Director Toolset

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Visibly yours

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1. BASIC CONCEPTS

Overview

- Introduction
- About a Setup
- About a Preset
- About a Project
- About storing Projects, Setups and Presets
- Terms you should know before you begin
- About stacking
- About stitching
- About tile categories and used digitizer

1.1 Introduction

Overview

Director Toolset is a software tool to set up, configure, manage and control all D320 and DX-700 based systems, with scalable and expandable functionality, for all users on all platforms.

The concept of this Director Toolset software is modular. The basic package can be extended with several optional plug-in modules, now or in the future available.

The Director Toolset software works with complete projects which can handle different setups simultaneously. On all these setups, different presets can be loaded. These terminology will be used through the complete software.

The next topics will explain more in detail the used terminology.

For those who have used the XLite Toolset software (previous generation control software) before, here's a list of the most important new features of the Director Toolset compared to the XLite Toolset:

- Director Toolset is a stand-alone application that runs on a Java Virtual Machine and that does not require extra services to run. It is a all-in-one application without need of the AdminEngine and Driver processes.
- With Director Toolset you can control several setups simultaneously. Even when the setups are connected via different COM ports or Ethernet port, it is possible to switch from one to another in a split second.
- Director Toolset can be used to design and create a setup offline, while you have no hardware devices at hand to detect. This feature makes it possible to design and prepare a show on the road, so that most work is done once you arrive at the show. You then just need to plug-in, detect and get the show running.
- Director Toolset can be used to create creative layouts and print out the mounting and cabling schemes for the creative building blocks.

1.2 About a Setup

What is a Setup ?

A **Setup** is a collection of hardware devices, such as digitizers, LED devices, FiberLinks, e.g., that are linked together. When this setup is connected via a COM port to a computer, the devices become available for Director Toolset.

A **Setup** can be e.g. a “D320 PL” with “16 ILite3 tiles” connected to the computer. It contains how the tiles are mounted (columns and rows) or how the inputs are configured.

Physical representation

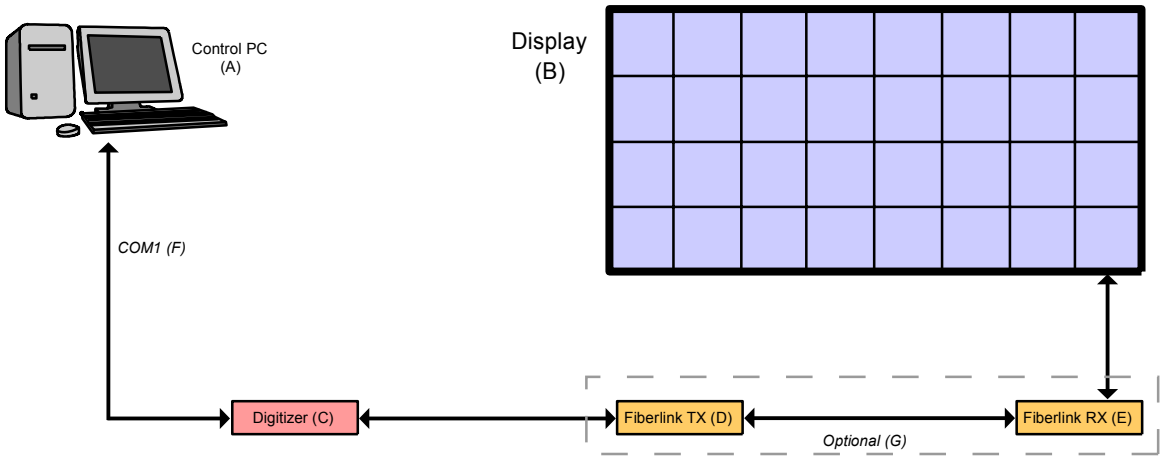


Image 1-1
Setup 1

A Computer
B Display devices
C D320 based Digitizer
D FiberLink transmitter
E FiberLink receiver
F COM1

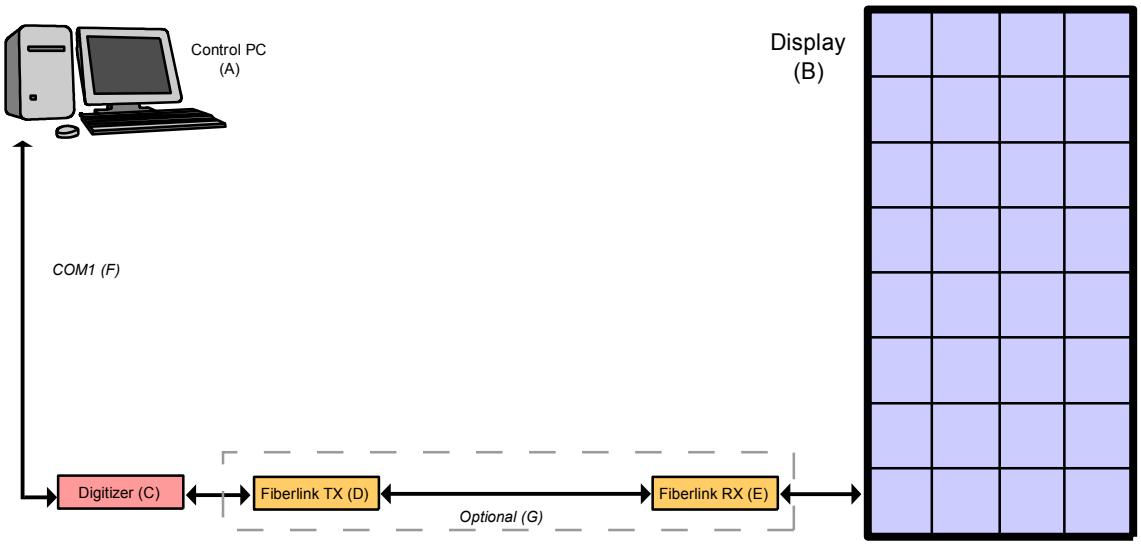


Image 1-2
Setup 2

A Computer
B Display devices
C D320 based Digitizer
D FiberLink transmitter
E FiberLink receiver
F COM1

Setup 1 and setup 2 two different setups but they contain the same hardware devices (hardware components).

In principle, each D320 based setup is connected to one COM port of the computer. A second setup should be connected to another COM port.

You can have at most 1 setup on the same COM port unless COM-port sharing is allowed.

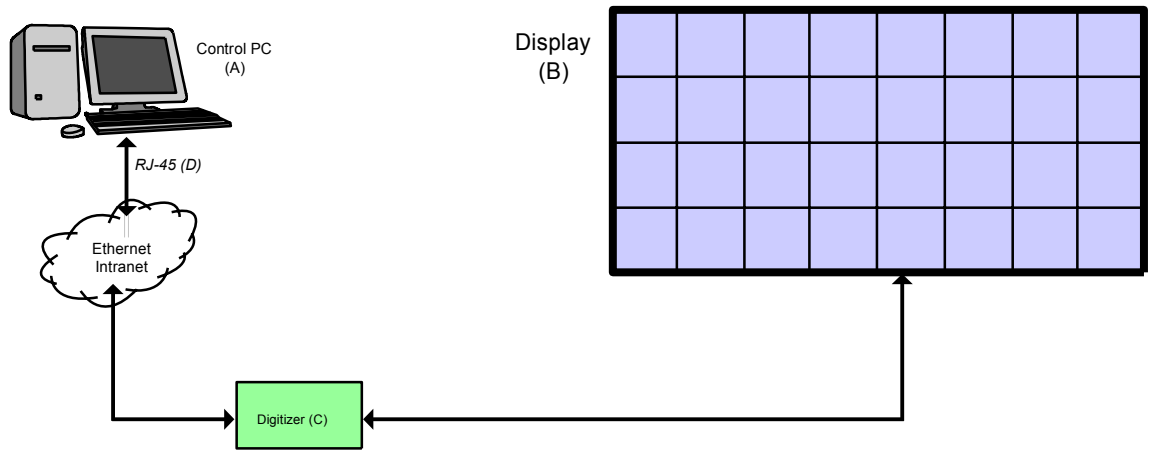


Image 1-3
Setup 3

A Computer
B Display device
C DX-700 based digitizer
D Ethernet connection

Setup 3 is a DX-700 based setup with 32 tiles. This setup is controlled via an Ethernet connection. Different setups can be controlled at the same time.

1.3 About a Preset

What is a Preset ?

A **Preset** is a snapshot of all settings and parameters of a setup, in time. When the status of one parameter changes, a new preset can be created. But the user can decide whether the new preset should be saved on another name or not. These presets can be used as short cuts keys to return to a saved setup with its settings at that moment.

Within Director Toolset several presets can be created for the same Setup.

Representation

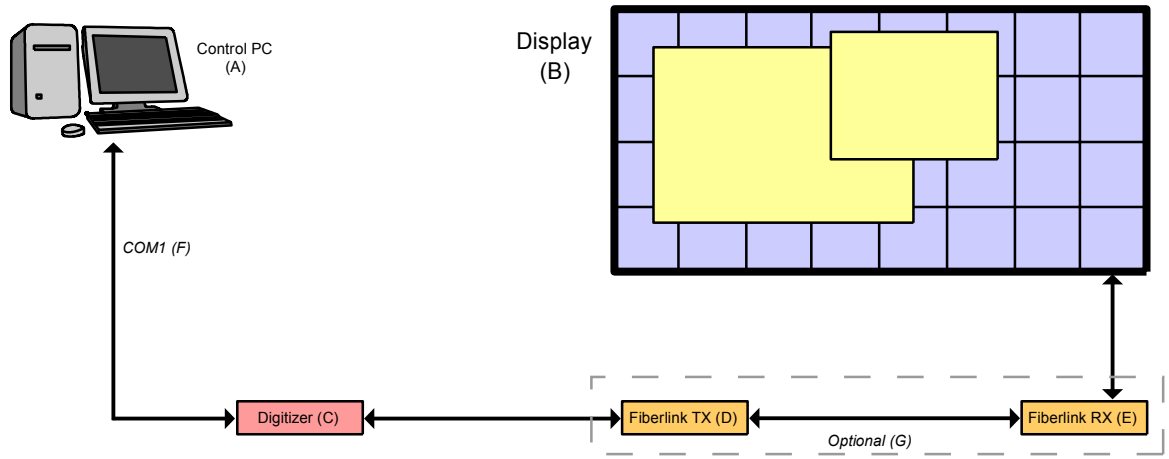


Image 1-4
Preset 1

A Computer
B Display devices
C D320 based Digitizer
D FiberLink transmitter
E FiberLink receiver
F COM1

This configuration is built up by a digitizer and a LED wall containing 32 tiles mounted as 4x8 (landscape).

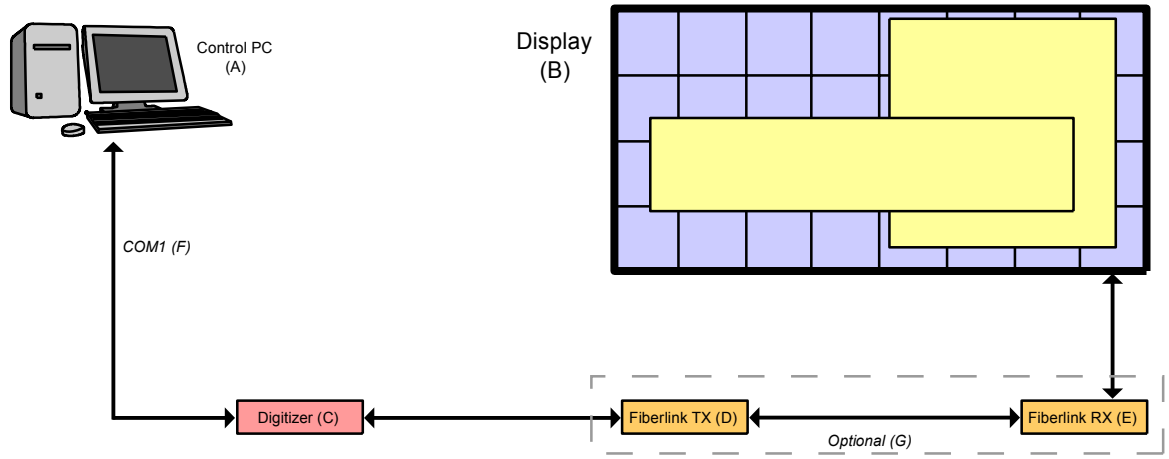


Image 1-5
Preset 2

A Computer
B Display devices
C D320 based Digitizer
D FiberLink transmitter
E FiberLink receiver
F COM1

This preset contains the same setup, but with new preset settings (device parameters are changed).

A setup can contain as many presets as desired.

1.4 About a Project

What is a Project ?

A **Project** is a collection **Setups**. These setups can contain one or more presets.

The user can create one project for e.g. an installation on an exhibition. This installation can contain different setups, e.g. different walls. Each setup can have different presets, e.g. one with low brightness, one with high brightness etc. .

Physical representation

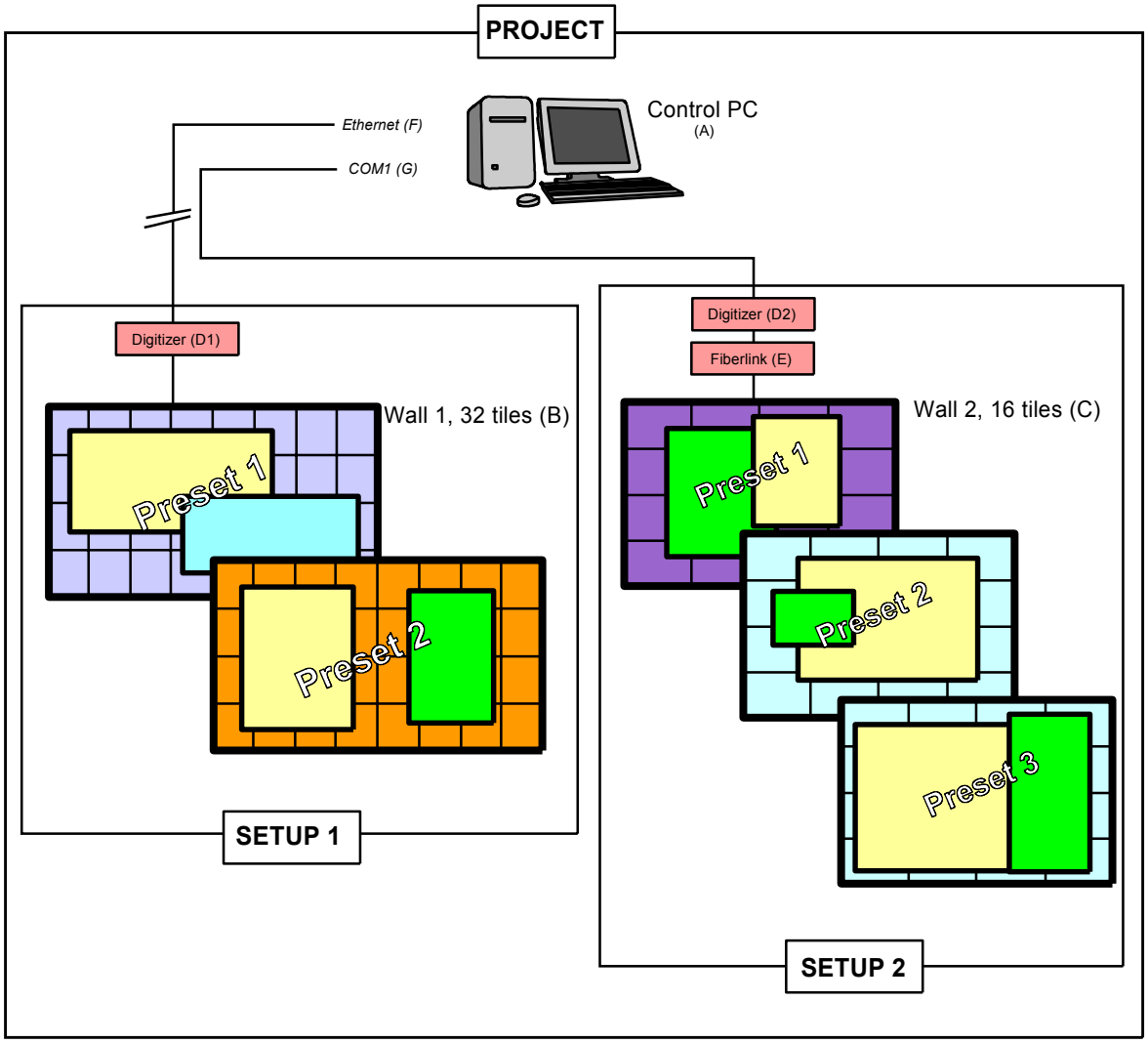


Image 1-6
Project overview

A Computer
B Wall with 32 tiles
C Wall with 16 tiles
D1 DX-700 based Digitizer
D2 D320 based Digitizer
E FiberLink
F Ethernet/Intranet connection
G COM1

Above project contains two setups. The first setup contains 2 presets, the second setup contains 3 presets.

Example of project :

Project	Setups	Presets
Exhibition hall	Entrance	Test preset
		Final preset (evening)
		Final preset (daylight)
	Booth_1 (4 tiles)	Test preset
		Final preset 2 active windows(4x1)
		Final preset 2 one window full screen
	Booth_2 (16 tiles)	Daylight setup
		Evening setup

1.5 About storing Projects, Setups and Presets

Overview

All information will be stored by default in the install directory of Director Toolset. Project information is stored in the subdirectory *repos*. The monitoring information and the IX designs are stored in the subdirectory *userdata*.

Example of a file structure:

```
Install directory
        └userdata
        └repos
```

This structure makes it possible to zip a typical project and send it to another computer for further use. To make a backup of all your projects, just make a copy of *userdata* and *repos* with all its content.

1.6 Terms you should know before you begin

Display

A **display** is a group of screens, containing the same tile types, which are combined together by stacking the respective digitizers or grouping the outputs of DX-700 digitizers.

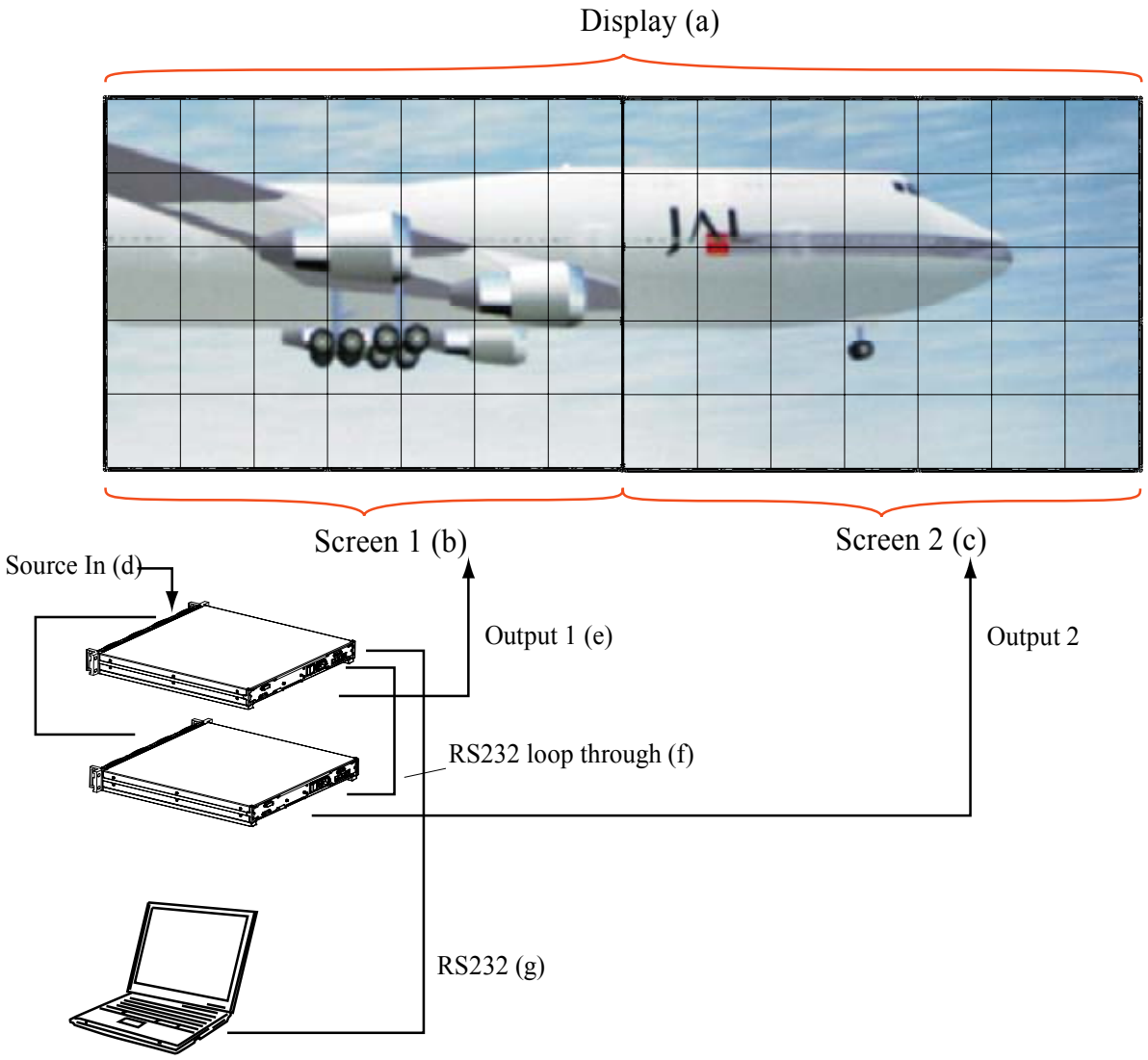


Image 1-7

Example with 2 D320 digitizers:

A display containing 2 screen. Each screen is built-up by 35 OLite tiles.

Screen

A **screen** contains LED tiles of the same type and is controlled by one D320 based digitizer or one output of a DX-700 digitizer. A screen is also a part of a display.

When there is in a setup only one digitizer or only one output for DX-700 digitizer and a display, a screen is equal to the display.

Sometimes, the name LED wall is used for screen.

Digitizer

A digitizer is a video processing device, designed to drive a screen. It is capable to handle all standard formats.

D320 based digitizers can be chained in order to generate more windows on the output. Or D320 based digitizers can be stacked in order to be able to split generated output of the devices to multiple screens.

DX-700 based digitizers can have up to 6 outputs per bank in order to drive 6 walls or to created some grouped output for large images.

1.7 About stacking

Stack

A stack is a setup where several digitizers are used to create one big image on a display.

Grouping

Only for DX-700 based digitizers. Internal stacking of outputs up to maximum 6 outputs.

General overview

A D320 based digitizer has a limit of maximum 1920 pixels horizontal and 1200 lines vertical, and a processing limit of 480000 pixels.

A DX-700 based digitizer has a limit of maximum 2048 pixels by 1080 with a processing limit of 1024 x 768 per output.

When a display (LED wall) is too large to be controlled by a single digitizer/output, this display can be split up in different screens, each controlled by a digitizer/output which is responsible for a part of the complete image. This principle is called stacking (or grouping when on the same output card).

First example of stacked configuration with D320 based digitizers:

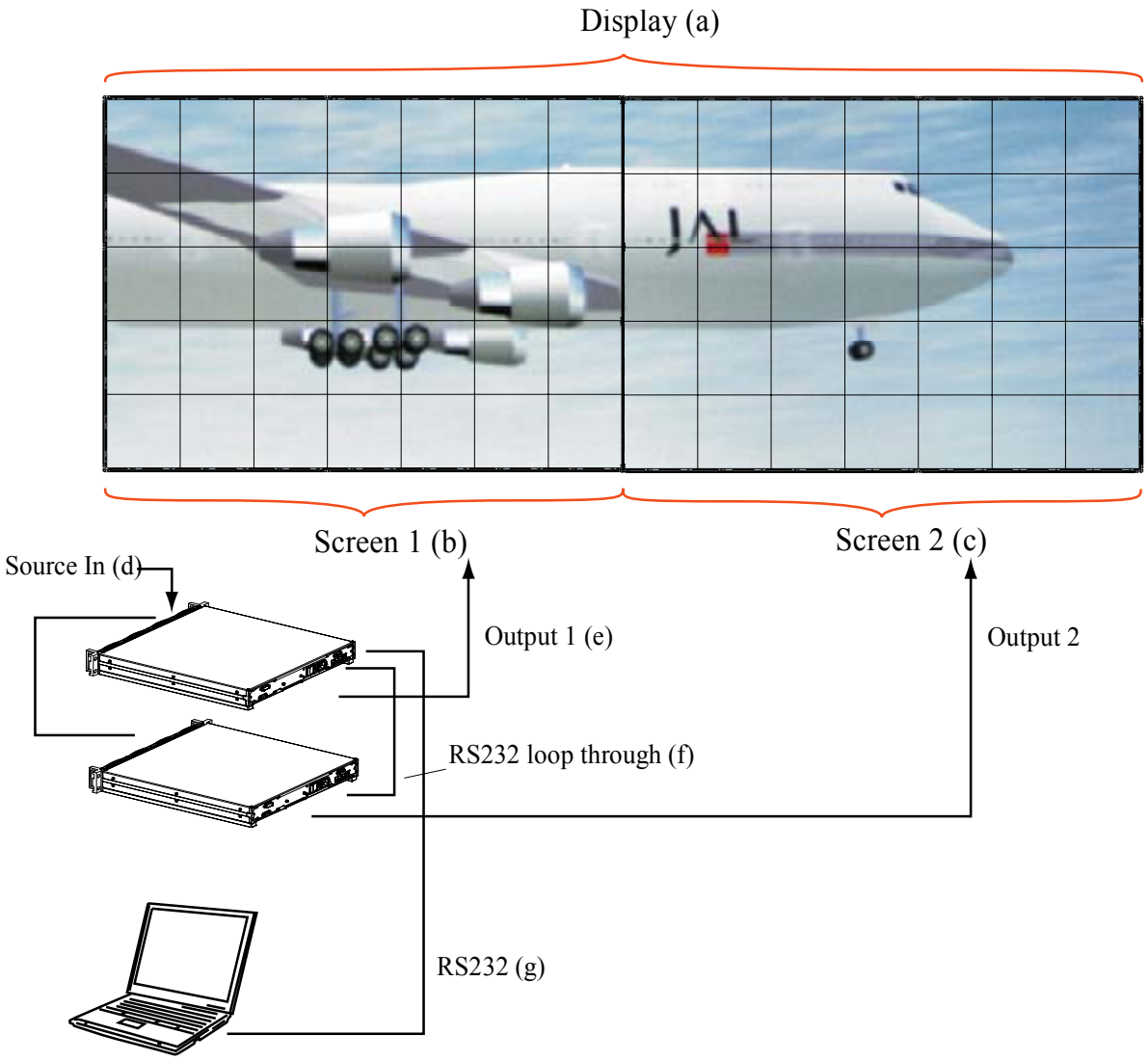


Image 1-8
Stacking principle (D320 based setup)

a Display
b Screen 1
c Screen 2
d Source in
e Output 1
f RS232 loop through
g RS232

Another example of stacking with a D320 based digitizers:

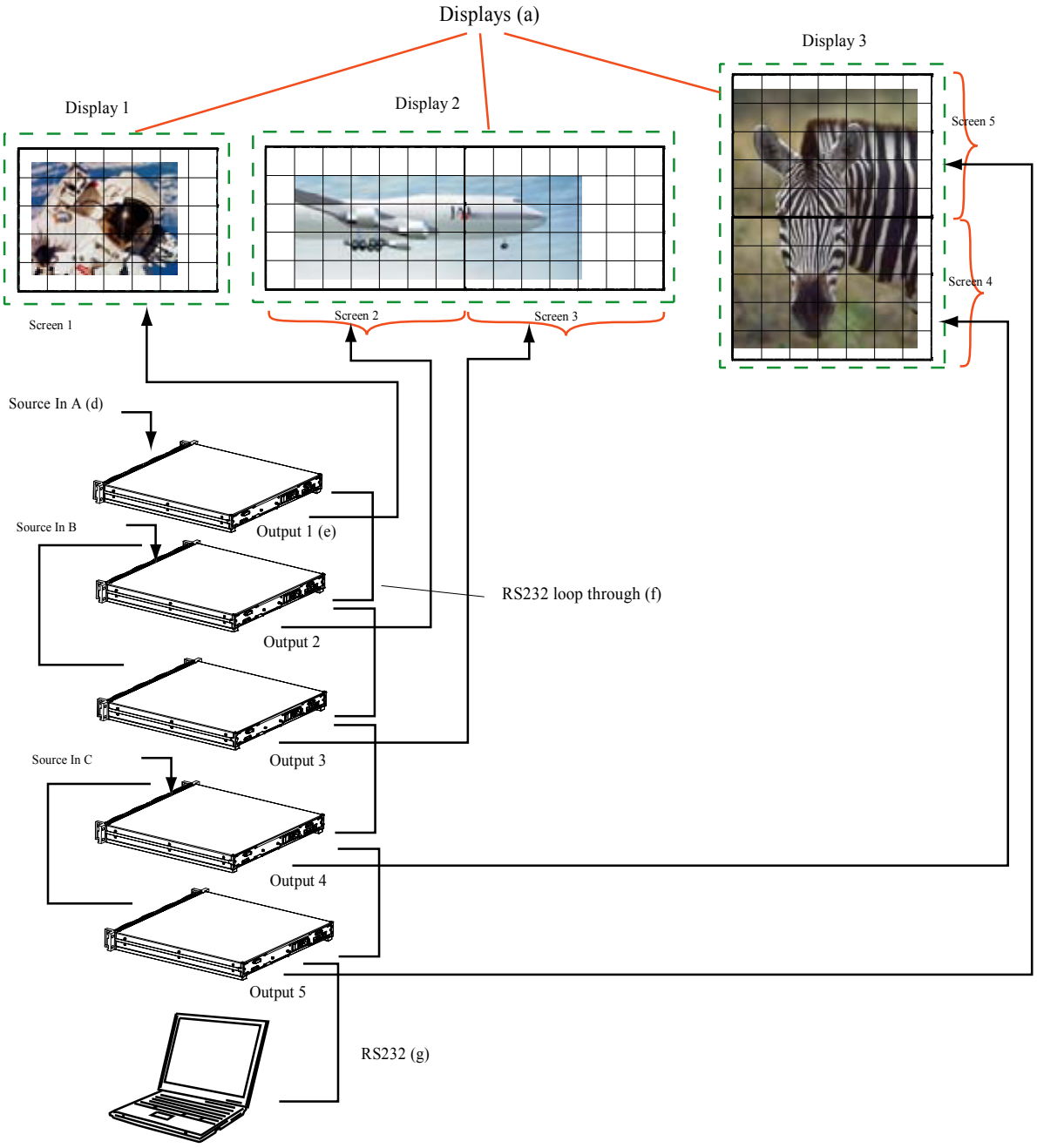


Image 1-9
Stacking example with 3 displays (D320 based setup)

a Display
c Source in
d Source in
e Output
f RS232 loop through
g RS232

This setup contains 3 displays. First display with one screen, second display with 2 screens next to each other and a third displays with 2 screen above each other.

To realize this combination, 5 stacked digitizers are necessary.

The customer will see this combination as 3 separate displays.

Display a is split up into two screens, screen 1 and screen 2. Two digitizers configured in a stack configuration are producing the image on the display. For more information about stacking digitizers, consult the installation manual of the used digitizers.

A DX-700 based setup:

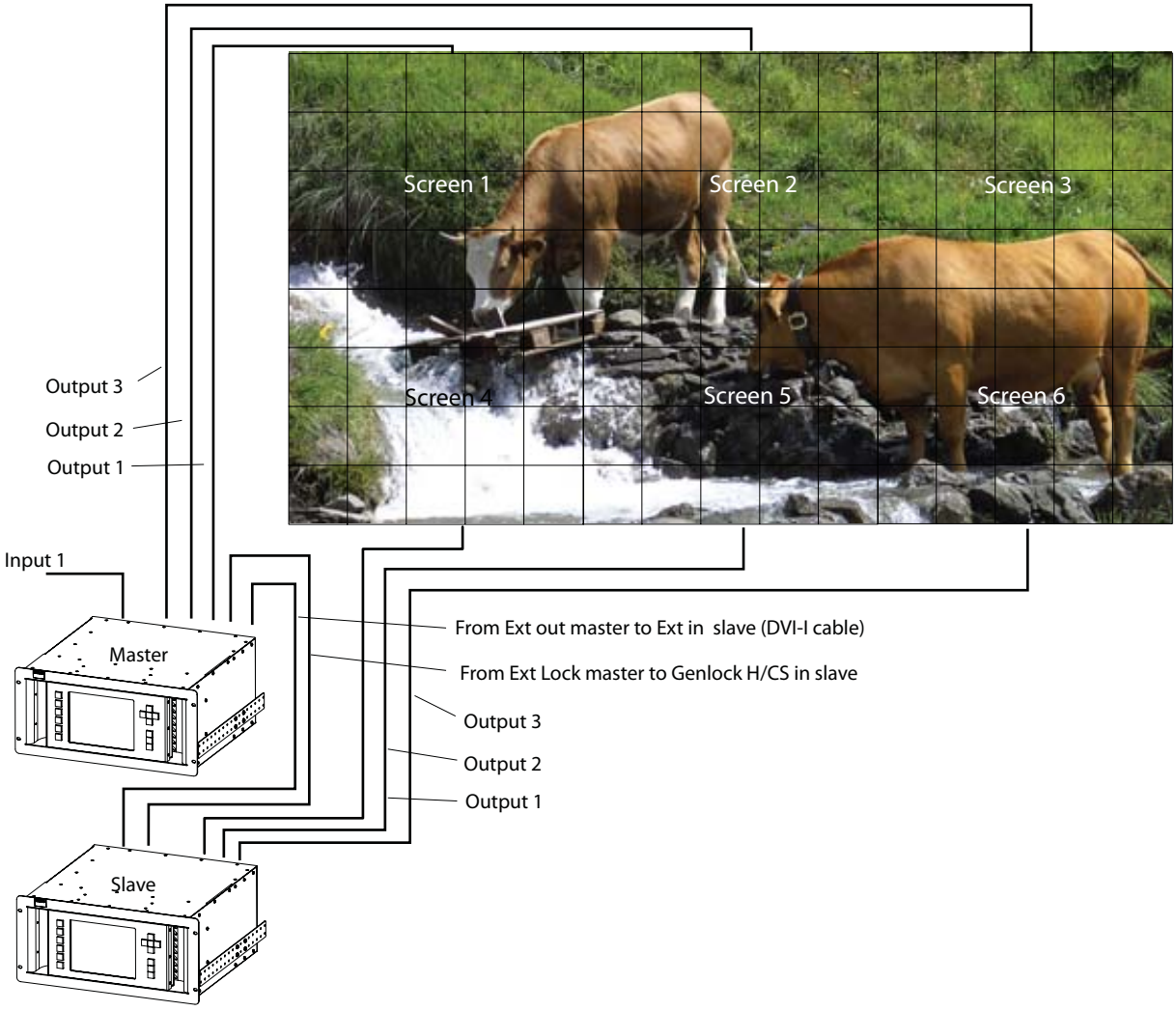


Image 1-10
DX-700 based stack setup

One display is created out of a stack of 2 DX-700 digitizer with each 3 screens. As input one source which loop through from the master digitizer to the slave via the DVI-I cable. The ext lock signal from the master digitizer is connected to the genlock H/CS in of the slave digitizer.

For an external stacking of digitizers, it is important that the genlock setting of the slave digitizer (front panel of digitizer) is set as follow:

- bank synchronization is set to *Lock to master* and
- master synchronization is locked external

If not set this way, the function *Find stacked devices* during the autodetection of the setup will not work.

For more information on how to set these settings, consult the user guide of the DX-700.

1.8 About stitching

Stitching

Stitching is a stacked setup without loop through for the source. Each digitizer (or bank in a multi bank configuration) receives its own input signal with is 1 to 1 mapped on the screens in the digitizer.

Only for DX-700 based setups.

General overview

In stead of connecting the complete video signal to the input of a stack which is then looped through to the next digitizer (or next bank in the same digitizer) the signal is already split up in different video signals which are separately connected to input of each digitizer. The inputs should be from the same source type. Both sources are then matched on the display. The content of each input must be 1 to 1 with the output so that only the viewport can be moved over a few pixel to make a seamless junction between parts of the image.

Example of a stitched setup:

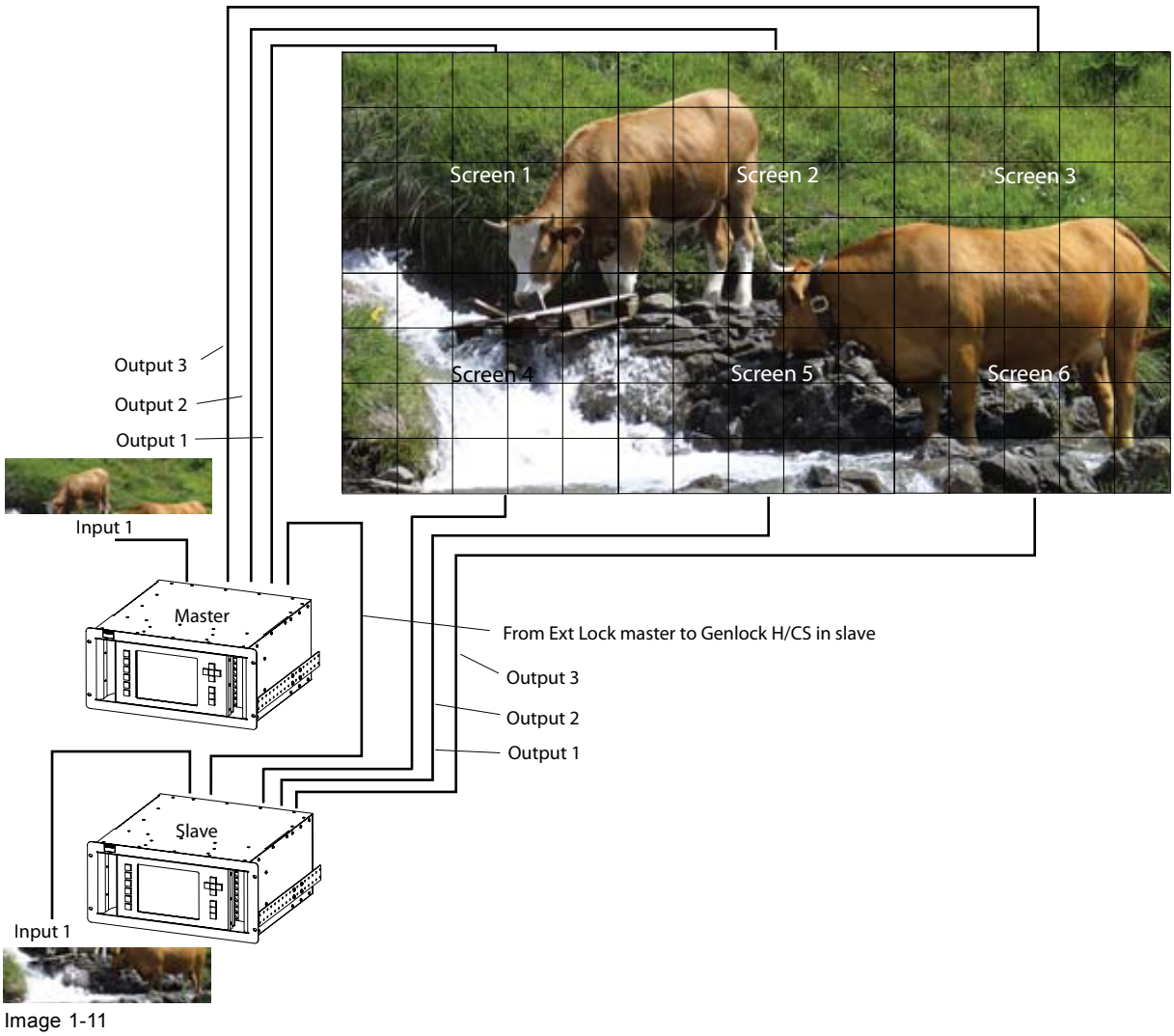


Image 1-11

Two digitizer are connected in a stacked setup but the input source is not loop through. Each digitizer receives its own content and this content is displayed on the display as one image. As each digitizer receives its own content, it is possible that second digitizer a completely different image than the second one.

The Ext Lock from the master with the genlock H/CS in of the slave must be installed. The slave digitizer must be locked to the master to avoid that both images are locked in a different way.

1.9 About tile categories and used digitizer

Overview

The current tiles can be divided into two categories, category 1 and category 2.

Tiles from category 1 can be used in a D320/LED-Pro based setup and in a DX-700 based setup.

Tiles from category 2 can only be used in a DX-700 based setup.

Category 1	Category 2
DLite tiles	NX tiles
ILite tiles	
SLite tiles	
OLite tiles	
T-series tiles	
DB tiles	
MiPIX	
MiSPHERE	
MiSTRIP	
MiTRIX	

2. INSTALLATION

Overview

- General requirements
- Software installation
- Starting up
- Starting up the server application for remote control
- Backup projects
- Uninstall Director Toolset
- About this manual

2.1 General requirements

Before you begin

It is assumed you are familiar with the Windows operating system at your site.

The CD-ROM in your package contains a Windows-based installation program. You can install the software from the CD-ROM.

System requirements for Microsoft Windows

Minimum hardware specifications :

- PC Pentium III or equivalent, 1 GHz
- 512 MB RAM
- Free hard disk space: 80 MB
- XGA resolution (1024 x 768)
- Serial communication port and/or Ethernet connection

Software

- Windows 2000, Windows XP Home or Windows XP Professional (recommended)

Recommended hardware specifications :

- PC Pentium IV or equivalent, 2.4 GHz
- 1 GB RAM
- 140 MB hard disk free space
- SXGA resolution (1280 x 1024) with 32 MB video memory
- Serial communication port
- Ethernet connection

Mac OS X

Software

- Apple’s Java SE 5.0 Release 3 or better
- Mac OS X v10.4.2 or better

Minimum system requirements :

- PowerPC G3
- 512 MB RAM
- 10 MB disk space
- Display with XGA resolution (1024x768)
- Network connection

Recommended system requirements

- PowerPC G5 or Intel Core 2 Duo
- Display with SXGA resolution (1280x1024)
- 1 GB RAM
- 50 MB hard disk free space
- Network connection

2.2 Software installation

To install on Window

The process of installing your software involves the following basic steps:

1. Insert the CD-ROM in the CD-ROM drive.
2. Is the AutoPlay active on your PC.
   If yes, continue with step 6.
   If no, from within the Windows environment go to the Start Menu. Choose *Run...* from the menu and proceed with the next steps.
3. Open windows explorer.
4. Select the CD-ROM Drive.
5. Double click *setup.exe* file.
6. Press **OK** to run the installation.

   The install shield will install all necessary files. (image 2-1)

   Follow the steps given on the different install windows.
7. Complete installation is automatic.

   Barco → Director Toolset item will be added to the program list (unless the install directory is changed during installation) or a startup icon will be added to the desk top depending on the selections made during installation.

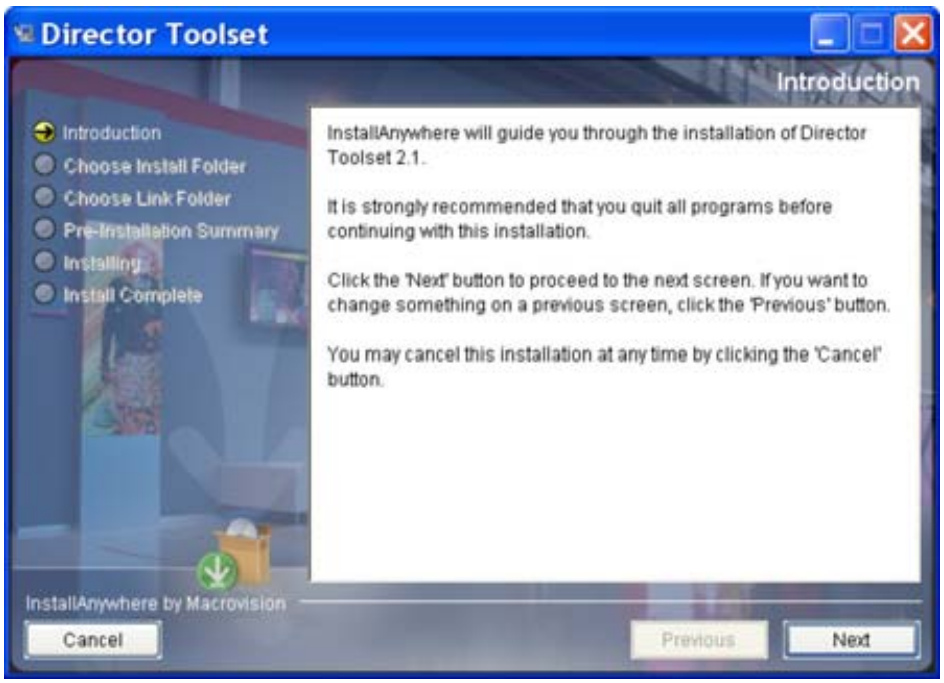


Image 2-1
Install pack start up

To install on MAC OS X

The process of installing your software involves the following steps:

1. Insert the CD-ROM in the CD-ROM drive and browse to the install folder.
2. Double click on the zip file to unzip.
3. Double-click on the *DToolset_Installer* file.

   The installation starts.
4. Follow the instructions given in the different install windows.
5. The complete installation is done automatically.

When controlling the LED wall via a remote connection, Director Toolset must be installed on the local computer AND on the remote computer.

2.3 Starting up

Start up

To start up the Director Toolset software:

1. Click on the Director Toolset icon on the desk top
   Or,
   Click on **Start** → *Programs* and select *Director Toolset* → Director Toolset Expert depending on the installation.

   The software starts up. This start up procedure can take a while. (image 2-2)

Image 2-2
Start up page

Start up possibilities

- Start up when no project is yet activated. The software will ask to start the default project.
- Start up with several Projects, but without any Setup defined: the software starts the most recent Project and will ask to create a setup.
- Start up with several Project and with several Setups defined: the software starts up with the most recent project and the most recently used setup. It starts also with the last used module.

2.4 Starting up the server application for remote control

What should be done ?

When using Director Toolset as client - server application, a server application should be started on the local computer (= computer connected with the LED wall)

How to start up ?

1. Open Explorer.
2. Browse to the install path of Director Toolset.
3. Open folder *Server*.
4. Double click on *Startserver.bat .*

   The server application will be started and the *Server module* window opens. (image 2-3)

   All settings are read only and are filled out during the creation of a new setup, see "Create new Setup", page 99.

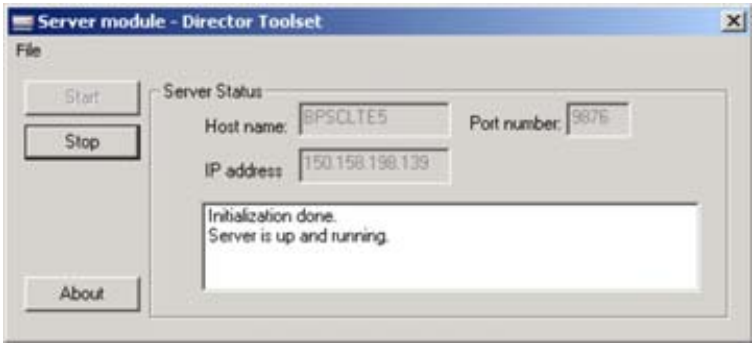


Image 2-3
Server module window

2.5 Backup projects

Make a backup

It is recommended to backup your own created projects with its specific configurations on an external medium.

If you have saved your projects in the software proposed path, then it is easy to find back all your projects.

The projects are normally stored as sub directories on the following path : `<install directory>\Director Toolset\repos`

And the monitoring data and IX designs are stored on the following path :`<install directory>\Director Toolset\userdata`

Take a backup of the *repos & userdate* directory with all its subdirectories and files.

Restore a backup

Restore the backup by copying both directories and its content to its original location.

2.6 Uninstall Director Toolset

How to uninstall?

To uninstall the program, normal Windows functionality can be used to remove a software.

Click on Windows **Start**, select *Settings* and open *Add/Remove software*.

Select the version of Director Toolset which must be removed and click on **Remove**.

The complete program will be removed from the hard disk.

2.7 About this manual

Overview

This Reference manual provides detailed information about the configuration and setup software Director Toolset. This manual is designed to be a reference tool in your everyday work with Director Toolset.

The following icons are used in the manual :

	Caution
	Warning
	Info, term definition. General info about the term.
	Note, gives extra information about the described subject.
	Tip, gives extra advice about the described subject.

Images given in the manual are used as illustration. The content of the image can be slightly different with the real image on the screen, e.g. version numbers, installed modules, etc. .

Typography:

- Clickable menu items or buttons are indicated in bold, e.g. **OK**
- Menu items are indicated in italic.
- A dialog window is indicated in italic, e.g. *Make a new configuration*.
- Step related notes, tips, warnings or cautions are printed in italic.
- Procedure related notes, tips, warnings or cautions are printed in bold between 2 lines preceding by the corresponding icon.

What's next?

Now that you are familiar with the style of this guide, you are now ready to know more about its modules and what they can do.

3. MENUS

Overview

- General
- Main Menu Bar
- Shortcut keys
- Main window
- Apply options (F12)
- How to adjust a setting
- About Director Toolset
- About Help
- Close Director Toolset
- Director Toolset tray
- Windows system tray

3.1 General

The right mouse button

The right mouse button is used in Director Toolset for direct controls. The use of this button can be handy throughout the complete software.

Ergonomics

Director Toolset works on the principle of windows with adjustable sizes that can be positioned as you like.

When Director Toolset opens, it displays the main window along with the Main Menu Bar. The drop-down menus include the usual functions of any software (File, Edit, etc.) and menus specific for Director Toolset.

The Main Menu Bar allows to open or create projects, setups and configurations as well opening a tree view window of the active project.

Next to the traditional shortcuts, some specific shortcuts are introduced to make the working of the program more easy.

An extra *Project overview* window makes project and configuration management more easy

3.2 Main Menu Bar

Structure

The main menu bar consists out of:

- a drop down menu bar accessible by clicking with the mouse on the item in the upper part of the main bar.
- an icon (buttons) menu bar for direct access to some tasks.

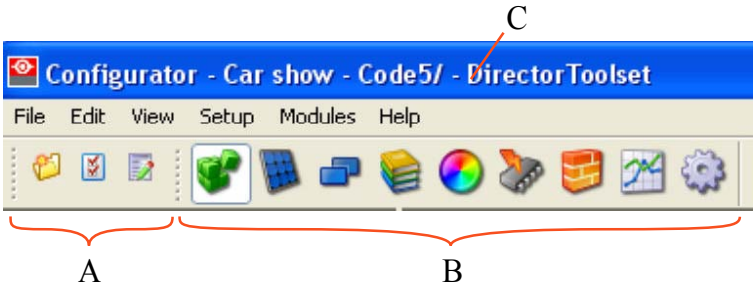


Image 3-1
Main menu bar

A	Project icons, create new project, apply options and logging info
B	Plug-in modules
C	Window title: combination of active module, project, setup

Each module has its own menu option, but File, Edit, Compose, Modules and Help are available in each module.

Commands that cannot be found in the menu options can usually be found by right-clicking an item.

3.3 Shortcut keys

Overview

Keyboard shortcut	Action
Ctrl + N	New preset
Ctrl + Alt + N	New setup
Ctrl + Shift + N	New project
Ctrl + O	Open project
Ctrl + Z	Undo last change
Ctrl + Y	Redo last change
Ctrl + C	Copy selected item
Ctrl + X	Cut selected item
Ctrl + V	Paste copied or cut item
Ctrl + A	Select all items
F1	Context sensitive help
F12	Open Apply Policy dialog

Table 3-2
Shortcut key table

3.4 Main window

Overview

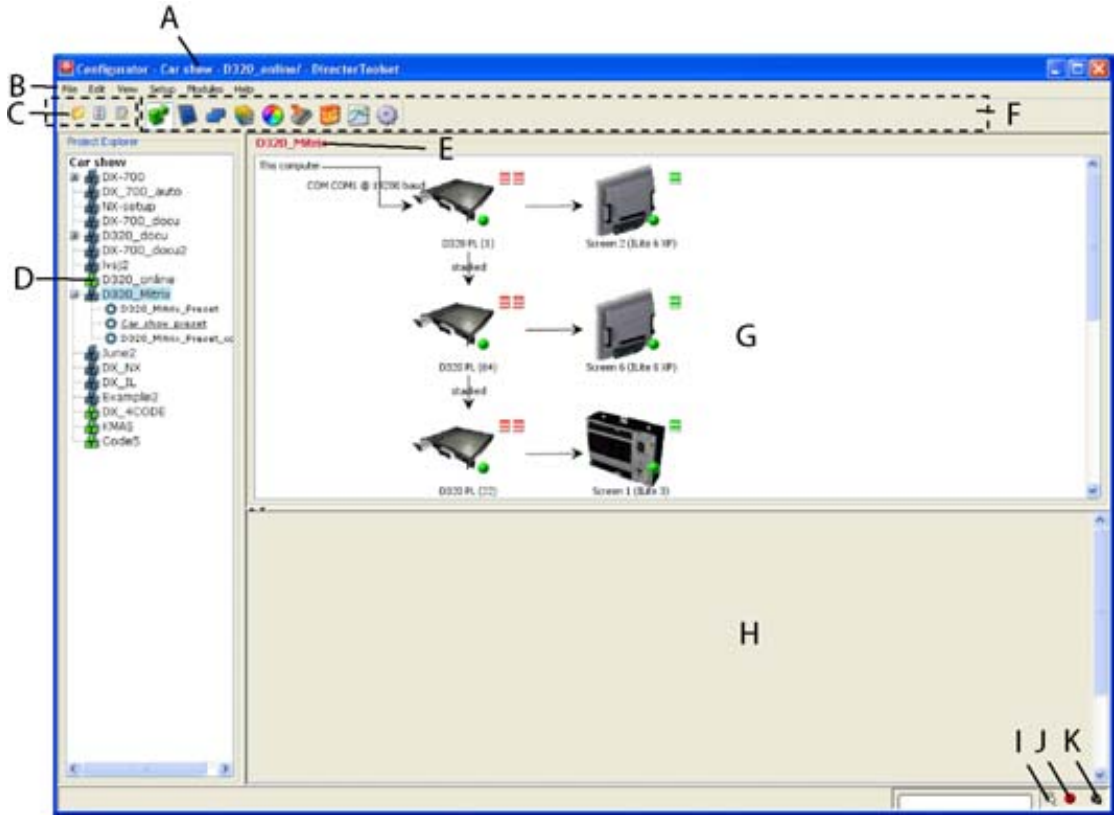


Image 3-2
Main window

Indication	Description
A	Window title. Construction of Project name – Setup – active Configuration
B	Menubar
C	Toolbar
D	Projector explorer, gives an overview of the existing setups and configurations for the named project.
E	Active setup: • When red, offline setup • When green, online setup
F	Start buttons for the different plug in modules
G	Preview pane for active setup (graph view)
H	Properties panel : shows the properties and settings of the selected device in the graph view
I	Serial communication setup

Indication	Description
J	Status led (status button). • When red: computer is offline • When green: computer is online When blinking green: data communication between computer and LED wall
K	Status led monitoring LED wall When black: monitoring not active When orange flashing: monitoring running

Tool tip

Most items and or icons in the menu bar show a tool tip when moving the mouse over that item or icon. This tool tip helps to identify the buttons or items.

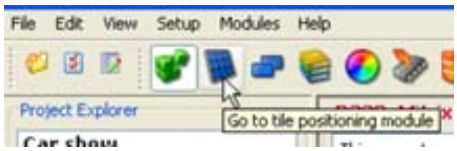


Image 3-3
Tool tip

Scroll bars

If there is more information available than displayed in a pane, vertical and horizontal scroll bars will be added to that specific pane. These scroll bars let you move up and down and left and right through the information in the pane. Vertical scroll bars are the bars on the right side of the pane. Horizontal scroll bars are the bars at the bottom of the pane.

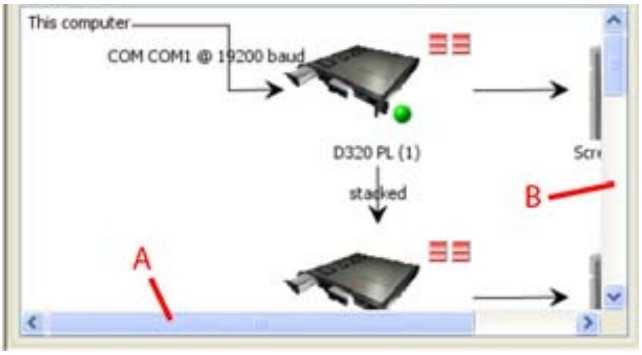


Image 3-4
Scroll bars

A Horizontal scroll bar
B Vertical scroll bar

To use scroll bars, place the cursor on the scroll box, click and hold down the mouse button. Move the scroll box the entire span of the scroll bar. Notice how you can move and up down in the information in the pane.

You can also click anywhere above or below (left or right) the scroll box in the empty space. Click once with the mouse and the scroll bar will make larger leaps in the information.

Split bar

The split bar divides the different panes. The position of the split bar is adjustable.

Image 3-5
Split bar

To adjust the position, place the cursor over the split bar separating the panes, so that the two-headed arrow cursor appears. Click on the two-headed arrow and drag it until the panes are the desired size.

3.5 Apply options (F12)

Overview

The apply options determine how changes will be executed. When multiple screens/displays are used, changing a setting can be interpreted in different ways.

Press function key **F12** or on the menu bar, select *View → Apply Policy* or click on icon on the tool bar.

Auto apply		when checked, changes will automatically be applied
When changing a screen, apply this change to	Selected screen only	Changes will be applied only to the selected screen
	All screens in the same display	Changes will be applied to all screens in the same display.
	All displays	Changes will be applied to all displays.
When changing an input, apply this change to	Selected input only	Only the input on which the setting is changed will be adapted.
	Stacked input only	The selected input and its stacked inputs will be changed according to the changes of the selected input
	All similar inputs	All similar inputs of the stacked digitizers will be changed (even those which are not in the same display)
When changing a fiberlink device, apply this change to	Selected device only	Only changes to the settings of the selected device will be applied to that device.
	All fiberlink devices in the same display	Change to a fiberlink device will be applied to all fiberlink devices in the same display.
	All fiberlink devices	All fiberlink devices used will be updated.
When changing a D320 pattern, apply this change to	Selected pattern generator only	Selected pattern will only be applied on the selected digitizer

	All similar stacked pattern generators in the same display	Selected pattern will be applied to all stacked digitizer in the same display
	All similar stacked pattern generators	Selected pattern will be applied to all stacked digitizers

Before starting an adjustment, check first the apply settings level.

3.6 How to adjust a setting

About slider adjustment

To change a slider adjustment, just click on the slider and hold down the mouse button. Move the slider while the mouse button in pressed to the desired value and release the mouse button. When in an online configuration, on the value while releasing the mouse button will be sent to the wall and not all intermediate values.

About input boxes

To change a value:

- Click on the up or down arrow buttons next to the input box until the desired value is reached.
- Click in the input box, select the actual value and enter a new value with your keyboard.

3.7 About Director Toolset

Why ?

The about function in the help gives an overview of the used system parameters and the installed modules. This information can be handy when calling for help.

The images given below are just example images. These images can differ from version to version.

How to start up ?

1. Click on **Help** in the menu bar and select *About*.

   The about start up window opens. (image 3-6)
   Or,
   right click on Barco icon in the Windows system tray and select *About...* . (image 3-7)

Image 3-6
About start up window

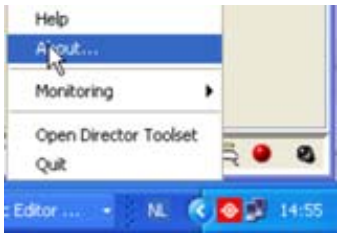


Image 3-7
About via System tray

System information

Click on **System** to see the system parameters on which Director Toolset is running.

Image 3-8
System parameters

Installed modules

Click on **Installed modules** to get an overview of the installed modules.

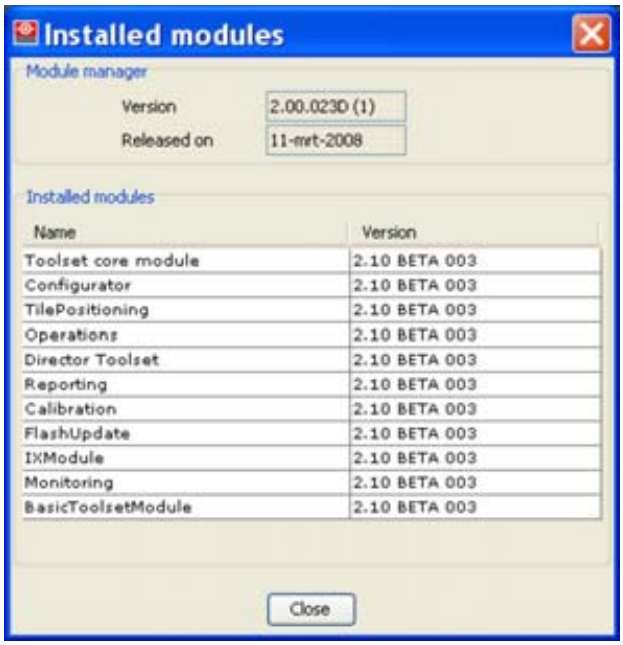


Image 3-9
Overview installed modules

3.8 About Help

Overview

- Help manual
- Help pointer

3.8.1 Help manual

Start up help

Click on **Help** and select *Help → Help manual*.

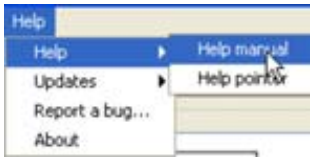


Image 3-10
Help manual

The *Help* dialog box appears.

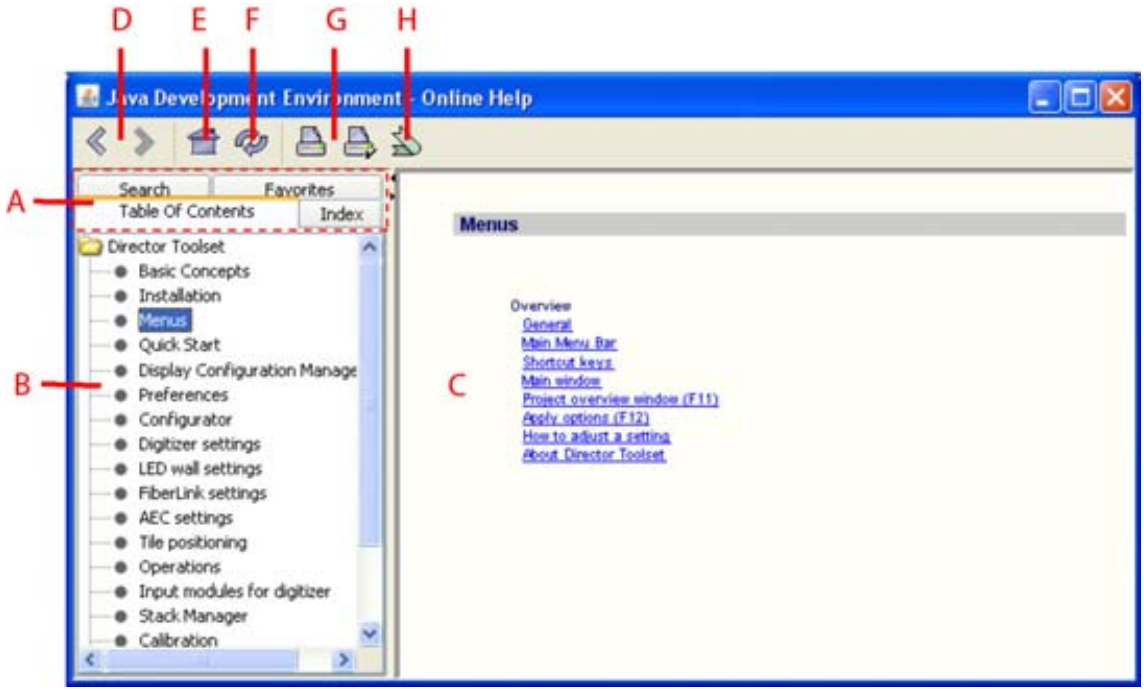


Image 3-11
Help manual dialog

A	Help tab pages • Table of content : search the complete manual via the table of content. • Index : search via the index of the manual • Search : search via a keyword • Favorites : search via the stored favorites
B	Tab page content
C	Search result
D	Navigation buttons
E	Home button
F	Refresh button
G	Print and print setup button
H	Add to favorites

Alternative way to open the help manual. Right click on the Barco icon in the Windows system tray and select *Help*.

Image 3-12
System tray help call

3.8.2 Help pointer

Start up help pointer

Click on **Help** and select *Help* → *Help pointer*.

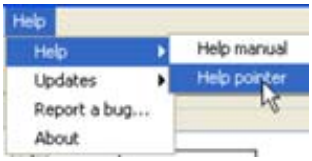


Image 3-13
Help pointer start up

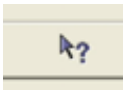


Image 3-14
Help pointer

A question mark appears. Drag the question mark over the item for which help is needed and click. If a help page is available, this page will open in a new window.

3.9 Close Director Toolset

Overview

Director Toolset can be closed in 2 ways:

- Close completly
- Hide in system tray. Director Toolset is still running in background. Monitoring can be started and stopped.

To close Director Toolset, select *File* → *Quit*.

The Keep running or quit application menu opens.

Image 3-15
Keep running or quit application window

Select the desired setting and click **OK**.

3.10 Director Toolset tray

Overview

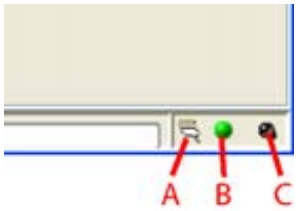


Image 3-16
Director Toolset tray

Director Toolset tray in normal operation.

Connection setup and Connection failures

For D320 based setups, when clicking on the connection icon (A) the serial connection window opens.

Image 3-17
Serial connection

To setup the com port, click on the drop down box and select the desired com port.

To setup the baud rate, click on the drop down box and select the desired baud rate.

Time out : Time within an answer should be received. To change the current value, click in the input field and enter a new value with the keyboard. Value is expressed in milliseconds.

Status: status of the setup. To change from offline to online or vice versa click on the drop down box and select the desired value.

For a DX-700 based setup, when clicking on the connection icon (A) the Communication Parameters dialog opens even when the status of the icon indicates a communication problem (white cross on red background as overlay on the icon).

Image 3-18
Communication failure indication

A communication lost status can be reached when:

- Director Toolset sends a number of consecutive commands returning time-outs
- Director Toolset sends a number of consecutive commands to a digitizer returning a connection exception

At that time, the icon (A) starts blinking with a red cross an the toolset progress bar indicates progress.

Click on icon (A) to see the Communication parameter settings.

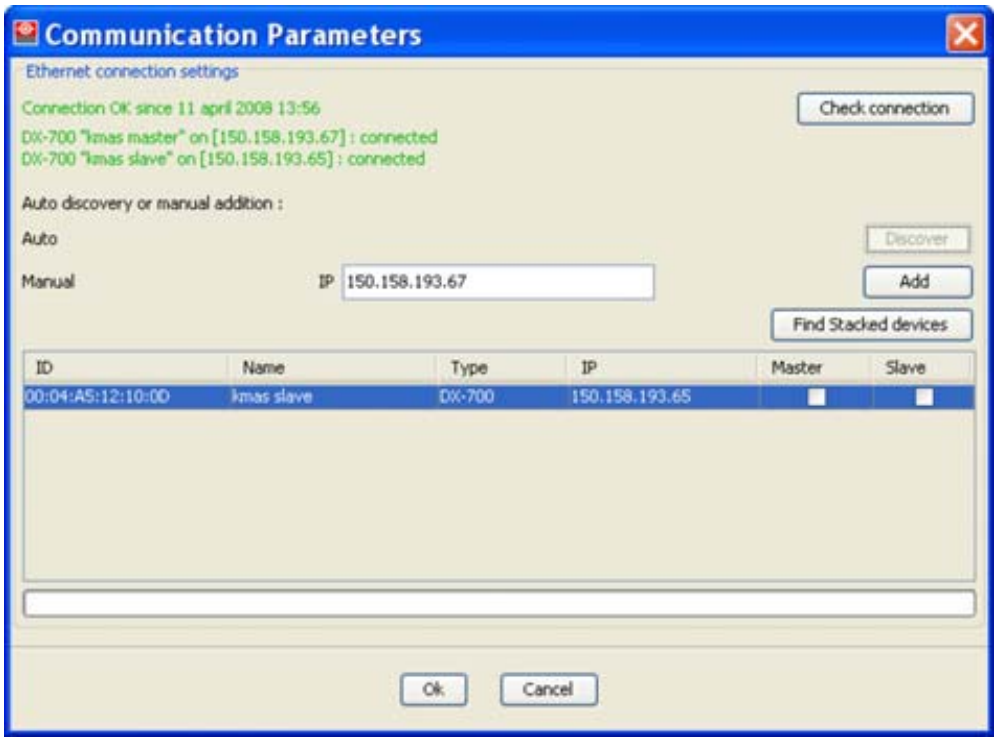


Image 3-19
Ethernet connection setup

When all digitizer are online and connected, an indication in green is given in the upper part of the dialog per digitizer.

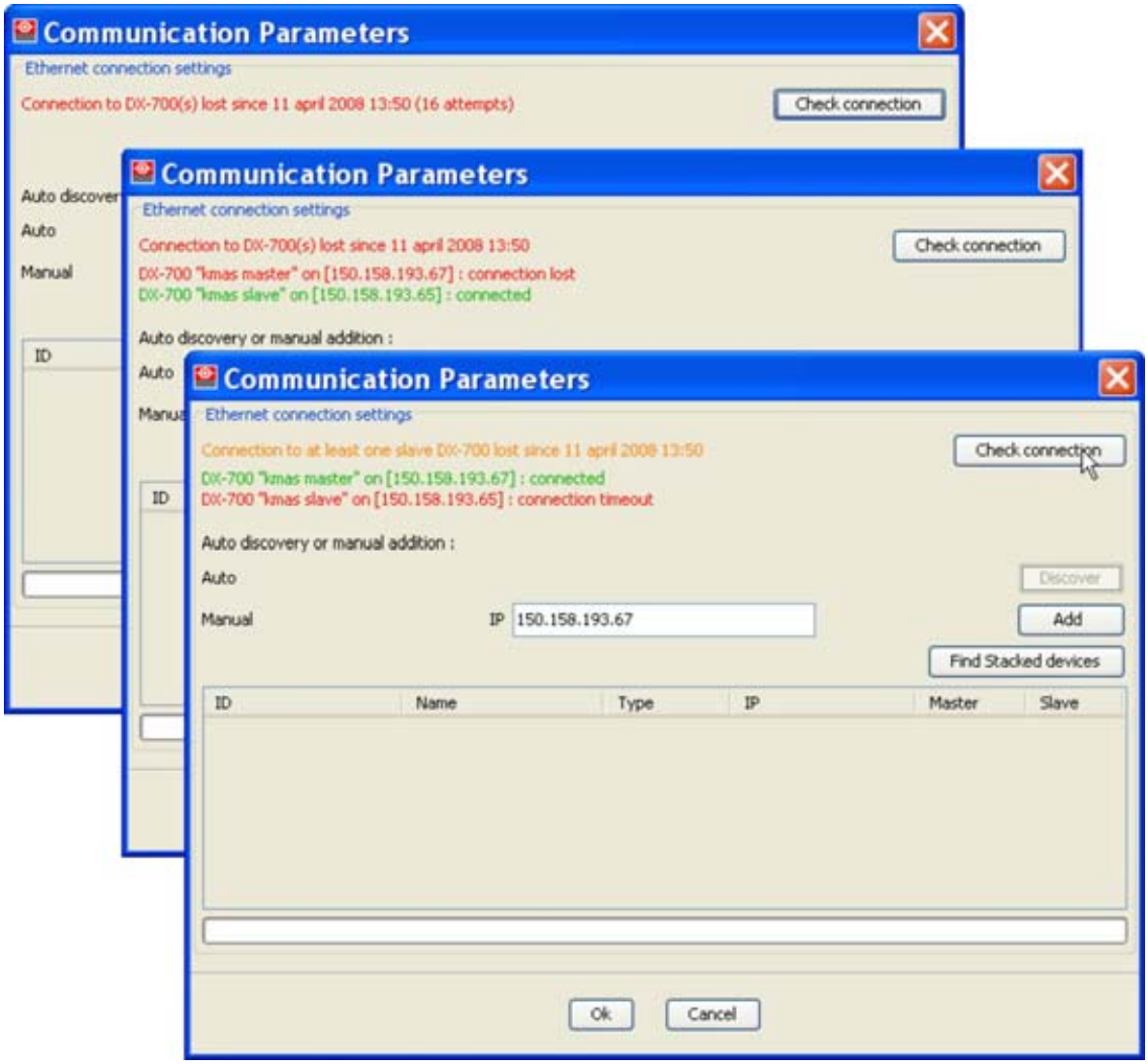


Image 3-20
Communication status

When one of the digitizers in the stack no longer has communication, a red indication is given. The button **Check connection** becomes available. Click this button to try to reconnect with the current digitizer(s). While in this *communication lost status* offline working is still possible.

When the Check connection button is pressed:

- When the communication with the master digitizer is still OK, but not with one of the slave digitizer then the first row is indicated in orange with just below the status of each digitizer connection. Check connection can solve the problem. Commands can still be send to the master digitizer which can distribute them to its slaves.
- When the communication with the master digitizer is not OK, but OK for all slaves, than no commands can be sent to the setup. Check connection can solve the problem if the hardware connection is OK. The first row is indicated in red. Below the master digitizer row is indicated in red and the slave rows in green.

Click on **Discover** to search the Ethernet/Intranet for other connected DX-700 digitizers. Select an DX-700 out of the list and click **OK**. If the setup is a stacked setup, check the check box of the master digitizer and execute a **Find Stacked devices** to find all slave digitizers.

Or, enter an IP address manually and click on **Add**.

Communication icon

The communication icon (B) shows the status of the current setup.

- When green : setup is online (online for Director Toolset, that does not mean that the physical connection is still available).
- When green blinking : Director Toolset tries to make a connection.
- When red : setup is offline.

Monitoring icon

The monitoring icon (C) shows the status of the monitoring of all displays.

- When blinking orange, monitoring is started.
- No blinking, monitoring is stopped.

3.11 Windows system tray

Overview

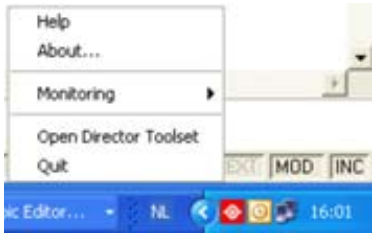


Image 3-21
Window tray

Right click on the Barco icon in the Window system tray to open the menu.

The following items are available:

- Help, opens the Help manual. More info on "Help manual", page 40.
- About... , shows information about Director Toolset. More info on "About Director Toolset", page 38.
- Monitoring, starts and stops the monitoring of all displays. More info on "Monitoring Status", page 569.
- Open Director Toolset, opens Director Toolset when hided.
- Quit, close Director Toolset completely.

4. QUICK START

4.1 Introduction

Audience

The Quick start chapter is intended to serve as a guide for anyone who tries to set up a LED wall for the first time. It will discuss only the necessary steps, without special feature to get a good quality image on the wall. For an in-depth discussion or to understand all special features, read the manual completely

Prerequisite knowledge

This software package will be used by those who build up a wall for the first time, therefore this quick start chapter will be handy to learn more about Director Toolset and also be used by more experience installers who have good knowledge of XLite Toolset. For those who are trained to work with XLite Toolset, this quick start will be handy to see the link with the previous software.

The next procedure will discuss the steps to be taken to build up a LED wall and references to the more detailed explanation will be added.

4.2 Working with an online connected LED wall

Steps to be taken

The following process steps must be executed to configure a simple wall until a picture is displayed on it.

1. Create a Project, Setup and Preset, "Project Tree Creation for online working", page 50.
2. Place the wall with the active field and position the tiles on the correct place, "Tile Positioning", page 55.
3. Set the digitizer timings to display a correct output, "D320 Digitizer timings", page 57
4. Position the input windows on the wall and configure the minimal settings of each input. When only one input is connected, set this input full size, "Window operations", page 62.
5. If necessary, color calibrate the LED wall.

4.3 Working with offline and connect later with LED wall

Steps to be taken

The following process steps must be executed to configure a simple wall until a picture is displayed on it.

1. Create a Project, Setup and Preset, "Project Tree Creation for offline working", page 52
2. Insert the necessary devices into the setup, "Add devices to a setup", page 54
   Note: *Insert only the devices as used in the physical LED wall, otherwise a mismatch error will be given synchronizing the created setup with the real LED wall.*
3. Place the wall with the active field and position the tiles on the correct place, "Tile Positioning", page 55.
4. Set the digitizer timings to display a correct output, "D320 Digitizer timings", page 57
5. Position the input windows on the wall and configure the minimal settings of each input. When only one input is connected, set this input full size, "Window operations", page 62.
6. Connect your computer to the system and make the created setup online using Online button. Make sure before settings online that your offline setup is exactly as the physical setup.

7. If necessary, color calibrate the LED wall.

4.4 Menu and modules overview

Overview

The following chart gives an overview of:

- the menus on the menu bar
- the icons on the tool bar

The chart gives also an overview of the menu item between Setup and Modules in the menu bar. This item changes from module to module. Even some modules do not have an item. The link between the modules and the item is made on the chart.

Module	Extra item between Setup & Modules
Configurator	no item
Tile positioning	Positioning mode
Operations	no item
Calibration	no item
Flash update	Tools
IX module	IX menu
Monitoring	no item

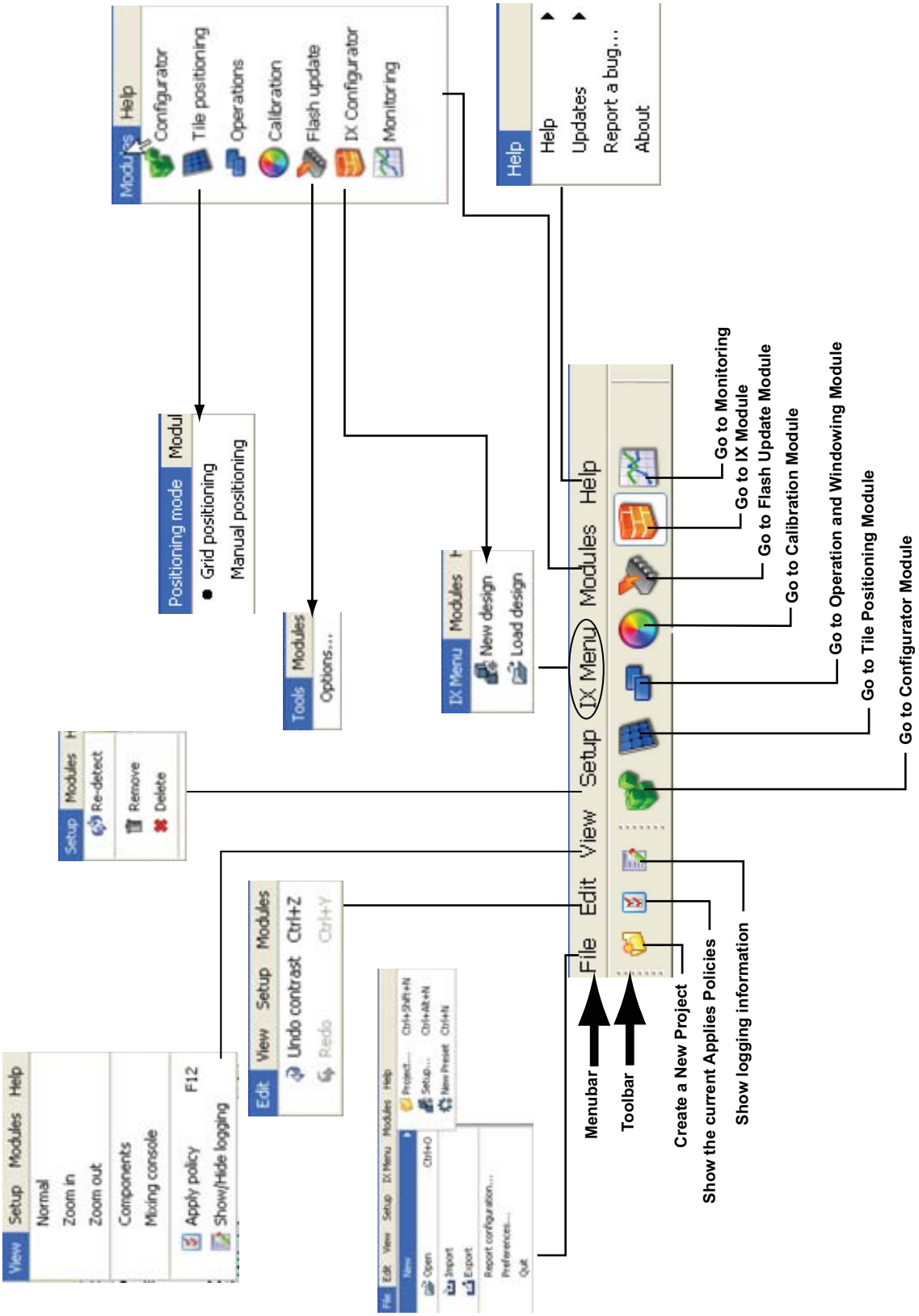

Modules
Help
Configurator
Tile positioning
Operations
Calibration
Flash update
IX Configurator
Monitoring
Help
Updates
Report a bug...
About
Positioning mode
Grid positioning
Manual positioning
Tools
Modules
Options...
IX Menu
Modules
New design
Load design
Setup
Re-detect
Remove
Delete
Edit
View
Setup
Modules
Undo contrast Ctrl+Z
Redo Ctrl+Y
View
Setup
Modules
Help
Normal
Zoom in
Zoom out
Components
Mixing console
Apply policy F12
Show/Hide logging
File
Edit
View
Setup
IX Menu
Modules
Help
Go to Monitoring
Go to IX Module
Go to Flash Update Module
Go to Calibration Module
Go to Operation and Windowing Module
Go to Tile Positioning Module
Go to Configurator Module
Menubar
Toolbar
Create a New Project
Show the current Applies Policies
Show logging information

Image 4-1

4.5 Project Tree Creation for online working

For a D320 based setup

1. Start up the configurator module by clicking on icon.
2. Create new Project, see "Create new Project", page 81.
   Fill out a logical project name, the author and eventually a description of the project. Continue with **OK**.
3. Create new Setup, see "Create new Setup", page 99.
   Select D320 based setup as digitizer type.
   Fill out a Setup name, select Online, check local connection as driver connection and fill out the serial communication port and baud rate (see "Serial connection", page 104). Continue with **OK**.
4. Create new Preset, (see "Create new Preset via projector explorer", page 123).
   Fill out a Preset name, select the creation place and on which preset it can be based. Continue with **OK**. The preset is created with the current settings and can be edited if necessary.

For a LED-Pro based setup

1. Start up the configurator module by clicking on icon.
2. Create new Project, see "Create new Project", page 81.
   Fill out a logical project name, the author and eventually a description of the project. Continue with **OK**.
3. Create new Setup, see "Create a new setup", page 94.
   Select LED-Pro based setup as digitizer type.
   Fill out a Setup name, select Online, click Discover and select the corresponding LED-Pro. Continue with **OK**.
4. Create new Preset, (see "Create new Preset via projector explorer", page 123).
   Fill out a Preset name, select the creation place and on which preset it can be based. Continue with **OK**. The preset is created with the current settings and can be edited if necessary.

For a DX-700 based setup

1. Start up the configurator module by clicking on icon.
2. Create new Project, see "Create new Project", page 81.
   Fill out a logical project name, the author and eventually a description of the project. Continue with **OK**.
3. Create new Setup, see "Create new Setup", page 85.
   Select DX-700 based setup as digitizer type.
   Fill out a Setup name, select Online, click Discover and select the corresponding DX-700. Continue with **OK**.
4. Create new Preset, (see "Create new Preset via projector explorer", page 123).
   Fill out a Preset name, select the creation place and on which preset it can be based. Continue with **OK**. The preset is created with the current settings and can be edited if necessary.

Flowchart

Image 4-2

4.6 Project Tree Creation for offline working

Recommended path

1. Start up the configurator module by clicking on icon.
2. Create new Project, see "Create new Project", page 81.
   Fill out a logical project name, the author and eventually a description of the project. Continue with **OK**.
3. Create new Setup, see "Create new Setup", page 99.
   Make the digitizer selection.
   Fill out a Setup name, select Offline (all other settings will be grayed out). Continue with **OK**.
4. Add devices to the setup, for D320 based setups, see "Design manually an offline setup based on a D320 digitizer", page 143, for DX-700 based setups, see "Design manually an offline setup based on a DX-700 digitizer", page 165, for LED-Pro based setups see "Design manually an offline setup based on a LED-Pro digitizer", page 183.
5. New presets can be created for this setup.
6. Continue with Tile positioning.

Flowchart

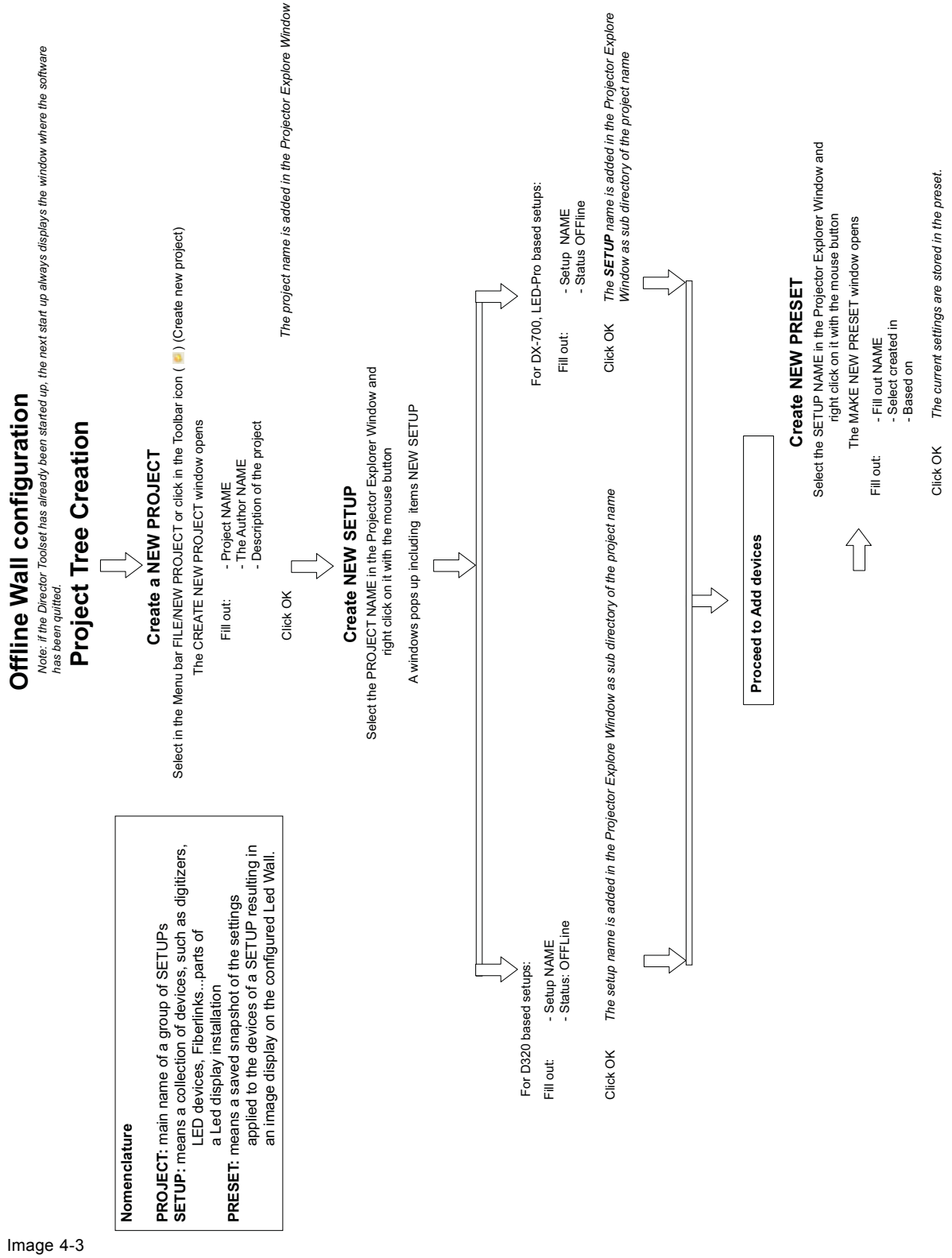


Image 4-3

4.7 Add devices to a setup

Steps to be taken

1. If the setup is not active, select the setup by clicking on it.
2. Open the Component window (see "Display the Components window", page 139)
3. Insert the different devices.
4. Click first on the digitizer tab and insert the corresponding digitizer (for D320 digitizer, see "Add a D320 based digitizer to a setup", page 144, for DX-700 digitizer, see "Add DX-700 digitizer to a setup", page 169).
5. Click on the Screen tab and drag the screen icon into the preview pane .
   Select the tile type and the number of rows and columns (for D320 digitizer, see "Add screen", page 151, for DX-700 digitizer, see "Add a screen to the setup", page 177).
   Depending on the selected screen, the other tabs in the Components window will be different.
6. If necessary to insert a FiberLink (not for NX tiles), click on the Peripherals tab and drag the corresponding FiberLink icon onto the screen icon in the configurator preview pane (see "Add a FiberLink", page 156).
7. Only for D320 digitizers, fill up the digitizer with the necessary inputs. Click on the D320 inputs tab and drag the desired input icon onto the digitizer icon in the configuration preview pane. Select the location. Click add. Repeat if necessary for other inputs. (see "Via drag and drop", page 160)
   For DX-700 digitizers, click on the digitizer to see the settings. Add extra input or output card (see "Add input cards to the DX-700", page 174 and see "Add an extra output card to the DX-700", page 172)

Flowchart

Add manually devices to setup

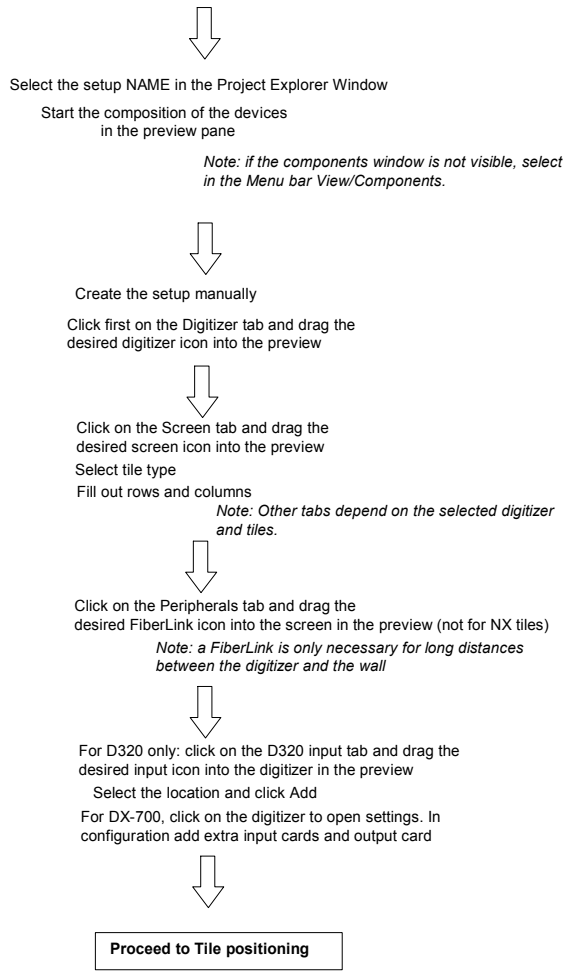


Image 4-4

4.8 Tile Positioning

Purpose

The purpose of tile positioning is to build up the wall as the wall is physically build up. Once this is done, the wall should be positioned with the active field of the digitizer.

Steps to be taken

1. Start up the Tile positioning module by clicking on icon in the tool bar (see "Introduction", page 321).
2. Set tile positioning mode on *Grid positioning* (see "Tile positioning modes", page 325).
3. To work more easily, switch off Auto apply .
4. Position the tiles inside the active field of the digitizer. Most easiest way : press the Positioning icon (see "Positioning parameters", page 326)
5. Go to grid properties and set up the number of columns and rows (). Use the Rows - Columns switch to exchange both values.

6. Select data direction and start data position ()
7. Click now on Apply now to apply all settings to the wall.
8. Proceed to the digitizer timings window.

Flowchart

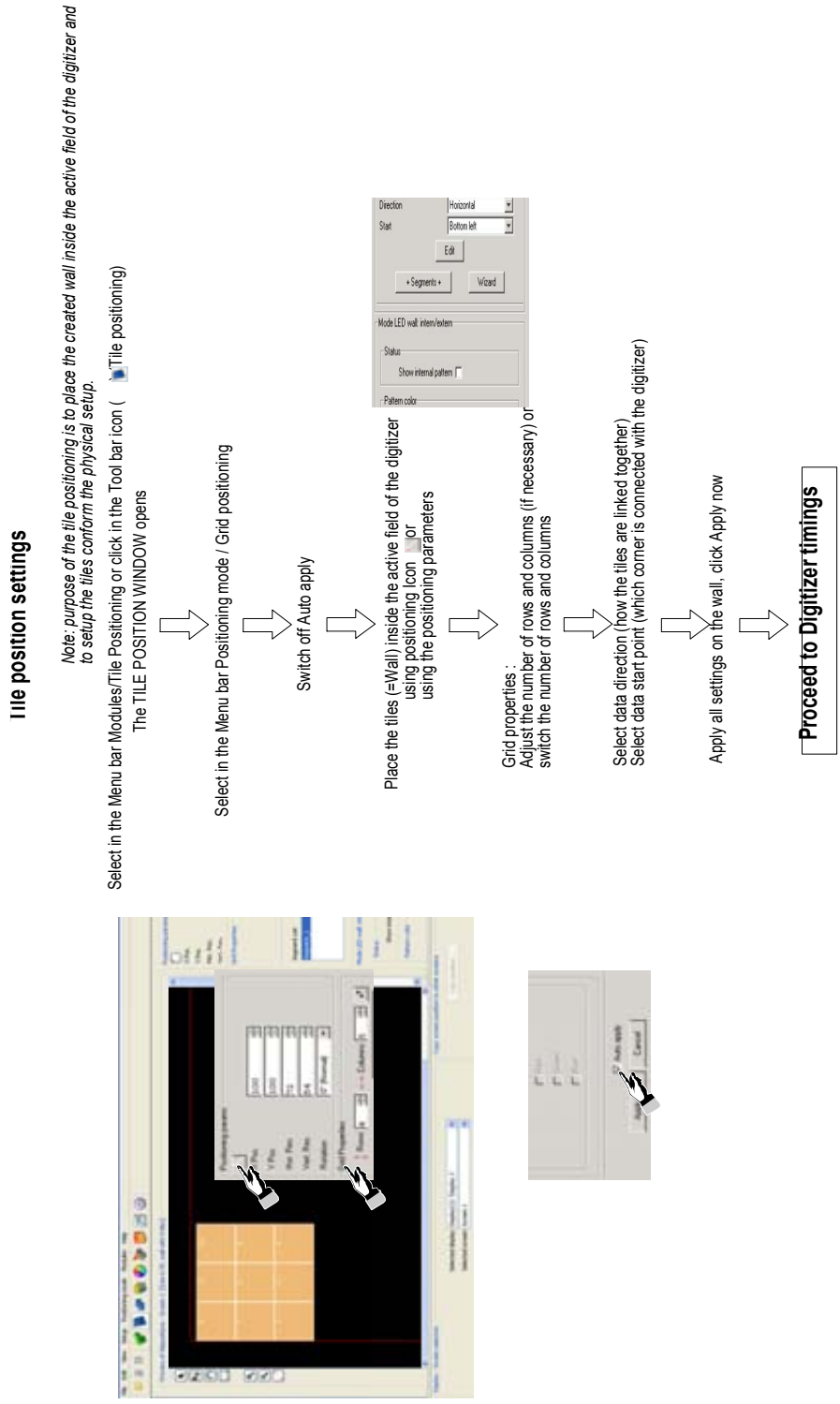


Image 4-5

4.9 D320 Digitizer timings

Steps to be taken

1. Start up the Configurator module by clicking on icon.
2. Display the digitizer settings by clicking on the digitizer icon (see "Device settings", page 201).
3. Click on the **Settings** tab and click then on **Timings**.
4. Click on **Standard timings** to load the defaults and then on **OK**..
5. Click **OK** and continue with window operations.

Flowchart

Image 4-6

4.10 DX-700 digitizer timings

Steps to be taken

1. Start up the Configurator module by clicking on icon.
2. Display the digitizer settings by clicking on the digitizer icon (see "Introduction", page 229).
3. Click on the **Settings** tab, select the display and click then on **Timings** (see "Output Timings", page 237).
4. Click on **Standard timings** to load the default and then on **OK**.
5. Click **OK** and continue with window operations.

Flowchart

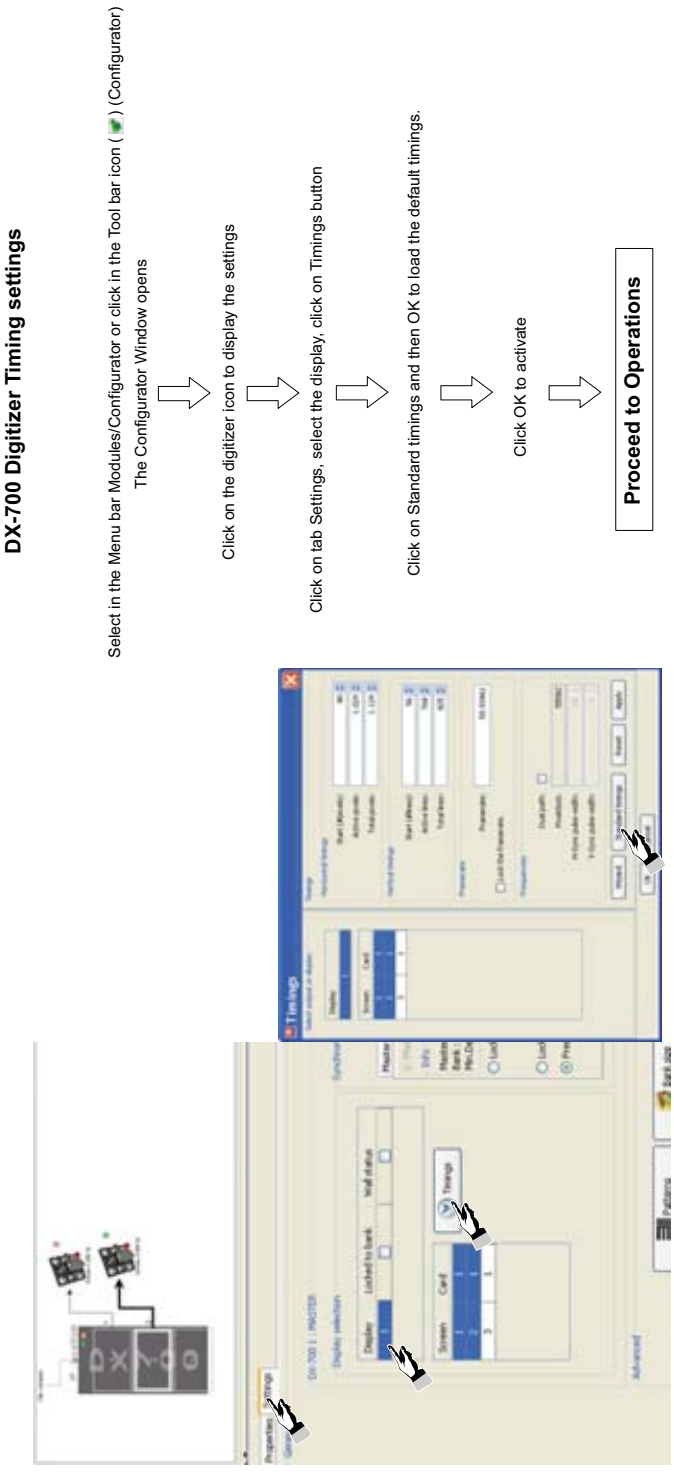


Image 4-7

4.11 LED-Pro digitizer timings

Steps to be taken

1. Start up the Configurator module by clicking on icon.

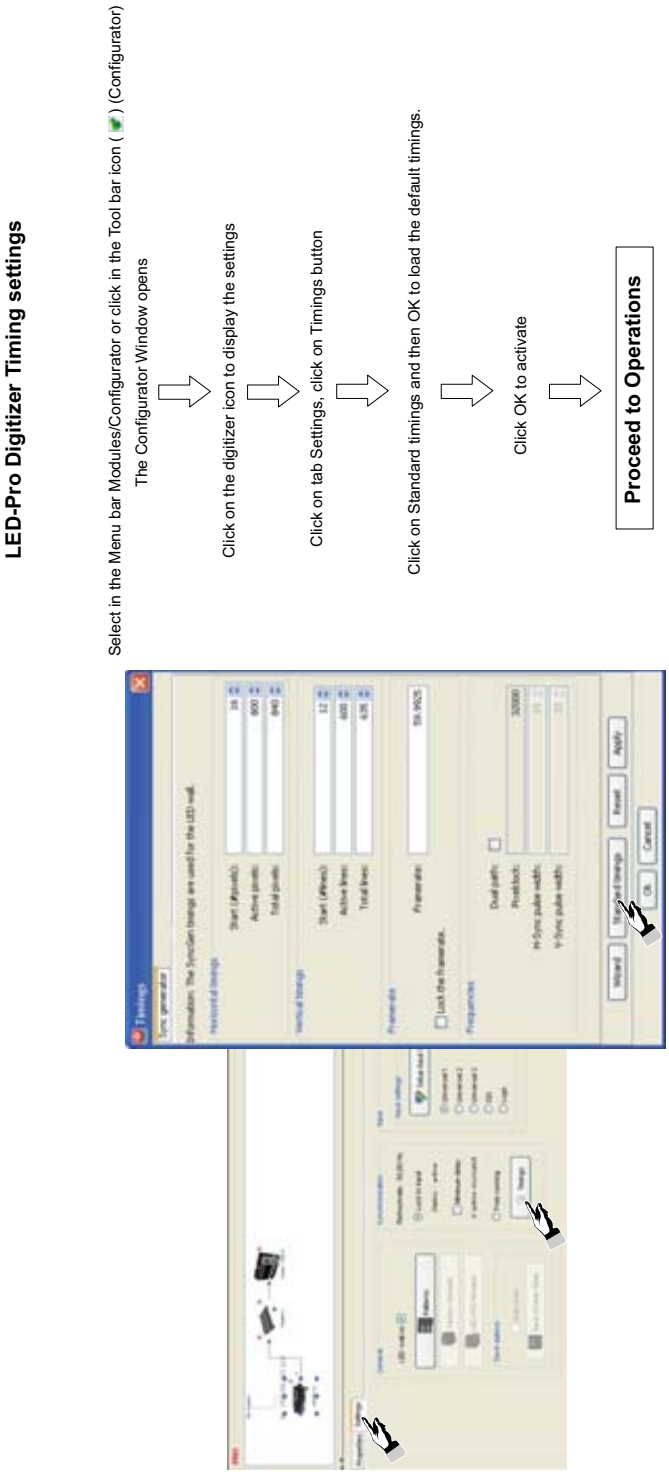


Image 4-8

2. Display the digitizer settings by clicking on the digitizer icon (see "Introduction", page 271).
3. Click on the **Settings** tab, select the display and click then on **Timings** (see "Timings window", page 277).
4. Click on **Standard timings** to load the default and then on **OK**.
5. Click **OK** and continue with window operations.

4.12 Window operations

Steps to be taken

1. Start up the Operations module by clicking on icon.
2. Move the input window(s) inside the LED wall representation (square with blue outline).
   Click on the input window and drag it to the desired location see "Move window", page 365).
3. Set the dimensions of each window (see "Re-size window", page 366)

   Note: *When only one input is used, click on the best fit icon ( ) to display the input on the complete wall (see "Full size input window", page 372).*
4. Input configuration: click on a window to select. The name of the input type appears in *Source settings*.
   Click on Adjust to open the input settings.
   Note: *For DVI, input resolution must be set before booting the source PC.*
5. If the full image should be displayed in the window, use the default Viewport settings. Otherwise, setup the viewport accordingly (see "Viewport settings", page 373).
   Note: *To setup the viewport settings, a visible picture is required on the LED wall.*
6. When an online Setup, proceed eventually to Color calibration if necessary.
   When working on an offline setup, make first your setup online before proceeding eventually to Color calibration.
   Right click and select Online to make the setup online. Make sure that the hardware is exactly the same as created in the offline setup.

Flowchart

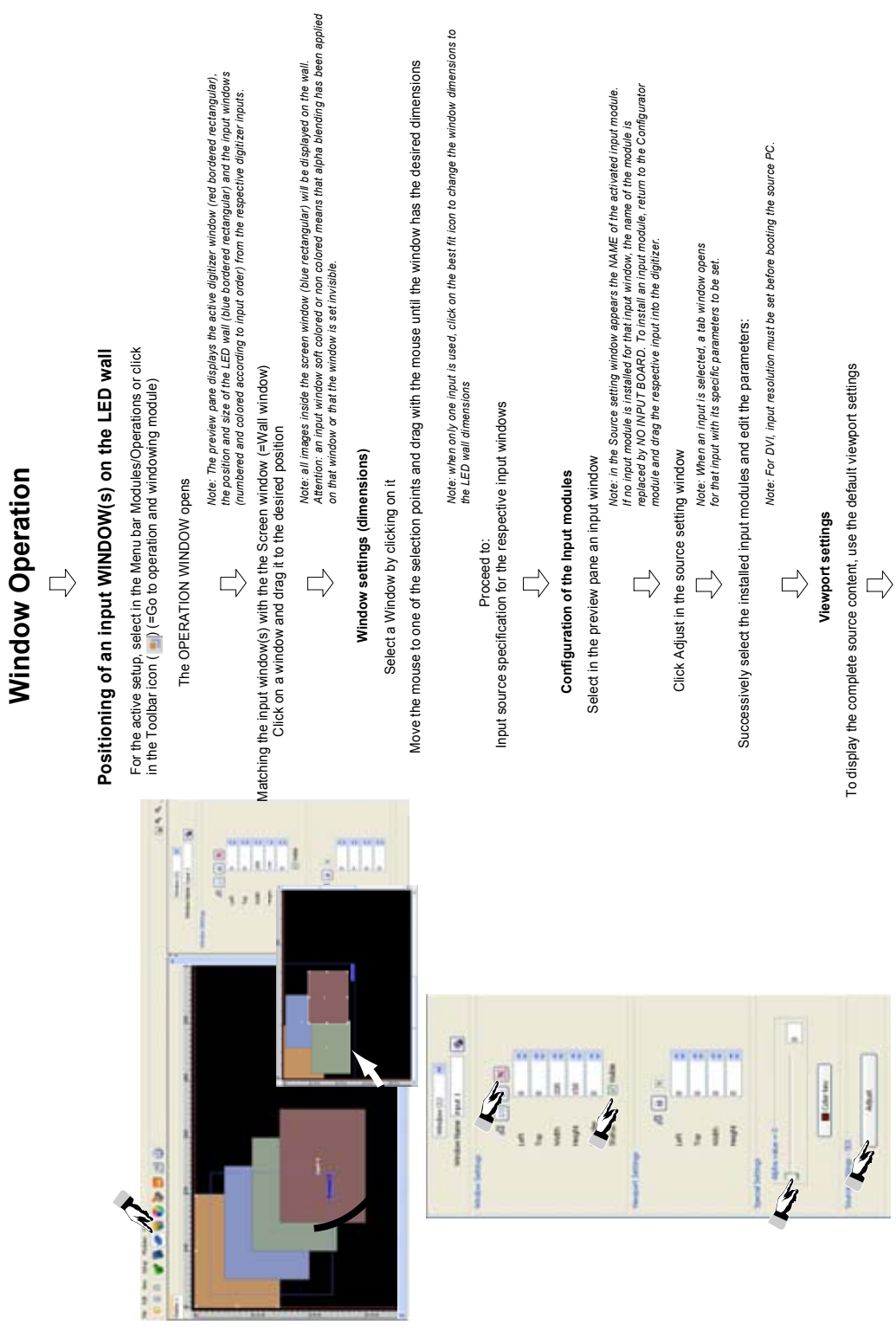


Image 4-9

4.13 Presets

Steps to be taken

1. Right click on a setup name in the Project Explorer (see "Create new Preset via projector explorer", page 123)
2. Fill out a preset name and select in where to start from.
3. Click **OK** to create the preset.
4. To edit the preset, click on **Edit** and the Change Window settings open. Make your changes and click close the store in the preset (see "Edit preset", page 130).
5. To associate a shortcut, click on Shortcut, select Preset and enter key combination (see "Shortcut key assignment", page 131). Click **OK**.

Extra presets can be added in the same way.

Flowchart

Presets

Create preset for current settings

For the active setup, right click on it and select New preset

The PRESET CREATION window opens

Note: The preview pane displays the active digitizer window (red bordered rectangular), the position and size of the LED wall (blue bordered rectangular) and the input windows (numbered and colored according to input order) from the respective digitizer inputs.

Accept proposed name or enter en new name
When first preset, select based on 'default'
Click OK

Note: current settings are stored in the preset and can be recalled when necessary.

Edit preset

Any created preset can be edited
Click Edit
Change Window settings
Close window, preset is edited

Note: preset must be applied again before the new settings are active.

Shortcut creation

Click on Shortcut
Select preset
Enter key combination, click OK

Note: shortcut available from anywhere in the program

Extra presets can be added in the same way

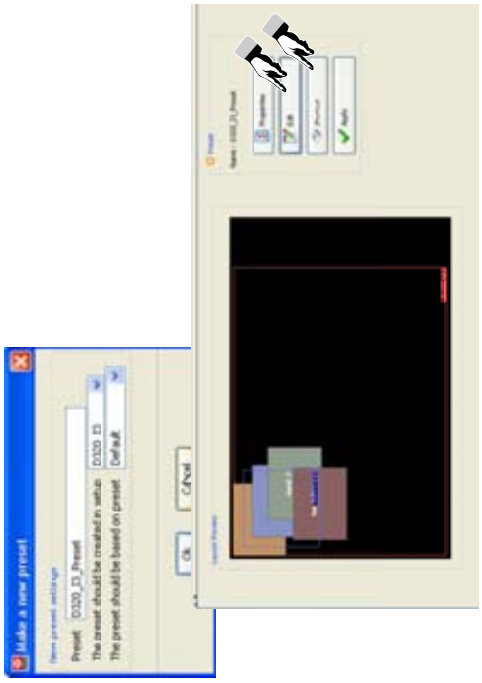


Image 4-10

4.14 Creative working with MiPIX, MiSPHERE, MiSTRIP, MiTRIX, OLite or NX

4.14.1 Preparations to create a design with MiPIX, MiSPHERE, MiSTRIP, MiTRIX, OLite or NX

Steps to be taken

1. Before starting the creation of a design within a Project, create or select a Setup where the MiPIX, MiSPHERE, MiSTRIP, MiTRIX, NX or OLite configurations will be stored.
2. Click on the IX icon in the tool bar or select via the menu bar *Modules*/*Configurator* (see "Introduction", page 469).
3. A new design can be started or an existing design can be edited.

Flowchart

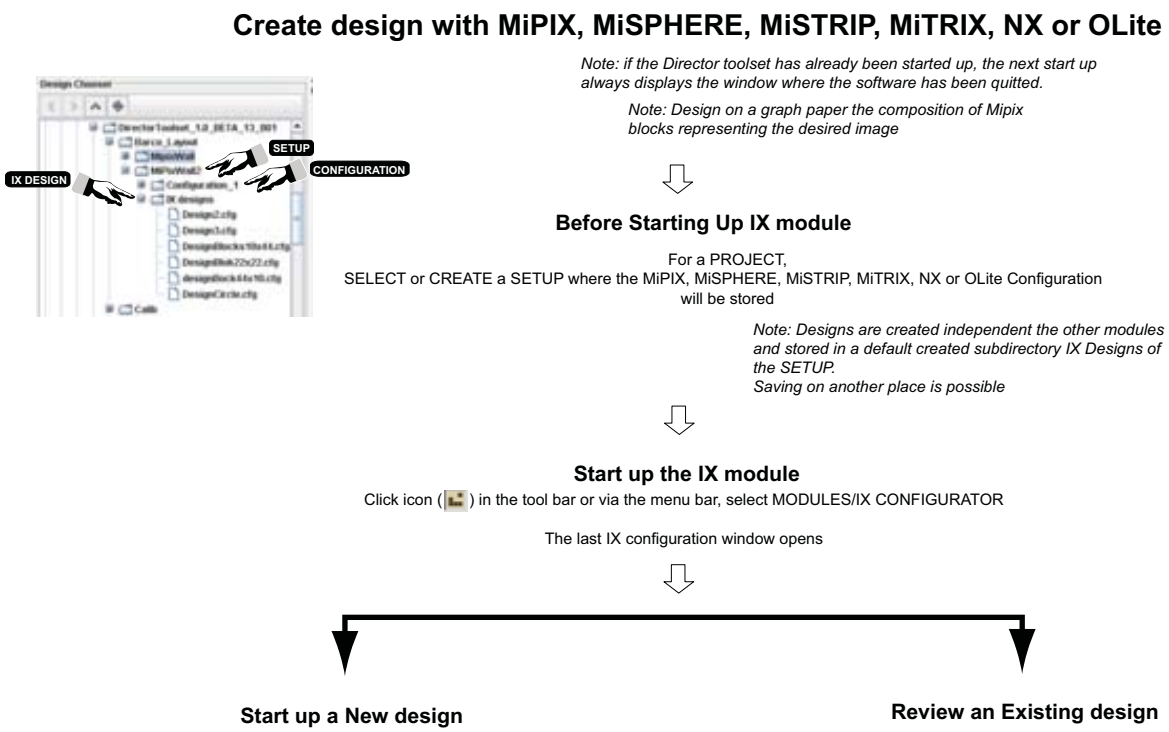


Image 4-11

4.14.2 Create and save new design

Steps to be taken

1. Click on the new design icon (in the tool bar or select via the menu bar *IX menu → New design* (for OLite, see "Start up for OLite configuration in customized mode", page 471, for MiPIX, see "Start

up for a MiPIX configuration", page 485, for MiSPHERE, see "Start up for MiSPHERE configuration", page 494, for MiSTRIP, see "Start up for MiSTRIP configuration", page 500).

2. Fill out the New Control block window. Enter name for the design and select the control unit (for OLite, see "New control block configuration", page 473, for MiPIX, see "New control block configuration", page 485, for MiSPHERE, see "New control block configuration", page 494
   For MiPIX:
   - Outline in grid (see "Outline in Grid", page 486) and auto fill (see "Auto Fill of the outline in grid", page 487)
   - Gaps, distance between 2 blocks (see "Advanced settings for auto fill", page 489)

   For MiSPHERE:
   - Outline in grid (see "Outline in Grid", page 495) and auto fill (see "Auto Fill of the outline in grid", page 496) (only useful for special cases)
   - Gaps, distance between 2 units (see "Advanced settings for auto fill", page 498)

   For OLite 510:
   - Workspace dimensions

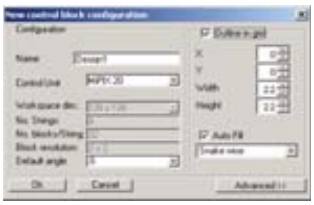
   For OLite 612:
   - Workspace dimensions
   - Outline in grid (see "Outline in Grid", page 476) and auto fill (see "Auto Fill of the outline in grid", page 477)
   - Gaps, distance between 2 blocks (see "Advanced settings for auto fill", page 479)

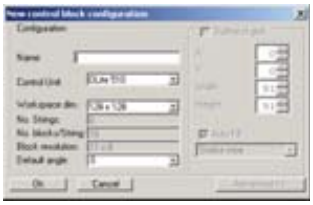
   For NX:
   - Workspace dimensions

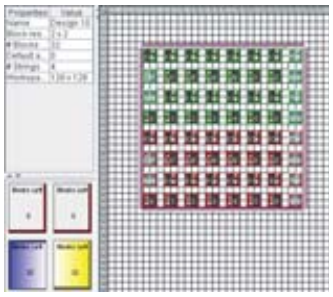
   For MiSTRIP:
   - Workspace dimensions
   - Default angle

   For MiTRIX:
   - Workspace dimensions
   - Default angle
3. Click **OK** to open the designer window. When auto fill is active, the blocks (units) will be placed at the same time.
4. Place the blocks manually in to the grid (see "Add new blocks to a design", page 508).
5. Save the design by clicking on the Save icon ( ) (see "Save a design", page 513)
6. Continue with the *IX configuration*.

Flowchart







Start up a New design

Click new design icon ( ) in the tool bar or via the menu bar, select IX MENU/New design

⇩

A New Control Block Configuration windows opens

Enter:
- NAME of the configuration
- Select Controller, MiPix20, MiSPHERE, MiSTRIP, MiTRIX or Olite510

Fill out for:
- MiPix 20: - Outline in grid & Auto fill (optional)
  - Gaps (optional)
  - (Workspace dimensions is always 128x128)
- MiSPHERE: - Outline in grid & Auto fill (optional)
  - Gaps (optional)
  - (Workspace dimensions is always 128x128)
- For Olite 510: workspace dimensions (to define) and default angle
- For NX: workspace dimensions and default angle
- For MiSTRIP: workspace dimensions, mode and default angle

Click **OK** to confirm

⇩

A design window opens containing a checker pattern design pane

⇩

Depending the entered parameters in the New Control Block Configuration window, the design pane can be a:
- blanco squared pane
- blanco squared outlined pane
- blanco squared pane shifted X & Y

⇩

Create the design by placing the blocks manually (for MiPIX, MiSPHERE, MiSTRIP, NX and OLite) or automatically (for MiPIX, MiSPHERE) with regard to the rotation angle.

⇩

Save the New design

Click Save icon ( ) in the tool bar
If you want to save on another location, browse to the desired directory

Note: for OLite and MiSTRIP the restriction will be checked before saving. If the design is not correct, the user will be asked to correct the design.

⇩

Go to IX configuration window

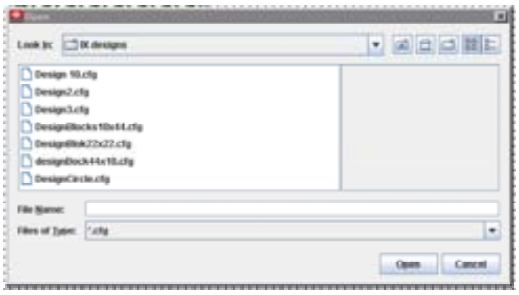
Image 4-12

4.14.3 Edit and save existing design

Steps to be taken

1. Click on the Load design icon ( ) in the tool bar or click in the menu bar on *IX menu → Load design*.
2. Browse to the desired design and double click on it to open.
3. The selected design opens in the designer window.
4. Modify the design.
   - Add or remove blocks
   - Move blocks in the workspace
   - Rotate blocks
5. Save the design on the existing name by clicking on the Save icon ( ) (see "Save current version of the design", page 519) or on a new name by clicking on the Save as icon ( ) (see "Save current design under a new name", page 519).
6. Continue with the *IX configuration*.

Flowchart



Review an Existing design

Click Load design icon ( ) in the tool bar or via the menu bar, select IX MENU/Load design

A browse window opens on the design subdirectory of the active setup.
Select the desired design in the list or browse to the desired design directory

⇩

Click OPEN.
The selected design opens in the design pane of the IX module

⇩

Start modifying the loaded design

⇩

Save the design

On the existing name : Click save icon ( )

On a new name : click save as icon ( )

The save as window opens, browse to the desired location
and enter a new name for the design

⇩

Go to IX configuration window

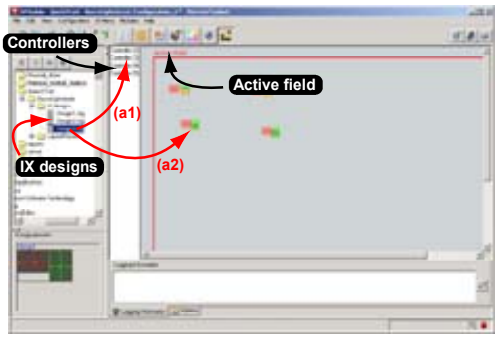
Image 4-13

4.14.4 Link designs to controllers

Steps to be taken

1. Click on the IX configurator icon ( ) in the tool bar or click in the menu bar on *IX menu → IX configurator* (see "Configurator activation", page 543).
   The configurator window opens.
2. Browse in the Design chooser to the desired design and click on it. Hold down the mouse button.
3. Drag the design onto the controller in the controller list or on the controller representation in the preview (see "Apply a design to a controller", page 544).
4. The controller representation will change to the preview of the design.
5. Position the controller in the active field of the digitizer (see "Moving controllers in active field", page 555).
6. Repeat if necessary for other controllers.
7. Continue with Window Operations, page 62.

Flowchart



Linking Design(s) to Controllers

Click IX Configuration icon ( ) in the tool bar or via the menu bar, select IX MENU/IX Configurator

⇩

An IX configuration window opens

Showing:
- Design chooser (allow to scroll to desired designs)
- Available controllers in the configuration
- Active field of the digitizer

⇩

Browse to the desired design in the Design Chooser
Click and hold down the mouse button
Note: multiple selection of controllers possible

⇩

Drag that design on to the desired controller
in the list of Controllers (a1) or on to the desired controller
in the Active field (a2).

⇩

Design associated with Controller
Preview shown on controller representation
in Active field

⇩

Position the controllers in the Active field
by moving to the desired position

⇩

Go to Operations

Image 4-14

5. PREFERENCES

Overview

- Introduction
- Start up the preferences
- Software Appearance
- Bug report setup
- General
- Logging

5.1 Introduction

Overview

Preferences determine the default behavior of the software. Some preferences can be generally set for the complete software, some others are only for the different plug-in modules.

The content of the preference window will change with the number of modules used in the software.

5.2 Start up the preferences

How to start up ?

1. Click on *File* on the menu bar. (image 5-1)

   The file menu opens.

2. Select *Preferences...* .

   The *Preference* dialog box opens. (image 5-2)

3. Use the **Show all** button to display all the preference items. This **Show all** buttons is available in all following sub preference windows.

4. Use **Apply** button to apply a preference change in one of the other module.
   Use **Cancel** to ignore the preference changes.
   Use **OK** to apply the preference changes and to close the window at the same time.

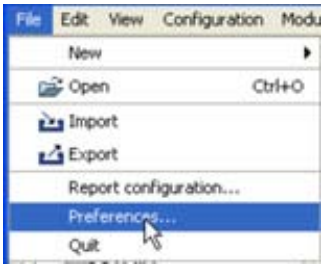


Image 5-1
Select Preferences

Image 5-2
Preference window

5.3 Software Appearance

What can be changed ?

The following items can be changed:

- Language of the software.
- Look and feel of the software.

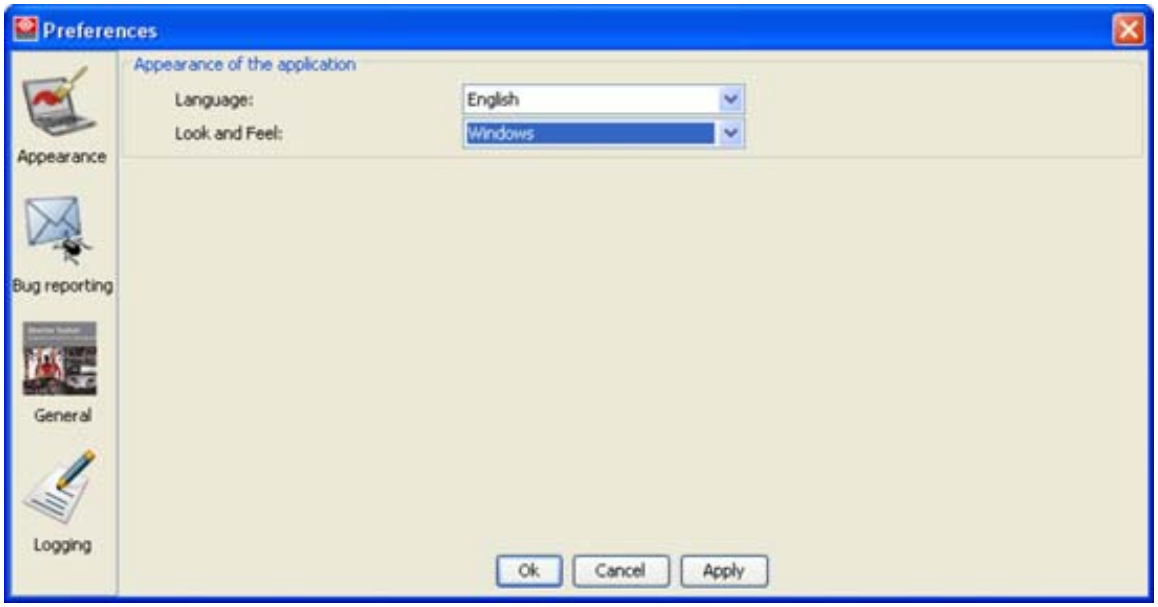


Image 5-3
Appearance preferences

Language selection

1. Click on **Appearance** (image 5-2).

   The appearance window opens (image 5-3).

2. Click on the combo box next to *Appearance of the application*.

   The possible languages will be displayed.

3. Select the desired language.

4. Click on Apply to confirm the selection.

   An info window will be displayed to announce that the language change will take place after restarting the software.

Look and feel of the software

1. Click on **Appearance** (image 5-2).

   The appearance window opens (image 5-3).

2. Click on the combo box next to *Look and Feel*. (image 5-4)

   The possible look and feels will be displayed.
   The following are possible:
   - Windows (image 5-5)
   - Java (image 5-6)

   An info window will be displayed to announce that the look and feel change will take place after restarting the software.

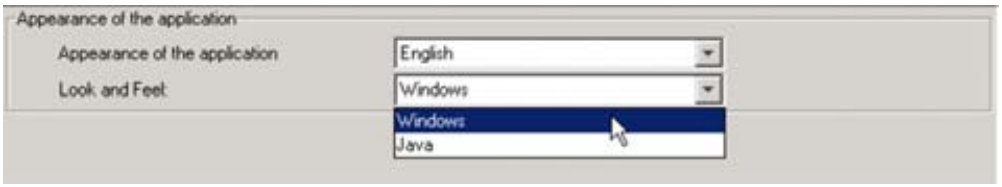


Image 5-4

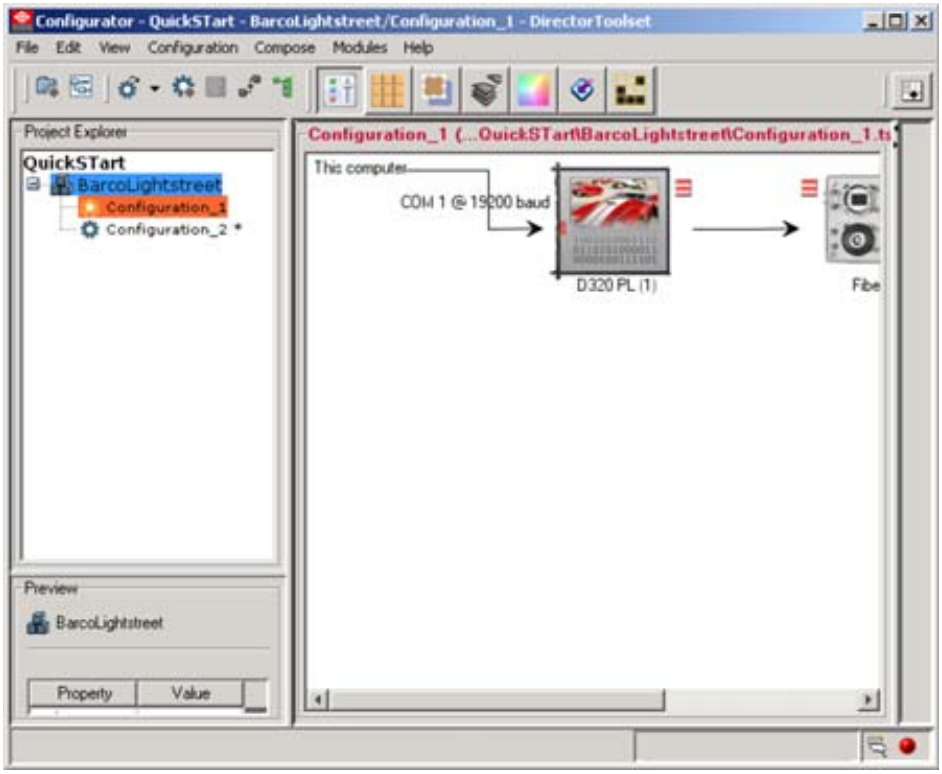


Image 5-5
Look and feel : windows

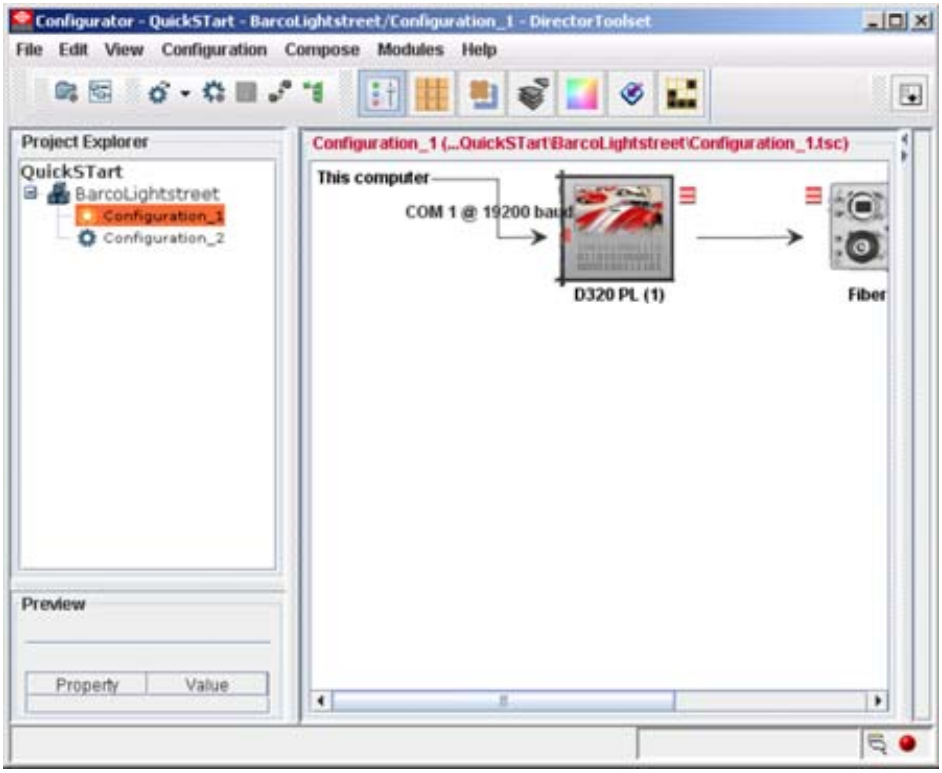


Image 5-6
Look and feel : java

5.4 Bug report setup

SMTP

SMTP (Simple Mail Transfer Protocol) is a TCP/IP protocol used in sending E-mail.

Setup bug report

1. Click on **Bug reporting** (when first another preference was clicked, click first on **Show all**). (image 5-7)

   The bug report setup window appears. (image 5-8)

   Bug reporting is by default enabled.

2. Fill out the Personal data.

   This personal data will be incorporated in the bug report so that Barco can contact you.
   Personal data contains the following information :
   - First name
   - Last name
   - Organization
   - E-mail address
   - Telephone number
   - Mobile number

3. Click on **Edit mail settings**.

   The mail settings window opens. (image 5-9)

4. Fill out *Your mail account settings*.
   The following settings should be entered :
   - Your E-mail address
   - Organization
   - Barco's E-mail address, automatically filled out when installing the software.

5. If you want to receive a copy of the bug report E-mail to Barco, check this check box.

6. Fill out the address of the SMTP mail server.
   Tip: *Contact your system administrator in your organization to obtain the correct address.*

7. Fill out the port of the mail server. Your system administrator can help you. The port is default set on 25.

8. Click **OK**.

Image 5-7
Bug report selection

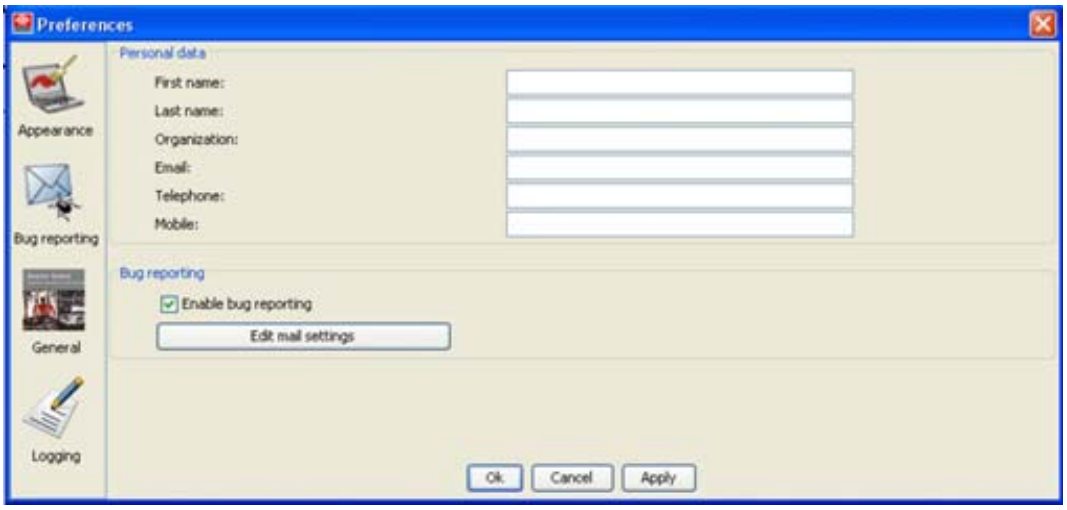


Image 5-8
Bug report setup window

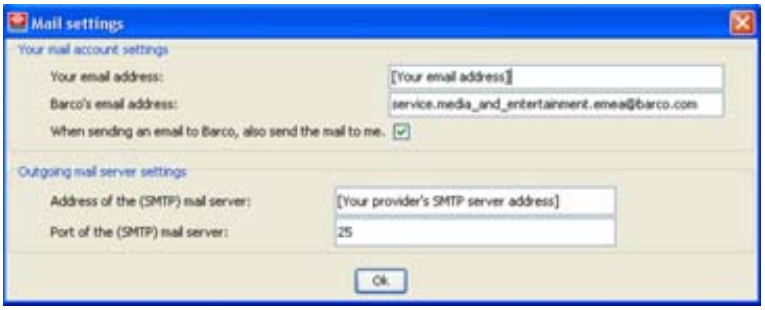


Image 5-9
Mail setup window

5.5 General

Start up

Click on General (when first another preference was clicked, click first on **Show all**).

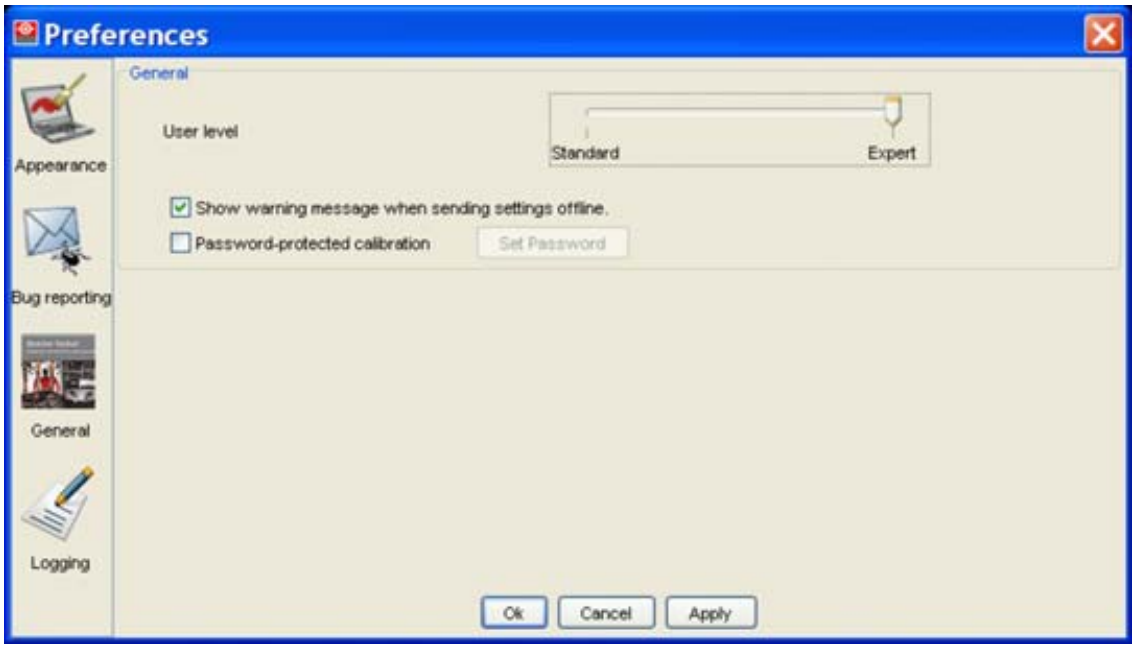


Image 5-10
Select General preferences

User level

Image 5-11

The user level of the software can be setup. The settings inside the modules can differ depending on the user level. E.g. more advanced settings are only available in *Expert* mode.

The following levels are available:

- Standard
- Expert

Warning message

When the check box *Show warning message when sending settings offline* is checked, a message will be displayed pointing to the connection icon when the setup is offline and a command is triggered.

Image 5-12
Offline message

Password protected calibration

Calibration settings can be protected by a password so that re-calibration cannot overwrite the settings without asking that password.

To set a password, check the check box before *Password protected calibration*. The **Set password** button becomes available.

Click on **Set password**. The *change password* window opens.

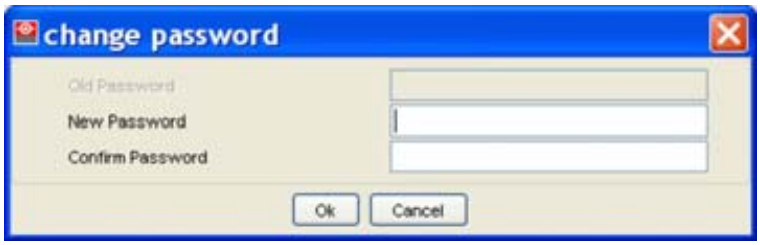


Image 5-13
Change password

Enter your password next to New password and re-enter the same password next to confirm your password.

Click **Apply** to activate the password protection.

Once a password is set, the **Set password** button changes to **Change password**.

First enter your current password, then continue by entering your new password.

5.6 Logging

Start up

Click on **Logging** (when first another preference was clicked, click first on **Show all**).

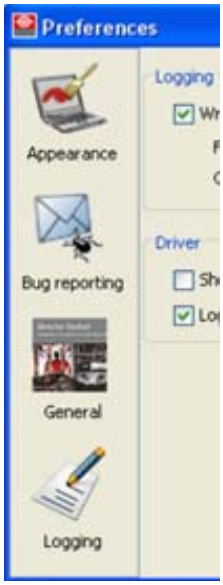


Image 5-14
Select Logging preferences

The logging preferences window opens.

Messages to log file

Image 5-15
Logging and debugging preferences

The logging about the behavior of the program can be logged in a file. Each time the program is started a new log file is created. The file is saved in a subdirectory *log* of the Director Toolset install directory. The file name contains the date and the sequence of start up at that date.

The logging level can be set for file and Console:

- Info : info messages provide to the user
- Warning : warning messages provided to the user
- Severe : severe messages provided to the user

Check the check box in front of *Write log messages to file* if you want to activate the logging. This is a preferred setting.

Show console

A console window can be displayed in which all actions are registered conform the console level setup..

Log driver messages

Driver messages which are shown in the console can be logged into a file at the same time. As this is time consuming action due to the number of messages, it is possible that Director Toolset runs slower.

By default, this logging is not active.

6. DISPLAY CONFIGURATION MANAGEMENT

Overview

- Introduction
- Projects
- Setups
- Presets

6.1 Introduction

Overview

Before you can control one or more displays, a project must be created. Within that project, different setups with configurations can be added. These configurations can be edited, moved to another setup, removed from a setup, added to a setup and so many other functions are possible. This chapter will give an in depth explanation of all possible manipulations.

6.2 Projects

Overview

- Create new Project
- Open Project
- Properties of a project

6.2.1 Create new Project

Create new Project via file menu

1. Click on *File* in the menu bar.

   The file menu opens. (image 6-1)

2. Select *New* and move the mouse to the right to open the different possibilities.
3. Select *Project*.

   The *Create new project* window opens. (image 6-2)

4. Fill out a *Project name*.
   Note: *The following characters are not allowed in a name: &, >, >, ', ", ?*
5. An author name can be filled out next to *Author*.
6. An optional description can be entered in the *Description* field.
7. Click on **OK** to create the new project.

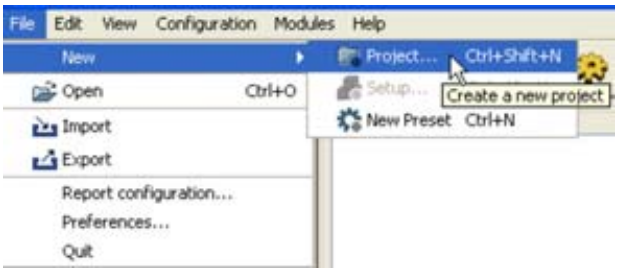


Image 6-1
Create new Project

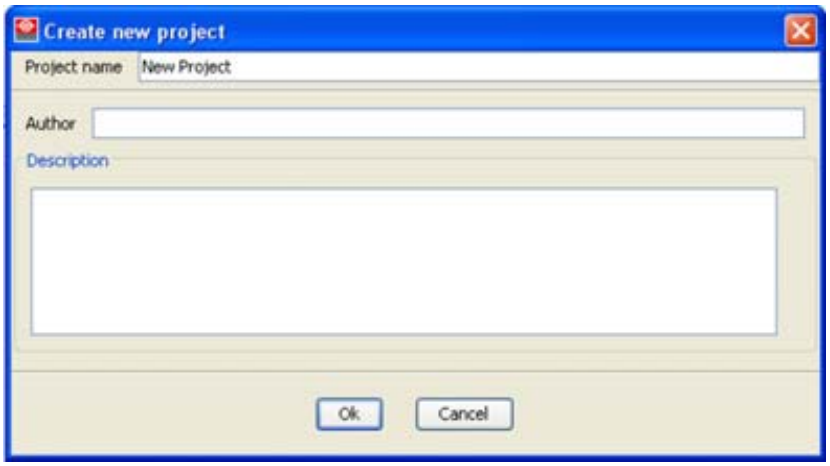


Image 6-2
Create new project window

Alternative way to create an new project.

- Click on the new project icon ( ) in the tool bar to open the *Create new project* window.
- Press **Ctrl + Shift + N** to open the *Create new project* window.

In both cases, follow the steps as described in 'Create new Project via file menu'.

6.2.2 Open Project

Where and how are projects stored ?

The customer has no control on where projects are stored. Everything is stored inside the working directory of Director Toolset. To open a project, just use the menus and the available projects will be displayed.

How to open an project ?

1. Click on *File* (1) in the menu bar. (image 6-3)

   The file menu opens.

2. Select *Open* (2).

   The Project browser opens (3). An overview of the available projects is given with the project name and a description, the same description as entered during the project creation.

3. Click on the desires project (4).

4. Click on **OK** (5).

   The selected project will be loaded with its latest used state.

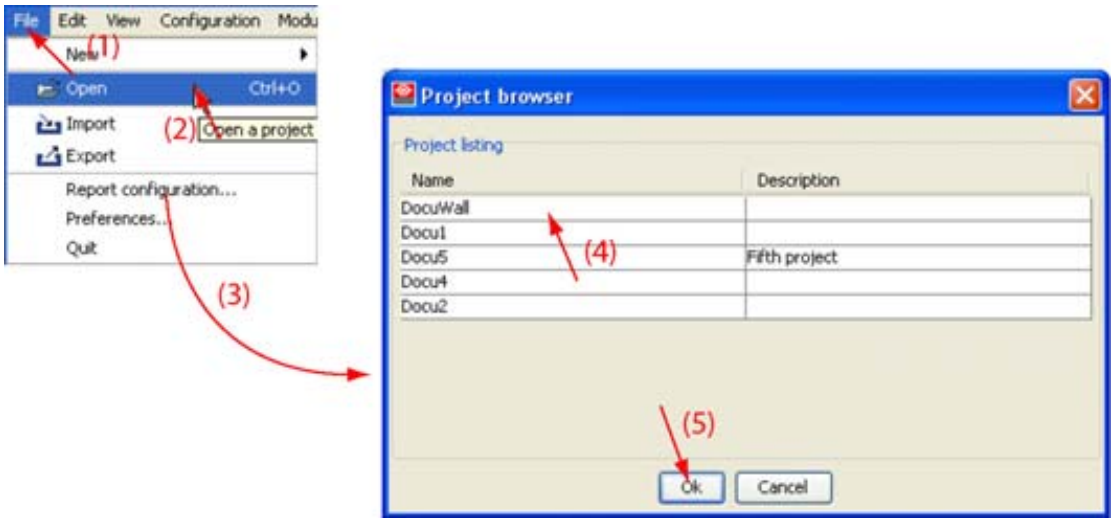


Image 6-3
Open a Project

6.2.3 Properties of a project

How to change or edit ?

1. Right click on the project name in the *Project explorer* (1). (image 6-4)

   A content menu opens.

2. Select *Properties* (2).

   The properties window is displayed (3).

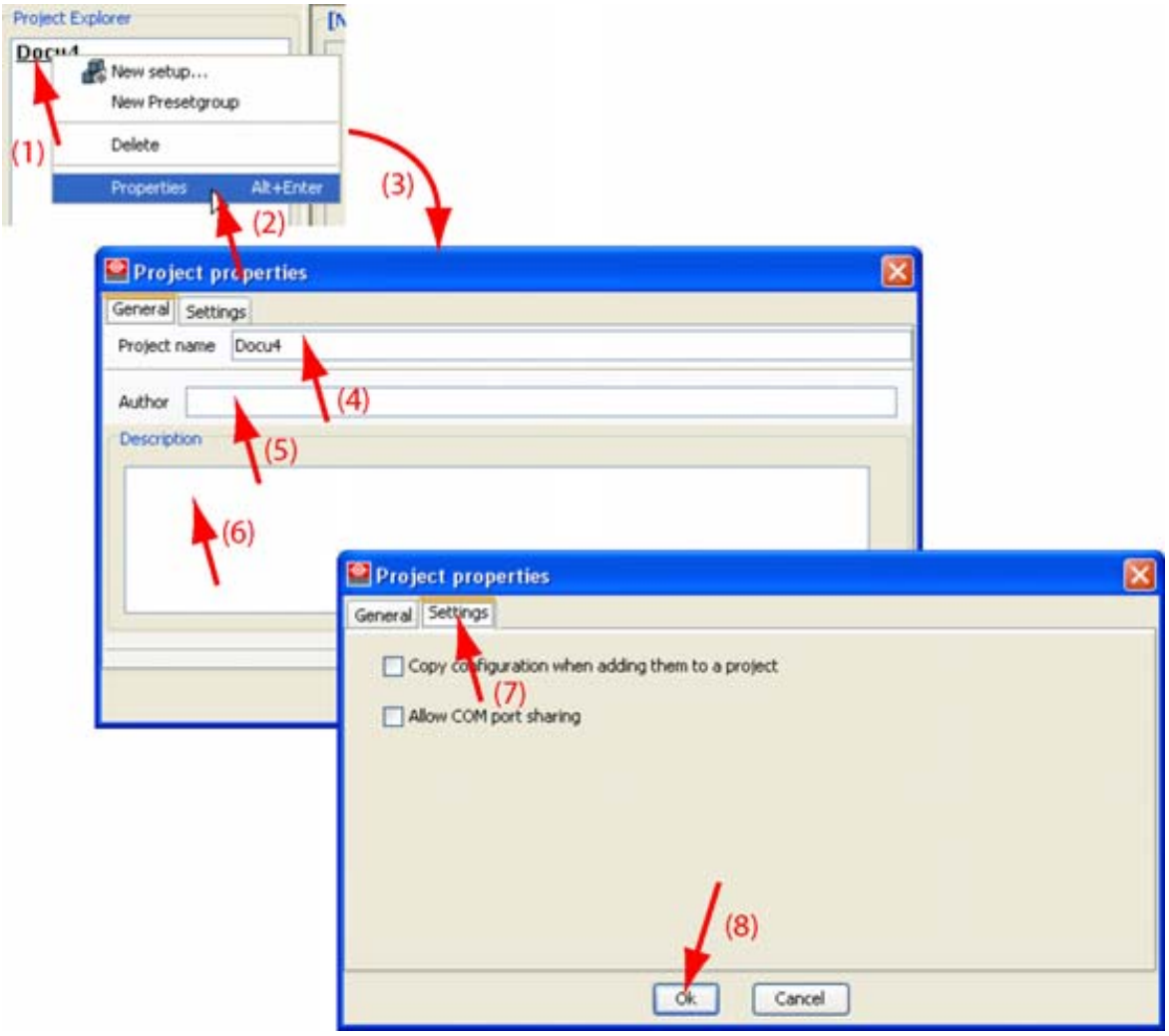


Image 6-4
Project properties

Tab 'General'

The following items can be update or filled out:

- Project name (4)
- Author (5)
- Description of the project (6)

Tab 'Settings'

The following items can be selected (7):

- Copy configuration when adding them to the project: a configuration from another setup can be added to the existing setup via a link or via a copy.
- Allow COM port sharing: allows setups to use the same COM port.

6.3 Setups

Overview

- Setup with a DX-700 digitizer
- Setup with a LED-Pro digitizer
- Setup with a D320
- Rename a setup
- Delete a setup
- Import a setup
- Export a setup
- Check Skeleton
- Make a setup online - offline
- Initialize replaced devices in a setup
- Re-detect a Setup
- Schedule contrast ON / OFF for a wall

6.3.1 Setup with a DX-700 digitizer

Overview

- Create new Setup
- Ethernet connection setup (manually setup)
- Auto discover a setup
- Properties of a setup

6.3.1.1 Create new Setup

Create a new Setup via File menu

1. Click on *File* on the menu bar.

   The File menu opens.

2. Click on *New* → *Setup*. (image 6-5)

   The *Create new Setup* window opens. (image 6-6)

3. Click on the **DX-700 setup** tab.
4. Fill out a setup name next to *Setup name*.
5. Select the *Status* of your setup.

Online	Computer has a connection with an Ethernet network and can discover itself which DX-700s are on the network. Once a connection is established, it autodetects the different connected devices.
Offline	There is no communication with a DX-700. No other selections are available at that moment. Only a manual setup can be created.

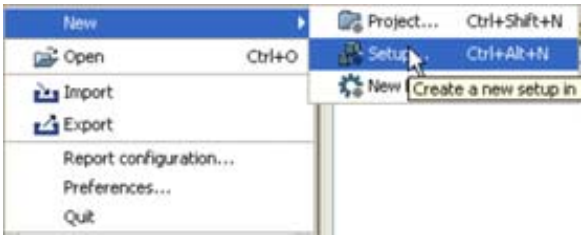


Image 6-5
Create new Setup

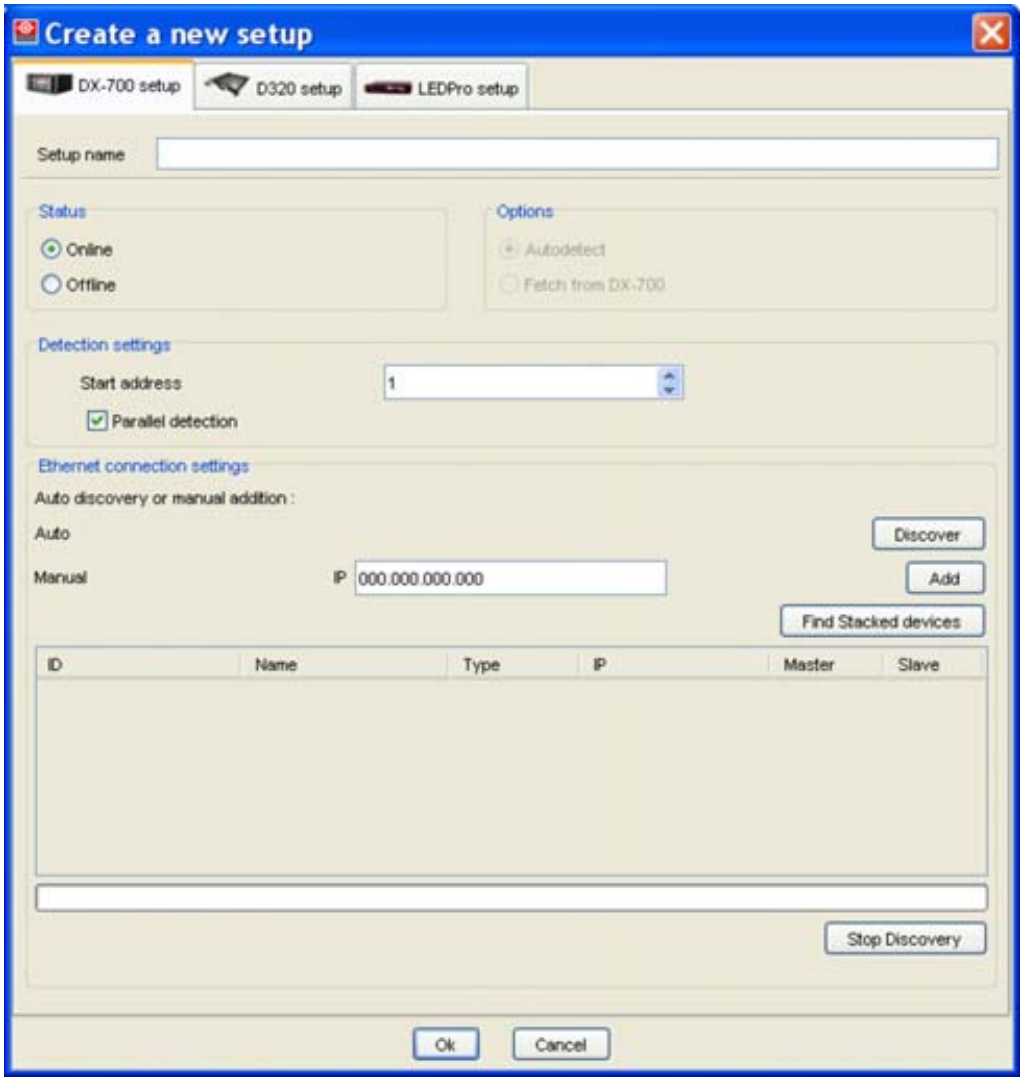


Image 6-6
Create new setup window

Create a new Setup via the Project explorer

1. Right click on the project name. (image 6-7)

   The content menu opens.

2. Click on *New setup ...* .

   The *Create new Setup* window opens (image 6-6).

3. Fill out a setup name next to *Setup name*.

4. Select the *Status* of your setup.

Online — Computer has a connection with an Ethernet network and can discover itself which DX-700s are on the network. Once a connection is established, it autodetects the different connected devices.

Offline — There is no communication with a DX-700. No other selections are available at that moment. Only a manual setup can be created.

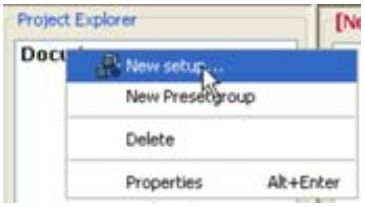


Image 6-7
Create new setup

6.3.1.2 Ethernet connection setup (manually setup)

IP

Internet Protocol. The network layer of TCP/IP. Required for communication with the internet.

What should be done?

The communication between the computer and the DX-700 is established via an Ethernet protocol.

The user has the possibility to enter the IP address of the DX-700 to communicate with.

DHCP

Dynamic host configuration protocol. DHCP is a communications protocol that lets network administrators manage centrally and automate the assignment of IP addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

DNS server

Computers, Projectors, Touch panels connected to a network are referenced by their IP address. The only problem is that remembering IP addresses is not easy. If you need to use hundreds of addresses then it will become impossible to remember them. This is why domain names are created. Internet names (domain and host names) are just aliases to these IP addresses. When you use an Internet address it is automatically translated to an IP address. In fact a program or device that translates those Internet names to IP addresses is called a DNS Server.

Subnet mask

A number that is used to identify a subnetwork so that IP addresses can be shared on a local area network.

Default Gateway

A router that serves as an entry point into and exit point out of a network. For example, a local network (LAN) may need a gateway to connect it to a wide area network (WAN) or to the Internet.

About an Ethernet connection

An Ethernet connection can be established via an network supported or not by an DHCP server or it can be made via a local connection directly between the DX-700 and the computer.

Via a network with DHCP server facilities:

1. Connect your computer to the network with a normal Ethernet cable.
2. Go to the Control Panel of your computer and select Network connections.
3. Right click on the network and select Properties.
4. Select Internet protocol and click on Properties.
5. Check Obtain an IP address automatically. Click **OK** to apply. Your connections is made.

Via a network (local or direct connected) without DHCP facilities:

1. Connect your computer to the network with a normal Ethernet cable via a hub or router or connect your computer via crossed Ethernet cable directly to the DX-700.
2. Go to the Control Panel of your computer and select Network connections.
3. Right click on the network and select Properties.
4. Select Internet protocol and click on Properties.
5. Check manually assign an IP address.
6. Recall the IP address of the DX-700 via the touch panel on the DX-700.
7. Enter now an IP address for the PC within the same subbet as the DX-700's IP address. When entering a subnet mask as 255.255.255.0, that means that the first 3 octets of the IP address must be the same as that of the DX-700. The last octet can be any value between 0 and 255 as long as it is unique on the network.

Some examples:

First example:

- DX-700 IP address : 192.168.100.5
- DX-700 Subnet mask : 255.255.255.0
- PC IP address : 192.168.100.2
- PC Subnet mask : 255.255.255.0

Result : communication is possible. Both IP addresses are in the same subnet range.

Second example:

- DX-700 IP address : 192.168.100.5
- DX-700 Subnet mask : 255.255.255.0
- PC IP address : 192.168.105.2
- PC Subnet mask : 255.255.255.0

Result : no communication possible. Both address are not in the same subnet range.

Manually set up of the connection

1. Click in the input field next to Manual IP and select the current value.
2. Enter the IP address of the DX-700.
   Note: *An address contains 4 octets with a maximum value of 255. Each octet is separated by a bullet.*
3. Click on **Add**.

The device is searched on the network. When it is found, it is added to the list in the lower part of the *Create new setup* window.

4. Click on the DX-7000 to select.
   Note: *Check that the check box before Run is checked. If not, check this check box first.*
5. Click **OK**.

   An autodetection is started.

   When the autodetection is successfully finished the real setup is loaded as new setup.

6.3.1.3 Auto discover a setup

What can be done ?

The computer can check automatically the network to discover which DX-700 digitizers are connected to the network. Once the different digitizers are discovered the user can select a single DX-700 or when using a stacked configuration, it is possible to indicate which DX-700 is the master digitizer and then the software can detected the slave digitizers.

To create a setup with a single DX-700

1. Click on **Discover**.

   The computer searches on the network for connected DX-700 devices. When devices are found, a list is displayed in the lower part of the *Create new setup* window.
2. Click on the DX-700 of your choice to select this device.
3. Click **OK**.

   An autodetection is started.

   When the autodetection is successfully finished, the real setup is loaded as the new setup.

To create a setup with stacked DX-700's

1. Click on **Discover** (a). (image 6-8)

   The computer searches on the network for connected DX-700 devices. When devices are found, a list is displayed in the lower part of the *Create new setup* window (b).
2. Check the check box *Master* next the DX-700 which is the master digitizer in the stacked setup (c).
3. Click on **Find stacked devices** (d).

   All slave devices in the setup are detected and next to these devices in the list the check box *Slave* is checked.
4. Click **OK** (e).

   An autodetection is started. When *Parallel detection* is checked, all digitizers in the stack are addressed at the same time. This is the quickest way to address the complete system. The first digitizer and its devices will start with address 1, the second gets an offset of 2000 and starts with 2001. The next slave gets another offset. This is necessary in a parallel detection. (image 6-9)

   If parallel detection is not allowed, uncheck *Parallel detection* and the addressing will start with the first digitizer and its devices. When finished with the second one, etc. The address will follow each other but the needed time will be longer.

   When the autodetection is successfully finished, the real setup is loaded as the new setup.

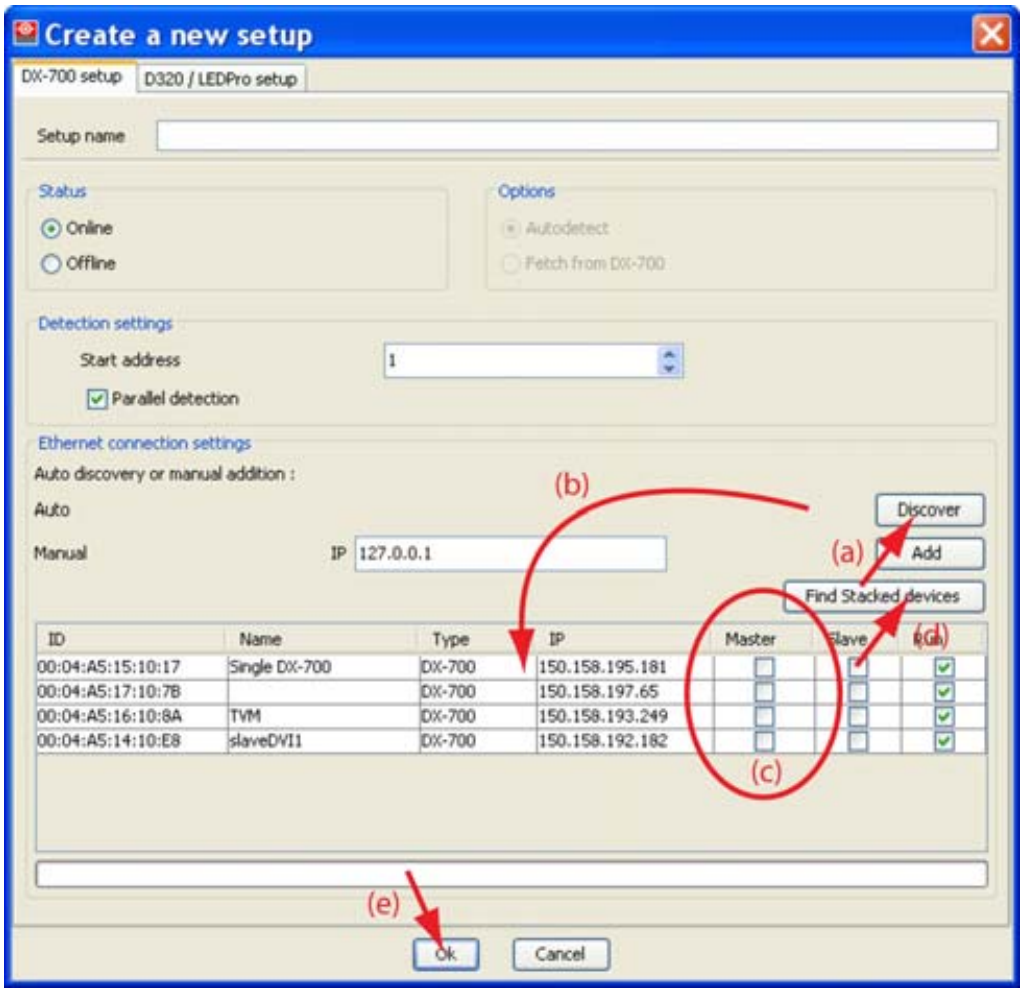


Image 6-8

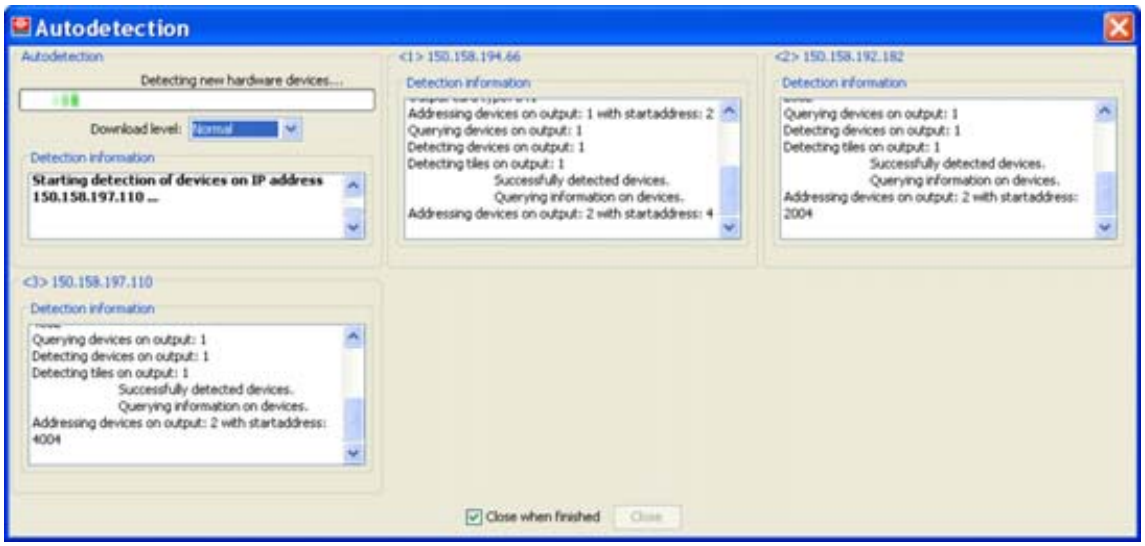


Image 6-9
Parallel autodetection

When only the master DX-700 is selected and no slave is yet indicated and Discover is pressed, then a error window will be displayed to show that something is wrong.

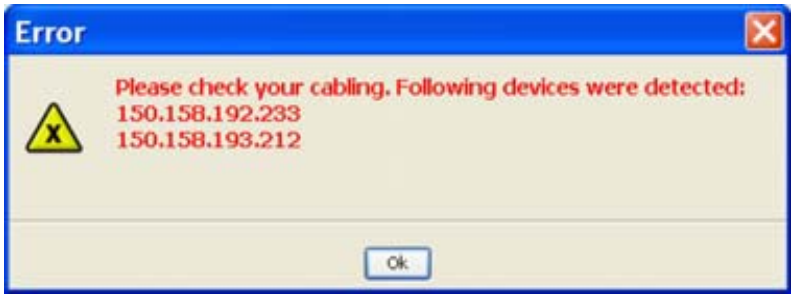


Image 6-10

Click OK and then click on Find Stacked devices. The slave devices will be indicated in the list. Click then OK to execute an autodetection.

When an autodetection is done of stacked setup, but the number of inputs are not the same, a message is displayed but the setup is loaded.

Image 6-11

6.3.1.4 Properties of a setup

How to change or edit

1. Right click on the setup name in the *Projector explorer*. (image 6-12)

   The *Properties* window opens.

Image 6-12
Select Properties of selected Setup

Tab 'General'

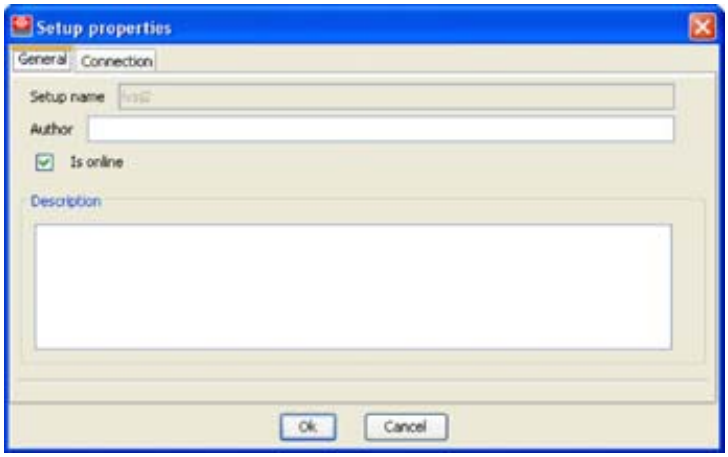


Image 6-13
Setup General tab

The following items can be updated or filled out:

- Author
- Online
  - When checked, the setup is online. When changing to not checked, a question message box will be displayed to warn that this setup will be switched to offline.
  - When not checked, the setup is offline. Check this box to make the setup online.
- Description of the setup

Tab 'Connection'

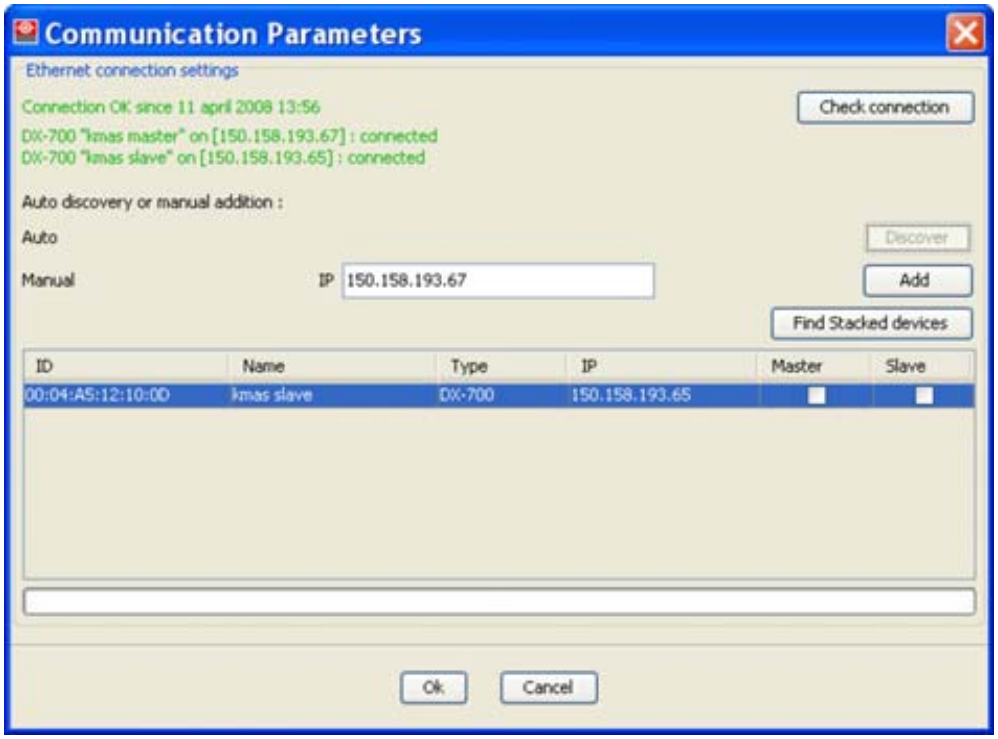


Image 6-14
Setup Connections

The connection status is indicated on the top part of the dialog. When all is indicated in green, then everything is OK with the communication.

A communication lost status can be reached when:

- Director Toolset sends a number of consecutive commands returning time-outs
- Director Toolset sends a number of consecutive commands to a digitizer returning a connection exception

At that time, the communication icon in the Director Toolset tray starts blinking with a red cross an the toolset progress bar indicates progress.

Click on that communication icon to see the Communication parameters.

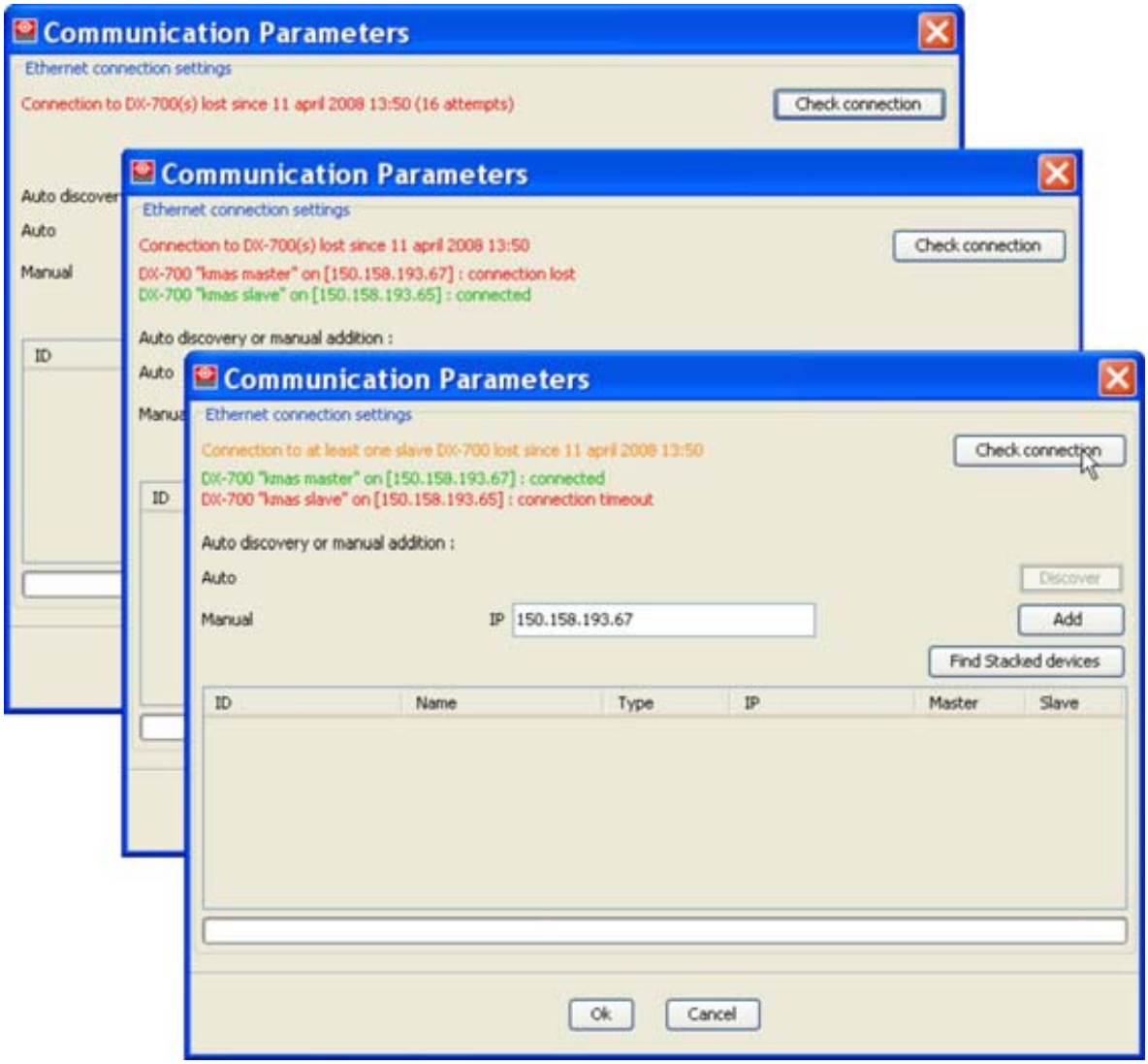


Image 6-15
Communication status

When one of the digitizers in the stack no longer has communication, a red indication is given. The button **Check connection** becomes available. Click this button to try to reconnect with the current digitizer(s). While in this *communication lost status* offline working is still possible.

When the Check connection button is pressed:

- When the communication with the master digitizer is still OK, but not with one of the slave digitizer then the first row is indicated in orange with just below the status of each digitizer connection. Check connection can solve the problem. Commands can still be send to the master digitizer which can distribute them to its slaves.
- When the communication with the master digitizer is not OK, but OK for all slaves, than no commands can be sent to the setup. Check connection can solve the problem if the hardware connection is OK. The first row is indicated in red. Below the master digitizer row is indicated in red and the slave rows in green.

With **Check connection**, Director Toolset tries to make the connection with the known IP address. If that fails it executes a discover tries to find the new IP address via the known MAC address.

or

The Ethernet connection settings can be changed to a new IP address.

Handle as follow:

- Click **Discover** to list all possible DX-700 on the network. Make your choice and click **OK**. If it is a stacked setup, check the master digitizer and click then on Find Stacked devices to discover the slave digitizers. For more information, see "Auto discover a setup", page 89.
- Enter the new IP manually. Click **Add** to retrieve the corresponding DX-700. Select this digitizer in the list and click **OK**.

6.3.2 Setup with a LED-Pro digitizer

Overview

- Create a new setup
- Ethernet connection setup (manually setup)
- Auto discover a setup
- Properties of a setup

6.3.2.1 Create a new setup

Create a new Setup via File menu

1. Click on *File* on the menu bar.

   The File menu opens.

2. Click on *New* → *Setup*. (image 6-16)

   The *Create new Setup* window opens. (image 6-17)

3. Click on the **LED-Pro setup** tab.
4. Fill out a setup name next to *Setup name*.
5. Select the *Status* of your setup.

Online	Computer has a connection with an Ethernet network and can discover itself which LED-Pros are on the network.
Offline	There is no communication with a LED-Pro. No other selections are available at that moment. Only a manual setup can be created.

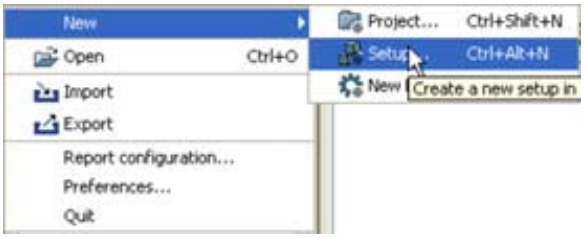


Image 6-16
Create new Setup

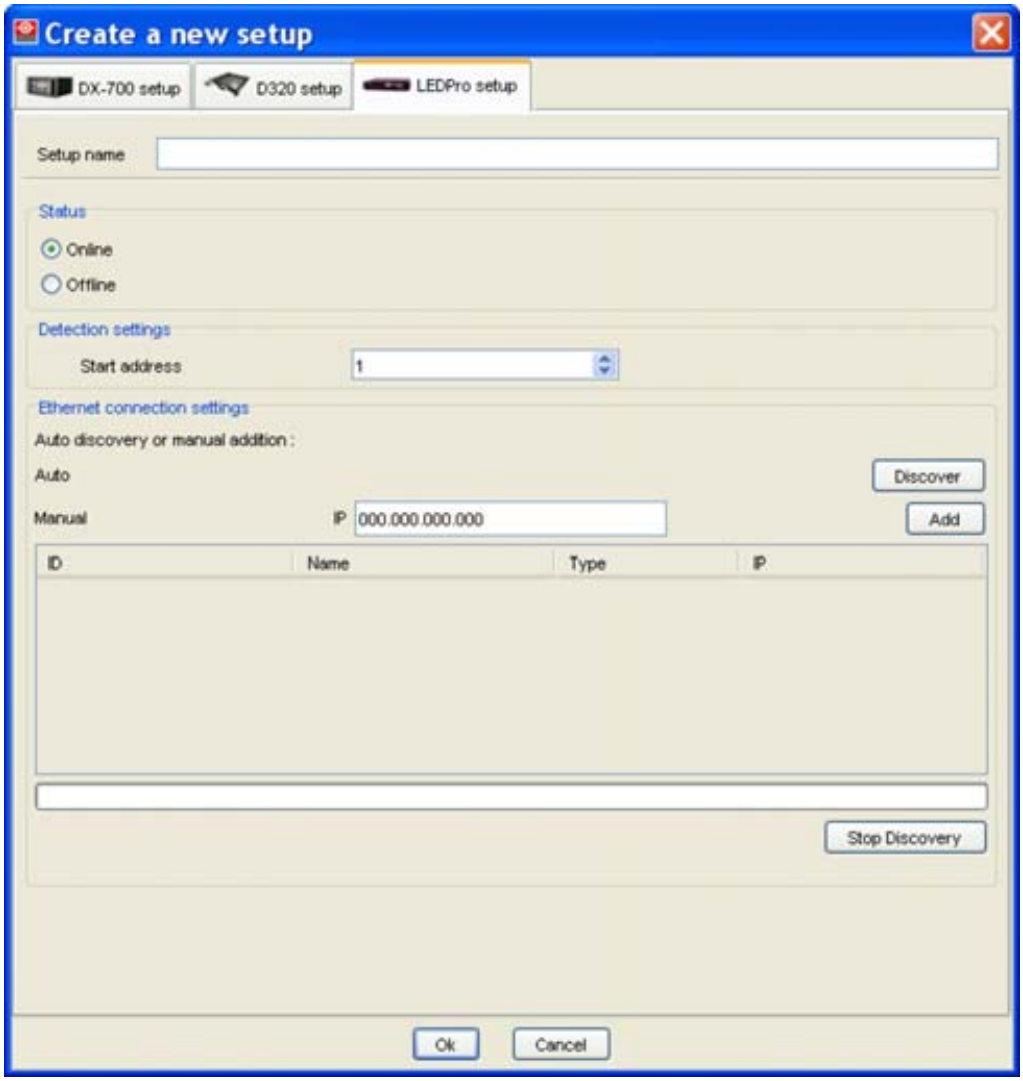


Image 6-17
Create LEDPro setup

Create a new Setup via the Project explorer

1. Right click on the project name. (image 6-18)

   The content menu opens.

2. Click on *New setup ...* .

   The *Create new Setup* window opens.

3. Click on **LEDPro setup** tab.

   The window changes (image 6-17).

4. Fill out a setup name next to *Setup name*.

5. Select the *Status* of your setup.

Online	Computer has a connection with an Ethernet network and can discover itself which LED-Pros are on the network.
Offline	There is no communication with a LED-Pro. No other selections are available at that moment. Only a manual setup can be created.

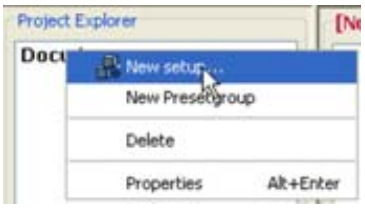


Image 6-18
Create new setup

6.3.2.2 Ethernet connection setup (manually setup)

What should be done?

The communication between the computer and the LED-Pro is established via an Ethernet protocol.

The user has the possibility to enter the IP address of the LED-Pro to communicate with.

As the information about Ethernet is the same between a LED-Pro and a DX-700,see "Ethernet connection setup (manually setup)", page 87 for more information about Ethernet addresses and about an Ethernet connection.

Manually set up of the connection

1. Click in the input field next to Manual IP and select the current value.
2. Enter the IP address of the LED-Pro.
   Note: *An address contains 4 octets with a maximum value of 255. Each octet is separated by a bullet.*
3. Click on **Add**.

   The device is searched on the network. When it is found, it is added to the list in the lower part of the *Create new setup* window.
4. Click on the LED-Pro to select.
5. Click **OK**.

   An autodetection is started.

   When the autodetection is successfully finished the real setup is loaded as new setup.

6.3.2.3 Auto discover a setup

What can be done ?

The computer can check automatically the network to discover which LED-Pro digitizers are connected to the network. Once the different digitizers are discovered the user can select a LED-Pro.

To create a setup with a LED-Pro

1. Click on **Discover**.

   The computer searches on the network for connected LED-Pro devices. When devices are found, a list is displayed in the lower part of the *Create new setup* window.
2. Click on the LED-Pro of your choice to select this device.
3. Click **OK**.

   An autodetection is started.

   When the autodetection is successfully finished, the real setup is loaded as the new setup.

6.3.2.4 Properties of a setup

How to change or edit

1. Right click on the setup name in the *Projector explorer*. (image 6-19)

   The *Properties* window opens.

Image 6-19
Select Properties of selected Setup

Tab 'General'

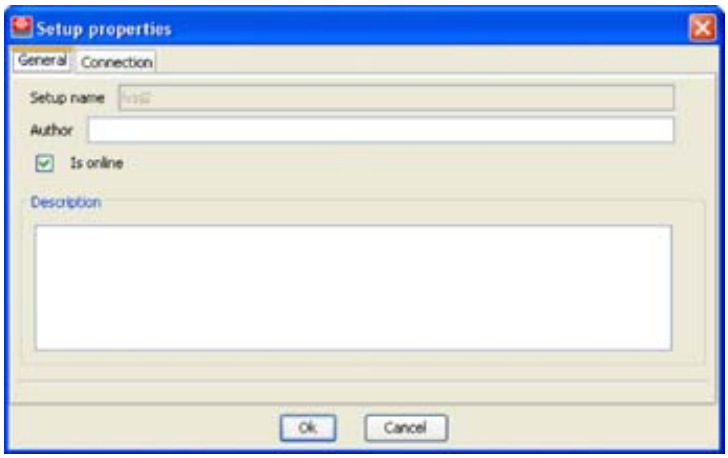


Image 6-20
Setup General tab

The following items can be updated or filled out:

- Author
- Online
  - When checked, the setup is online. When changing to not checked, a question message box will be displayed to warn that this setup will be switched to offline.
  - When not checked, the setup is offline. Check this box to make the setup online.
- Description of the setup

Tab 'Connection'

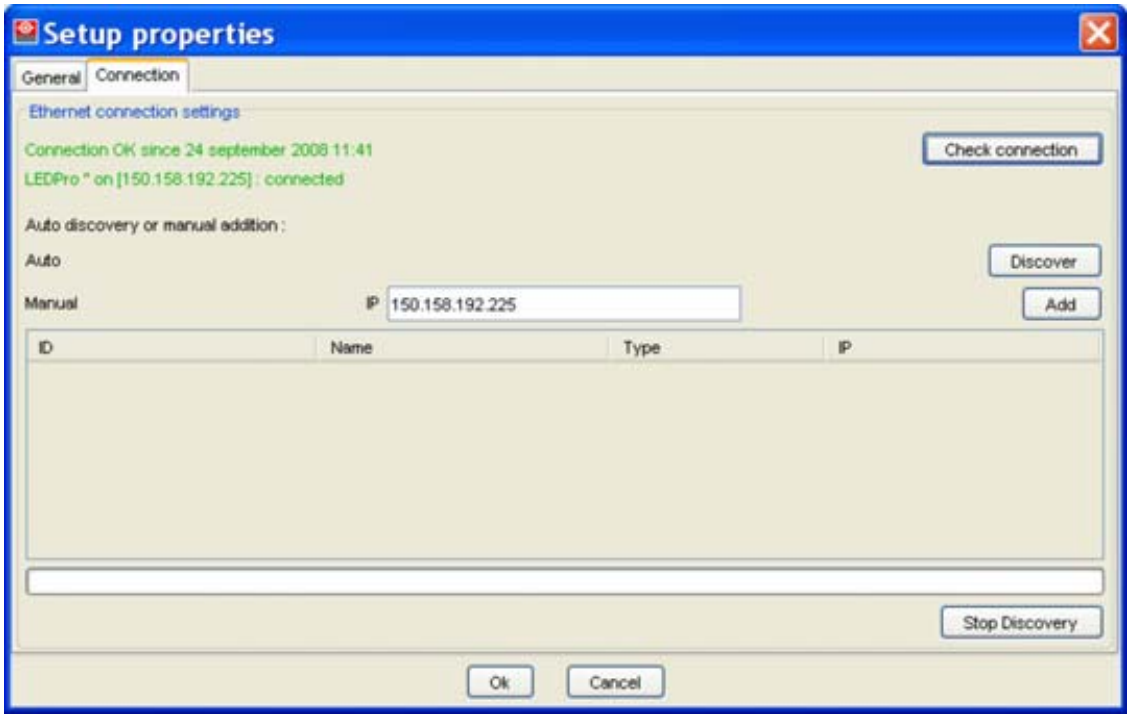


Image 6-21
Setup Connections

The connection status is indicated on the top part of the dialog. When all is indicated in green, then everything is OK with the communication.

A communication lost status can be reached when:

- Director Toolset sends a number of consecutive commands returning time-outs
- Director Toolset sends a number of consecutive commands to a digitizer returning a connection exception

At that time, the communication icon in the Director Toolset tray starts blinking with a red cross an the toolset progress bar indicates progress.

Click on that communication icon to see the Communication parameters.

When the digitizer has no longer communication, a red indication is given.

With **Check connection**, Director Toolset tries to make the connection with the known IP address. If that fails it executes a discover tries to find the new IP address via the known MAC address.

or

The Ethernet connection settings can be changed to a new IP address.

Handle as follow:

- Click **Discover** to list all possible LED-Pro on the network. Make your choice and click **OK**.
- Enter the new IP manually. Click **Add** to retrieve the corresponding LED-Pro. Select this digitizer in the list and click **OK**.

6.3.3 Setup with a D320

Overview

- Create new Setup
- Driver connection
- Serial connection
- Properties of a setup

6.3.3.1 Create new Setup

About local controlled versus remote controlled setups

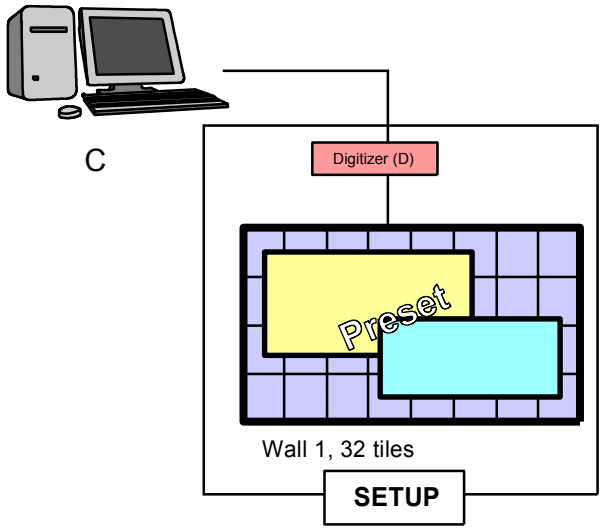


Image 6-22
Local controlled Setup

C Local computer

A local controlled Setup is a setup which is directly connected via a serial connection with the computer running Director Toolset.

While creating a new Setup locally, the following settings must be set up:

- Driver connection pane
  - Check Local connection
- Serial connection pane
  - the baud rate for the communication between the local computer and the Setup.
  - the COM port used on the local computer.

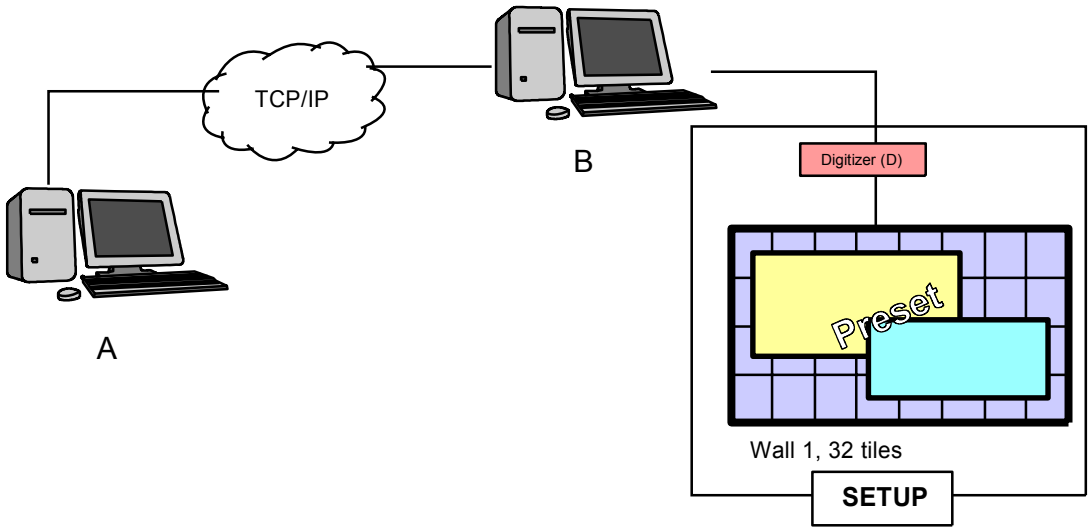


Image 6-23
Remote controlled Setup

A Remote computer
B Local computer

A remote controlled Setup is a setup which is directly connected via a serial connection with the local computer running Director Toolset and the server module of Director Toolset. This local computer is connected via TCP/IP with the remote computer. This remote computer runs Director Toolset.

While creating a new Setup remotely, the following settings must be set up:

- Driver connection pane
  - Check Remote connection
  - the IP address or hostname of the local computer
  - the TCP/IP port number (by default 9876)
- Serial connection pane
  - the baud rate for the communication between the local computer and the Setup.
  - the COM port used on the local computer.

Practical example :

The digitizer and the local computer which is connected to a TCP/IP network, are located in a control room from where the wall is not visible. When the TCP/IP network is also available on the LED wall location, then just plug in your remote computer to configure and adjust the LED wall.

Create new Setup via File menu

1. Click on *File* on the menu bar.

   The file menu opens. (image 6-24)

2. Select *New* and move the mouse to the right to open the different possibilities.
3. Select *Setup*.

   The *Create new setup* window opens. (image 6-25)

4. Click on **D320 setup** tab.

   The content changes to the D320 setup. (image 6-26)

5. Fill out a setup name next to *Setup name*.
6. Select the *Status* of your Setup.

Online Computer is physically connected with the different devices. Driver connection and serial connection can be adjusted. Auto-detected configurations can be created in this type of setup.

Offline There is no communication link with the devices. No other selections are available at that moment. Only manual configurations can be created in this setup.

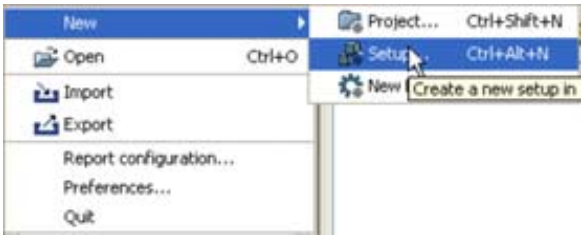


Image 6-24
Create new Setup

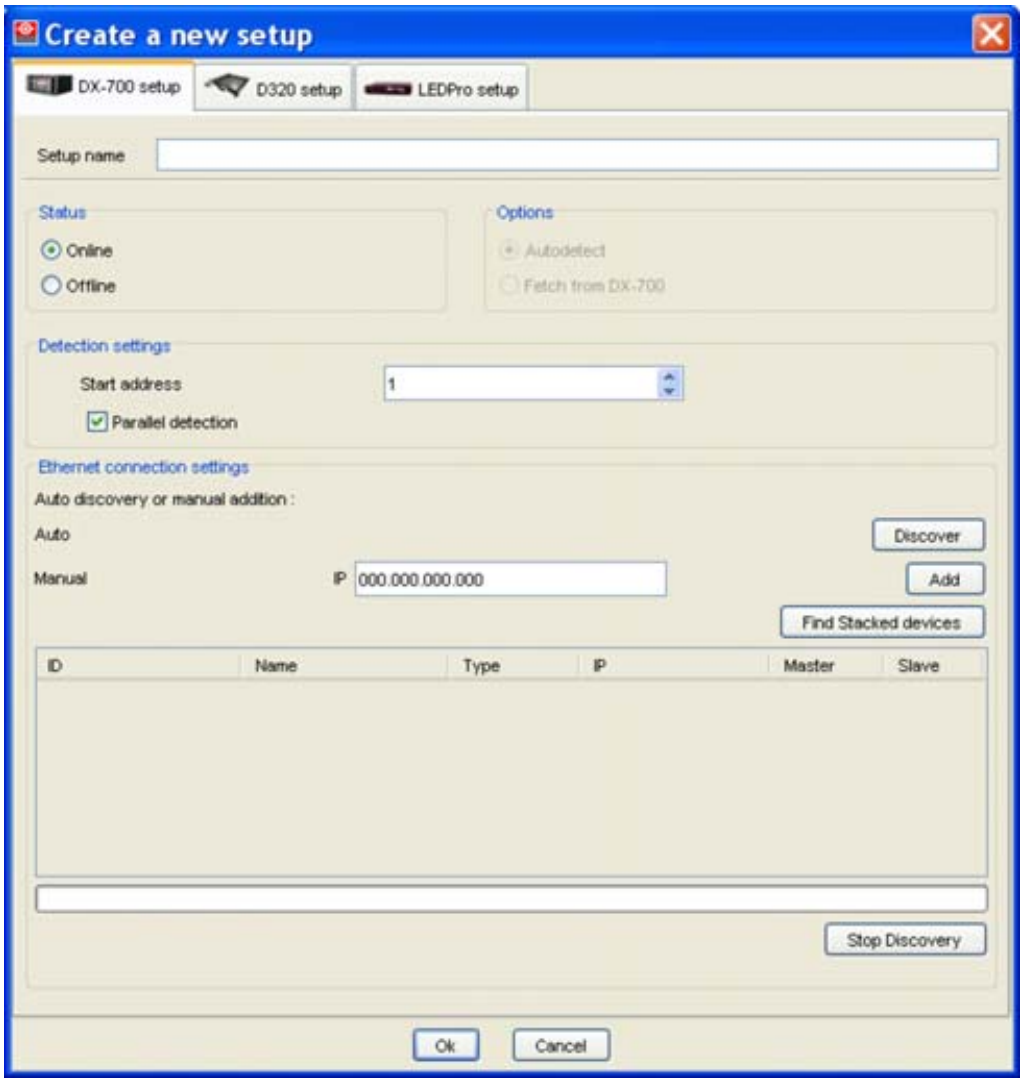


Image 6-25
Create new setup window

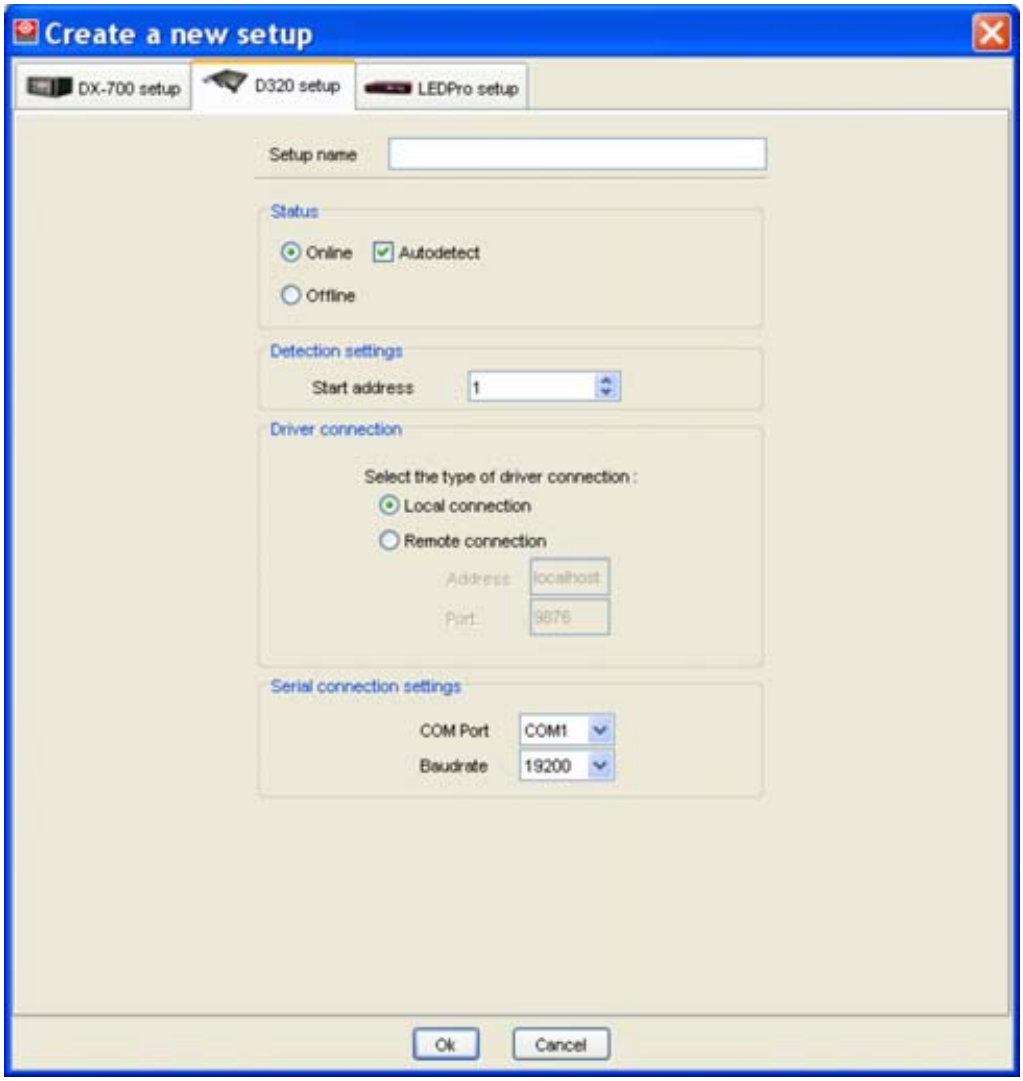


Image 6-26
Create new setup with D320

Create a new Setup via the Project explorer

1. Right click on the project name in the *Projector explorer*. (image 6-27)

   The content menu is displayed.

2. Select *New Setup*.

   The *Create new setup* window opens (see image 6-25).

3. Click on **D320 setup** tab.

   The content changes to the D320 setup (see image 6-26).

4. Fill out *Setup* name.
   Note: *The following characters are not allowed in a name: &, >, >, ', “, ?*

5. Select the status of your Setup.

Online	Computer is physically connected with the different devices. Driver connection and serial connection can be adjusted. Auto-detected configurations can be created in this type of setup.
Offline	There is no communication link with the devices. No other selections are available at that moment. Only manual configurations can be created in this setup.

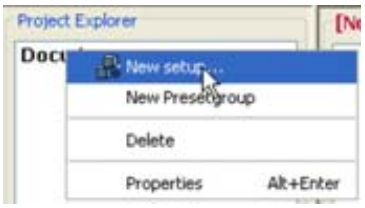


Image 6-27
Create new setup

Alternative way to call the new Setup creation window

- Press **Ctrl + Alt + N** to open the Create new setup window.

Remote connection error

When working with a remote controlled setup, and the connection is lost with the server (local computer), a message will be displayed to announce that the connection with the server is lost. Click on **OK** to retry.

Image 6-28
Remote control error message

After one retry and the connection is not yet established, an error message will be displayed.

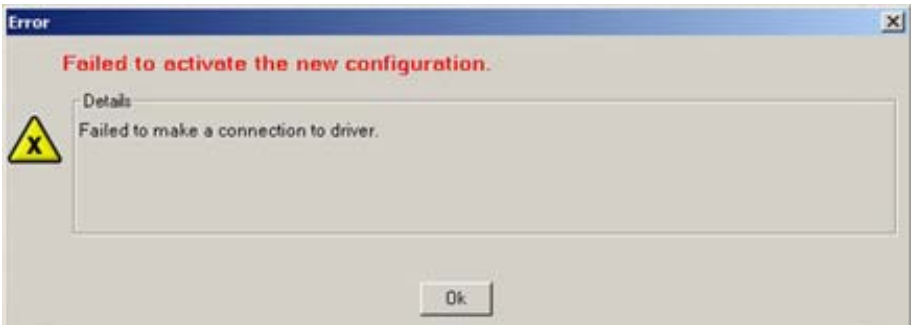


Image 6-29
Error message after remote connection retry

The active configuration will be accessible as it was a local configuration

6.3.3.2 Driver connection

Only for online setup creations.

Selection

1. Select the desired connection by checking the corresponding radio button. (image 6-30)

Local connection	The digitizer is connected directly with the COM port of the computer.
Remote connection	The digitizer is connected with a local computer which is plugged in on a network. This computer can remotely controlled via the network. When remotely controlled, fill out the local computer address or host name and the connection port (default 9876)

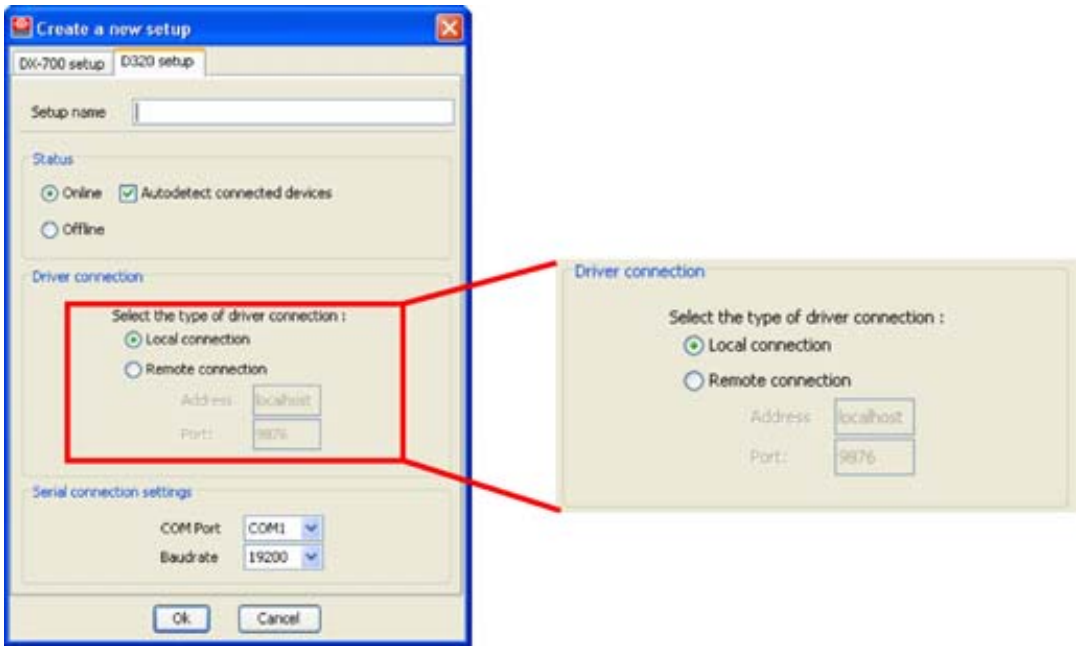


Image 6-30
Driver connection 'Setup' properties

6.3.3.3 Serial connection

Only for online setup creations.

Set up

1. Click on the drop down box next to *COM port* and select the desired COM port. (image 6-31)
2. Click on the drop down box next to baud rate and select the desired baud rate.

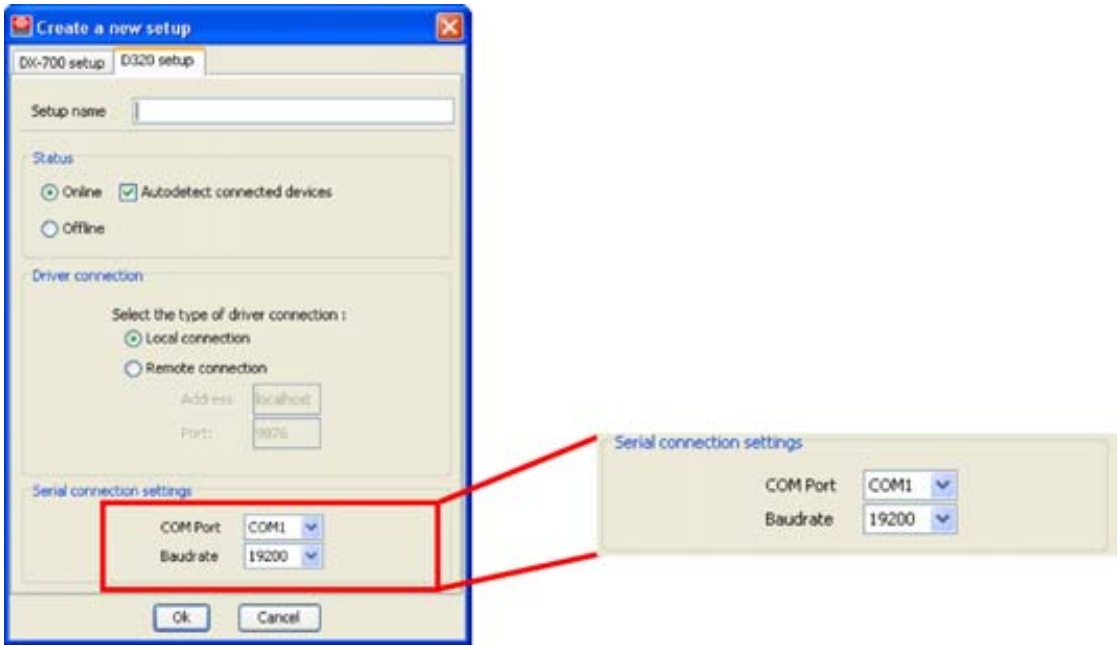


Image 6-31
Serial connection 'Setup' properties

6.3.3.4 Properties of a setup

How to change or edit ?

1. Right click on the setup name in the *Project explorer*. (image 6-32)

   A content menu opens.

2. Select *Properties*.

   The properties window is displayed.

Image 6-32
Select Properties of selected Setup

Tab 'General'

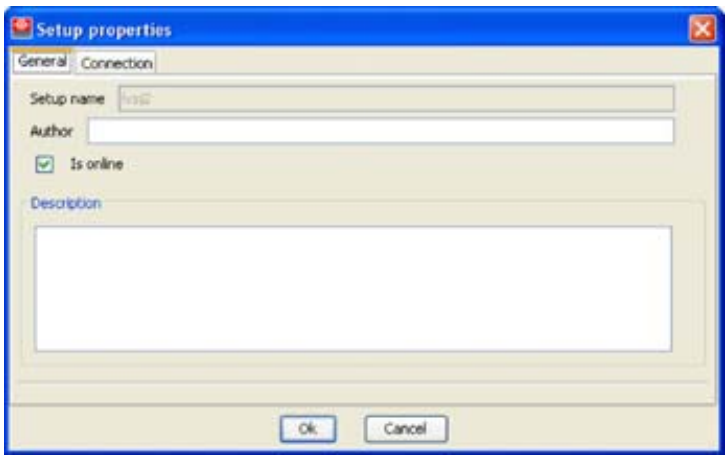


Image 6-33
Setup general tab

The following items can be updated or filled out:

- Author
- Online
  - When checked, the setup is online. When changing to not checked, a question message box will be displayed to warn that all configurations of this setup will be switched to offline.

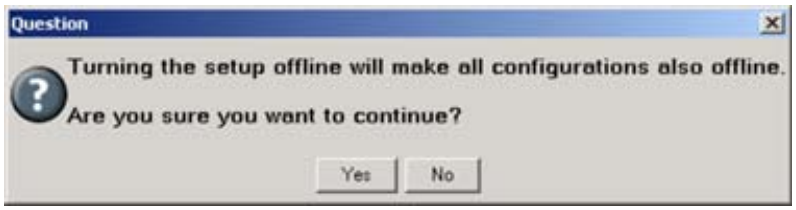


Image 6-34
Setup Properties offline question

  - When not checked, the setup is offline. Check this box to make the setup online.
- Description of the setup

Tab 'Connection'

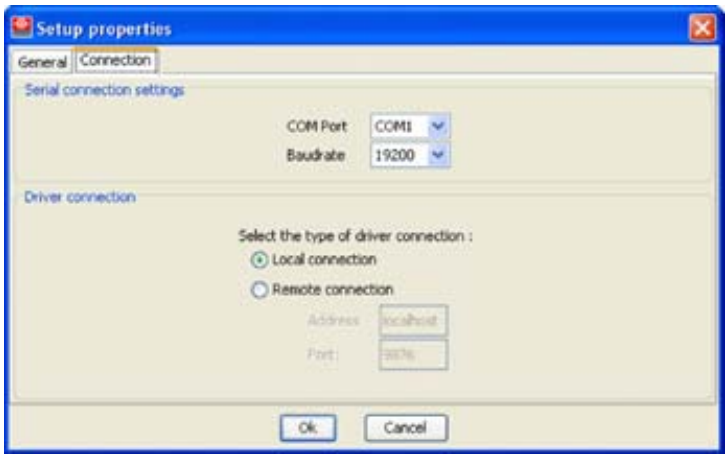


Image 6-35
Setup Connection

for Serial Connection setup:

The following items can be selected:

- COM port : click on the combo box and select the desired COM port out of the list of available COM ports.
- Baud rate : click on the combo box and select the desired baud rate out of the list.

for Driver connection setup:

Select the type of connection that the setup should use. The following connections are possible by clicking on the drop down box:

- Local connection: no further setting needed.
- Remote connection:
  - fill out the host name or IP address of the computer connected with the digitizer.
  - fill out the port. By default 9876

6.3.4 Rename a setup

How to rename ?

1. Right click on the selected 'setup' (1). (image 6-36)

   A content menu opens.

2. Select *Rename* (2).

   A *Rename setup* box is displayed (3).

3. Fill out a name in the field *Enter a new name for this setup* (4).
   Note: *The following characters are not allowed in a name: &, >, >, ', ", ?*

4. Click on **OK** to rename the setup (5).

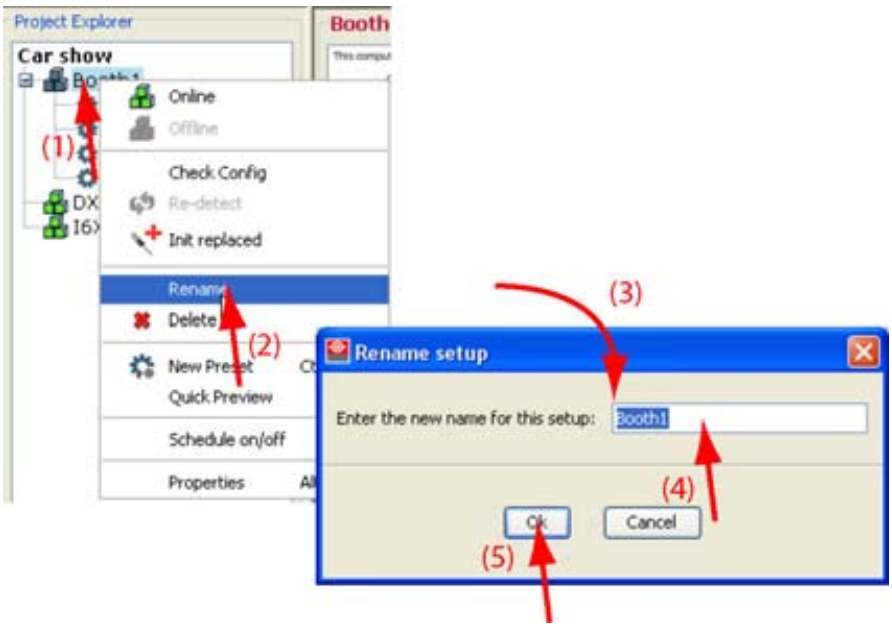


Image 6-36
Rename a setup

6.3.5 Delete a setup

What can be done ?

A setup can be deleted from a project. All presets in the setups are removed at the same time.

Before a setup can be deleted, this setup must be offline.

How to delete a setup ?

1. Right click on the selected setup (1) in the Projector explorer. (image 6-37)

   A content menu opens.

2. Select *Delete* (2).

   When the setup is offline, this setup will be delete. When the setup is online, a message opens to indicate that the tile are still active.

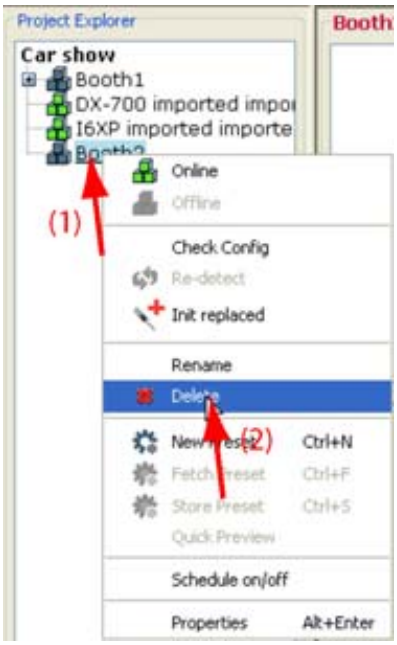


Image 6-37
Delete a setup

6.3.6 Import a setup

What can be done?

Setups from other projects can be imported in the current project. These setups can come from a file or from a DX-700.

How to import from file

1. Click on *File* on the menu bar. (image 6-38)

   The file menu opens (1).

2. Select *Import*.

   The import window opens (2).

   The network is scanned for DX-700 devices and the devices on the network are listed in the table below *Import from DX-700*.

3. Click on the radio button next to *Import from file* (3). (image 6-39)

4. Click **Browse** (4).

   A browse window opens (5).

5. Browse to the desired location and select the setup to import (6).

6. Click **Open** to start the import of the file (7).

7. Click **Next** to open the setup selection.

8. Determine what you want to import. Check the check box in front of the level to import (8). (image 6-40)
   - Project level : imports the complete project with all its setups and presets.
   - Setup level : imports one or more specific setups with all its presets.
   - Preset level : imports one or more specific presets from a setup.

   An asterisk (*) behind a project level and or setup level means that only part of the project and or setup is checked for import.

9. Do you want to import in a new project? (9)
   If yes, Check the check box in front of *Create a new projects when importing projects*.

10.Do you want to import extra files? (10)
If yes, Click **Browse** and browse to the files you want to import.

11.Click **Finish** to start the import action (11).

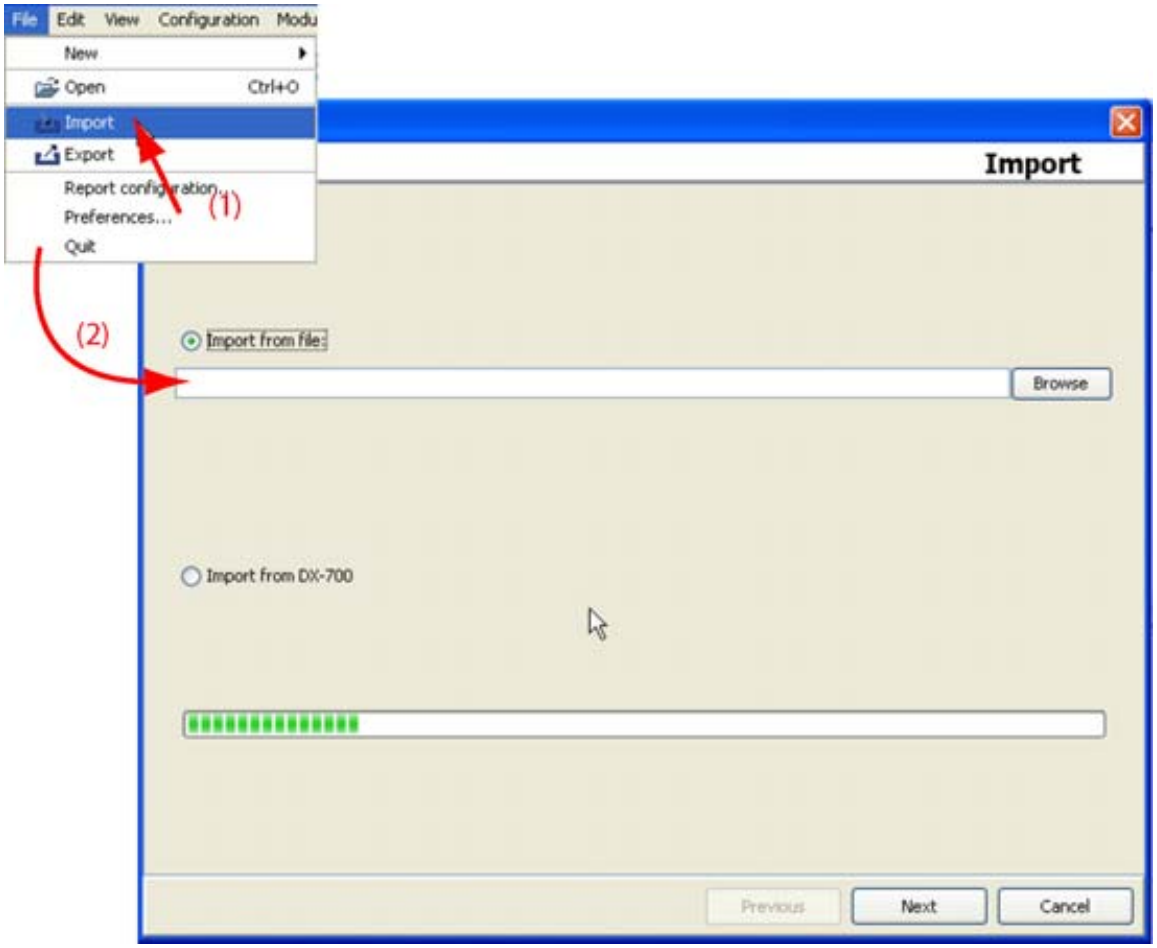


Image 6-38
Import project, start

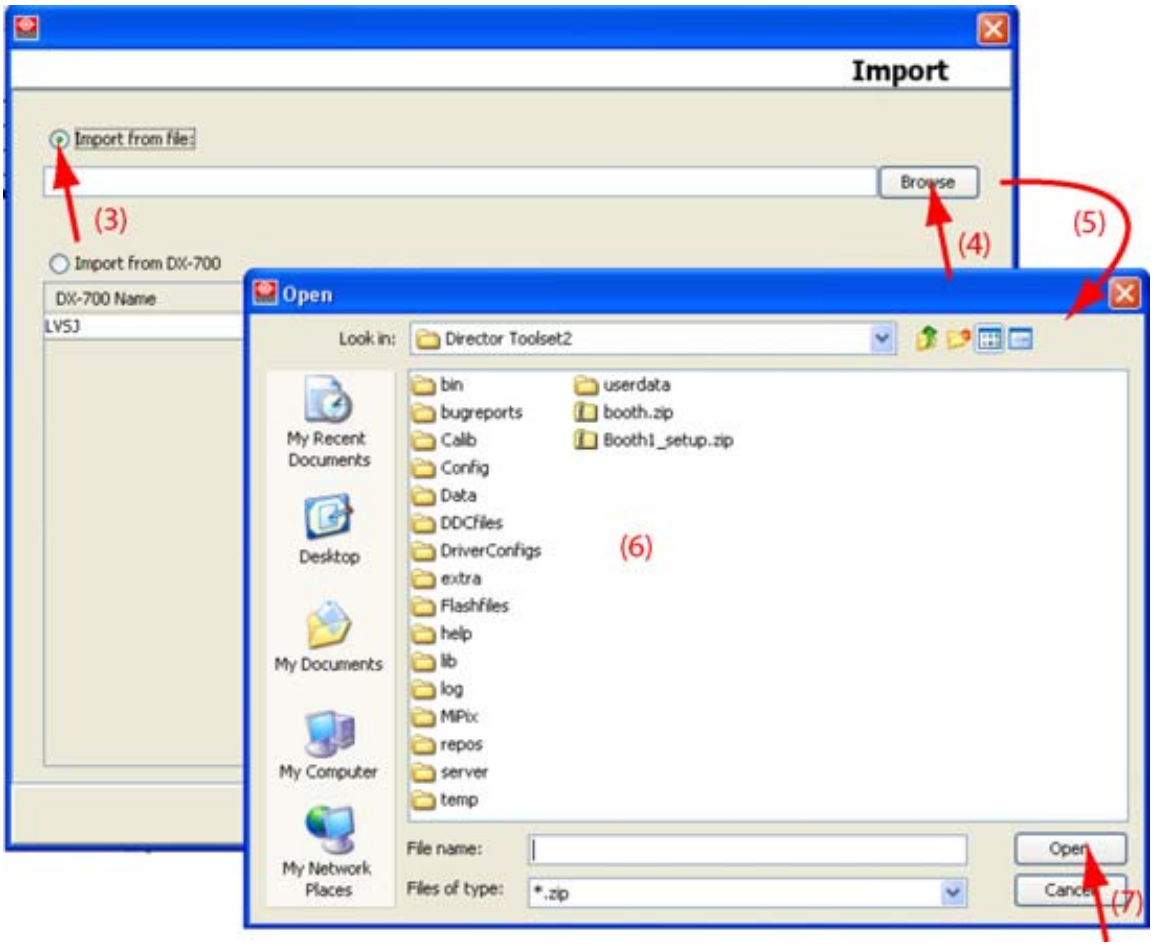


Image 6-39
Import project, select file

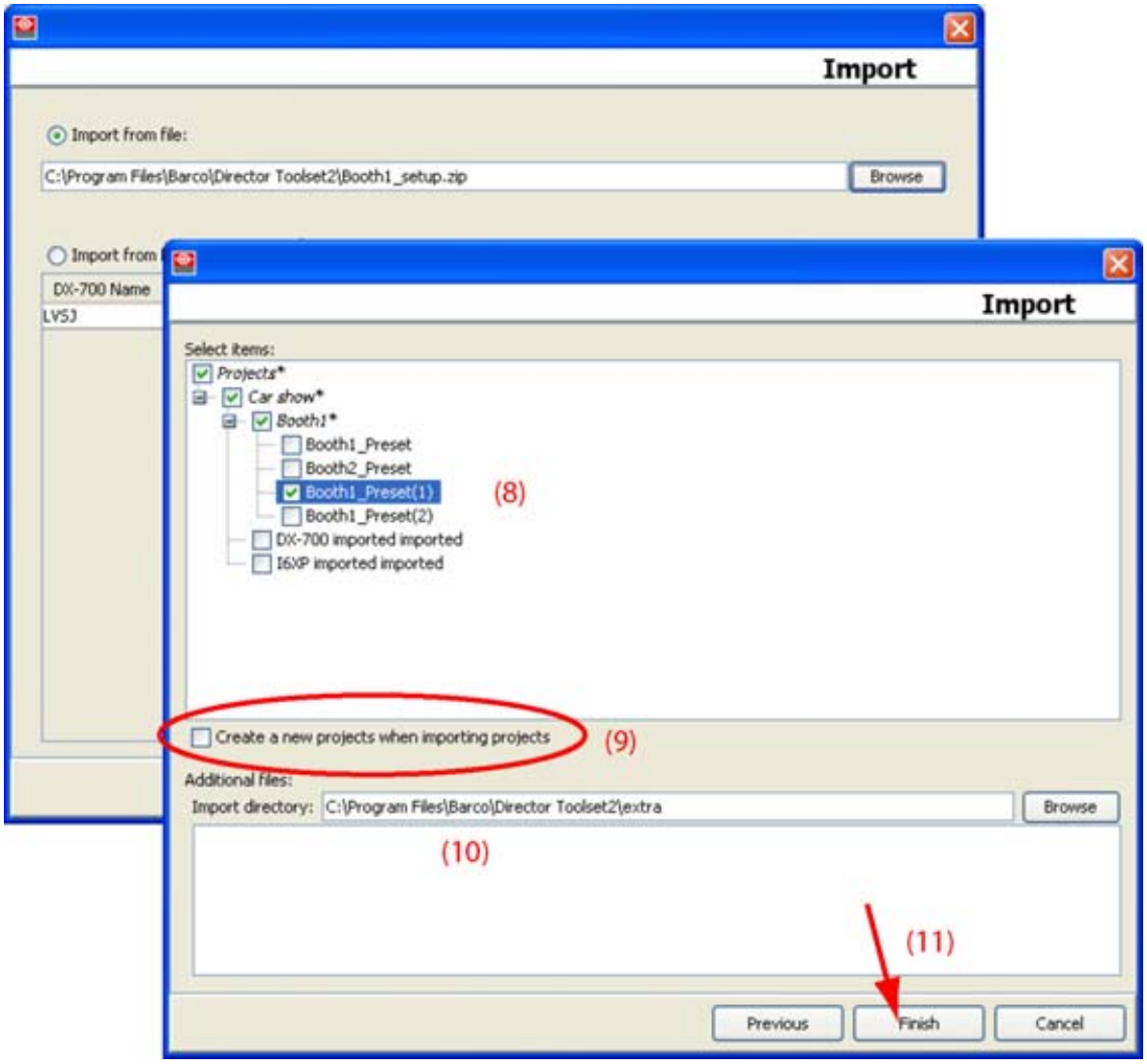


Image 6-40
Import project, finalize

How to import from a DX-700

1. Click on *File* on the menu bar. (nog beelden toevoegen)

   The file menu opens.

2. Select *Import*.

   The import window opens.

   The network is scanned for DX-700 devices and the devices on the network are listed in the table below *Import from DX-700*.

3. Click on the radio button next to *Import from DX-700*.

4. Select the DX-700 out of the list, from where to import.

   The import starts.

6.3.7 Export a setup

What can be done?

Projects, together with its setups and presets stored in Director Toolset can be exported to file or to a DX-700. These projects can be completely exported or partially. When partially export is chosen, an asterisk (*) will appear next to the project and or setup to indicate that only part of it will be exported.

This export action can be considered as backup of the stored projects on Director Toolset.

How to export to a file

1. Click on *File* on the menu bar. (image 6-41)

   The *File* menu opens.

2. Select *Export* (1).

   The export window opens (2).

   The network is scanned for DX-700 devices and the devices on the network are listed in the table below *Export to DX-700*.

3. Click on the radio button in front of *Export to file* (3) and click on **Browse** (4). (image 6-42)

   A browse window opens (5).

4. Browse to the desired location (6) and enter a file name (7). Click on **Open** (8).

   The complete path will be filled out in the export window.

5. Click on **Next**.

   A project overview tree is displayed.

6. Determine what you want to export. Check the check box in front of the level to export (9). (image 6-43)
   - Project level : exports the complete project with all its setups and presets.
   - Setup level : exports one or more specific setups with all its presets.
   - Preset level : exports one or more specific presets from a setup.

   An asterisk (*) behind a project level and or setup level means that only part of the project and or setup is checked for export.

7. Do you want to export extra files?
   If yes, Click **Browse** and browse to the files you want to export (10).

8. Click **Finish** (11).

   A zip file is created and stored in the selected location.

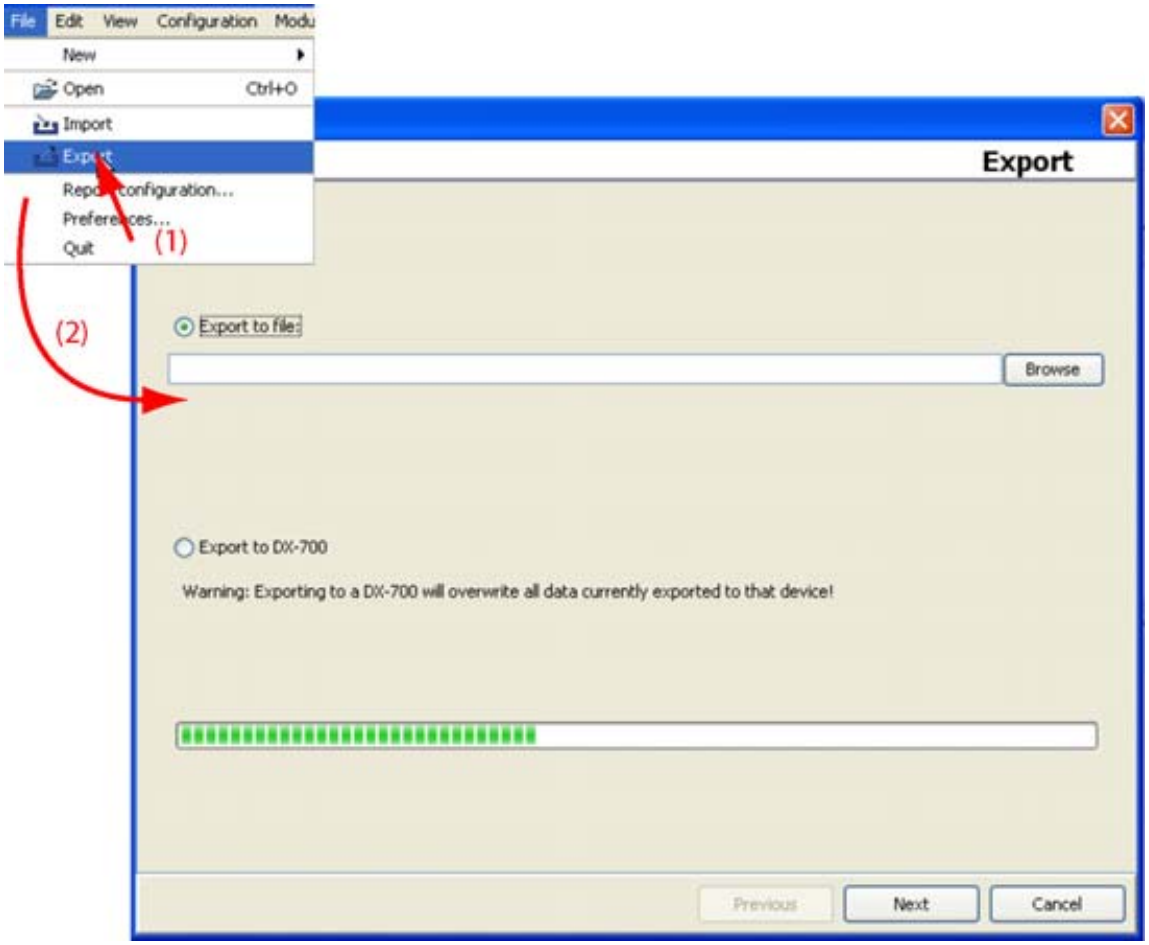


Image 6-41
Export Projects

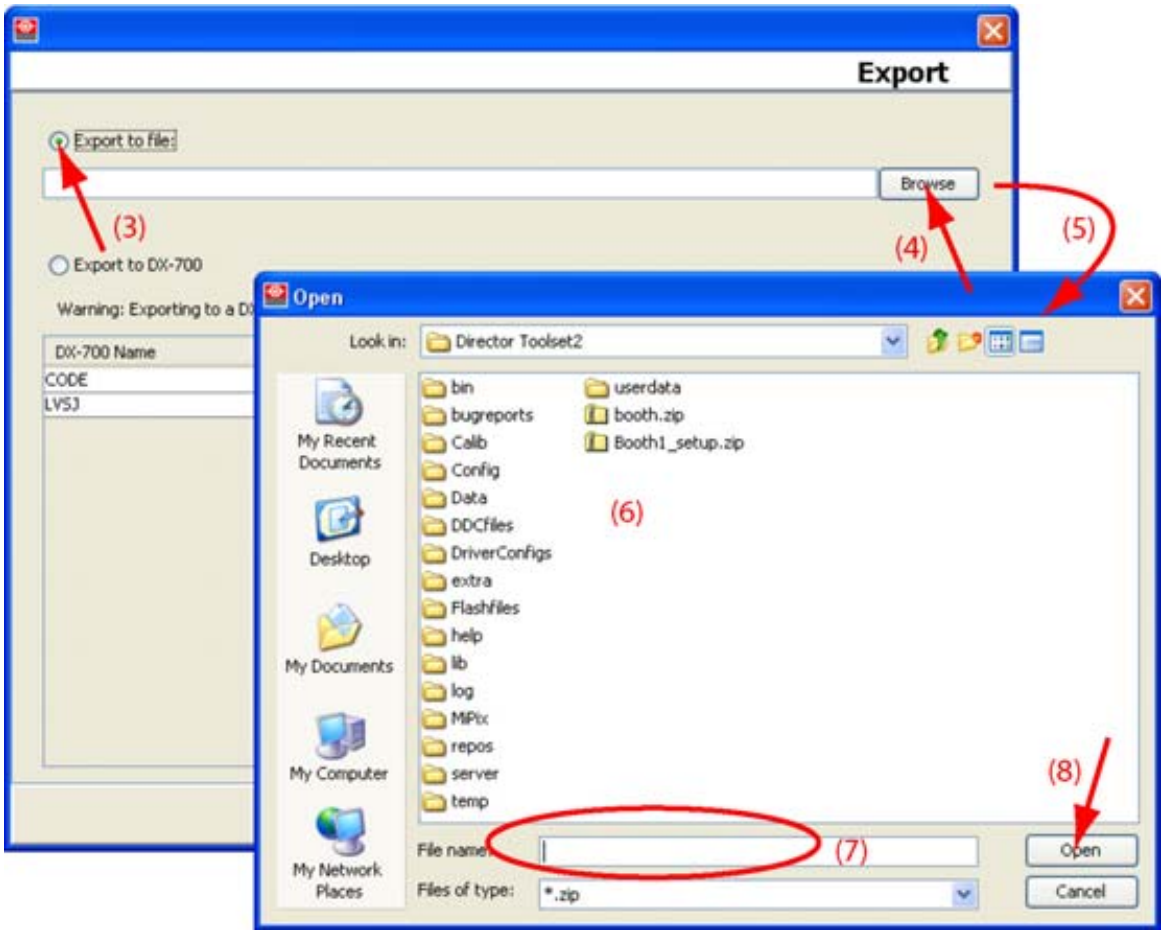


Image 6-42
Export Projects, to file

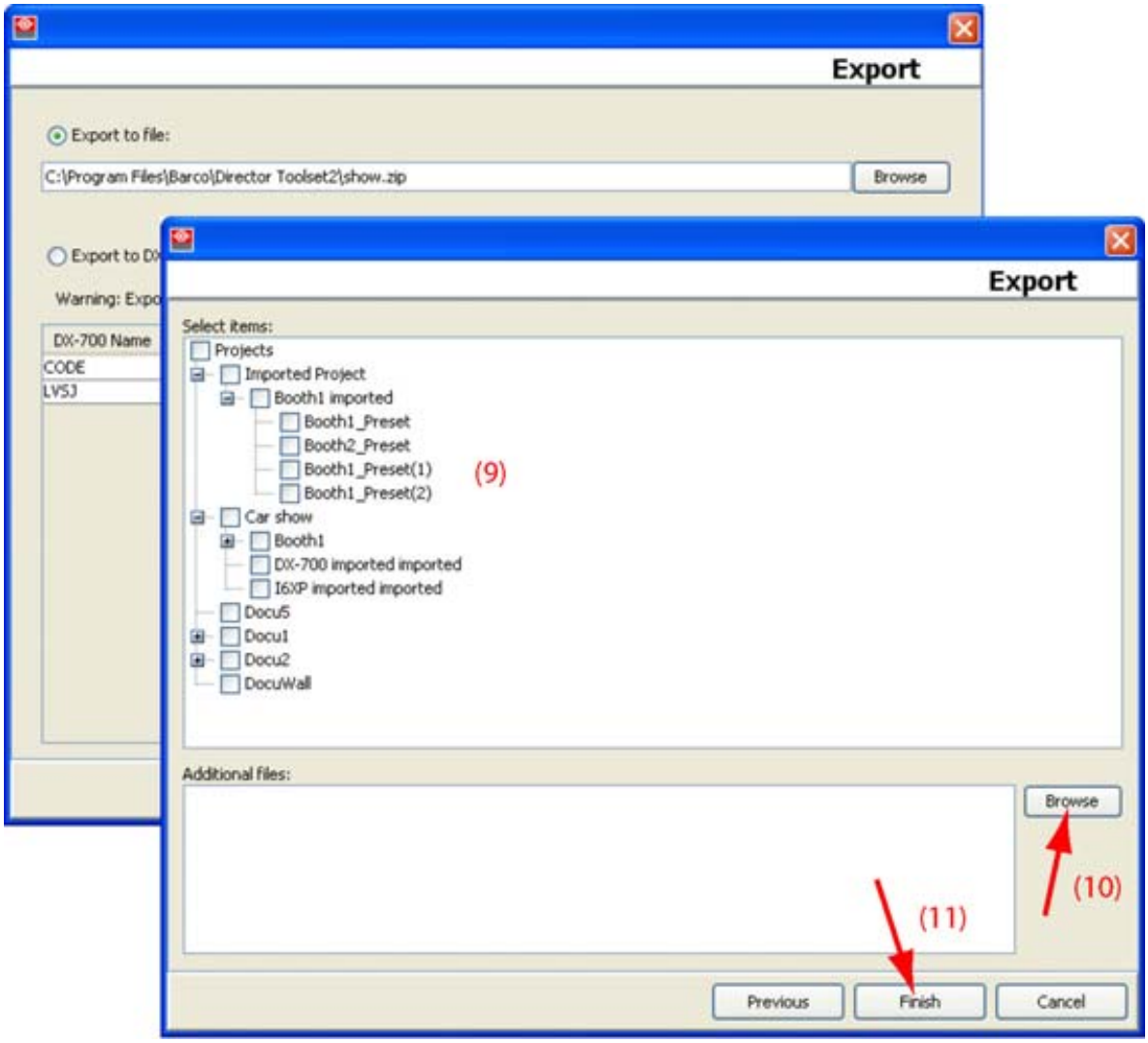


Image 6-43
Export projects, selection

How to export to a DX-700

1. Click on *File* on the menu bar (image 6-41).

   The *File* menu opens.

2. Select *Export* (1).

   The export window opens (2).

   The network is scanned for DX-700 devices and the devices on the network are listed in the table below *Export to DX-700*.

3. Click on the radio button in front of *Export to DX-700* (3) and select the DX-700 to export to out of the list (4). (image 6-44)

   A project overview tree is displayed.

4. Determine what you want to export. Check the check box in front of the level to export (5).
   - Project level : exports the complete project with all its setups and presets.
   - Setup level : exports one or more specific setups with all its presets.
   - Preset level : exports one or more specific presets from a setup.

   An asterisk (*) behind a project level and or setup level means that only part of the project and or setup is checked for export.

5. Do you want to export extra files? (6)
   If yes, Click **Browse** and browse to the files you want to export.
6. Click **Finish** (7).

   Data is prepared to be exported and send the selected DX-700.

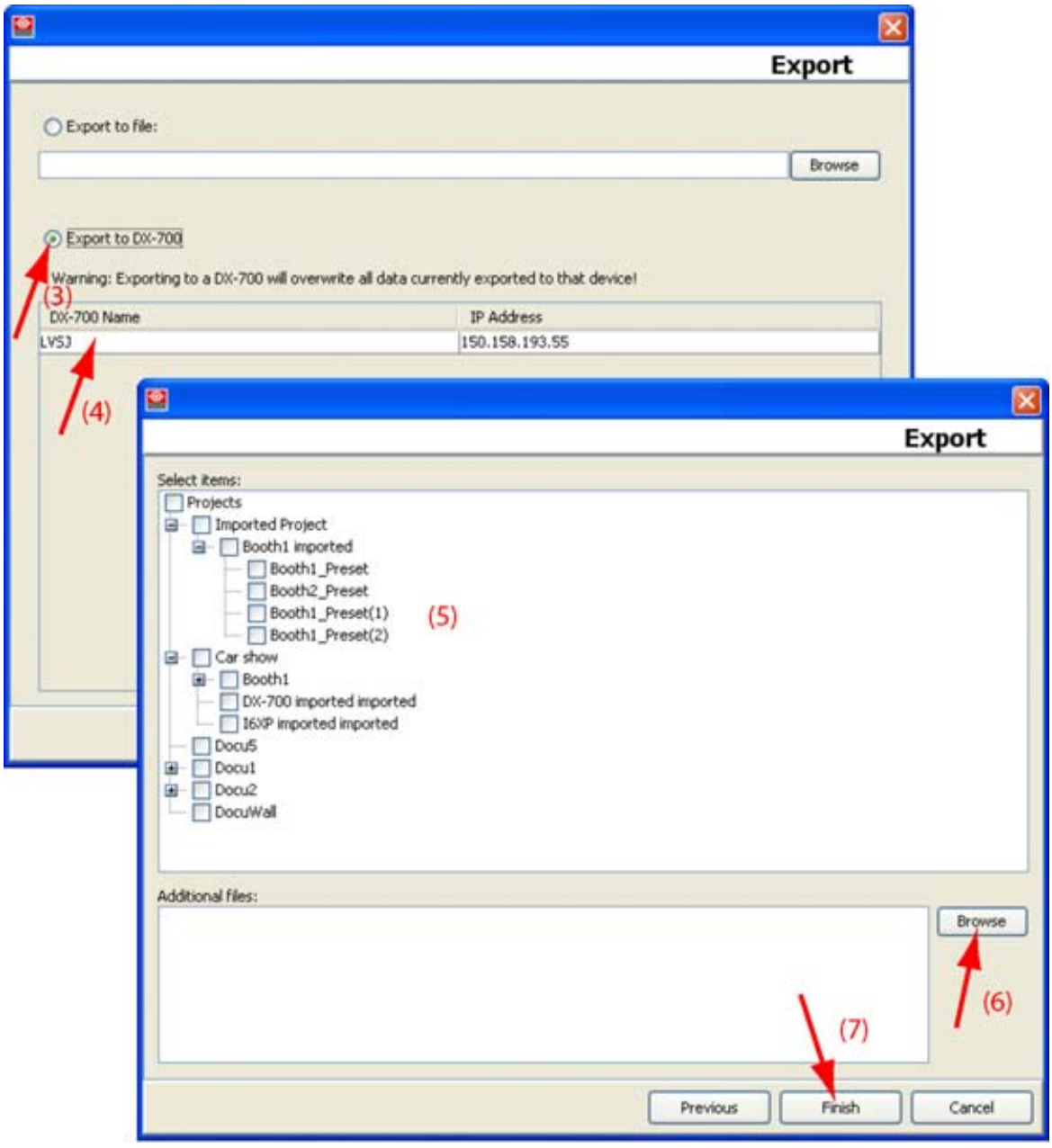


Image 6-44
Export to DX-700, selection

6.3.8 Check Skeleton

Only for D320 based setups.

What can be done ?

The current setup in Director Toolset (mostly offline created) can be check with the real setup when Director Toolset is online connected with the digitizer. Only a device check is done. No redectection is done.

How to check

1. Right click on a setup. (image 6-45)

   The content menu opens.

2. Select *Check Skeleton*.

   The connection is checked and all connected devices are checked to make sure that these devices are the same as those in the created setup.

   When a mismatch is detected, an error message is displayed.

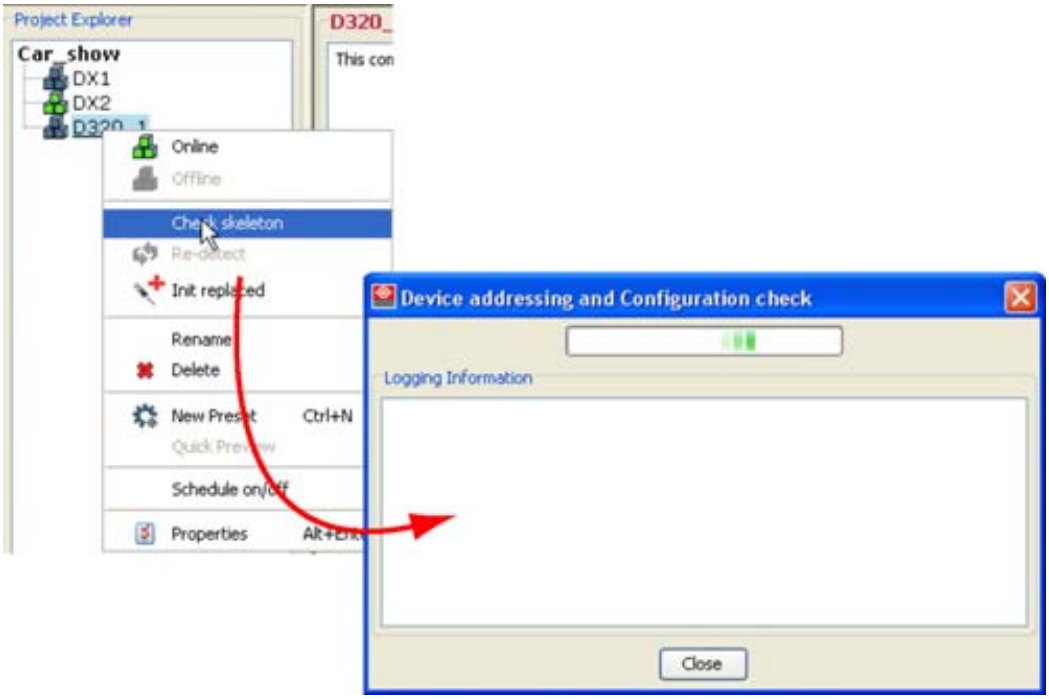


Image 6-45
Check skeleton

6.3.9 Make a setup online - offline

What can be done ?

A setup created offline via a scheme of the online setup, can be made online when arriving on the site itself.

An online setup can be switched to offline.

To make a setup online

1. Right click on the offline setup ( ) and select *Online*. (image 6-46)

   The software will check the created setup with the real setup.

   Or when the setup was previously online and set offline and changed during its offline state, a question is displayed to ask for a re-detection. (image 6-47)

Image 6-46
Make online

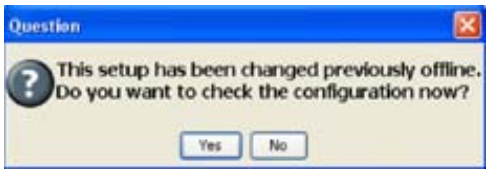


Image 6-47
Make online question

To make a setup offline

1. Right click on the online setup ( ) and select *Offline*. (image 6-48)

   The setup is switched offline

Image 6-48
Make offline

6.3.10 Initialize replaced devices in a setup

What can be done ?

When some tiles or digitizers are replaced in a physical setup, those devices must be initialized. A read-dressing is started but only the replaced devices are uploaded with new settings. All other devices keep their current settings.

How to initialize

1. Right click on a setup. (image 6-49)

   The content menu opens.

2. Select *Init replace*.

The device repair window opens. (image 6-50)

3. Check the type of devices which are replaced.

   When tiles are replaced, check One or more tiles.

   When digitizers are replaced, check One or more digitizers.

   When tiles and digitizers are replaced, check both.

4. Click **OK** to start.

   A device addressing and configuration check is started. When successful, a message is displayed to announce that the initialization was successfully. (image 6-51)

Image 6-49
Init replace

Image 6-50
Device repair window

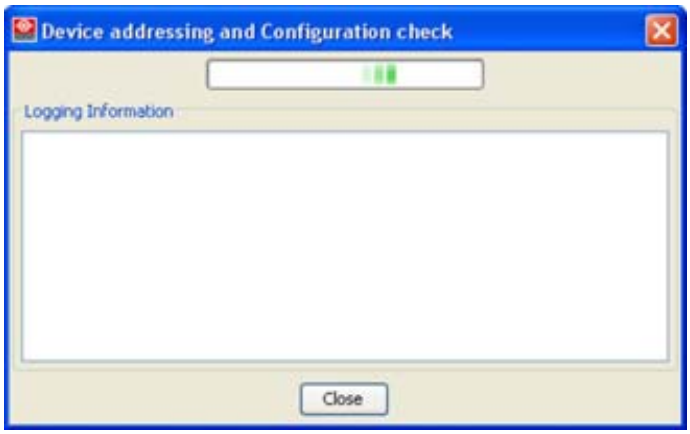


Image 6-51
Check window

6.3.11 Re-detect a Setup

How to re-detect

1. Right click on an online setup ( ) and select *Re-detect*. (image 6-52)
   Or,
   click on **Configuration** and select *Re-detect*. (image 6-53)

   The Autodetection starts. (image 6-54)

Image 6-52
Re-detect via content menu

Image 6-53
Re-detect via menu

Image 6-54
Start Autodetection

6.3.12 Schedule contrast ON / OFF for a wall

What can be done ?

The contrast of a wall can be set to zero (0) at a given time and can be switched again to the target contrast at another time and that within a 24 hours scope. It is not necessary to set both time limits.

How to schedule ?

1. Right click on the setup which must be scheduled (1). (image 6-55)

   A content menu opens.

2. Select *Schedule ON/OFF* (2).

   The schedule dialog box opens (3).

3. If you want to schedule the ON time, check the check box next to ON. If you want to schedule the OFF time, check the check box next to OFF. Then click in the corresponding spin box and select, select the actual value and enter the new time with the following pattern hh:mm:ss or select the hours part and click on the up down control of the spin box until the desired value is reached. Then select the minutes and repeat as for the hours. Continue with the same for the seconds (4).
4. Click on **Start** to activate the scheduling (5).

   The contrast of the LEDwall will be set to the target contrast when the *ON* time is reached.

   The contrast of the LEDwall will be set to zero (0) when the *OFF* time is reached.

   To interrupt the scheduling, click on **Stop**.

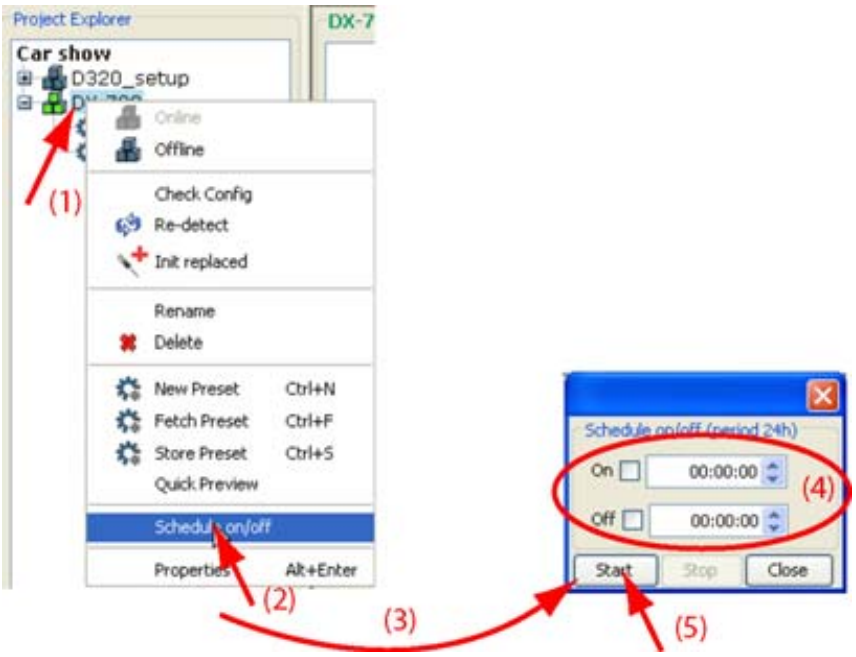


Image 6-55
Schedule contrast ON/OFF

6.4 Presets

Overview

- About presets
- Create new Preset via File menu
- Create new Preset via projector explorer
- Delete a preset
- Fetch preset
- Store preset
- Quick preview of all presets in a setup
- Apply a preset
- Preset preview
- Preset properties

6.4.1 About presets

Overview

A preset is a typical setup (snap shot at that moment), such as window positioning, viewport, gamma, etc. which can be applied at a later moment. A short cut can be associated to the preset which can be used through out Director Toolset. Presets can be created directly in a setup or via the Operations module (explained further in this manual).

When a preset is selected, only the configuration module is available, all other modules are grayed out.

Presets created for an online DX-700 or LED-Pro setup are stored directly on the DX-700 or LED-Pro itself.

6.4.2 Create new Preset via File menu

How to create

1. Click on *File* in the menu bar.

   The *File* menu opens.

2. Select *New* → *New preset* (1). (image 6-56)

   The *Make a preset window* opens (2).

   A proposed preset name is filled out. This name is the combination of the selected setup plus preset.

3. Click in the *Preset* input field, select the current name and enter a new name for your preset (3).

4. Select the setup where the preset should be created in. Click on the drop down box to get an overview of the setups in the current project. Select one out of the list (4).

   The current active setup is filled out by default.

5. The new preset can be based on an existing preset or on the default settings. Click on the drop down box to get an overview of the current presets for the selected setup. Select one out of the list (5).

6. Click **OK** to create the preset (6).

   If you create a preset in an online setup based on a DX-700 or LED-Pro digitizer, then the preset will be stored on the digitizer itself. An information message is displayed. (image 6-57)

   Click **Yes** to continue.

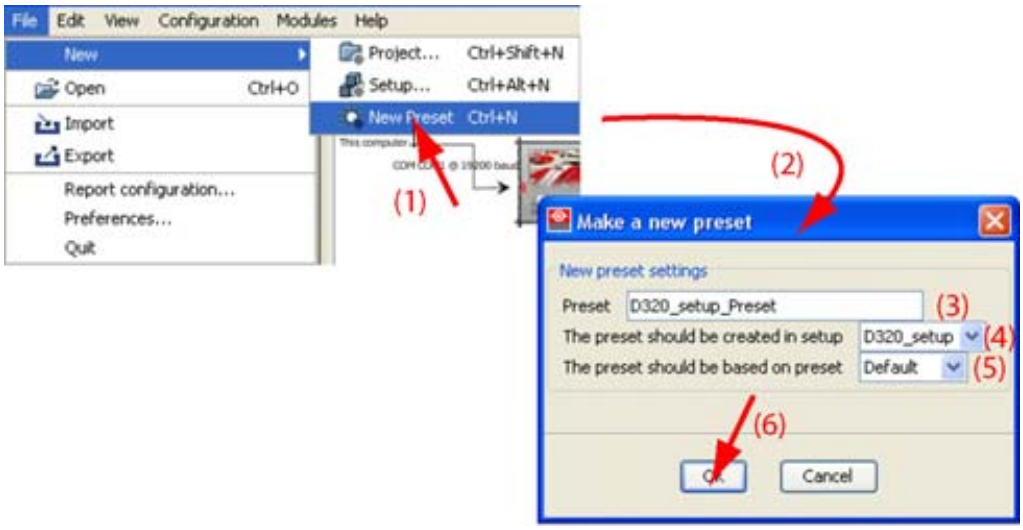


Image 6-56
New preset, via file menu

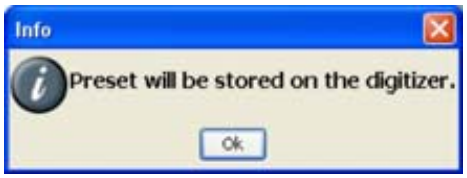


Image 6-57
Stored on digitizer

Alternative way to create a new preset

- Click on a setup to select.
- Press **Ctrl + N** to open the *Make a preset* window.

6.4.3 Create new Preset via projector explorer

How to create

1. Right click on a setup where a new preset should be created. (image 6-58)

   The content menu opens.

2. Select *New preset* (1).

   The *Make a preset window* opens (2).

   A proposed preset name is filled out. This name is the combination of the selected setup plus preset.

3. Click in the *Preset* input field, select the current name and enter a new name for your preset (3).

4. Select the setup where the preset should be created in. Click on the drop down box to get an overview of the setups in the current project. Select one out of the list (4).

   The current active setup is filled out by default.

5. The new preset can be based on an existing preset or on the default settings. Click on the drop down box to get an overview of the current presets for the selected setup. Select one out of the list (5).

6. Click **OK** to create the preset (6).

   If you create a preset in an online setup based on a DX-700 or LED-Pro digitizer, then the preset will be stored on the digitizer itself. An information message is displayed. (image 6-59)

   Click **Yes** to continue.

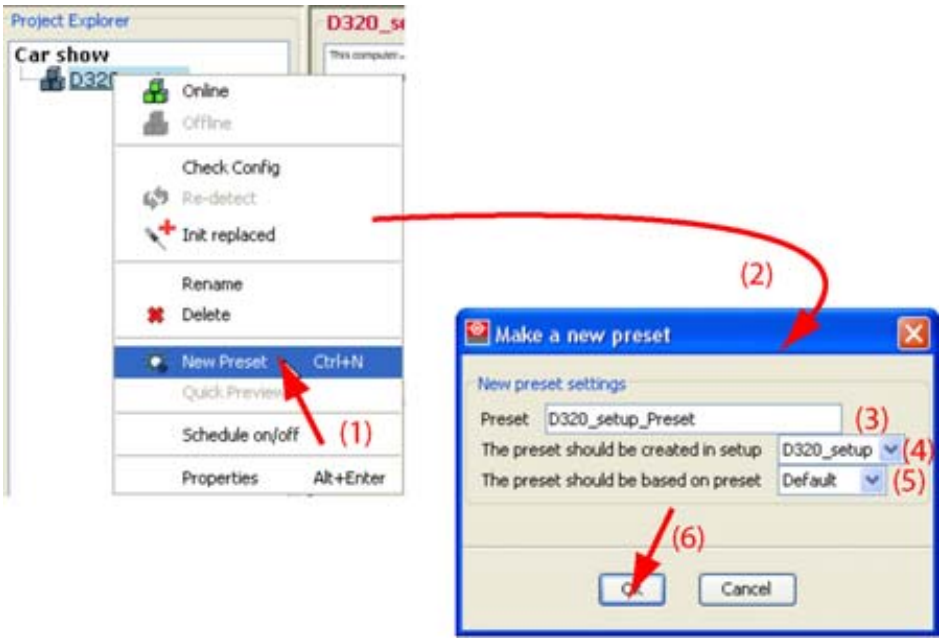


Image 6-58
New preset, via project explorer

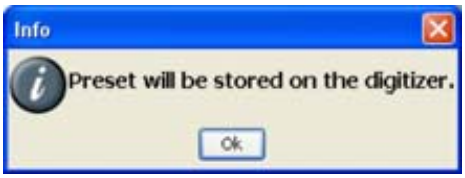


Image 6-59
Preset stored on digitizer

6.4.4 Delete a preset

How to delete

1. Right click on the preset to delete. (image 6-60)

   The content menu opens.

2. Select *Delete*.

   The selected preset is deleted.

Image 6-60
Delete preset

If you delete a preset which was stored on the DX-700 or LED-Pro, the preset will be deleted on the DX-700 or LED-Pro also.

6.4.5 Fetch preset

Only for DX-700 and LED-Pro setups.

Fetched presets are only correct when the hardware is still the same as during the creation of the preset. Using an incorrect preset can disturb the functionality of the DX-700 or LED-Pro.

How to fetch

1. Right click on a setup.

   The content menu opens.

2. Select *Fetch Preset*. (image 6-61)

   The *Fetch Preset from digitizer* window opens. (image 6-62)

3. Select the preset to fetch.

4. Click **OK**.

   The fetched preset is added to the setup and becomes the active preset.

Image 6-61
Fetch preset

Image 6-62
Preset selection

Alternative way to fetch preset

- Select a DX-700 or LED-Pro based setup.
- Press **Ctrl + F**. The preset will be fetched from the DX-700 or LED-Pro.

6.4.6 Store preset

Only for DX-700 or LED-Pro setups.

How to store

1. Right click on a setup.

   The content menu opens.

2. Select *Store Preset*. (image 6-63)

   The *Store preset to digitizer* window opens. (image 6-64)

3. Select the preset to store.

4. Click **OK**.

   The preset will be stored on the DX-700 or LED-Pro.

Image 6-63
Store preset

Image 6-64
Preset selection to store

Presets which are not stored during the creation can be stored on the DX-700 or LED-Pro via the Store preset function.

6.4.7 Quick preview of all presets in a setup

What can be done ?

An overview of the window layout of each preview can be given in comparison with the current layout on the wall, just by scrolling through the available presets.

How to display

1. Right click on the setup.

   The content menu opens.

2. Select Quick Preview. (image 6-65)

   The *Preset View Control Dialog box* opens.

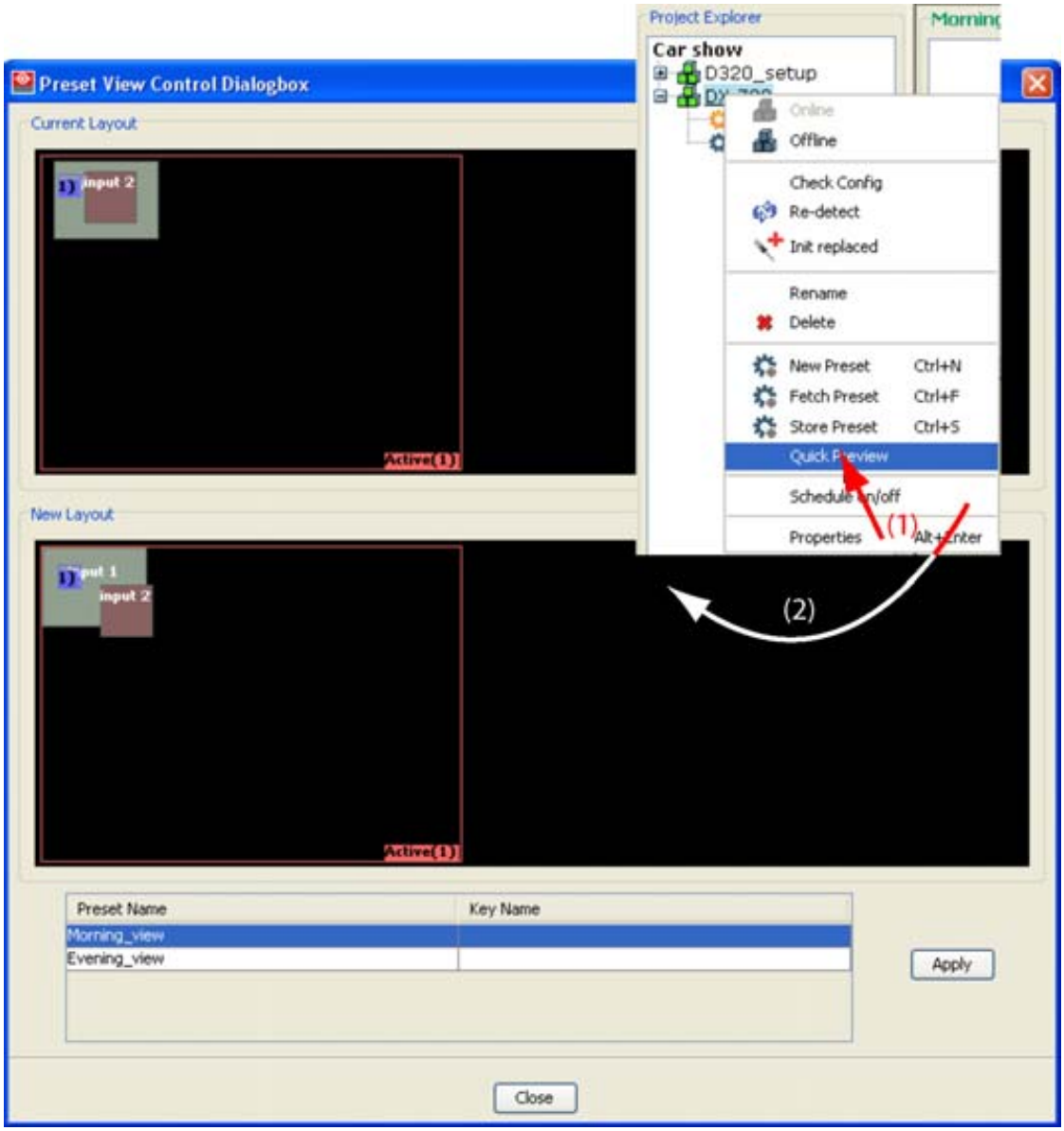


Image 6-65
Quick preview presets

6.4.8 Apply a preset

Before a preset can be applied, the setup must be online.

Apply via the content menu

1. Right click on the preset to apply.

   The content menu opens.

2. Select *Apply*. (image 6-66)

   When the setup is offline, a message is displayed to mention that the setup must be online.

   When the setup is online, a connection will be established with the hardware and data will be transferred to this hardware. When the transfer fails, an error message will be displayed.

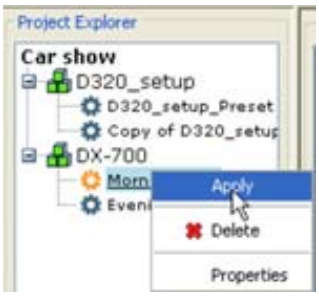


Image 6-66
Apply preset

Apply via the preview window

1. Click on a preset to activate.

   A preview is displayed. (image 6-67)

2. Click on **Apply preset**.

   When the setup is offline, a message is displayed to mention that the setup must be online.

   When the setup is online, a connection will be established with the hardware and data will be transferred to this hardware. When the transfer fails, an error message will be displayed.

   For a DX-700 based setup, Director Toolset sends an apply command to the digitizer and the digitizer itself take care of the apply.

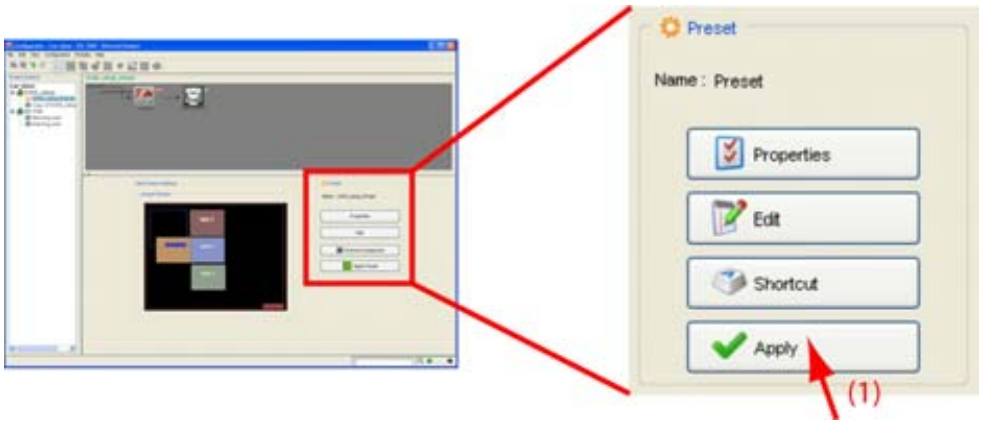


Image 6-67
Apply preset via preview

Apply via the quick preview

1. Make a quick preview of the presets in the setup.

   The quick preview window is displayed. (image 6-68)

2. Select the desired layout by selecting a preset out of the list.

   The new layout pane changes accordingly.

3. When the desired layout selected, click on **Apply**.

   When the setup is offline, a message is displayed to mention that the setup must be online.

   When the setup is online, a connection will be established with the hardware and data will be transferred to this hardware. When the transfer fails, an error message will be displayed.

   For a DX-700 based setup, Director Toolset sends an apply command to the digitizer and the digitizer itself take care of the apply.

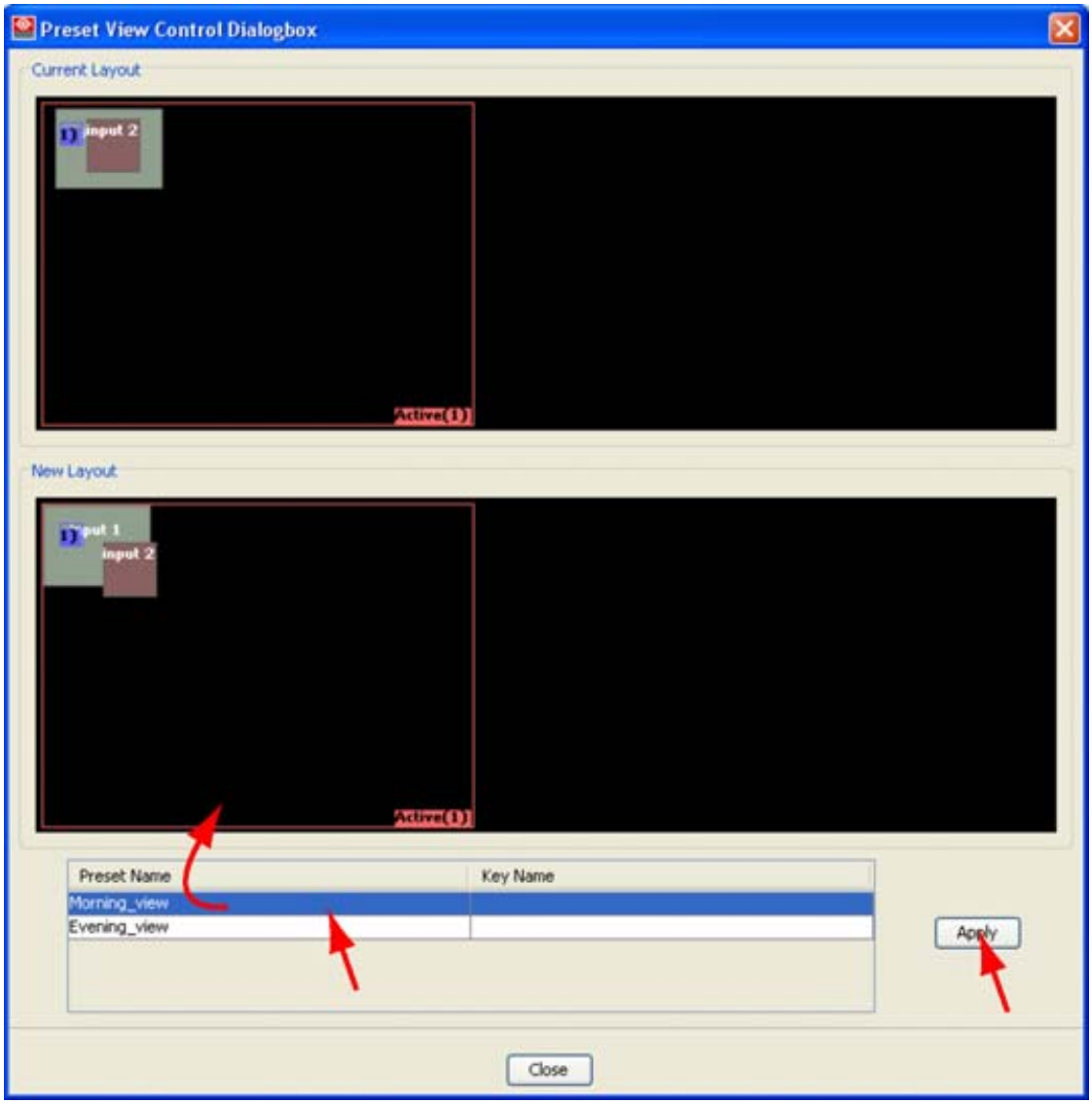


Image 6-68
Apply preset via quick preview

When a preset is applied directly on the DX-700, then all information will be synchronized with Director Toolset independent the apply level settings.

6.4.9 Preset preview

Overview

- How to preview a preset
- Edit preset
- Shortcut key assignment

6.4.9.1 How to preview a preset

Steps to be taken

1. Click on the preset to select the preset. (image 6-69)

A preview is shown in the right pane.

This preset can now be edited.

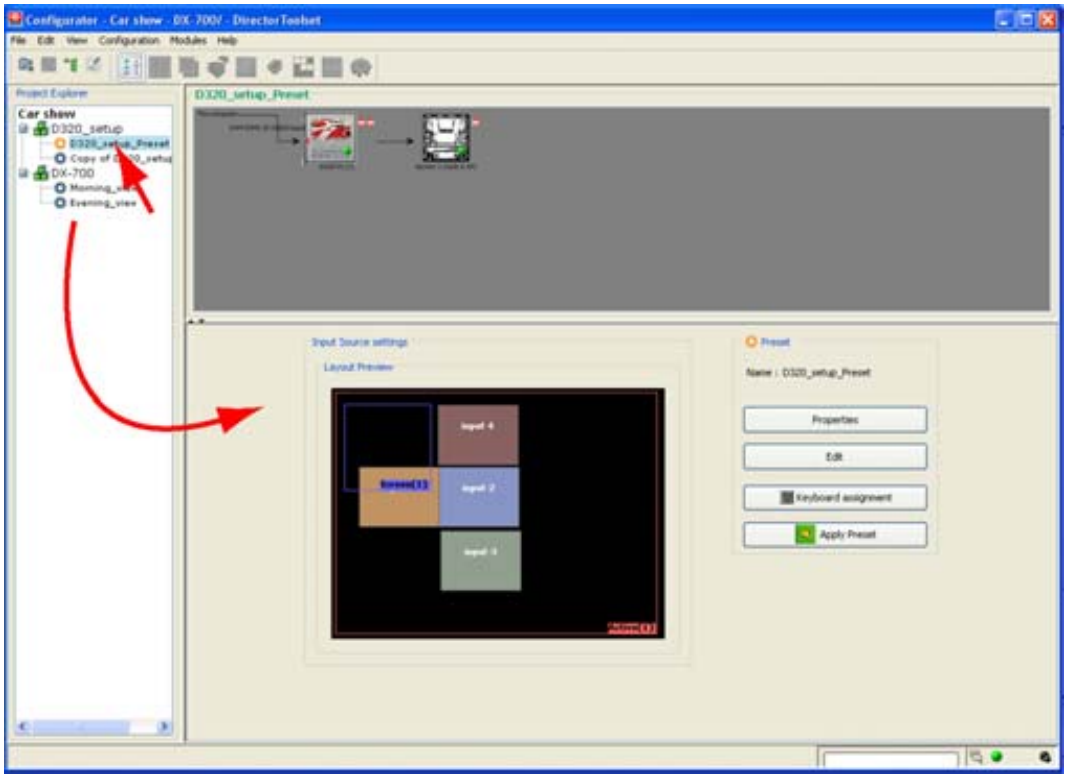


Image 6-69
Preset preview

6.4.9.2 Edit preset

How to start up edit

1. Once in the Preset preview pane, click on **Edit**. (image 6-70)

   The *Edit input source* window opens. (image 6-71)

   All settings inside the Edit input source window are the same as those in Operations. For a detailed explanation of each control, see for

   - Window settings, see chapter "15. Operations", "Window settings", page 354.
   - Viewport settings, see chapter "15. Operations", "Viewport settings", page 373.
   - Special settings such as alpha blending, color key, etc. , see chapter "15. Operations", "Special settings", page 378.
   - Source settings, see chapter "15. Operations", "Source settings", page 383.
   - Display settings, see chapter "15. Operations", "Display settings", page 385.

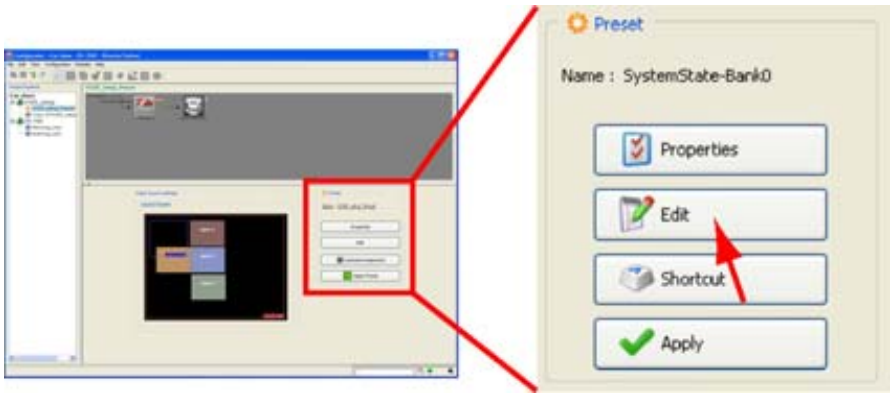


Image 6-70
Start up Edit preset

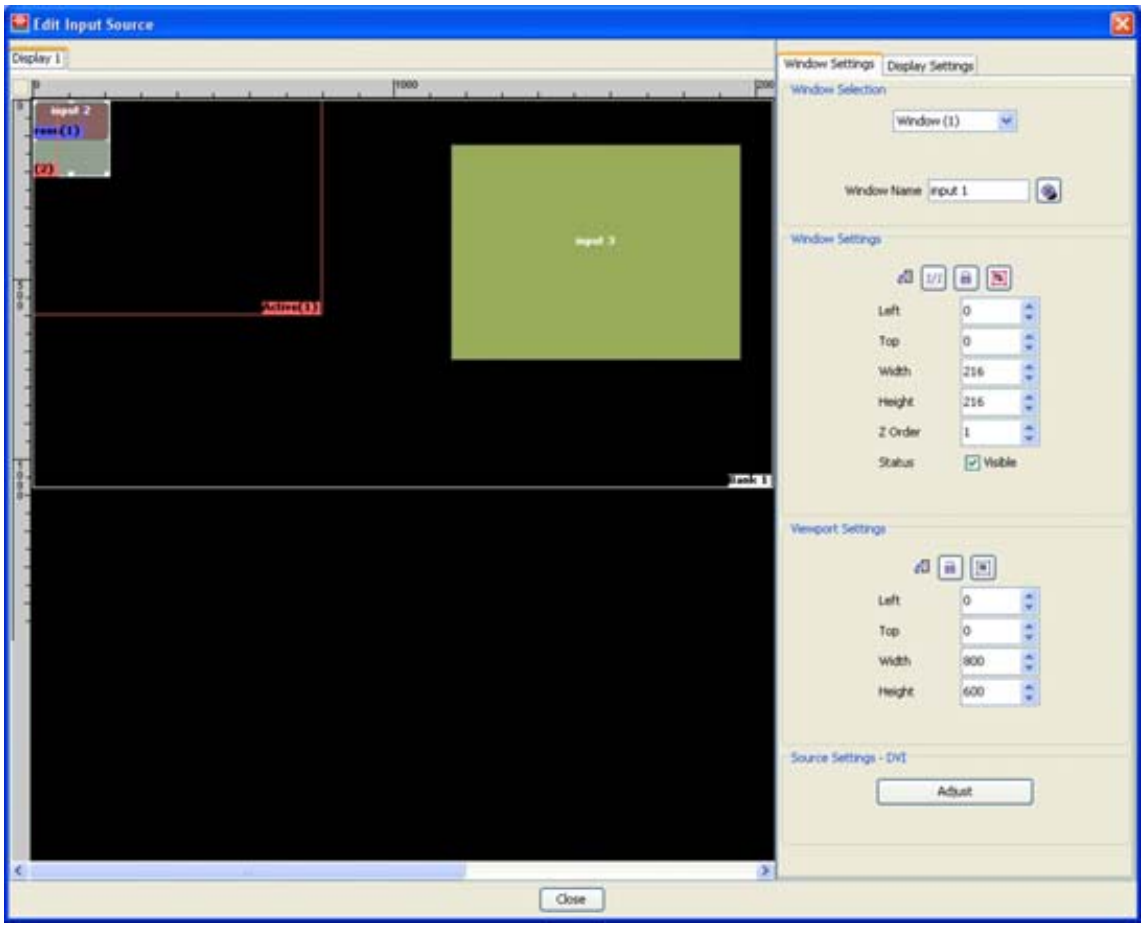


Image 6-71
Edit input source

6.4.9.3 Shortcut key assignment

What can be done ?

A keyboard shortcut can be assigned to each preset or preset group. This shortcut can then be used in any module of the Director Toolset to switch from layout.

How to assign?

1. While in the *Preset preview*, click on **Shortcut**. (image 6-72)

The shortcut key assignment menu opens with the current presets filled out. (image 6-73)

2. Click on a preset name.

   The background becomes blue.

3. Push the key on the keyboard which you want to assign to the preset.

   The keystroke will be entered next to the name of the preset .

   If the keystroke is already in use for other purposes, the key binding field will display a warning message, *key already in use, please choose another*.

4. Repeat from step 2 if other presets must have a shortcut.
5. Click on **OK** to activate the shortcuts.

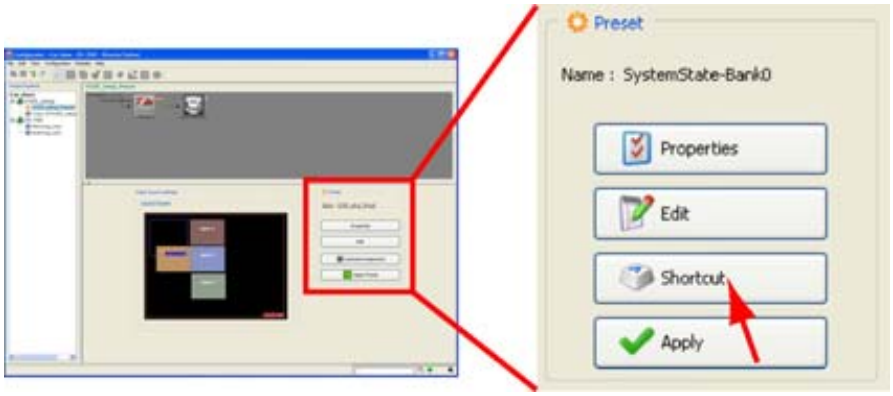


Image 6-72
Create shortcut

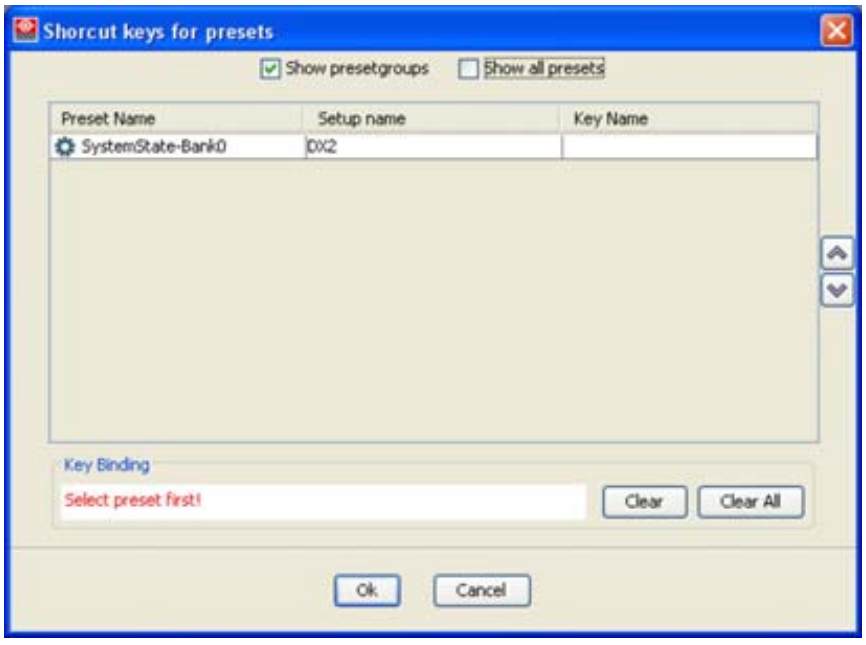


Image 6-73
Shortcut key assignment window

To show all presets in the project, check the check box next to Show all presets.

6.4.10 Preset properties

Overview

- Start up the properties
- General properties
- Apply levels

6.4.10.1 Start up the properties

Start up properties via content menu

1. Right click on the desired preset. (image 6-74)

   The content menu opens.

2. Select *Properties*.

   The *Preset properties* window opens with the *General* properties and the *Apply levels*.

   When the preset was created for a D320 based setup, then window (A) appears. When the preset was created for a DX-700 based setup, then window (B) appears.

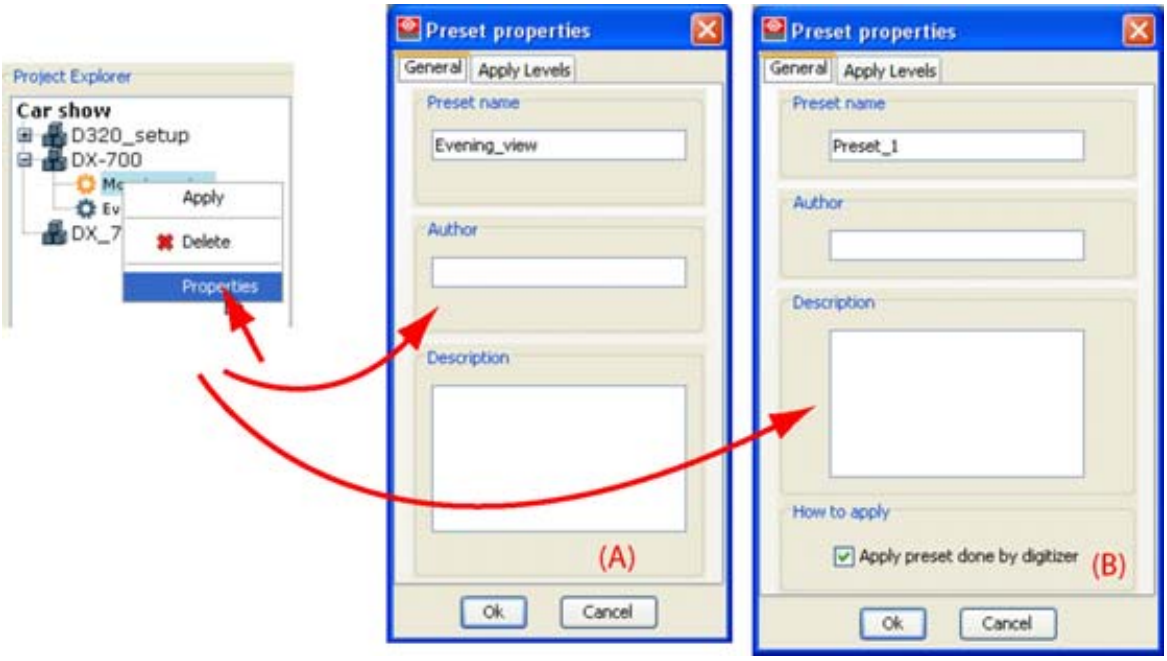


Image 6-74
Preset properties via right click

Start up properties via preview menu

1. Activate a preset.

   The preset preview pane opens with the current preset settings. (image 6-75)

2. Click on **Properties** (1).

   The *Preset properties* window opens (2) with the *General* properties and the *Apply levels*.

   When the preset was created for a D320 based setup, then window (A) appears. When the preset was created for a DX-700 based setup, then window (B) appears.

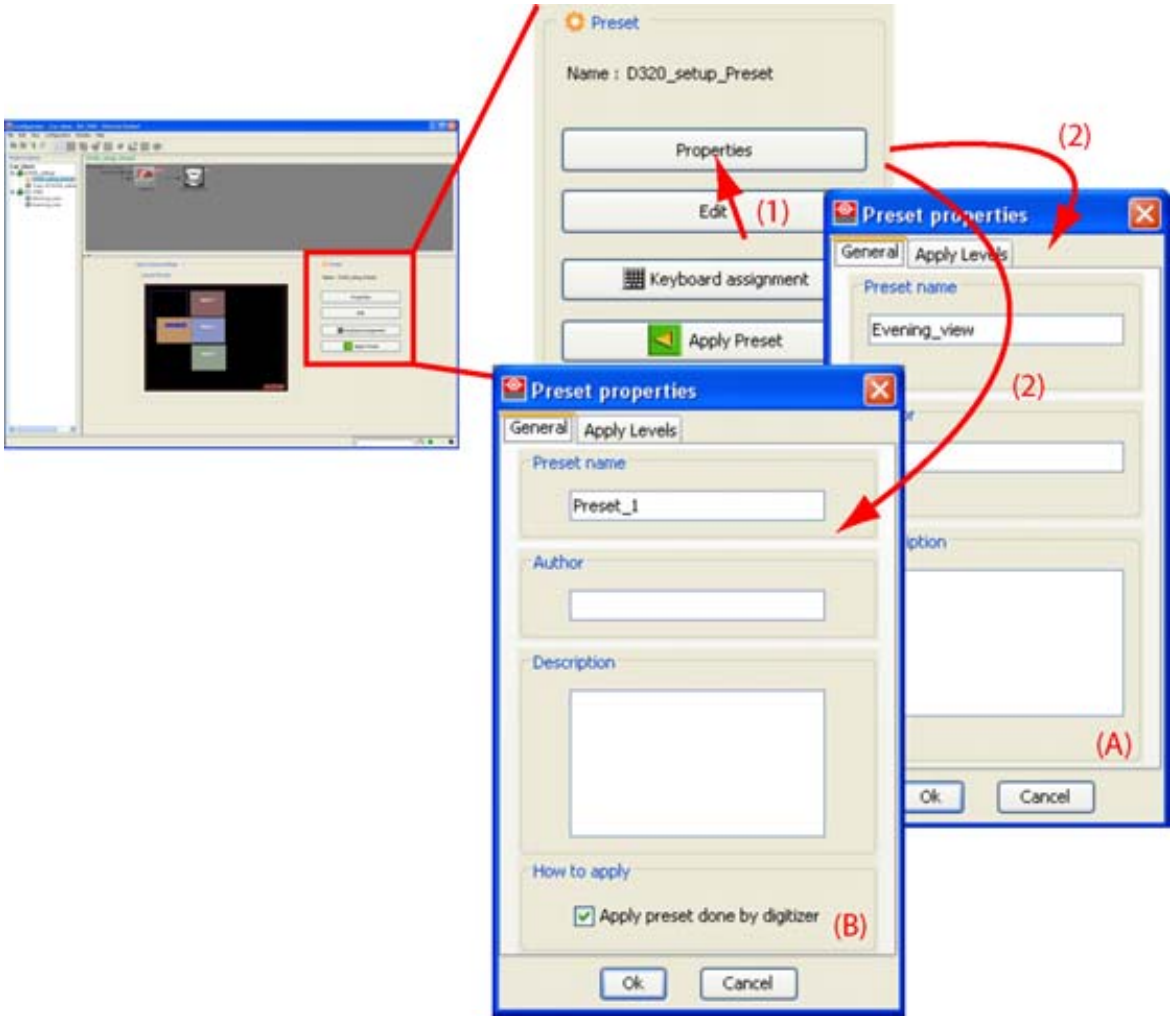


Image 6-75
Preset properties via Preview

6.4.10.2 General properties

Overview

Click on the **General** tab to open the General properties of the current selected preset.

Image 6-76
General properties preset

Image 6-77
General properties preset for DX-700

Preset name

To change the preset name, click in the input field, select the current name and enter a new name. Once OK is pressed, the new properties become effective.

Author

The name of the author of this preset. This name can be changed. Click in the input field, select the current author and enter a new author.

Description

The description field gives more explanation about the current preset. This description can be edited. Click in the input field, remove what has to be removed and enter a new description.

How to apply

Note : only for DX-700 based setups.

When *Apply Preset done by digitizer*:

checked	Director Toolset sends only an apply command to the digitizer. This digitizer will take care of applying the preset as all information is already stored on the DX-700. This will accelerate an apply preset.
unchecked	Director Toolset sends all information to the digitizer and applies the preset.

6.4.10.3 Apply levels

Overview

Click on the **Apply levels** tab page to display the apply levels of a preset.

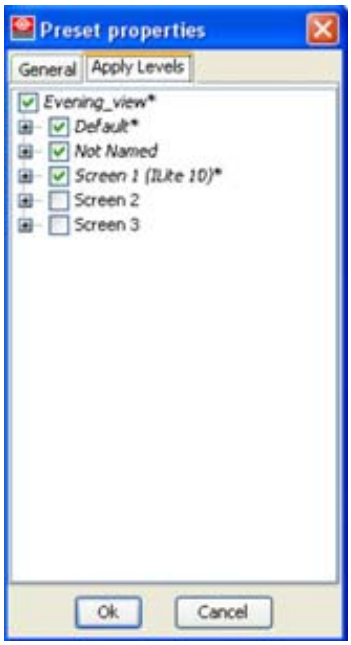


Image 6-78
Preset properties, apply levels

About Apply levels

When a preset is created, all current settings of the setup are stored in this preset.

For a D320 based setup:

Once the preset is activated, all these settings can be applied again. With the apply settings, it is possible to apply only part of these settings. So, in a setup the non applied settings remain the current active settings.

An asterisk (*) behind an apply level means that the lower level settings only partly will be applied when the preset is activated.

For a DX-700 based setup:

When applying a preset which is stored by default on the digitizer itself, then all information will be applied. However, the synchronization between preset and setup uses the apply levels to update the info in the setup. In such a case, it is recommended that all apply levels are enabled so that the entire preset is synchronized in the setup.

For both setup types, when a higher level is selected, by default all lower settings are selected to.

To exclude some settings, uncheck the check box in front of the setting. When a higher level is excluded, all lower levels are excluded at the same time.

7. CONFIGURATOR

Overview

- Introduction
- Configurator window
- Components window
- Display the Components window
- Setup Overview pane
- Project explorer
- Settings pane
- Design manually an offline setup based on a D320 digitizer
- Replacing and moving digitizer input
- Design manually an offline setup based on a DX-700 digitizer
- Design manually an offline setup based on a LED-Pro digitizer
- Create an online configuration
- Manipulations within the Setup Overview pane
- Mixing console

7.1 Introduction

Overview

The configurator makes it possible to create offline configurations which are created manually via drag and drop out of the *Configuration Components* Window or via a wizard. It also views detected configurations which are loaded via an auto-detection. For both configuration types, the settings of each device can be changed separately.

Start up

To start up the configurator, just click on the configurator icon on the tool bar or click on menu bar on *Modules* and select *Configurator*.

Image 7-1
Select configurator

7.2 Configurator window

Overview

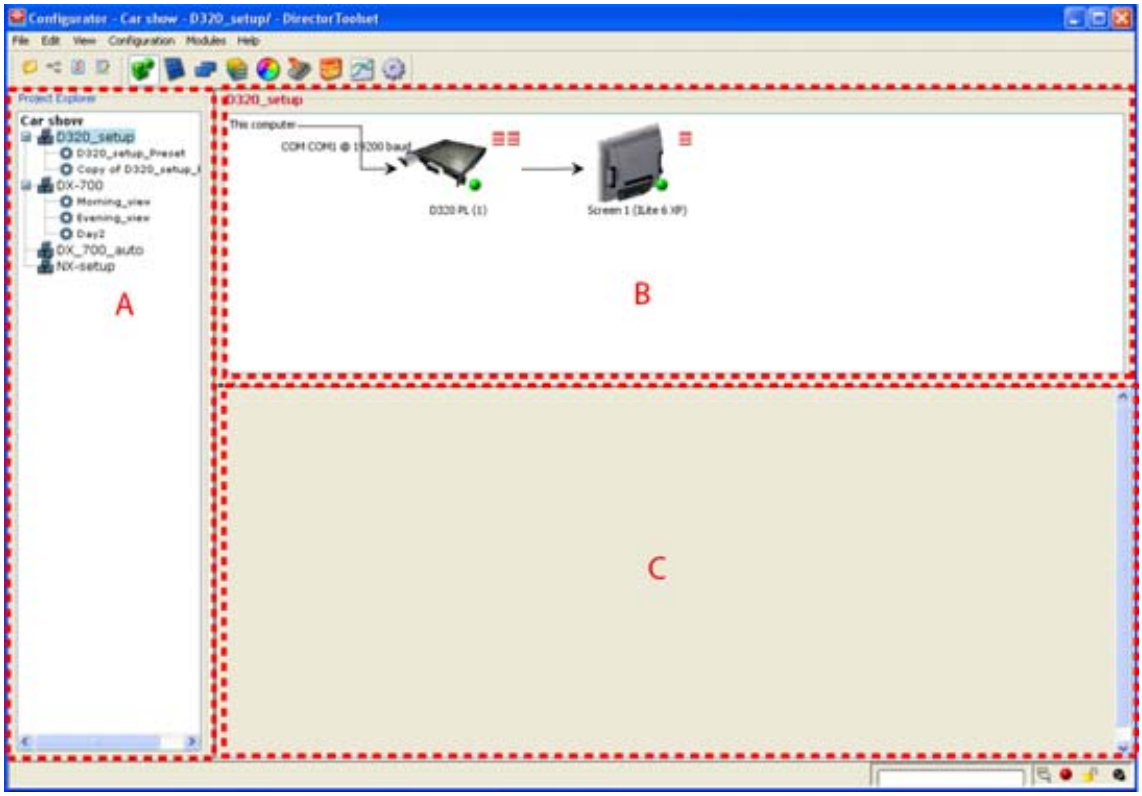


Image 7-2
Configurator window

A Project explorer

B Setup overview pane

C Settings pane

7.3 Components window

Overview

The components window is different per setup type. A setup type can be DX-700, LEDPro or D320 based setup.

The components window includes different tab pages such as : digitizers, DX-700, LEDPro, screens, peripherals and D320 inputs.

Image 7-3
Components window for D320 setup

Image 7-4
Components window for DX-700 setup

Image 7-5
Components window for LEDPro setup

It is now possible to build up a setup by selecting the desired components yourself. Start from one of the tab pages and select the desired image and dragging it into the preview pane.

When selecting the components yourself, the best way to work is to follow the tab pages from left to right.

7.4 Display the Components window

Using the right mouse button

1. Right click in the preview pane.

   A pop-up menu opens. (image 7-6)

2. Select *Show configuration components*.

The Components window will be displayed. This window depends on the selected setup. (image 7-7)

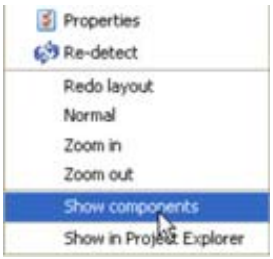


Image 7-6
Show configuration components menu

Image 7-7

Using the menu bar

1. Click on *View* on the menu bar and select *Configuration components*. (image 7-8)

   The Components window will be displayed (image 7-7).

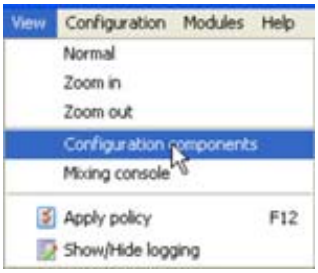


Image 7-8
Select configuration components menu

7.5 Setup Overview pane

Overview

- Introduction
- About the used graphics

7.5.1 Introduction

Overview

The setup overview pane gives an overview with device icons of :

- auto-detected setups.
- manually created setups

It shows visually how devices are connected together. Settings of the different devices can be activated.

7.5.2 About the used graphics

Overview

D320 Digitizer representation:

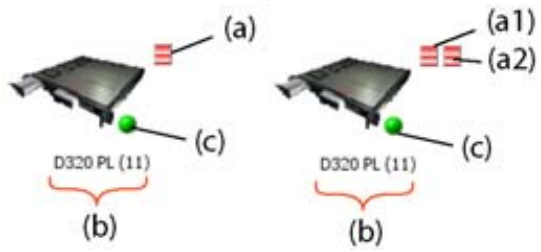


Image 7-9

a	Internal pattern status (one icon (a1) = sync generator, second icon (a2)= display interface): • red: internal pattern off • green: internal pattern on
b	Concatenation of device name and serial address.
c	LEDwall (screen) status: • green : LEDwall on • red: LEDwall off

DX-700 digitizer representation:

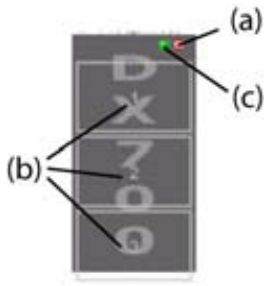


Image 7-10

a	Internal pattern status : • red: internal pattern off • green: internal pattern on
b	Output number indication
c	LEDwall (screen) status: • green : LEDwall on • red: LEDwall off

LEDPro digitizer representation:

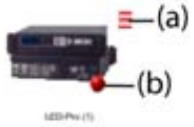


Image 7-11

a	Internal pattern status : • red: internal pattern off • green: internal pattern on
b	LEDwall (screen) status: • green : LEDwall on • red: LEDwall off

Fiberlink representation:

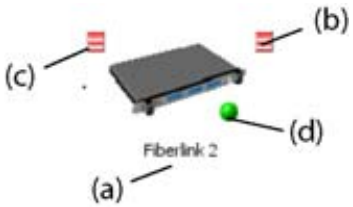


Image 7-12

a	Name of device
b	Internal pattern receiver side, status: • red: internal pattern off • green: internal pattern on
c	Internal pattern transmitter side, status: • red: internal pattern off • green: internal pattern on
d	LEDwall (screen) status: • green : LEDwall on • red: LEDwall off

LEDwall (screen) representation:

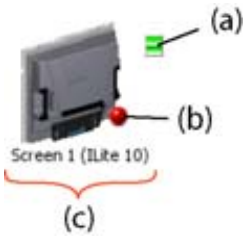


Image 7-13

a	Internal pattern, status: • red: internal pattern off • green: internal pattern on
b	LEDwall (screen) status: • green : LEDwall on • red: LEDwall off
c	Concatenation of Screen number and screen type

Each LEDwall (screen) type is represented by a different picture.

AEC representations:

Image 7-14

Image 7-15
AEC4000

7.6 Project explorer

Overview

The project explorer pane (see item A in image 7-2) gives a hierarchical overview of the existing **Setups** and **Presets** for the named project in the title.

The tree can be expanded by clicking on the plus icon in front of an item.

To select a **setup** or **preset**, just click on it. The background of the selected item changes to blue. When the same item is open (active) the background remains blue. The overview of the preset or setup is shown in the right upper pane.

A pop-up menu with different functions related to the selected item is hidden behind the right mouse button. Just right click on the selected item to reveal that pop-up menu.

7.7 Settings pane

Overview

The settings pane (see item C in image 7-2) gives an overview of the settings of the different devices (digitizers, screens, fiberlinks and input sources) when a device is selected in the configuration overview pane. Some settings are read only, but most settings can be adjusted in the settings pane.

7.8 Design manually an offline setup based on a D320 digitizer

Digitizer

It a digital device that mixes all kind of input sources to a standard output format, mixed with the control signal to drive the LED wall.

Overview

- Introduction
- Add a D320 based digitizer to a setup
- Remove a digitizer from a setup
- About digitizer settings
- Add an extra D320 based digitizer to a setup
- Add a screen to a setup
- Add a FiberLink to a setup
- Add an AEC to a setup
- Add inputs to a digitizer
- Reorganizing the inputs

7.8.1 Introduction

How to design a setup ?

Starting from a new offline setup, the devices such as digitizers, screens, fiberlinks and digitizer inputs can be added to the setup by dragging one by one the corresponding icon from the Component window into the Setup overview pane.

As the order of dragging determines the connections between the devices it is important to think carefully about the design. Start always with a digitizer, then with a screen followed by eventually a fiberlink. To finish, fill up the digitizer with the necessary inputs. The following topics will explain how to add one of these components to the setup overview pane.

7.8.2 Add a D320 based digitizer to a setup

How to add ?

1. Click on the **Digitizer** tab in the *Components* window to display the possible digitizers (a). (image 7-16)
2. Click on the desired digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the *Preview* pane (c).
4. Release the mouse button.

   The digitizer is added to the setup.

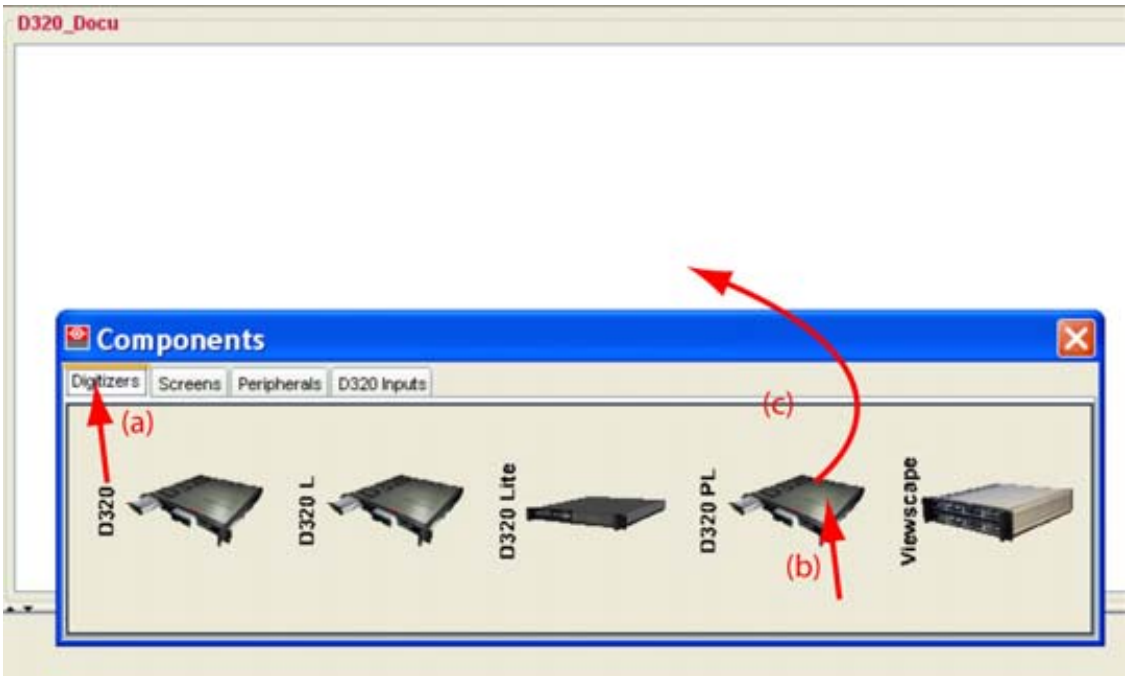


Image 7-16
Add digitizer to setup

7.8.3 Remove a digitizer from a setup

How to remove?

1. Right click on the digitizer which must be removed from the setup.

   A content menu opens. (image 7-17)

2. Select *Remove*.

   The selected digitizer in the setup is removed (see also Possible messages).

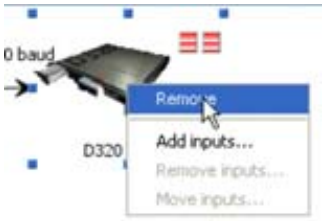


Image 7-17
Remove via right click

Possible messages

When deleting the single digitizer linked with a screen in a setup, Director Toolset will display a question dialog box to ask the user if he agrees that when continuing the deletion of the digitizer, the screen will be deleted too.

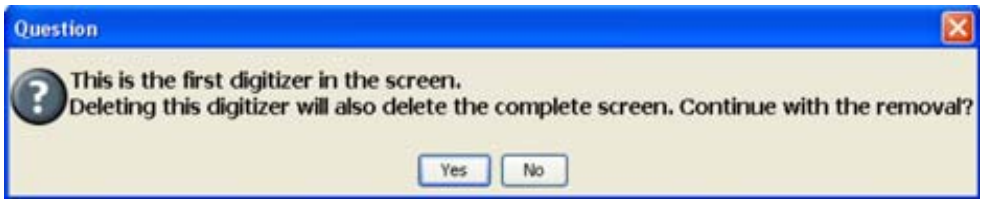


Image 7-18
Remove single digitizer in setup

7.8.4 About digitizer settings

Digitizer settings

To display the digitizer settings, click on the digitizer icon used in the configuration preview pane. The settings will open in the settings pane.

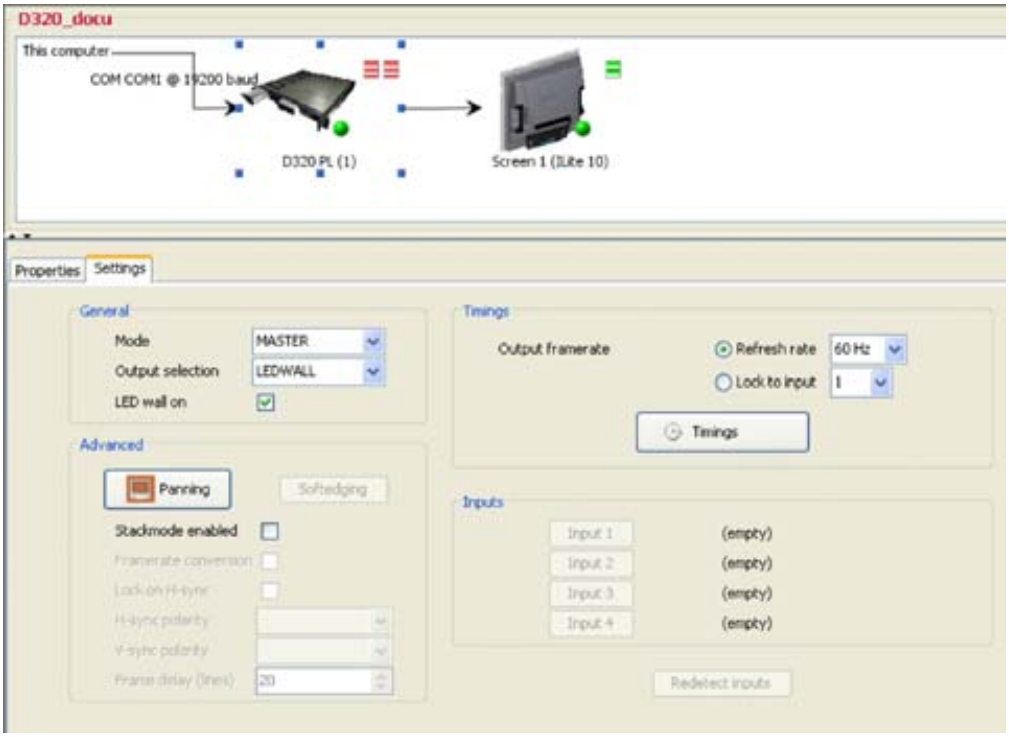


Image 7-19
Digitizer settings

The settings will be discussed in "D320 based Digitizer settings", page 201.

7.8.5 Add an extra D320 based digitizer to a setup

Overview

- Add an extra stacked digitizer to a configuration (easy way)
- Add an extra stacked digitizer to a setup (second way)
- Add an extra chained digitizer to a setup
- Add a chained digitizer via the Add input menu

What can be done ?

An extra D320 based digitizer, same type or not, can be added to an existing setup. Depending on the way the digitizer is added and if the previous digitizers are fully filled up with input slots, the added digitizer can be added as stacked or chained digitizer.

7.8.5.1 Add an extra stacked digitizer to a configuration (easy way)

Overview

This method can be used in any configuration setup.

How to add ?

Start from a setup with already a digitizer in it.

1. Click on the **Digitizer** tab to display the possible digitizers (a). (image 7-20)

2. Click on the desired digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the *Setup Preview* pane (c).
4. Release the mouse button.

   The extra digitizer is added to the setup as a stacked digitizer. (image 7-21)

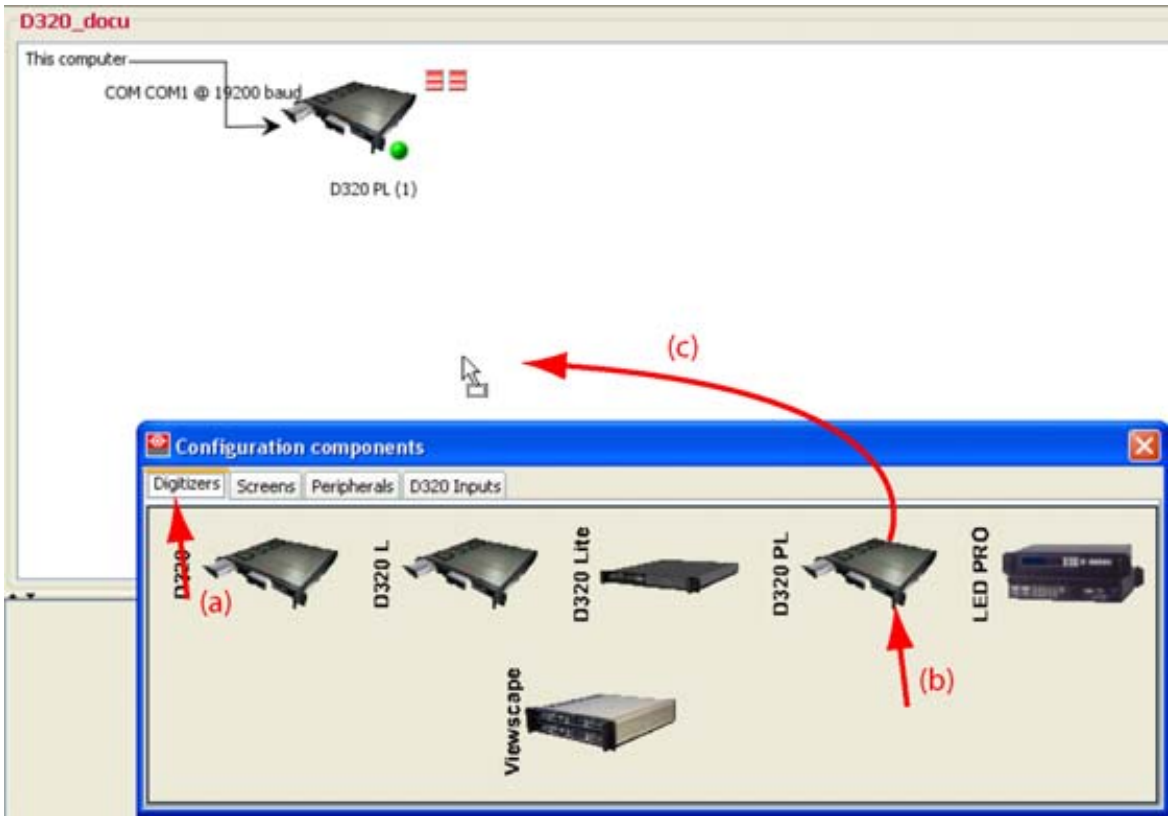


Image 7-20
Add extra digitizer as stacked to setup

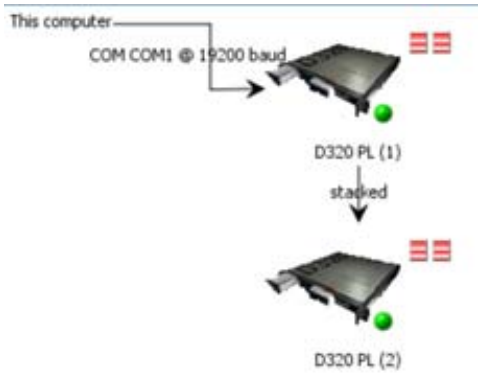


Image 7-21
Extra digitizer added

7.8.5.2 Add an extra stacked digitizer to a setup (second way)

How to add ?

Start from a setup with already a digitizer in it.

1. Click on the **Digitizer** tab to display the possible digitizers (a). (image 7-22)
2. Click on the desired digitizer and hold down the mouse button (b).

3. Drag the digitizer icon into the existing digitizer in the setup (c).
4. Release the mouse button.

   A dialog box will be displayed. (image 7-23)
5. Check *Connect stacked to digitizer*.
6. Click **OK**.

   The new digitizer will be added as a stacked digitizer.

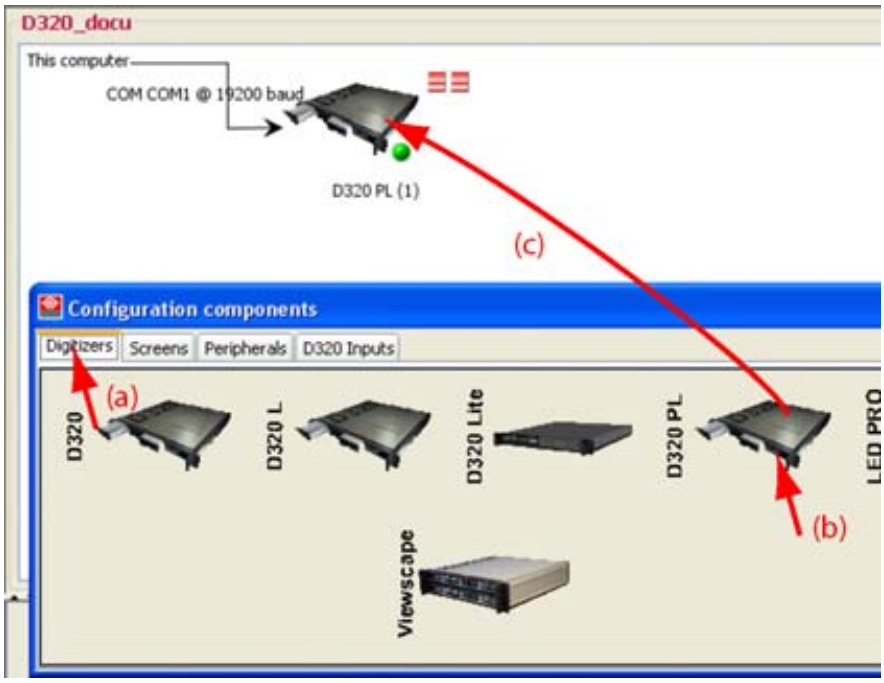


Image 7-22
Add digitizer by dropping on existing digitizer

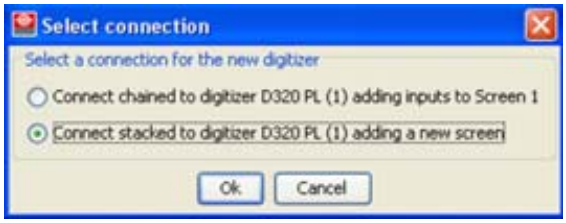


Image 7-23
Select digitizer connection, stacked

7.8.5.3 Add an extra chained digitizer to a setup

How to add ?

Start from a setup with already a digitizer in it.

1. Click on the **Digitizer** tab to display the possible digitizers (a). (see image 7-22)
2. Click on the desired digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the existing digitizer in the setup (c).
4. Release the mouse button.

   A dialog box will be displayed. (image 7-24)
5. Check *Connect chained to digitizer*.

6. Click **OK**.

   The new digitizer will be added as a chained digitizer.

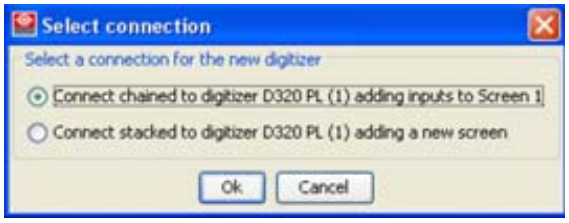


Image 7-24
Select digitizer connection, chained

7.8.5.4 Add a chained digitizer via the Add input menu

What is possible ?

When all inputs in the existing digitizer(s) are used and more inputs are necessary for the application, an extra chained digitizer should be added to the setup. New inputs can be added to this extra digitizer in the same way as they are added to the other digitizers.

The Add digitizer buttons is only available when all input slots in the previous digitizer are filled up.

How to add a chained digitizer ?

1. Right click on the last digitizer in the chain.

   A content menu appears. (image 7-25)

   When all input slots are filled up, the **Add digitizer** button becomes available.

2. Click on **Add digitizer**.

   A extra digitizer of the same type will be added. Extra inputs can be added now.

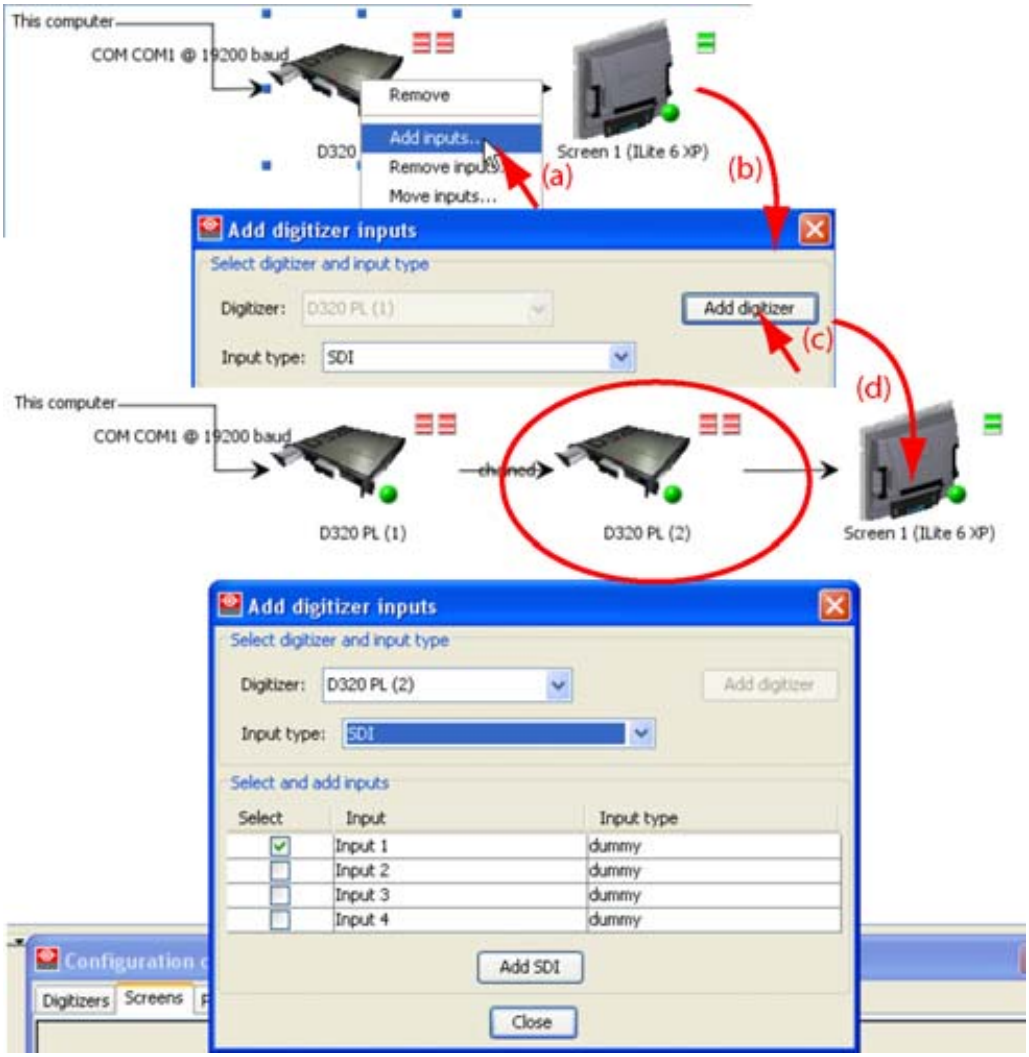


Image 7-25
Add chained digitizer

7.8.6 Add a screen to a setup

Overview

- Add screen
- About grouping of screens for a stacked configuration
- Screen settings
- Replacing a screen
- Remove a screen from a configuration
- Adding a screen when there are no free digitizer outputs

A physical SP10 tile contains 2 controllers. The software will calculate it as 2 tiles. Therefore, the number of columns must always be even (only one row is allowed).

7.8.6.1 Add screen

Add a screen when only one digitizer output is free.

1. Click on the **Screen** tab to display the screen icon (a). (image 7-26)
2. Click on the screen icon and hold down the mouse button (b).
3. Drag the screen icon into the *Setup Preview* pane (c).

   The *Settings of the new screen* window opens. This window depends on the selected tile type. (image 7-27)

   When a creative tile type is selected, the row and columns are replaced by # controllers.
4. Click on the scroll bar and select the tile type.
   Note: *Only the possible tile types for the new setup are shown in the list.*
5. Fill out the number of rows and columns.
   Note: *For a MiPIX, MiSPHERE, MiSTRIP or MiTRIX systems, fill out also the number of controllers.*

   Note: *For OLite one tile contains one control unit. So when OLite is used in customized mode, each created tile means a control unit to which a design can be associated.*
6. Click **Create** to create the screen.

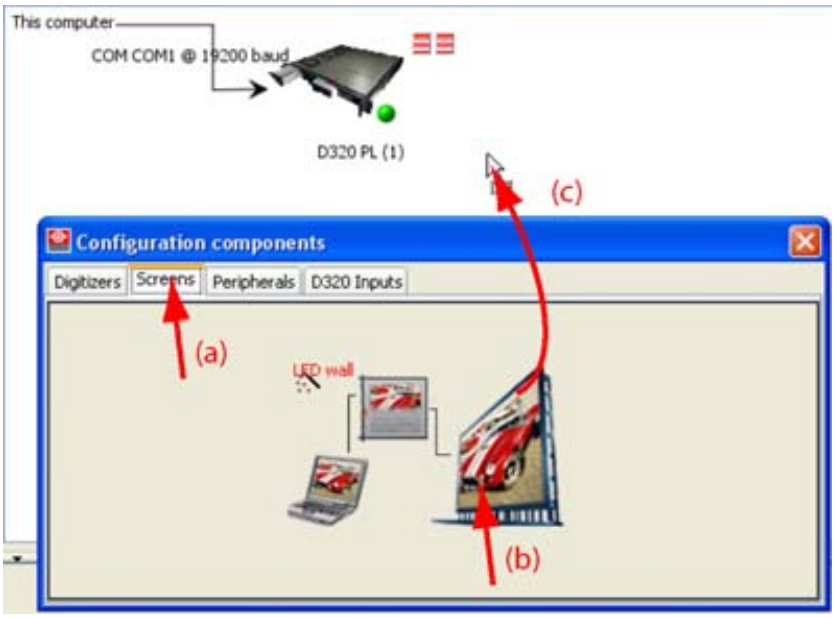


Image 7-26
Add screen to setup

Image 7-27
Settings of new screen window, for OLite tiles

Add a screen when more digitizer outputs are free.

1. Click on the **Screen** tab to display the screen icon (a). (image 7-28)
2. Click on the screen icon and hold down the mouse button (b).
3. Drag the screen icon into the *Preview* pane (c).

   The *Settings of the new screen* window opens. This window depends on the selected tile type. (image 7-29)
4. Click on the combo box next to *In which screen should it be created*, and select the desired screen.
5. Click on the scroll bar and select the tile type.
   Note: *Only the possible tile types for this setup are shown.*
6. Fill out the number of rows and columns.
   Note: *For a MiPIX, MiSPHERE, MiSTRIP or MiTRIX systems, fill out also the number of controllers.*

   Note: *For OLite one tile contains one control unit. So when OLite is used in customized mode, each created tile means a control unit to which a design can be associated.*
7. Click **Create** to create the screen.

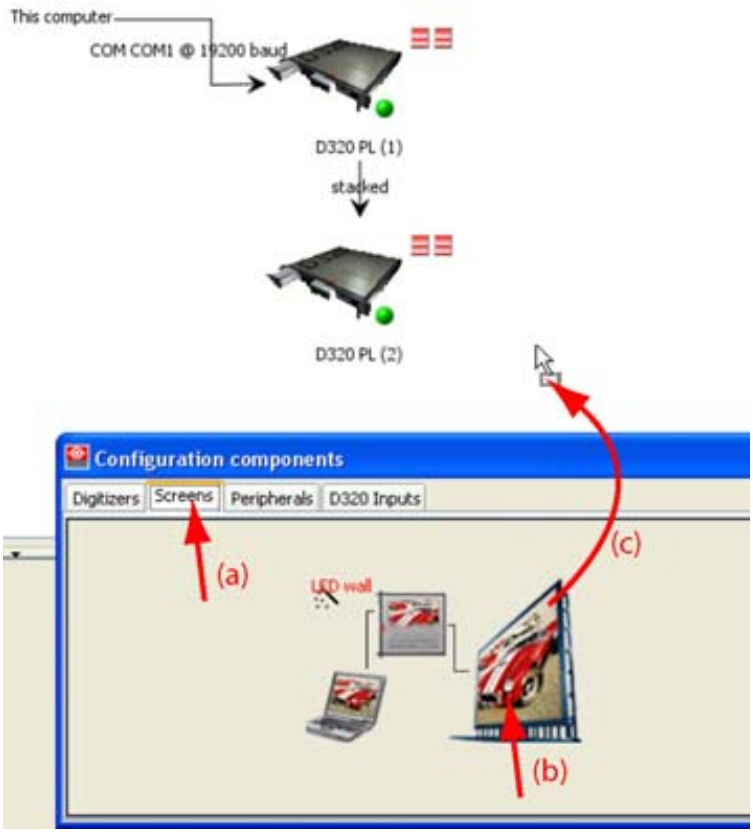


Image 7-28
Add screen to the configuration

Image 7-29
Settings of the new screen for MiPIX

Next screens can be added in the same way, as long as there are free digitizers.

For how the screen will be grouped together in displays, see "About grouping of screens for a stacked configuration", page 154.

7.8.6.2 About grouping of screens for a stacked configuration

Screens grouped in displays

In a stacked setup:

As long as the next screen is composed out of the same tile type, the screens will be grouped together in the same display.

As example:

```
Digitizer 1  ILite 8
Digitizer 2  ILite 8
Digitizer 3  SLite 12
Digitizer 4  ILite 8
```

The ILite 8 screens will be grouped in Display 1, the SLite 12 will be display 2

The rule is, equal screen will be grouped in the same display.

The display grouping can be changed in the Stack manager. Extra displays can be created or displays can be grouped together.

7.8.6.3 Screen settings

Overview

To display the screen settings, double click on the screen icon in the preview pane. The settings will open in the settings pane.

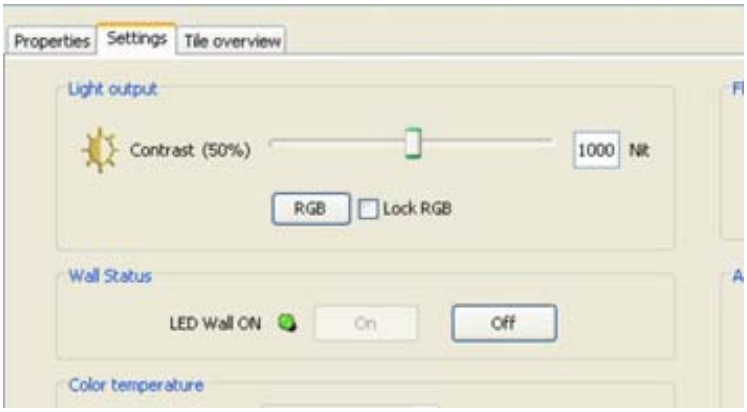


Image 7-30
Screen settings

The settings will be discussed in chapters "LED wall settings", page 287.

7.8.6.4 Replacing a screen

How to replace ?

1. Click on the **Screen** tab (a). (image 7-31)
2. Click on the screen icon and hold down the mouse button (b).
3. Drag the screen icon onto the screen icon in the setup preview pane which must be replaced (c).

4. Release the mouse button.

   The *Settings of the new screen* dialog box will be displayed (d).

5. Click on the scroll bar and select the tile type.
6. Fill out the number of rows and columns or fill out the number of control units.
7. Click **Create** to create the screen.

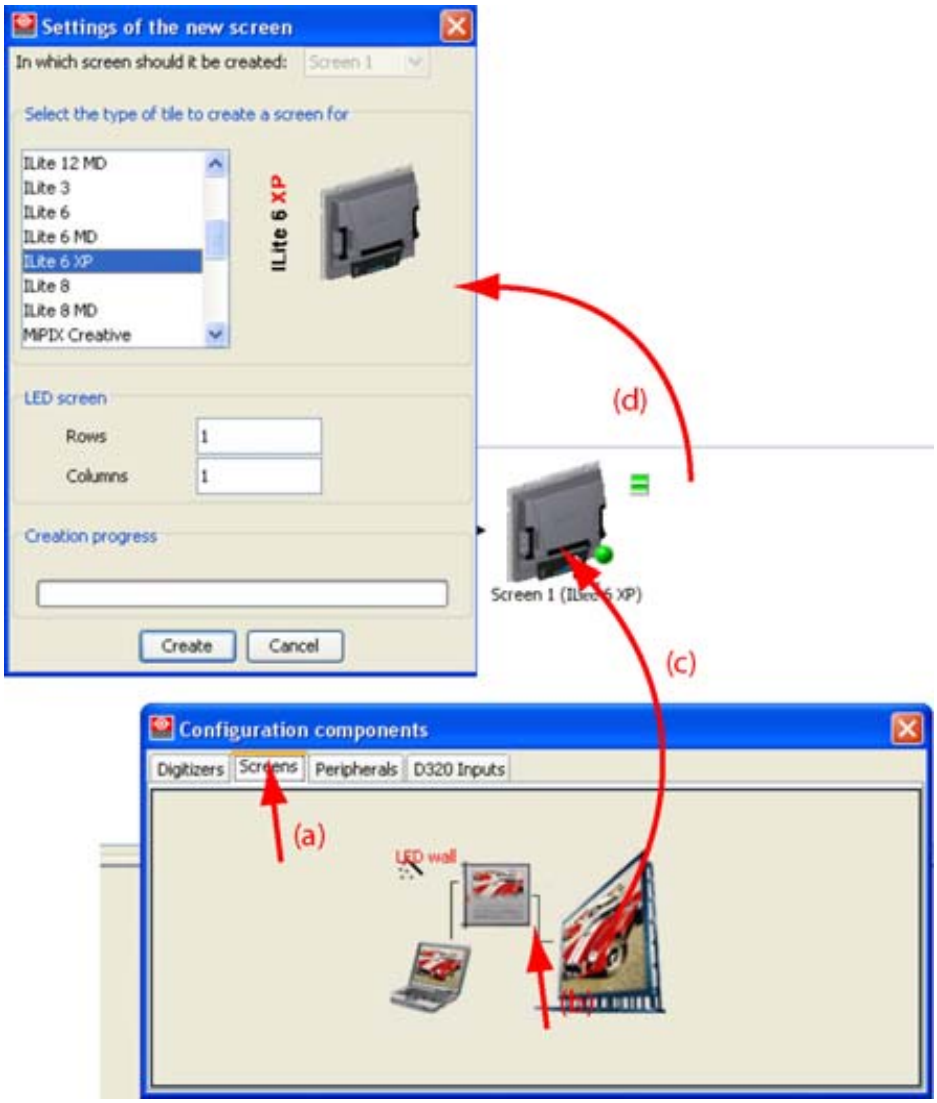


Image 7-31
Replace a screen

7.8.6.5 Remove a screen from a configuration

How to remove?

1. Right click on the screen which must be removed from the setup.

   A content menu appears. (image 7-32)

2. Select *Remove*.

   The selected screen in the setup will be removed.

Image 7-32
Remove screen

7.8.6.6 Adding a screen when there are no free digitizer outputs

What happens ?

When dragging the screen icon into the setup preview window, Director Toolset checks if there is a free digitizer to link that screen with the digitizer output. If no free digitizer is found, an error message will be displayed.

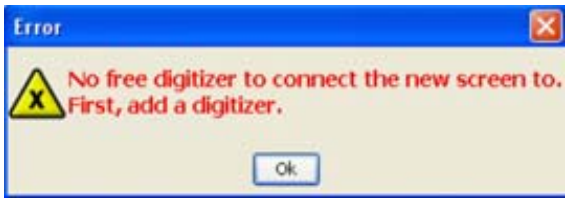


Image 7-33
No free digitizer error

7.8.7 Add a FiberLink to a setup

What can be done ?

A FiberLink must be used in the system when long distances between the digitizer and the wall must be covered. That allows the end-user e.g. to setup the digitizer in a remote control room.

7.8.7.1 Add a FiberLink

How to add ?

1. Click on the **Peripherals** tab (a). (image 7-34)
2. Click on the FiberLink icon and hold down the mouse button (b).
3. Drag the FiberLink icon onto the screen icon or the connected digitizer icon in the setup preview pane (c).
4. Release the mouse button.

   The FiberLink will be inserted between the digitizer and the screen. (image 7-35)

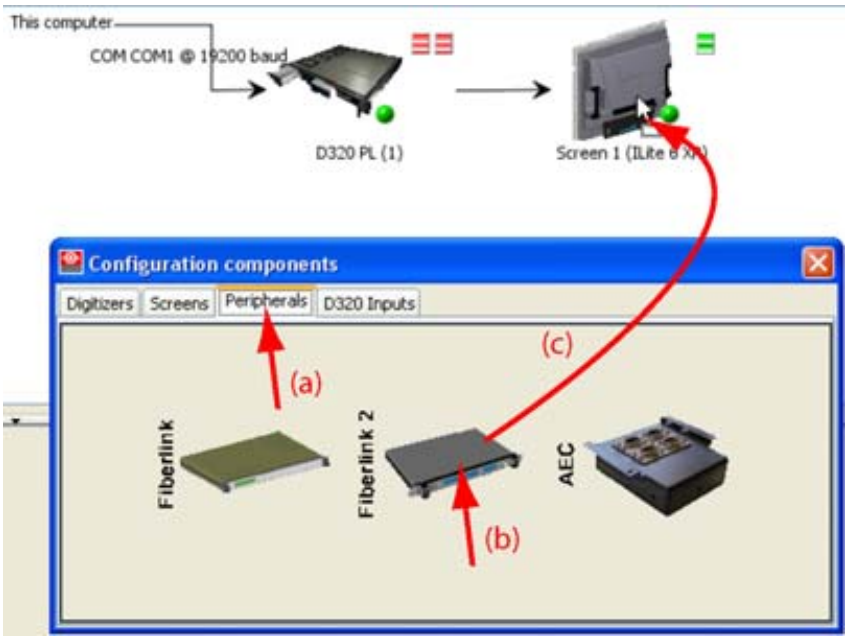


Image 7-34
Add FiberLink to configuration

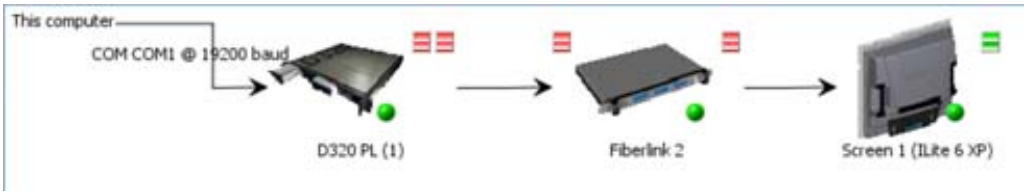


Image 7-35
FiberLink inserted

7.8.7.2 Remove a FiberLink from a configuration

How to remove via right click?

1. Right click on the FiberLink which must be removed from the setup. (image 7-36)

   A content menu appears.

2. Select *Remove*.

   The selected FiberLink in the setup will be removed.

Image 7-36
Remove FiberLink

7.8.7.3 FiberLink settings

Overview

To display the FiberLink settings, double click on the FiberLink icon in the preview pane. The settings will open in the settings pane.

Image 7-37
Fiberlink settings

For more explanation about the FiberLink settings, see "FiberLink settings", page 313.

7.8.8 Add an AEC to a setup

What can be done ?

A monitoring device such as an AEC can be added to the setup. This device can monitor the ambient light environment of the LED wall and can change the contrast of the LED wall according given rules when limits are exceeded.

Multiple monitoring devices can be added to the same screen.

7.8.8.1 Add an AEC

How to add ?

1. Click on the **Peripherals** tab (a). (image 7-38)
2. Click on the AEC icon and hold down the mouse button (b)
3. Drag the AEC icon onto the screen icon or on the connected digitizer icon in the setup preview pane (c).
4. Release the mouse button.

   The AEC will be inserted next to the screen as last one in the chain. (image 7-39)

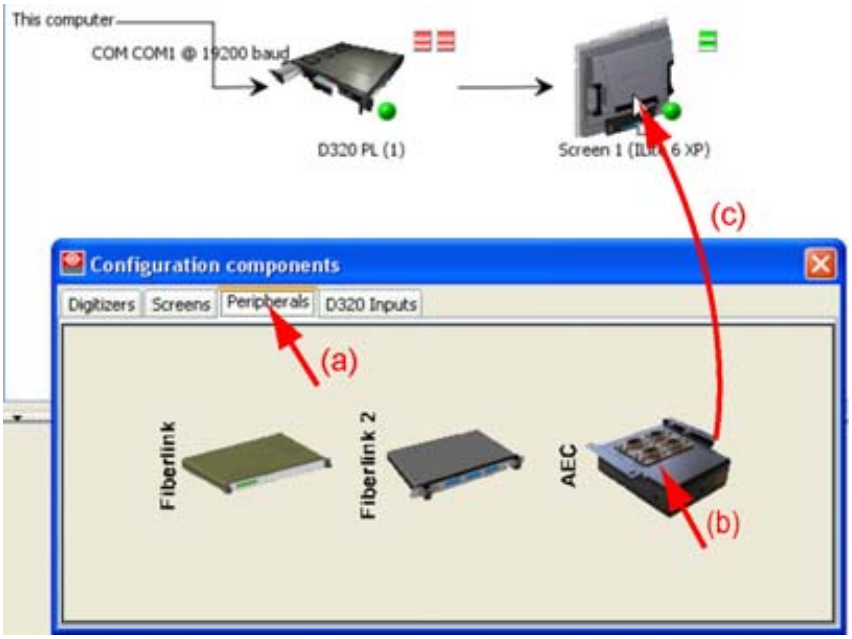


Image 7-38
Add AEC to setup

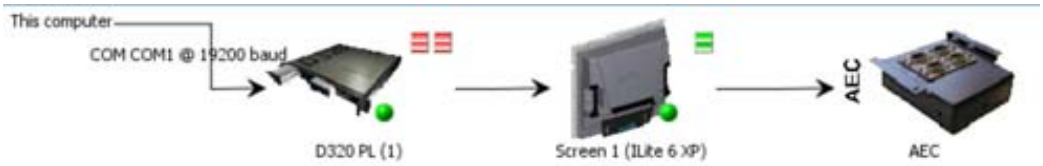


Image 7-39
AEC inserted

7.8.8.2 Remove a monitoring device from a setup

How to remove via right click?

1. Right click on the AEC which must be removed from the setup. (image 7-40)

   A content menu appears.

2. Select *Remove*.

   The selected AEC in the setup will be removed.

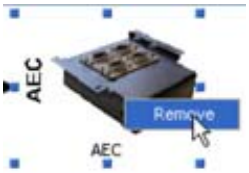


Image 7-40
Remove AEC

7.8.8.3 AEC settings

Overview

To display the AEC settings, double click on the AEC icon in the setup preview pane. The settings will open in the settings pane.

All settings are read only values. To change a value, go to the Monitoring module and select Setup AEC settings.

Image 7-41
AEC settings

The AEC properties give information about the device itself. This information can become handy when calling for service.

The AEC settings give read only information about the settings set up in the monitoring module.

7.8.9 Add inputs to a digitizer

Overview

- Via drag and drop
- Via right click

CAUTION: Never add more than 2 inputs of type SDI/HDSDI to one digitizer.

Not for LEDPro as this digitizer has fixed inputs.

Empty slots in a digitizer will be filled up with dummy inputs.

7.8.9.1 Via drag and drop

How to add ?

1. Click on the **D320 inputs** tab (a). (image 7-42)
2. Click on the input icon and hold down the mouse button (b).
3. Drag the input on the digitizer icon in the preview pane (c).
4. Release the mouse button.

   The dialog box *Add digitizer inputs* opens. (image 7-43)
5. Check the input to associate the new dropped module (d).
   Note: *Multiple selections are possible. The module will be added to all selected inputs.*

6. Click on **Add** (e) to add the module to the digitizer.

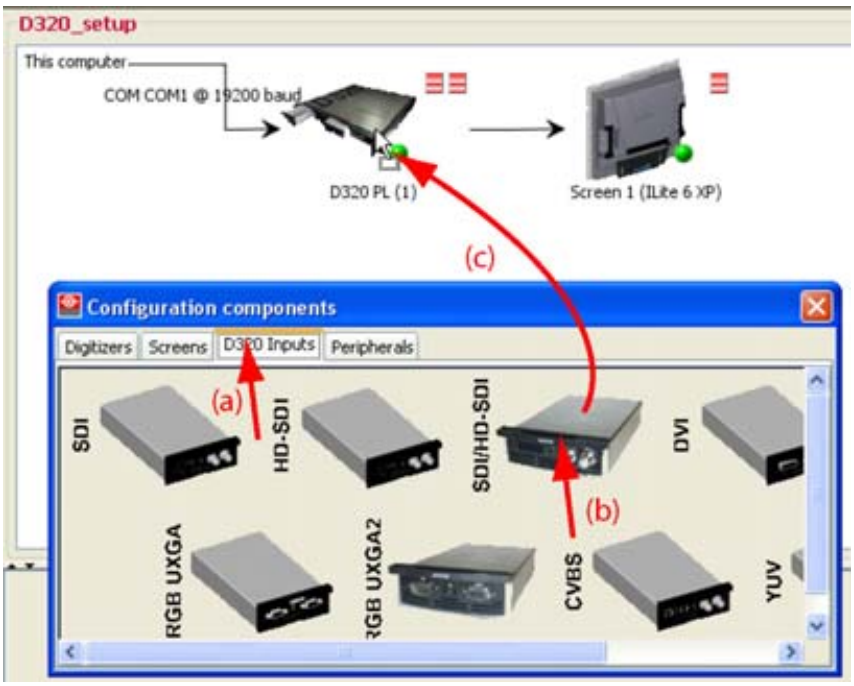


Image 7-42
Add input to a digitizer in a configuration

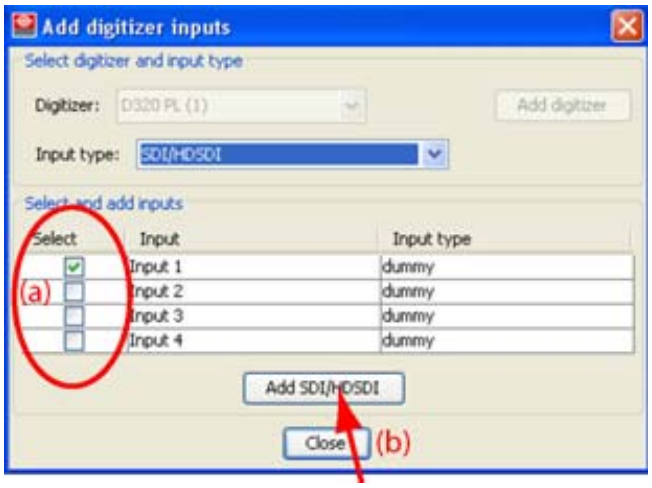


Image 7-43

7.8.9.2 Via right click

How to add ?

1. Right click on the digitizer.

   A content menu appears. (image 7-44)

2. Select *Add inputs* (a).

   The *Add digitizer inputs* dialog box opens (b).

3. Click on the combo box next to *Input type* and select the desired input module (c).

   When an input module is selected, the Add button changes to Add followed by the name of the selected module.

4. Check the input location (d).
   Note: *Multiple selections are possible. The module will be added to all selected inputs.*
5. Click on the **Add** button (e).

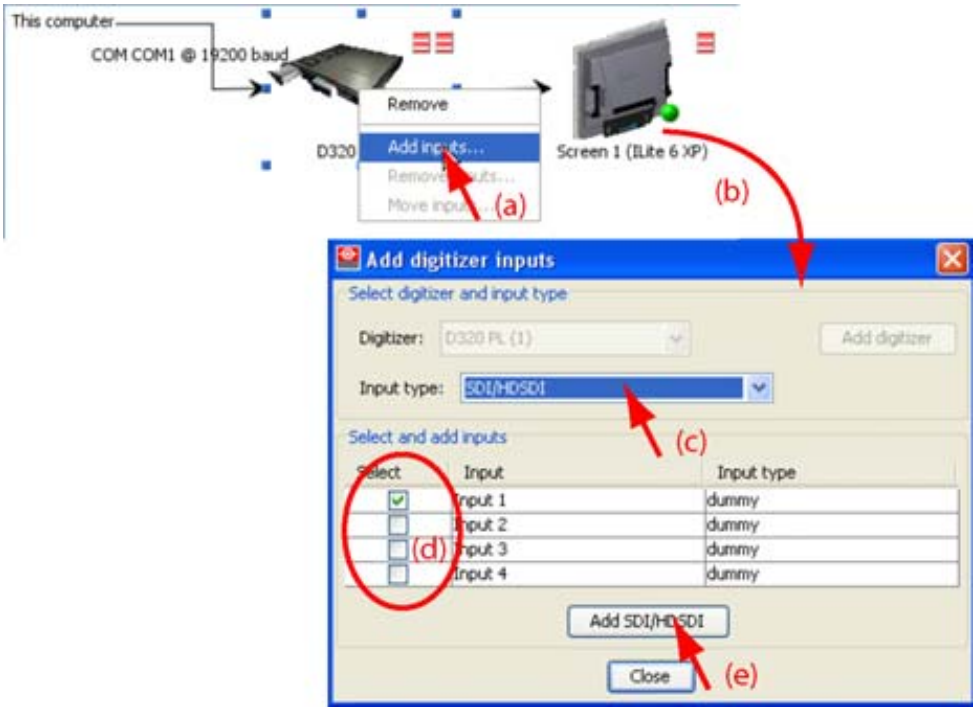


Image 7-44
Add new inputs to the digitizer

7.8.10 Reorganizing the inputs

How to reorganize the inputs ?

1. Right click on the digitizer icon in the setup preview pane.

   A content menu appears. (image 7-45)
2. Select *Move inputs ...* (a).

   The *Move digitizer inputs* dialog box opens (b).
3. Check the input which has to move to another location (c).
4. Click on the **Move up** or **Move down** button (d).

   The selected input will move over one position.

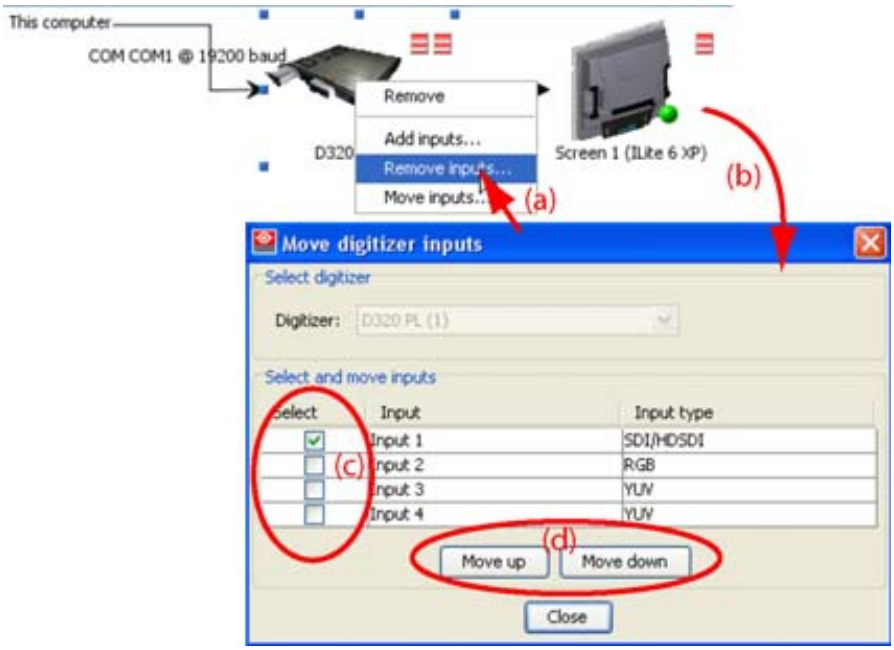


Image 7-45
Move inputs to new location

7.9 Replacing and moving digitizer input

Overview

- Replace an input
- Remove inputs from a D320 digitizer

Overview

Within an offline designed setup inputs in the different digitizers can be replaced or moved to other locations.

7.9.1 Replace an input

How to replace an input ?

1. Right click on the digitizer icon in the setup preview pane.

   A content menu appears. (image 7-46)

2. Select *Add inputs ...* (a).

   The *Add inputs* dialog box opens (b).

3. Click on the combo box next to *Input type* and select the desired input module (c).

   When an input module is selected, the Add button changes to Add followed by the name of the selected module.

4. Check the module which must be replaced (d).
   Note: *Multiple selections are possible. The module will replace all selected input modules.*

5. Click on the **Add** button (e) to execute the replacement.

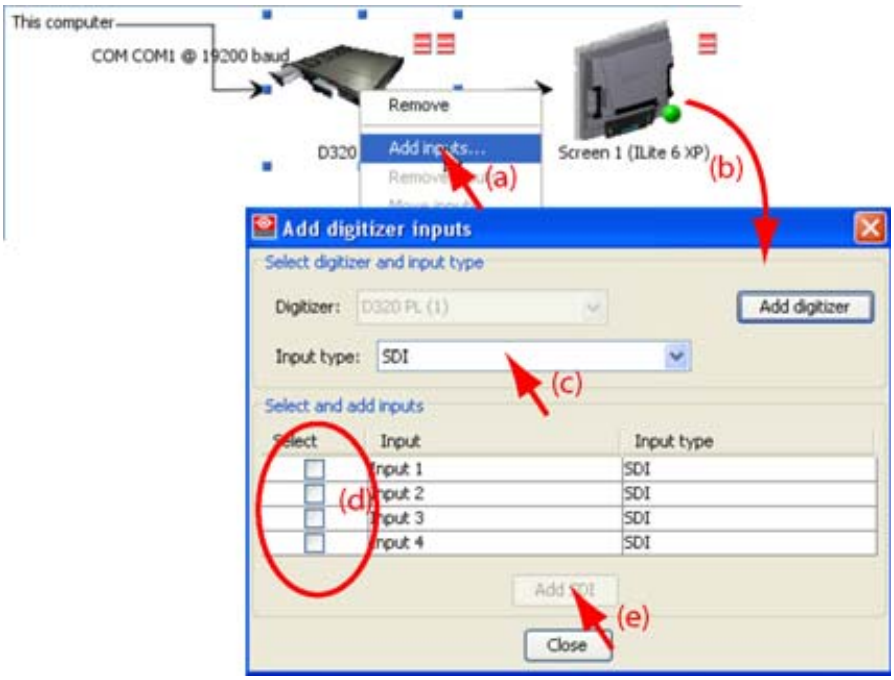


Image 7-46
Change an input

7.9.2 Remove inputs from a D320 digitizer

How to remove ?

1. Right click on the digitizer icon in the setup preview pane.

   A content menu appears. (image 7-47)

2. Select *Remove inputs ...* (a).

   The *Remove digitizer inputs* dialog box opens (b).

3. Check the input which must be removed (c).
   Note: *Multiple selections are possible. All selected inputs will be removed.*

4. Click on the **Remove** button (d) to remove the input.

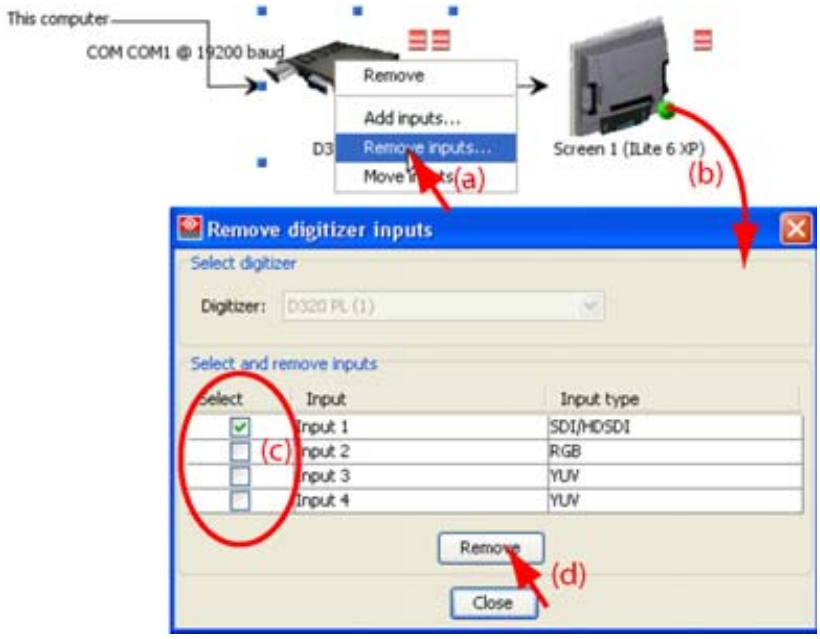


Image 7-47
Remove inputs from digitizer

7.10 Design manually an offline setup based on a DX-700 digitizer

Overview

- About a DX-700 digitizer
- Designing a setup
- Add DX-700 digitizer to a setup
- Add an extra DX-700 to a setup
- Remove a DX-700 from a setup
- About the digitizer settings
- Add an extra output card to the DX-700
- Remove an output card from the DX-700
- Add input cards to the DX-700
- Remove input card(s) from the DX-700
- Add a master bank to a DX-700
- Add a slave bank to a DX-700
- Remove a bank from a DX-700
- Add a screen to the setup
- Replace a screen in a setup
- Remove a screen from a setup
- Add and remove a Peripheral to a setup

7.10.1 About a DX-700 digitizer

Overview

The DX-700 is a multi-window video processor designed for use as a versatile front-end to all Barco LED products.

- Existing (legacy) LED products (category 1 tiles) such as MiPIX, DLite 7 and OLite 612 are supported via the 32-bit DVI link on the system's DVI Output Module.
- Next generation LED products (category 2 tiles) such as the NX-4 tiles are supported via the NNI interface on the system's NNI Output Module.

Input modules provide "universal" connections for DVI (RGB or YCbCr), Dual-DVI (RGB), Component Analog (RGB or YPbPr), SD-SDI, HD-SDI, and Dual HD-SDI formats. Multiple input modules can be assigned to a bank (and its associated outputs)

Output modules are available in two formats: DVI (for legacy Barco tiles), and NNI (for next generation Barco tiles). Each module has three outputs that can be driven independently or "grouped".

A maximum of two output modules can be included in a "bank."

In single or multi-bank configurations, each bank can have its own genlock source. The bank can be genlocked to any input within a bank, or to the System Module's external genlock port.

For more details about the DX-700, consult the DX-700 User's Guide.

About a 'bank'

DX-700 supports a wide number of flexible system configurations. Input and output modules are installed in "banks," consisting of one (or more) input modules and either one or two output modules (with two being the maximum allowed in a bank).

Bank

A "bank" is a way of combining inputs and outputs into independent video processors that are capable of driving one (or more) LED walls.

About a single bank configuration

The figure below illustrates two examples of single bank configurations:

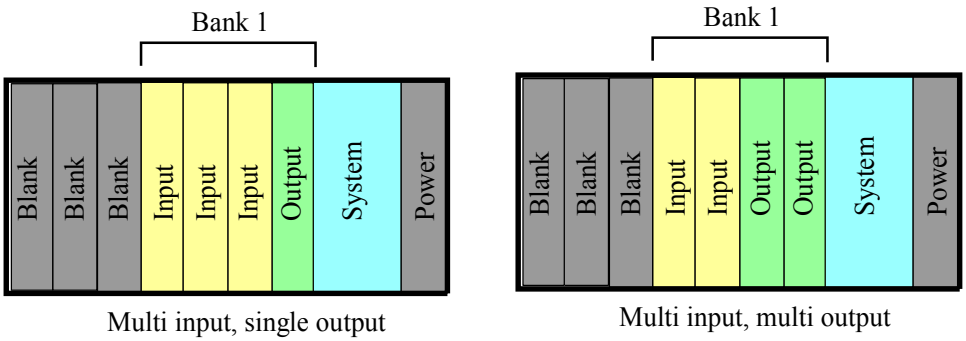


Image 7-48

Please note the following points regarding single bank DX-700 configurations:

- A single bank has a maximum "canvas" size of 2048 x 1080 pixels (or 1080 pixels x 2048 pixels). This overall region can be divided as required between three outputs (using one output module), or six outputs (using two output modules).
- From two to six physical outputs can be "grouped" electronically to form a larger "logical" output. No cabling is required. This grouping enables you to control a larger display, larger than is possible with a single output.

The outputs on the same output card must be connected with the same tile category (legacy tiles or new generation tiles).

About grouping

Grouping refers to an "electronic" connection, internal to a single DX-700, in which up to six physical outputs are combined to form a logical output. No cables are required. This grouping enables you to control a larger display — larger than is possible with a single output

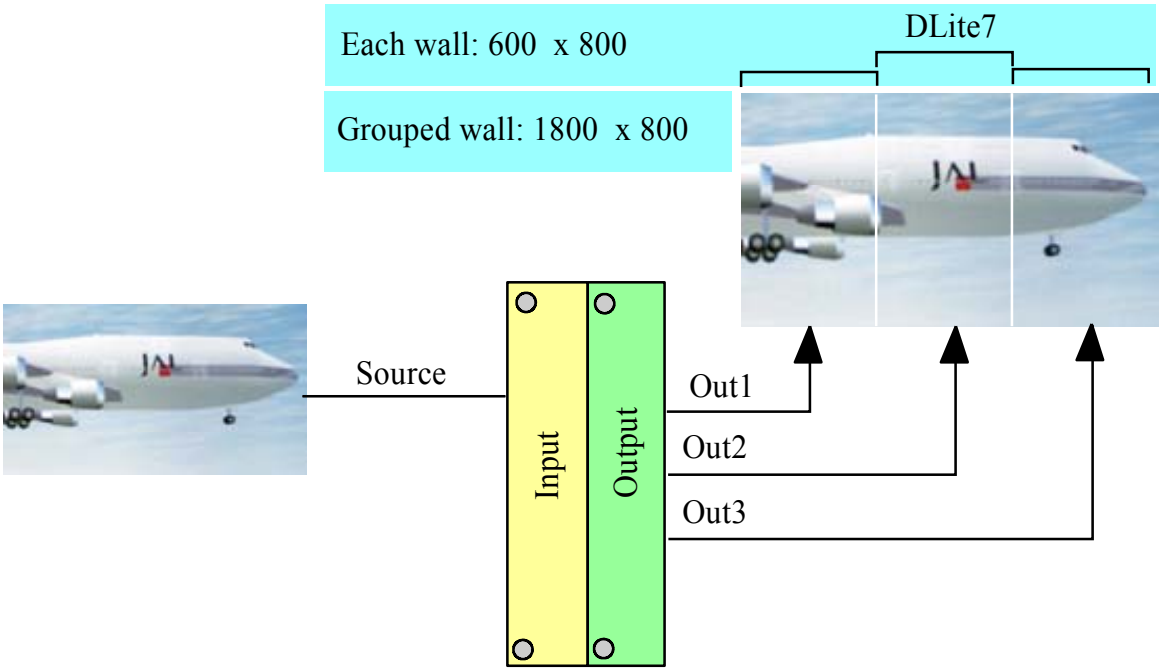


Image 7-49
Grouping example

About multi bank configuration

The figure below illustrates two examples of multi-bank configurations:

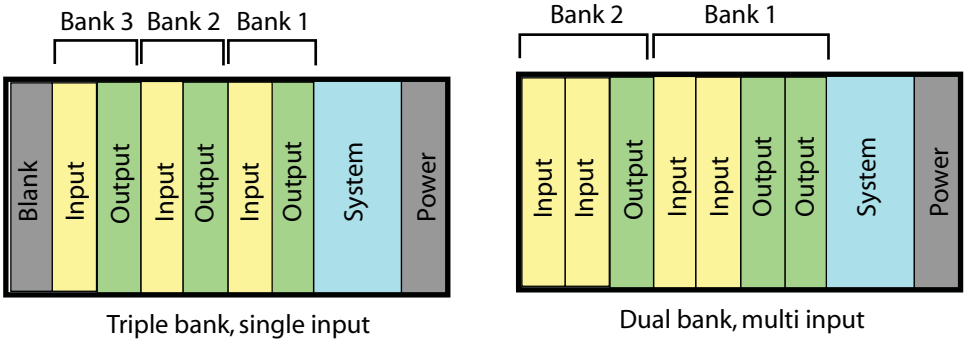


Image 7-50

Please note the following points regarding multi-bank DX-700 configurations:

- Each bank in a multi-bank configuration has a maximum canvas size of 2048 x 1080 pixels. Each canvas can be divided as required between three outputs (using one output module), or six outputs (using two output modules).
- Each input module within a bank can add its video image to that bank's canvas
- A single output module within a bank can drive one or more attached displays from any portion of that bank's canvas. The displays can be any type of tile within the "new" or "legacy" categories, but you cannot mix tile categories within a bank.

One bank can be assigned to drive NNI interface tiles, while another bank can be assigned to drive DVI interface tiles.

About external stacking

The external "Stacking" function enables multiple DX-700 units to be joined together in order to increase the overall canvas size — either horizontally or vertically. When working in this mode, all DX-700 units must have the same configuration, as follows:

- Video sources are all connected to input modules of the “master” DX-700.
- On each of the master’s input modules, the Expansion Out DVI port is connected to the DVI Input port on the first slave unit’s input modules. Similarly, the first slave connects to the second, etc.
- A Sync output on the master unit’s System Module allows slave units to genlock. This signal can also be daisy-chained to several DX-700 units.

About stitching

In stead of connecting the complete video signal to the input of a stack which is then looped through to the next digitizer (or next bank in the same digitizer) the signal is already split up in different video signals which are separately connected to input of each digitizer. The inputs should be from the same source type. Both sources are then matched on the display. The content of each input must be 1 to 1 with the output so that only the viewport can be moved over a few pixel to make a seamless junction between parts of the image.

About a DVI output card

For DVI output modules, each output is limited to the following parameters:

- a rectangular shape
- up to 480,000 pixels
- any orientation up to 2048 pixels on a side

Example for 1 module with 3 outputs:

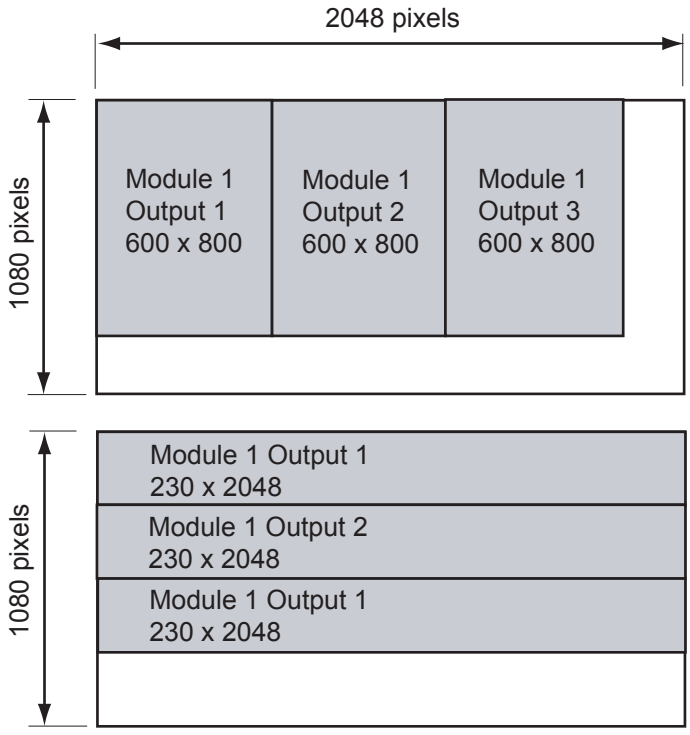


Image 7-51
Sample DVI canvases that use one output module

About a NNI output card

For NNI output modules, each output is limited to the following parameters:

- a rectangular shape
- up to 786,432 pixels
- any orientation up to 2048 pixels on a side

Example for 1 module with 2 outputs:

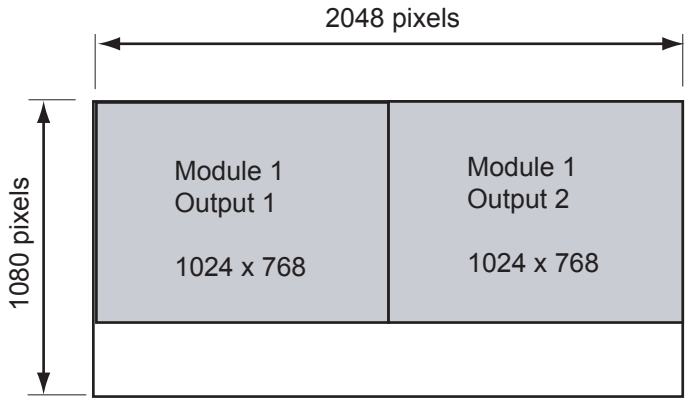


Image 7-52
Sample canvas using one NNI output module

7.10.2 Designing a setup

How to design ?

Starting from a new offline setup, the devices such as a DX-700 digitizer, multiple screens, fiberlinks and digitizer inputs and outputs can be added to the setup by dragging one by one to the corresponding icon from the Component window into the Setup overview pane.

As the order of dragging and output card of the DX-700 determines the connections between the devices it is important to think carefully about the design. Start always with a DX-700 and select the output type, then with one or more screens followed by eventually one or more fiberlinks. To finish, fill up the digitizer with the necessary inputs. The following topics will explain how to add one of these components to the setup.

7.10.3 Add DX-700 digitizer to a setup

How to add

1. Click on the DX-700 tab in the Components window to display the possible digitizers (a). (image 7-53)
2. Click on DX-700 digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the *Preview pane* (c).

   The *Output type selection* dialog box opens.
4. Select the output cards type. (image 7-54)

DVI	used for all legacy Barco tiles (category I) such as DLite, OLite, ILite, SLite and creative units.
	Maximum output format per output : 800 x 600
NNI	used for the next generation Barco tiles (category II) such as NX-4.
	Maximum output format per output : 1024 x 768

Each card has three outputs that can be driven independently or “grouped.”

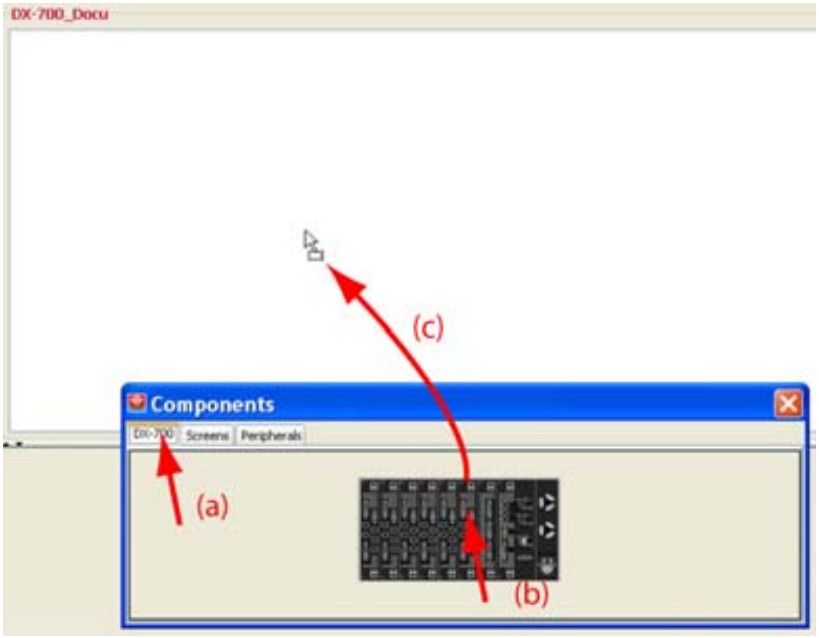


Image 7-53
Add DX-700 to preview

Image 7-54
Output selection

Mixing tile categories within a bank is not allowed. Both output cards must have the same output types.

7.10.4 Add an extra DX-700 to a setup

What can be done ?

An extra digitizer can be added to the setup. As long as the previous digitizer has only one master bank then the new digitizer can be added as a slave digitizer as long as the bank settings are equal to those of the master digitizer.

How to add

1. Click on the DX-700 tab in the Components window to display the possible digitizers (a). (image 7-55)
2. Click on DX-700 digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the *Preview pane* (c).

The *Output type selection* dialog box opens (d).

4. Select the output type.

   If the new digitizer must be a slave digitizer, then select the same output card as in the master digitizer.

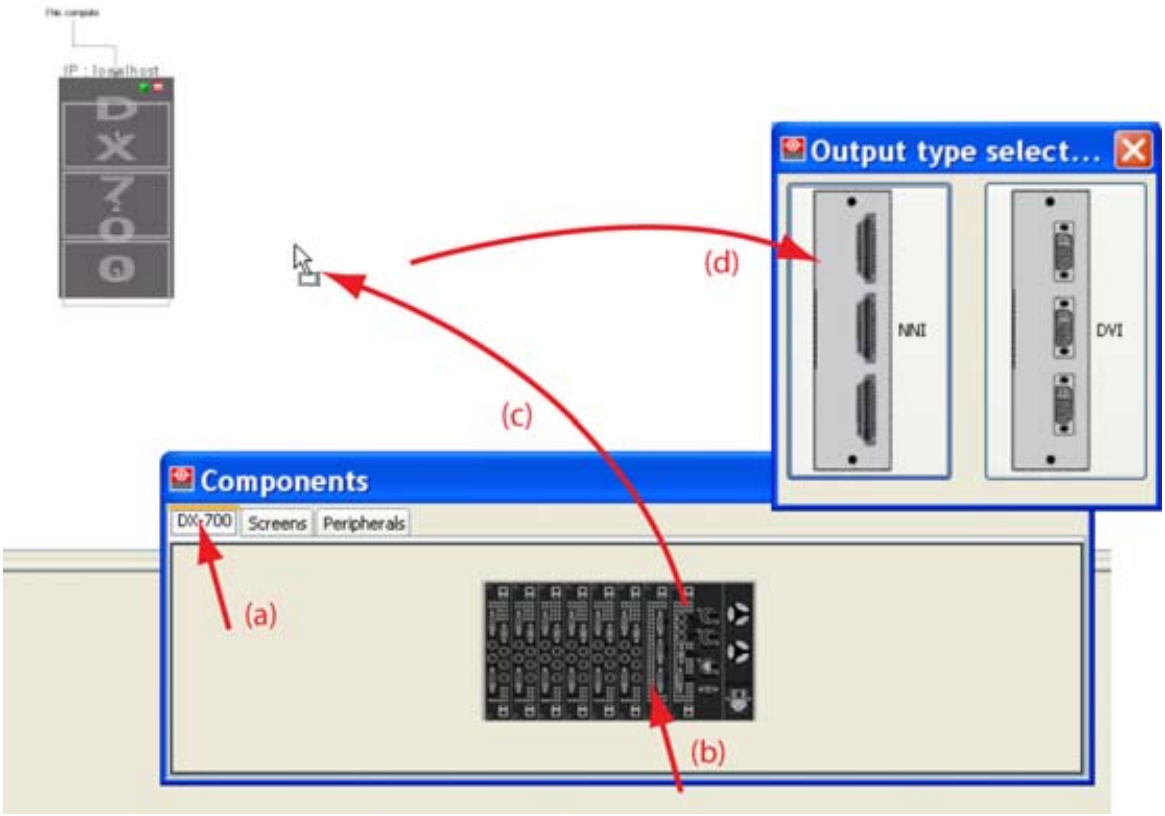


Image 7-55
Add extra DX-700

7.10.5 Remove a DX-700 from a setup

How to remove

1. Right click on a DX-700 digitizer. (image 7-56)

   The content menu opens.

2. Select *Remove*.

   The selected digitizer is removed from the setup.

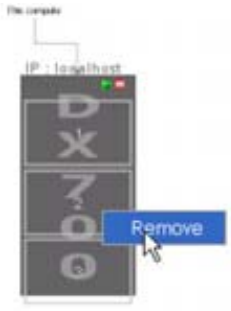


Image 7-56
Remove DX-700

7.10.6 About the digitizer settings

Digitizer settings

To display the digitizer settings, click on the digitizer icon in the setup preview pane. The settings will open in the settings pane.

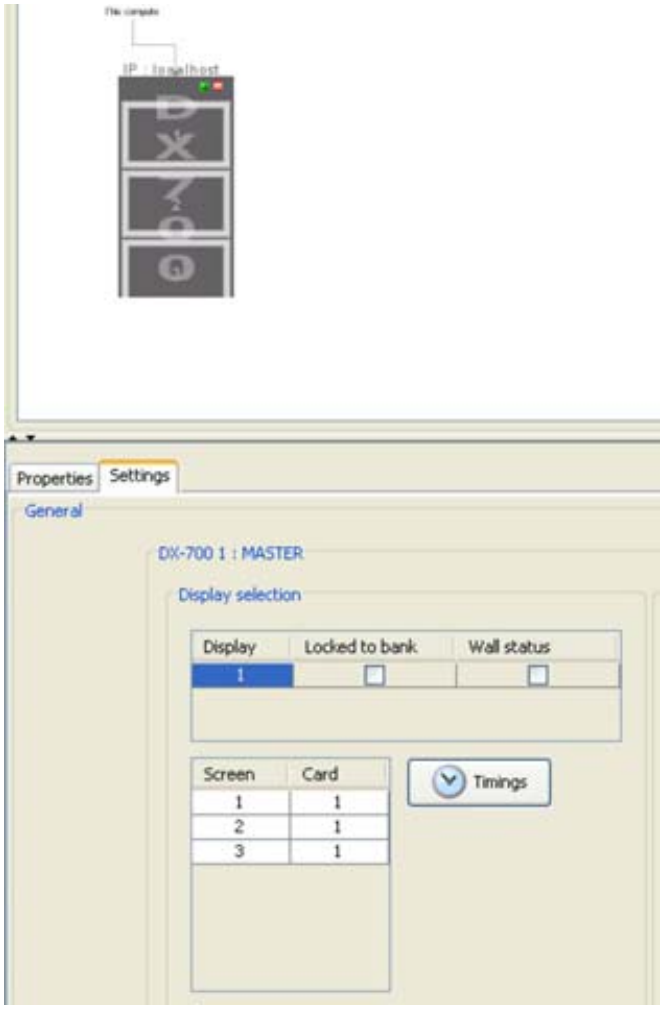


Image 7-57
Call DX-700 settings

The settings will be discussed in "DX-700 digitizer settings", page 229.

7.10.7 Add an extra output card to the DX-700

How to add

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane. (image 7-58)

2. Click on **Add output card**.

   A new output card with the same output specifications is added next to the first card. The already available inputs are moving one slot to the left.

   When two output cards (6 outputs) are in the DX-700, the preview of the digitizer in the preview pane will jump to the middle of the preview pane.

   The number indication above a card is the slot number in the digitizer.

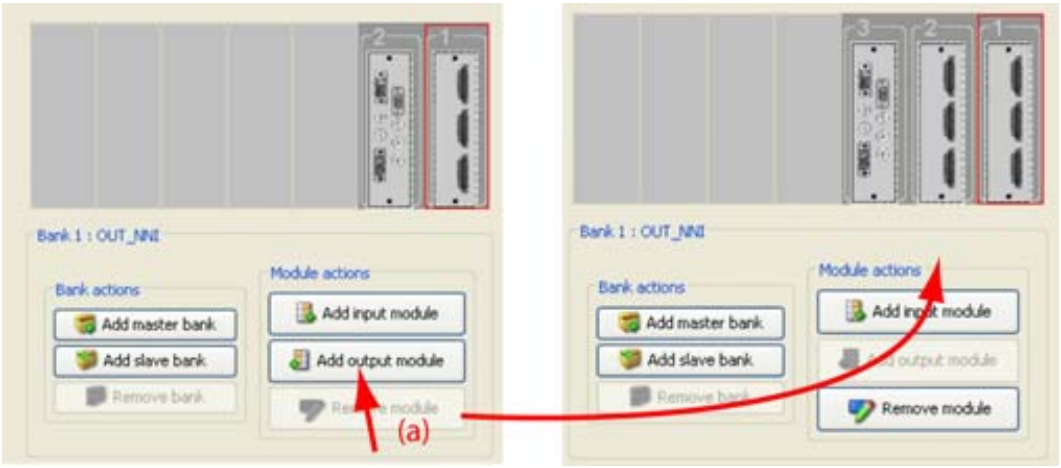


Image 7-58
Add output card

When the maximum allowed output cards are reached, the Add output card button is deactivated.

When there are no free slots to add an extra output card, remove first a input slot.

7.10.8 Remove an output card from the DX-700

How to remove

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane.

2. Click on the output card to remove. (image 7-59)
3. Click on **Remove card**.

   The output card is removed from the setup. All installed input cards will move one position to the right as there is no blank slot allowed between the output card and the first input card.

   The **Remove card** buttons becomes inactive as the last output card cannot be removed.

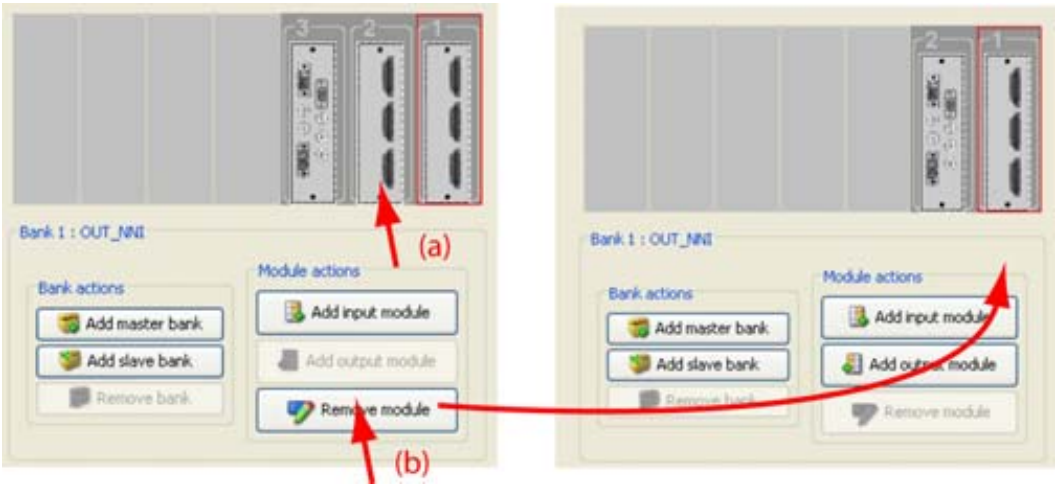


Image 7-59
Remove output card

7.10.9 Add input cards to the DX-700

How to add

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane.

2. Click on **Add input card**. (image 7-60)

   A new 'universal' input card is added in the first free slot next to the existing input cards. This card can now be configured for a typical source.

   The number indication above the card indicates the slot number in the digitizer.

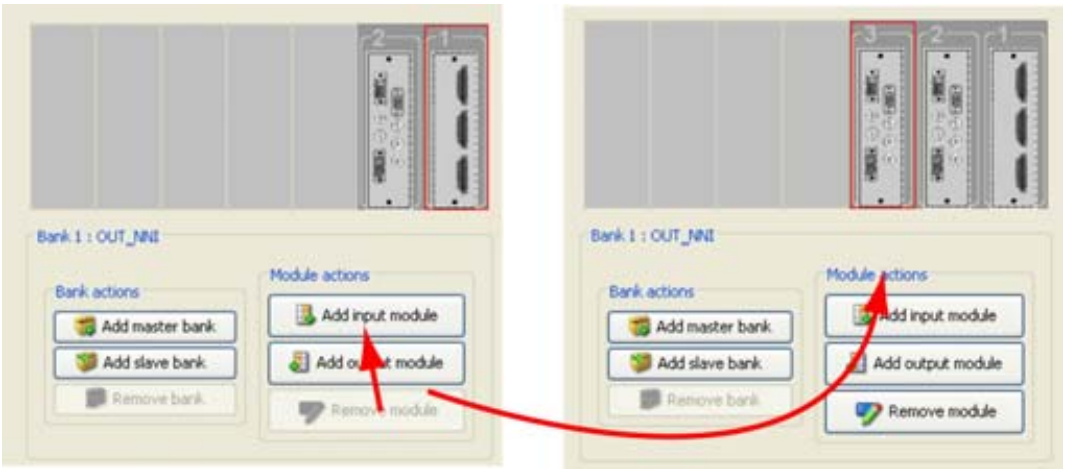


Image 7-60
Add input card

This procedure can be repeated as many times as there are free slots in the DX-700. Once all slots are filled up, both Add buttons are deactivated.

7.10.10 Remove input card(s) from the DX-700

How to remove

1. Click on the DX-700 icon in the preview pane.

The settings are filled out in the settings pane.

2. Click on the input card to remove. (image 7-61)
3. Click on **Remove card**.

   The selected input card is removed from the setup. All cards left of the removed card are moving one position to the right as no free slots are allowed between cards.

   The Remove card button becomes inactive when only one input card is available in the bank.

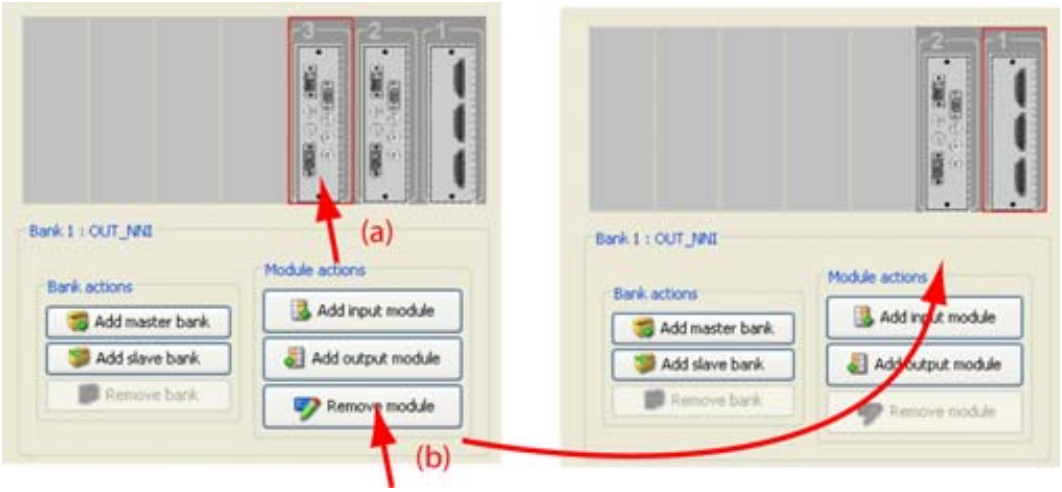


Image 7-61
Remove input card

This procedure can be repeated until only one input card in the bank is available.

7.10.11 Add a master bank to a DX-700

How to add

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane.

2. Click on **Add master bank** (a). (image 7-62)

   The *Output type selection* dialog opens (b).

3. Click on the desired output card (c).

   This selection is independent from another bank.

   A new output card and input card is added next to the existing bank (d).

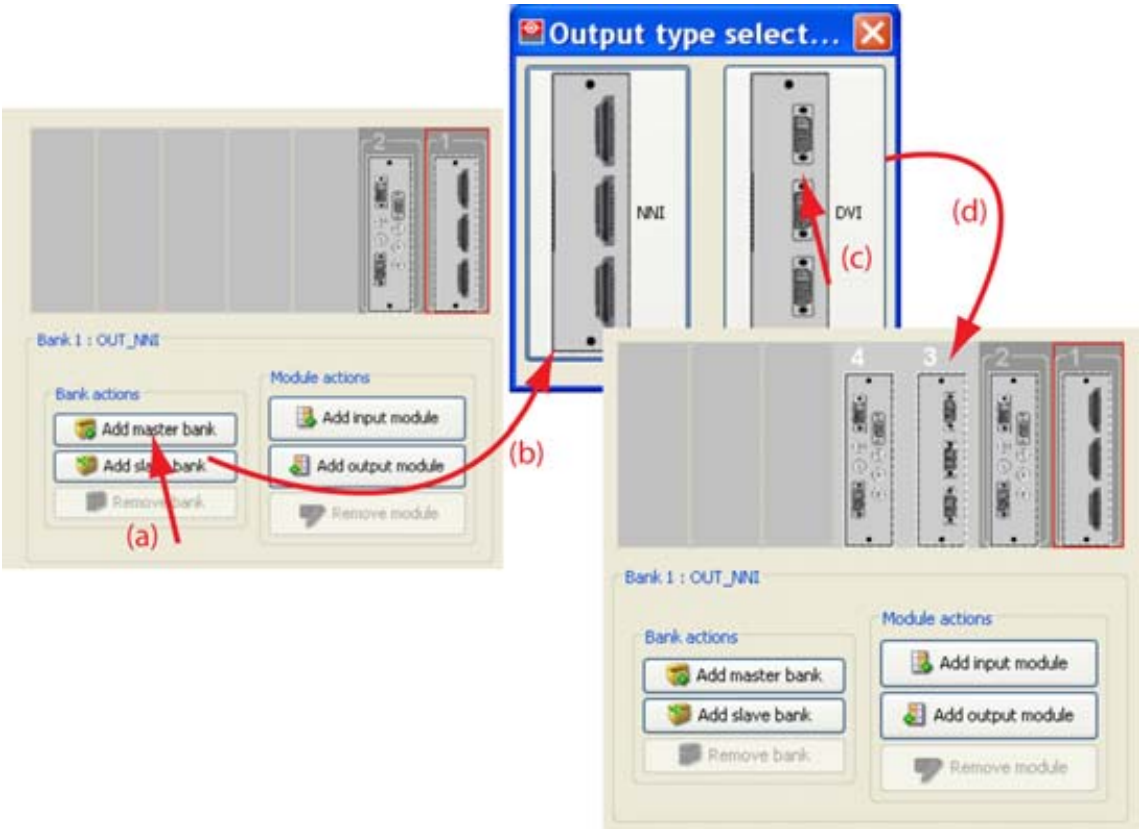


Image 7-62
Add master bank

7.10.12 Add a slave bank to a DX-700

How to add

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane.

2. Click on **Add slave bank** (a). (image 7-63)

   The same type of output card and an input card is added next to the existing bank (b).

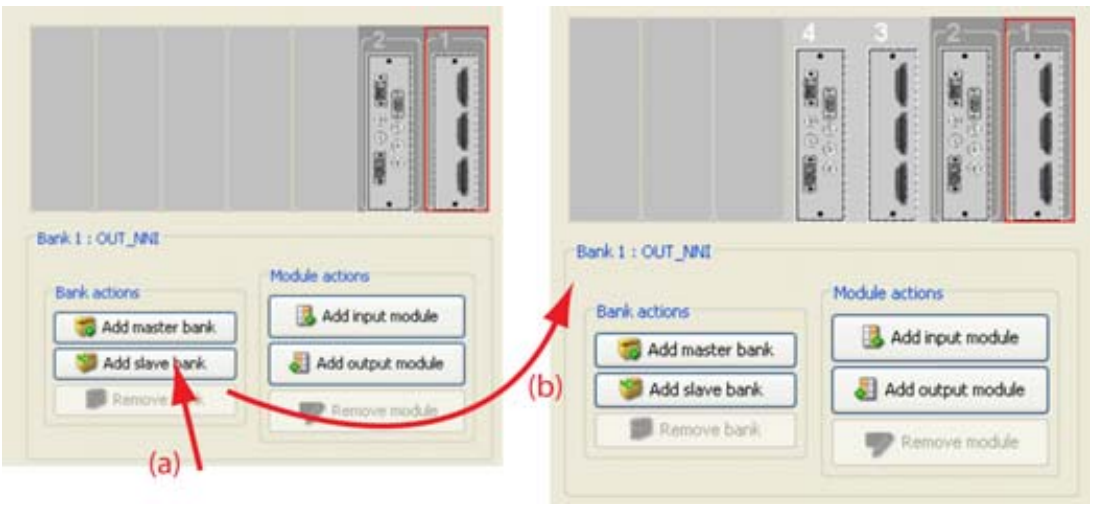


Image 7-63
Add slave bank

7.10.13 Remove a bank from a DX-700

Removing a bank will remove also all connected displays and peripherals .

How to remove a bank

1. Click on the DX-700 icon in the preview pane.

   The settings are filled out in the settings pane.

2. Select the bank to remove (a). (image 7-64)
3. Click on **Remove bank** (b).

   A question dialog appear: ” Are you sure you want to delete the selected bank ? This will delete the bank and all input and output modules in this bank.” (c)

4. Click **Yes** to continue with the remove (d).

   The output cards and input cards are removed from the digitizer. All connected displays and peripherals are removed at the same time.

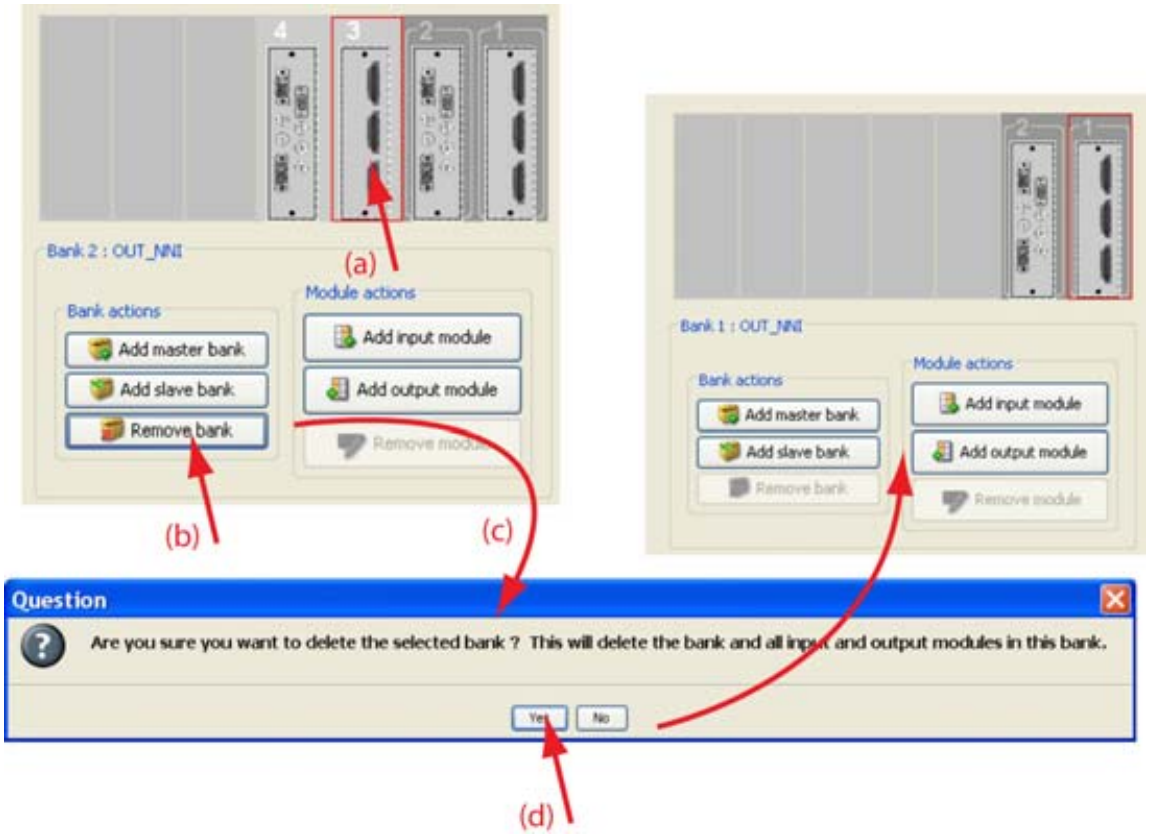


Image 7-64
Remove bank

7.10.14 Add a screen to the setup

How to add

1. Click on the **Screens** tab in the *Component window* (a). (image 7-65)
2. Click on the screen icon (b) and drag the screen icon in to the preview pane (c).

The *Settings of a new screen* window opens. (image 7-66)

This window will only contain the possible LED tile category for the installed output card(s).

3. Select in which screen it should be created by clicking on the drop down box and selecting the desired screen (d).

   Only the free screen location are indicated in this drop down box.

4. Scroll to the desired tile type and click on it to select (e).

5. If a fixed tile is selected, fill out the number of rows and columns used in the wall (f1).
   If a creative tile is selected, fill out the number of controllers used in the wall (f2).

6. Click **Create** (g).

   A progress bar indicates the progress of the creation process.

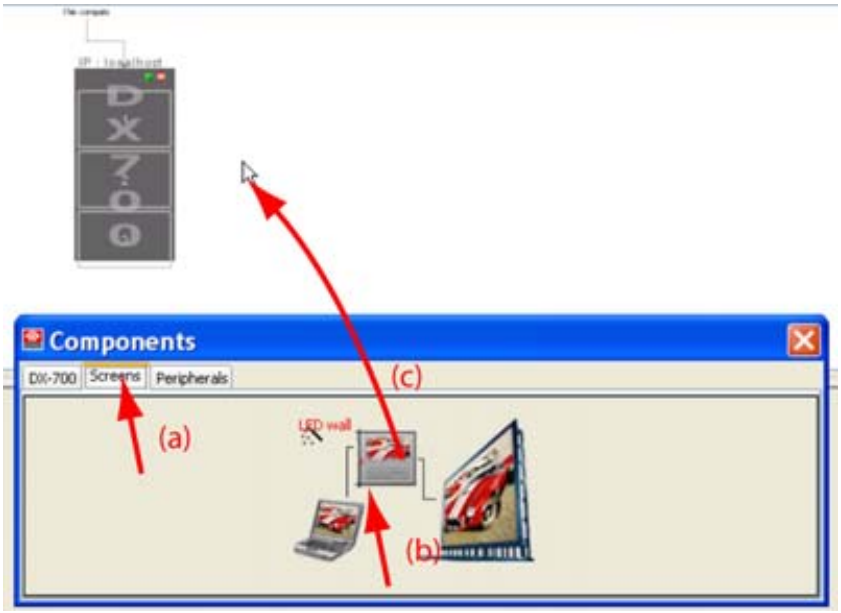


Image 7-65
Add screen to setup

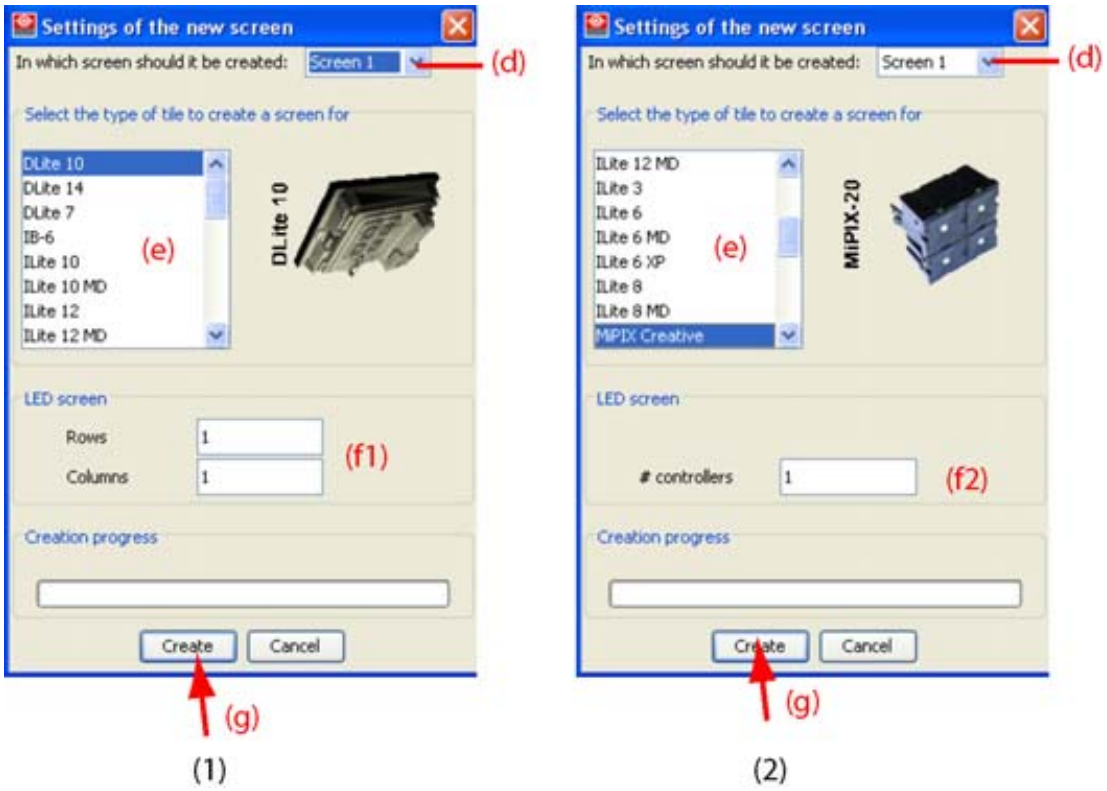


Image 7-66
New screen selection

(1) for normal tiles
(2) for creative tiles

Repeat this procedure if other screens must be connected to other outputs.

About grouping screens in a display

When multiple screen are added to the outputs of the DX-700, these screens will be organized in displays as follow:

When the next screen is composed out of the same tile type, the screens will be grouped together in the same display.

As example:

Output 1 ILite 6XP

Output 2 ILite 6XP

Output 3 SLite 12

Both ILite 6XP screens will be grouped in Display 1, the SLite 12 will be display 2.

The rule is, equal screen following each other are grouped in the same display.

This display grouping can be changed in the *Operations*, tab page *Stacking*. Extra displays can be created or displays can be grouped together.

7.10.15 Replace a screen in a setup

How to replace

1. Click on the **Screens** tab in the *Component window* (a). (image 7-67)

2. Click on the screen icon (b) and drag the screen icon in the preview pane onto the screen to be replaced (c).

   The Settings of a new screen window opens but with the screen selection deactivated.

   This window will only contain the possible LED tile category for the installed output card(s).

3. Scroll to the desired tile type and click on it to select (d). (image 7-68)
4. If a fixed tile is selected, fill out the number of rows and columns used in the wall (e1).
   If a creative tile is selected, fill out the number of controllers used in the wall (e2).
5. Click **Create** (f).

   A progress bar indicates the progress of the creation process.

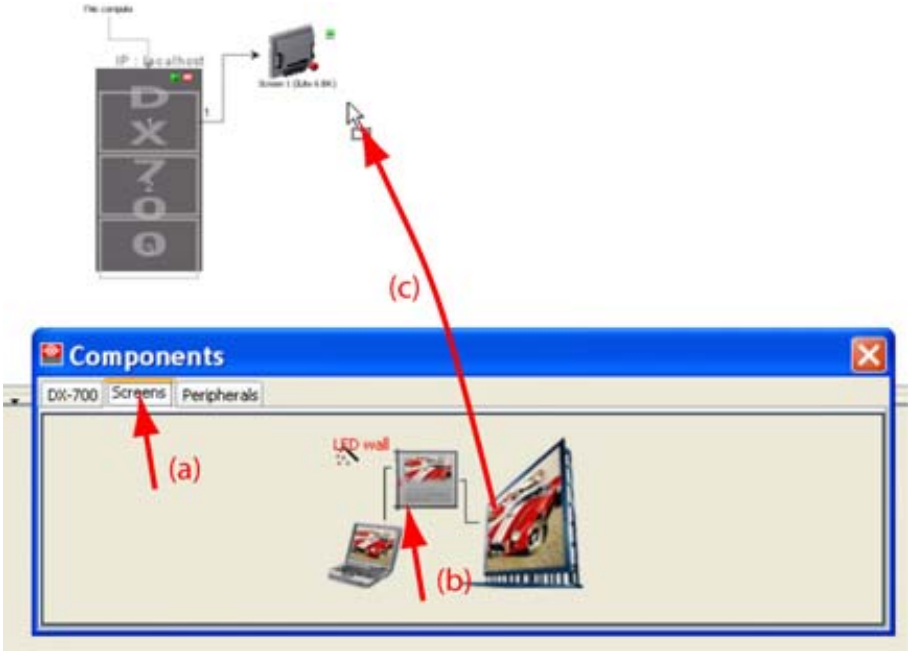


Image 7-67
Replace an existing screen

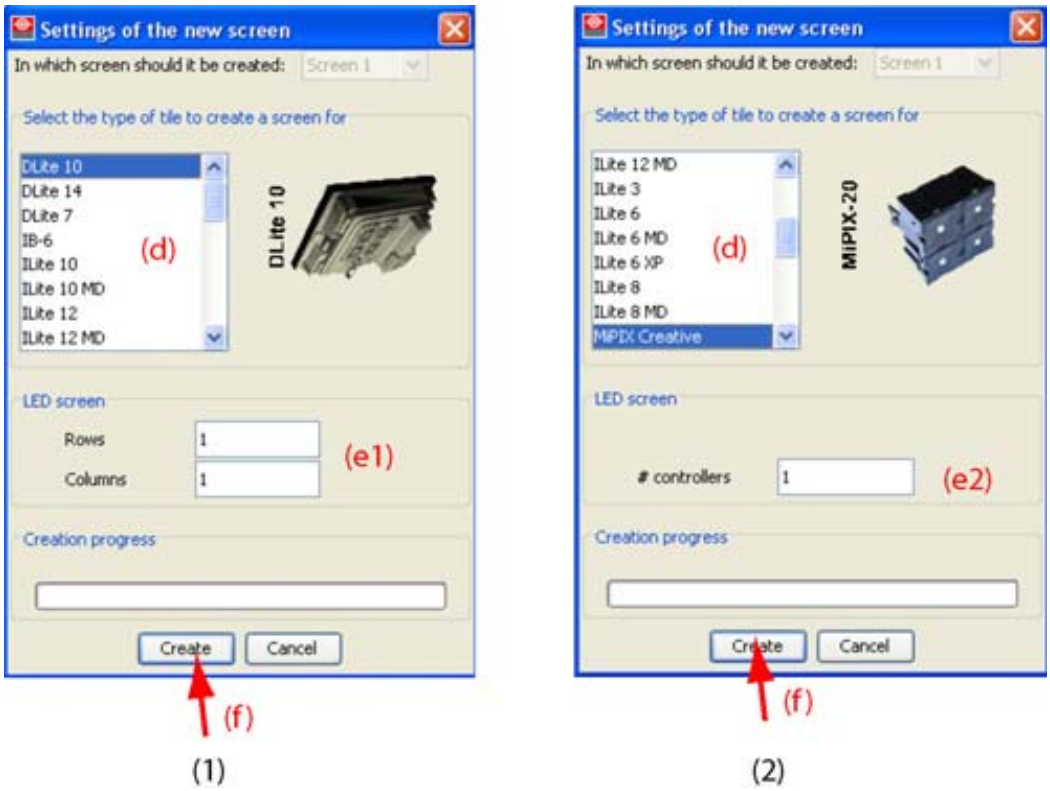


Image 7-68
New screen settings

(1) for normal tiles
(2) for creative tiles

7.10.16 Remove a screen from a setup

How to remove

1. Right click on the screen icon to remove. (image 7-69)

   A content menu opens.

2. Select *Remove*.

   The selected screen is removed from the setup.

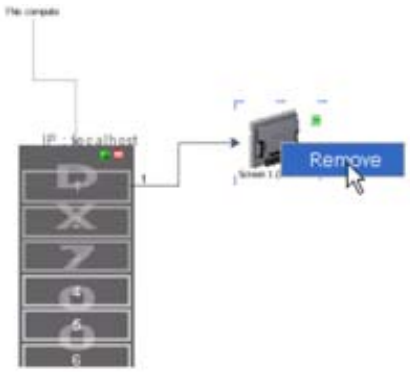


Image 7-69
Remove screen

7.10.17 Add and remove a Peripheral to a setup

A FiberLink or AEC can only be used with DVI supported output cards.

7.10.17.1 Add via drag and drop

How to add

1. Click on the **Peripherals** tab in the Component window (a). (image 7-70)
2. Click on the desired peripheral and hold down the mouse button (b).
3. Drag it onto the screen in the preview pane and release the mouse button (c).

   The peripheral is added.

   For a FiberLink, between the digitizer and the screen.

   For a monitoring device, AEC, as last device in the chain.

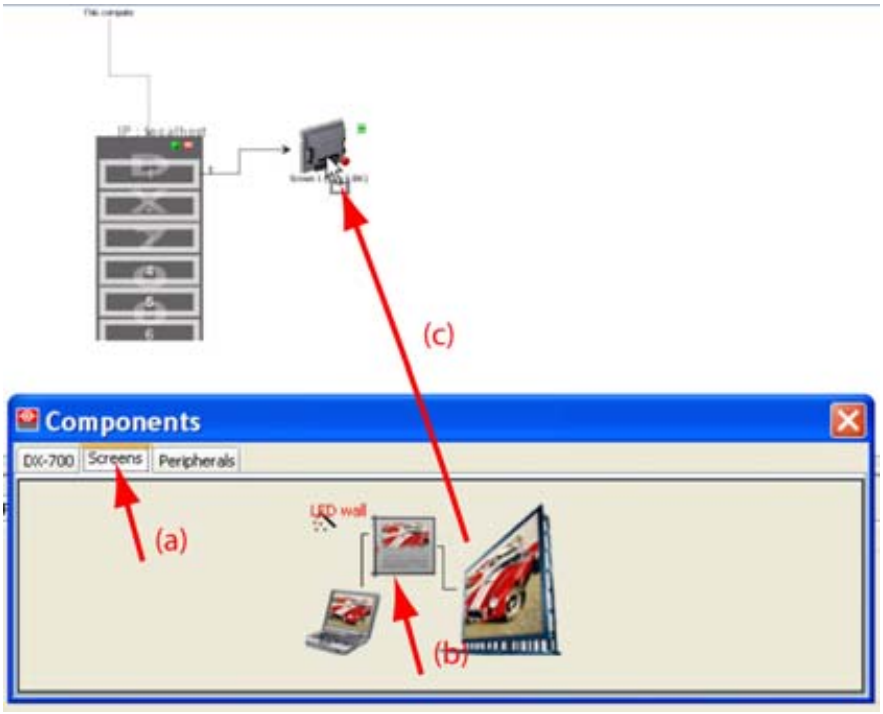


Image 7-70
Example: add FiberLink

7.10.17.2 Remove a Peripheral

How to remove

1. Right click on a peripheral, FiberLink or AEC. (image 7-71)

   A content menu opens.

2. Select *Remove*.

   The selected peripheral is removed from the setup.

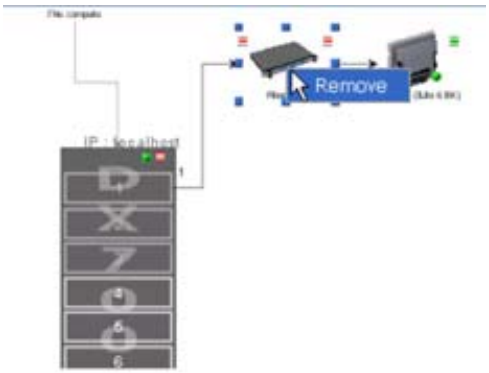


Image 7-71
Example: remove FiberLink

7.10.17.3 Peripheral settings

Overview

To display the settings, double click on the peripheral icon, FiberLink or AEC, in the preview pane. The setting will open in the settings pane.

Image 7-72
Example: FiberLink settings

7.11 Design manually an offline setup based on a LED-Pro digitizer

Overview

- About a LED-Pro digitizer
- Add a LED-Pro digitizer to a setup
- Removing a LED-Pro from a setup
- About the digitizer settings
- Add a screen to the setup
- Replace a screen in a setup
- Remove a screen from a setup
- Add a peripheral to a setup
- Remove a peripheral for a setup

7.11.1 About a LED-Pro digitizer

Overview

The LED-Pro is a powerful all-in-one signal processor that accepts a wide range of video input signals, and processes them to drive via one output a Barco LED display of category I. The LED-Pro allows you to scale visual sources while still maintaining superb picture quality.

LED-Pro is the ideal solution for converting RGB, HDTV, component, S-video, composite (NTSC, PAL and SECAM), SDI, DVI, and HDSDI for use with Barco LED walls.

7.11.2 Add a LED-Pro digitizer to a setup

How to add

1. Click on the LED-Pro tab in the Components window to display the possible digitizers (a). (image 7-73)
2. Click on LED-Pro digitizer and hold down the mouse button (b).
3. Drag the digitizer icon into the *Preview pane* (c).

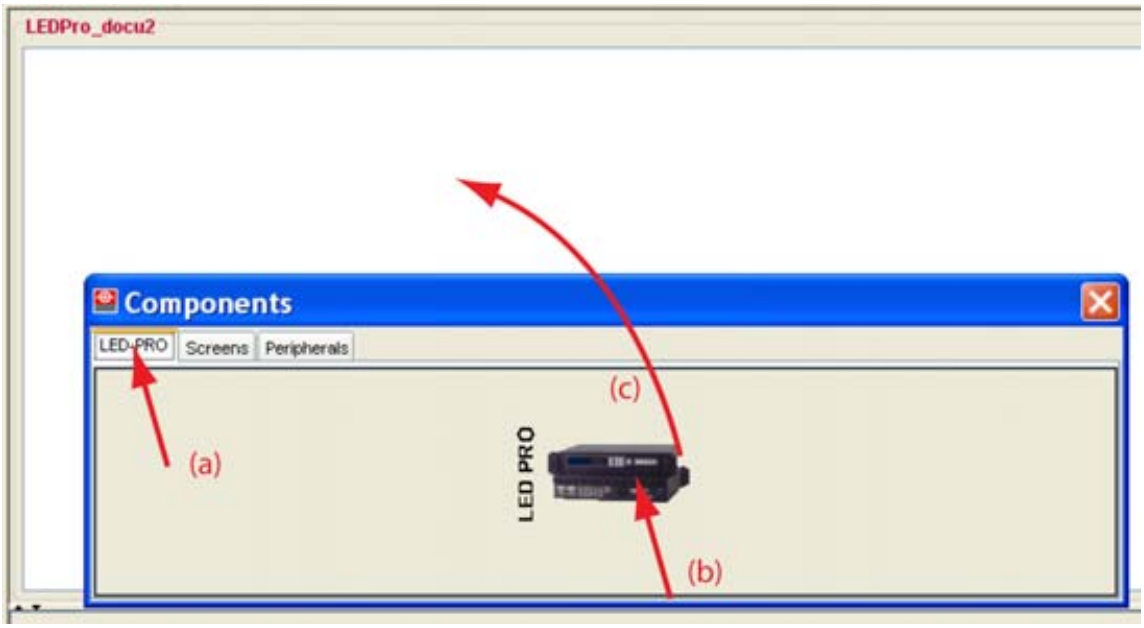


Image 7-73
Add LED-Pro to preview

7.11.3 Removing a LED-Pro from a setup

How to remove

1. Right click on a LED-Pro digitizer. (image 7-74)

   The content menu opens.

2. Select *Remove*.

   The selected digitizer is removed from the setup.

Image 7-74
Remove LED-Pro

7.11.4 About the digitizer settings

Digitizer settings

To display the digitizer settings, click on the digitizer icon in the setup preview pane. The settings open in the settings pane.

The settings will be discussed in "LED-Pro based Digitizer settings", page 271.

7.11.5 Add a screen to the setup

How to add

1. Click on the **Screens** tab in the *Component window* (a). (image 7-75)
2. Click on the screen icon (b) and drag the screen icon in to the preview pane (c).

   The *Settings of a new screen* window opens. (image 7-76)

   This window will only contain the possible LED tile category The selection *In which screen should it be created* is blanked out (d).
3. Scroll to the desired tile type and click on it to select (e).
4. If a fixed tile is selected, fill out the number of rows and columns used in the wall (f1).
   If a creative tile is selected, fill out the number of controllers used in the wall (f2).
5. Click **Create** (g).

   A progress bar indicates the progress of the creation process.

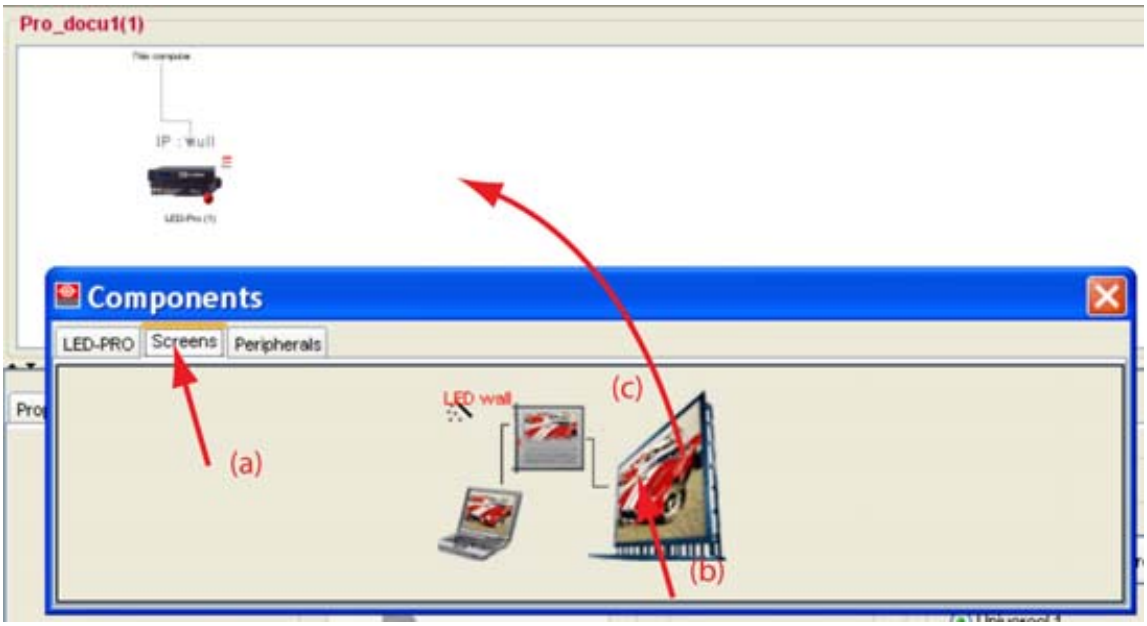


Image 7-75
Add screen to setup

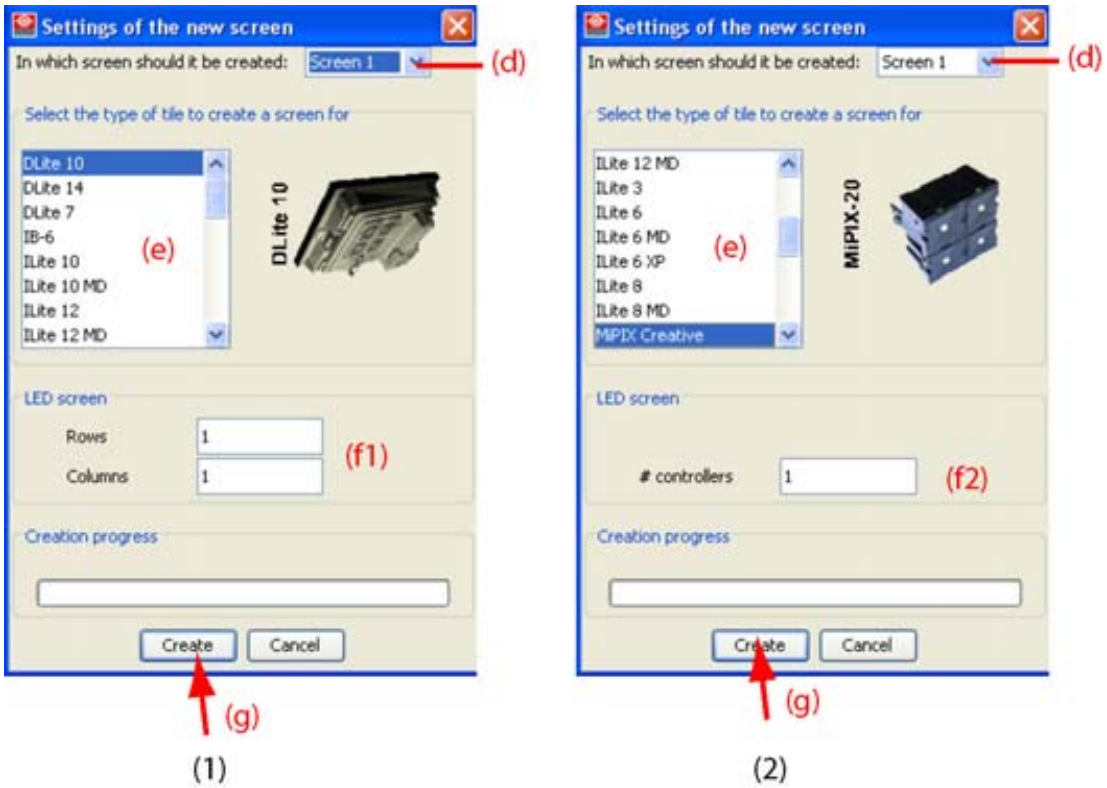


Image 7-76
New screen selection

(1) for normal tiles
(2) for creative tiles

7.11.6 Replace a screen in a setup

How to replace

1. Click on the **Screens** tab in the *Component window* (a). (image 7-77)
2. Click on the screen icon (b) and drag the screen icon in the preview pane onto the screen to be replaced (c).

   The Settings of a new screen window opens but with the screen selection deactivated.

   This window will only contain the possible LED tile category for the installed output card(s).
3. Scroll to the desired tile type and click on it to select (d). (image 7-78)
4. If a fixed tile is selected, fill out the number of rows and columns used in the wall (e1).
   If a creative tile is selected, fill out the number of controllers used in the wall (e2).
5. Click **Create** (f).

   A progress bar indicates the progress of the creation process.

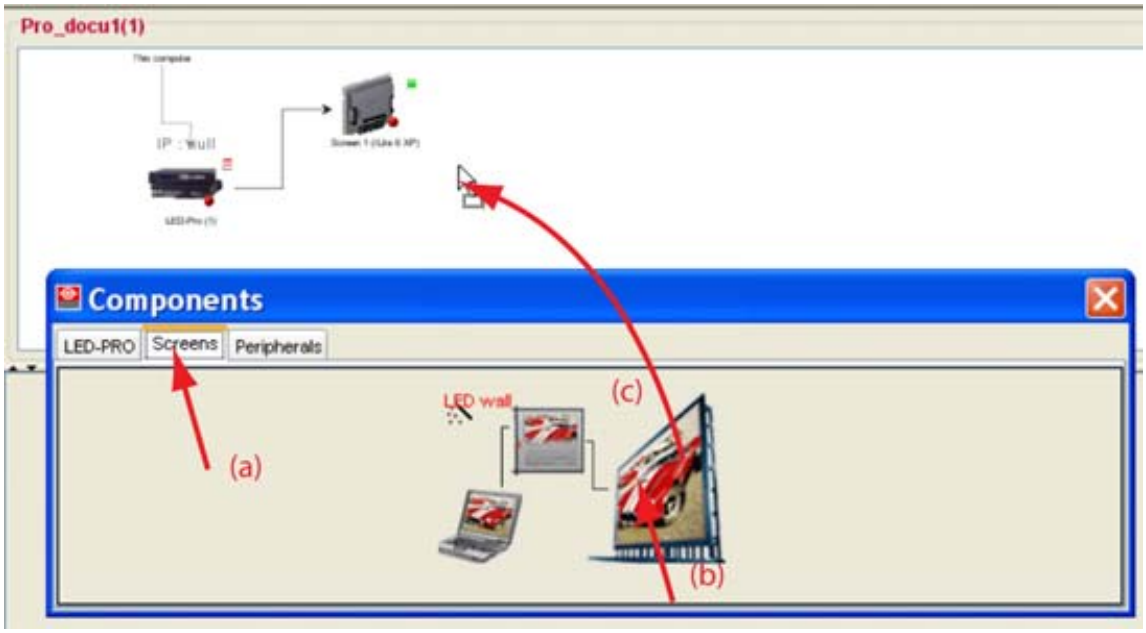


Image 7-77
Replace an existing screen

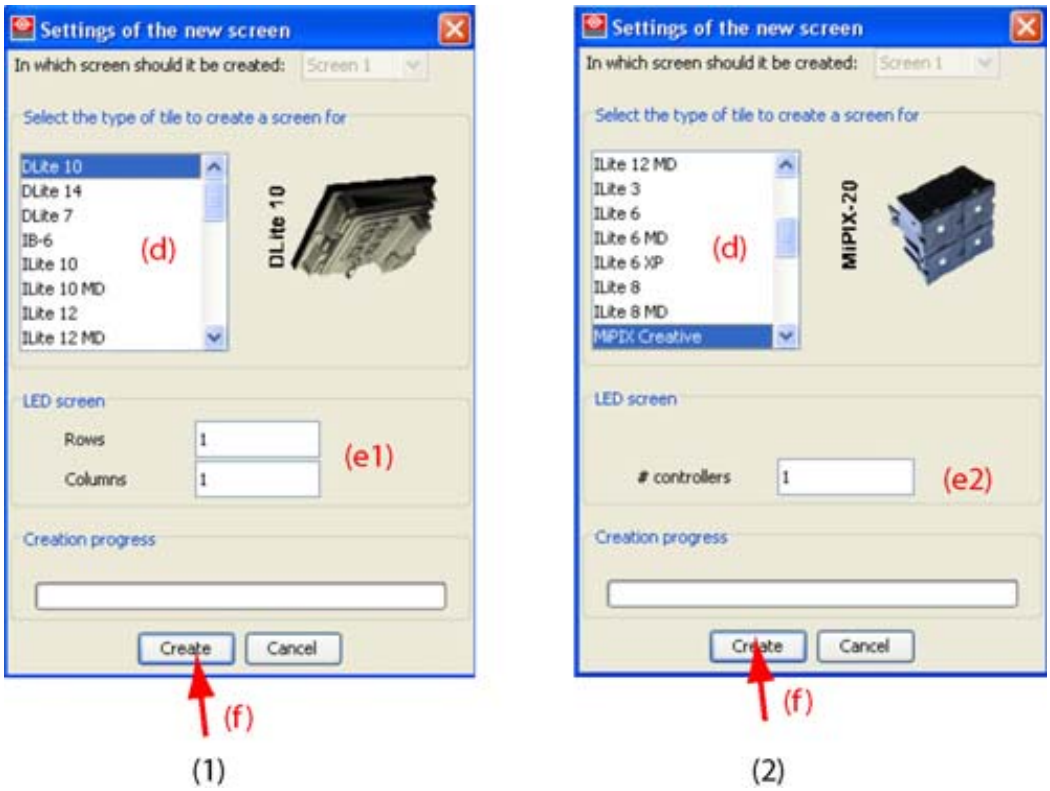


Image 7-78
New screen settings

(1) for normal tiles
(2) for creative tiles

7.11.7 Remove a screen from a setup

How to remove

1. Right click on the screen icon to remove. (image 7-79)

   A content menu opens.

2. Select *Remove*.

   The selected screen is removed from the setup.

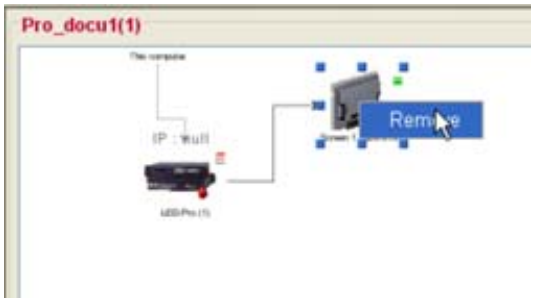


Image 7-79
Remove screen

7.11.8 Add a peripheral to a setup

How to add

1. Click on the **Peripherals** tab in the Component window (a). (image 7-80)

2. Click on the desired peripheral and hold down the mouse button (b).
3. Drag it onto the screen in the preview pane and release the mouse button (c).

   The peripheral is added.

   For a FiberLink, between the digitizer and the screen.

   For a monitoring device, AEC, as last device in the chain.

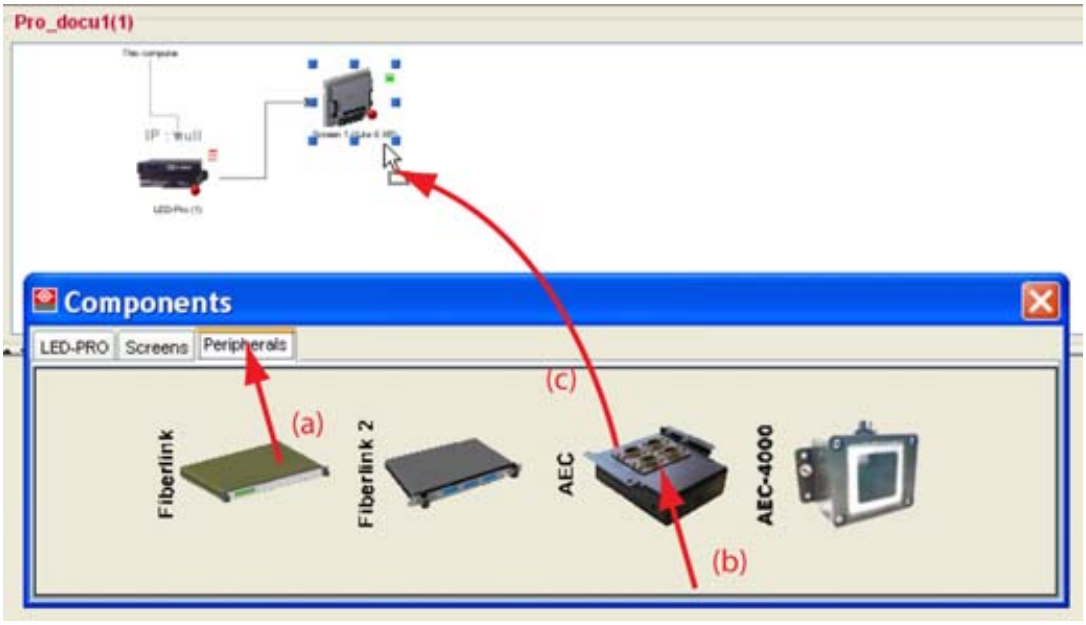


Image 7-80
Add peripheral

Peripheral settings

To display the settings, click on the peripheral icon, FiberLink or AEC, in the preview pane. The setting will open in the settings pane.

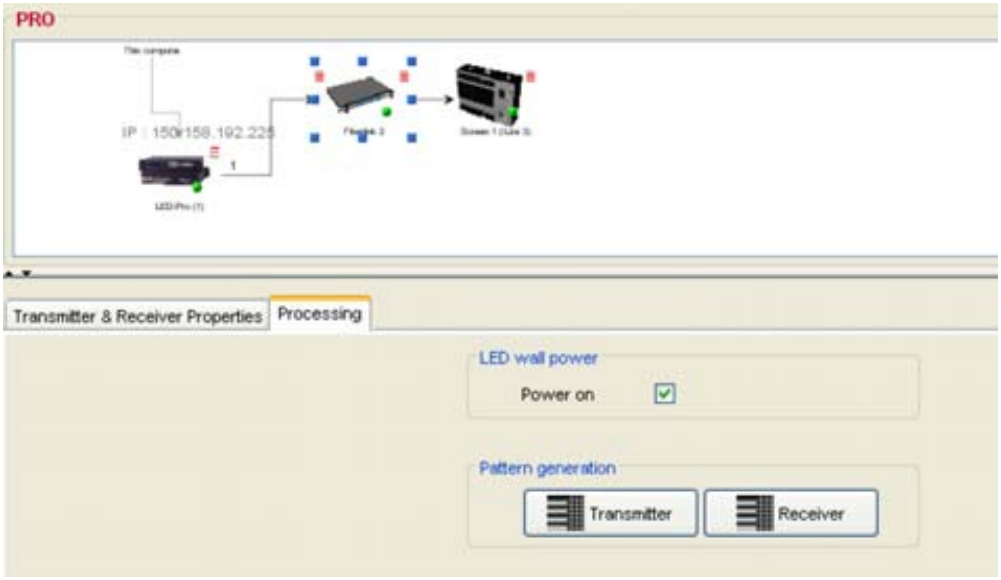


Image 7-81
Peripheral settings

7.11.9 Remove a peripheral for a setup

How to remove

1. Right click on a peripheral, FiberLink or AEC. (image 7-82)

   A content menu opens.

2. Select *Remove*.

   The selected peripheral is removed from the setup.

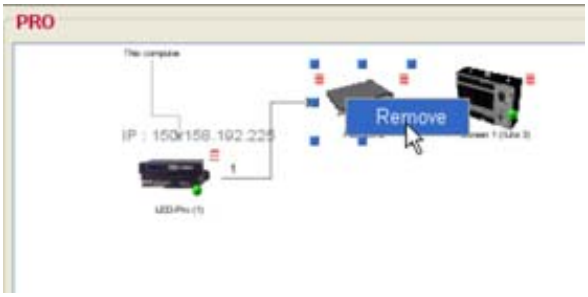


Image 7-82
Remove a peripheral

7.12 Create an online configuration

An online configuration can only be created in an online setup.

Overview

During the creation of an new configuration within an online setup (new created of existing setup), only the option Automatically detection of the setup is possible.

When **OK** is clicked, the setup will be detected automatically.

For explanation, for a D320 based setup, see "Create new Setup", page 99 and for a DX-700 based setup, see "Create new Setup", page 85 and read the part about online setup.

When online OLite configuration, tiled mode, is detected with several control units and one of these control units was set in customized mode (due to a previous use in another configuration), then the configuration will be detected as a customized mode even when it must be tiled mode. Check this setting before continuing the adjustments and correct if necessary.

Autodetection of a MiTRIX - MiSTRIP setup (possible problem)

The control box used for an OLite setup can also be used in a MiTRIX or MiSTRIP setup .

When the current used control box was previously used in an OLite setup, then it is possible that an autodectect does not recognize the used tiles.

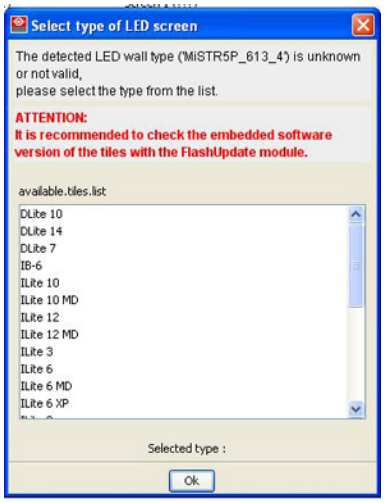


Image 7-83
Unknown tiles

Handle as follow to solve that problem:

1. Scroll and select MiTRIX or MiSTRIP in the displayed window. Click **OK**. The setup with the correct tiles is displayed.
2. Click on the screen in the preview pane to activate the screen properties.
3. Click on the **Screen Settings** tab
4. Click on **Address LED modules** to address all LED modules.
5. Execute a Redetect. Screen should be known now.

Autodetection of tiles with mode selection

When during an autodetection with a DX-700, tiles are detected which can be used in tile mode or in creative mode, a *Choose IX mode* dialog opens.

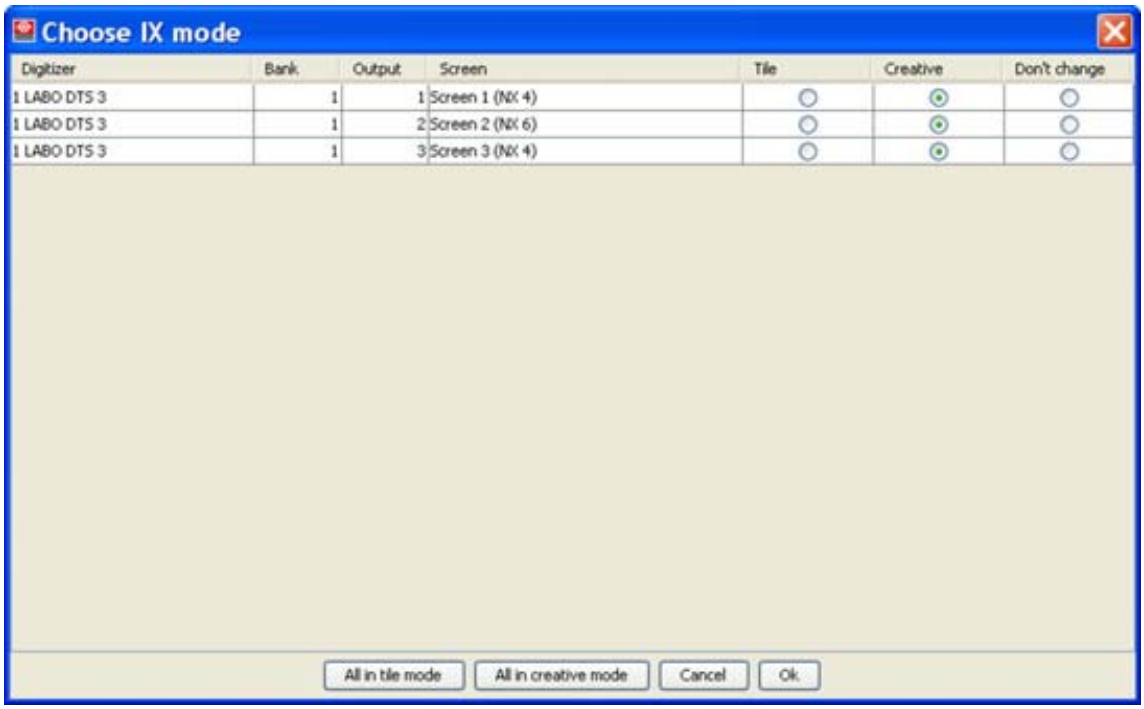


Image 7-84

Each screen can be set in a different mode by checking the corresponding radio button in the column *Tile* or *Creative*. Click on **OK** to apply the selection. If *Don't change* is selected, the current mode of the tile is activated.

To set all screens (tiles) in tile mode, click on **All in tile mode**.

To set all screens (tiles) in creative mode, click on **All in creative mode**.

7.13 Manipulations within the Setup Overview pane

Overview

- Move devices
- Setup preview Zoom IN/OUT
- Redo configuration layout
- Remove an item from a setup

7.13.1 Move devices

How to move ?

1. Click on a device in the configuration overview pane and hold down the mouse button (a). (image 7-85)

   A square with 8 points will indicate that the device is selected.

2. Drag the selected device to the desired location (b).
3. Release the mouse button.

   The selected device is moved to its new location, all connections remain in place.

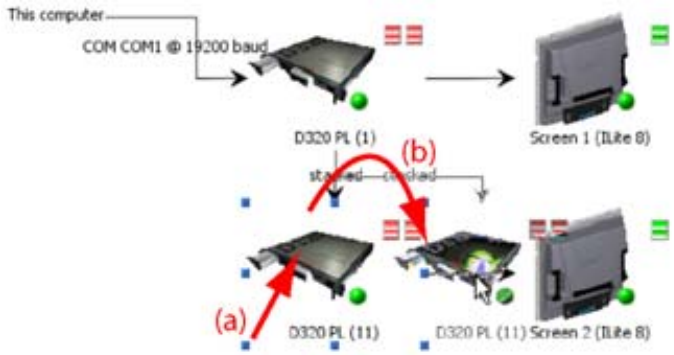


Image 7-85
Move item in preview pane

7.13.2 Setup preview Zoom IN/OUT

How to zoom IN/OUT

1. Right click in the setup overview pane.

   A pop-up menu opens. (image 7-86)
   Or,
   select *View* on the menu bar.

   The *View* menu opens. (image 7-87)

2. Select *Zoom in* or *Zoom out* or *Normal*.

Zoom in	a diagonal enlarged view will be displayed, the upper left corner stays on its place.
Zoom out	a diagonal reduced view will be displayed, the upper left corner stays on its place
Normal	the default view will be displayed

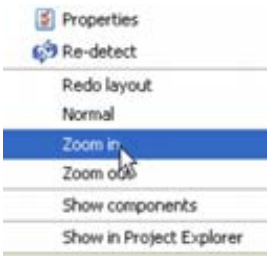


Image 7-86
Zoom via right click

Image 7-87
Zoom via zoom menu

Use the scroll bars to view a typical part of the setup overview.

7.13.3 Redo configuration layout

What can be done ?

When the devices in the configuration overview pane are moved through each other so that there is no overview anymore, with *Redo layout* the devices will be ordered again.

How to redo layout of the configuration overview pane ?

1. Right click on the background of the configuration overview pane.

   A pop-up menu opens. (image 7-88)

2. Select *Redo layout*.

   The layout will be reorganized for a clear overview of the configuration. (image 7-89)

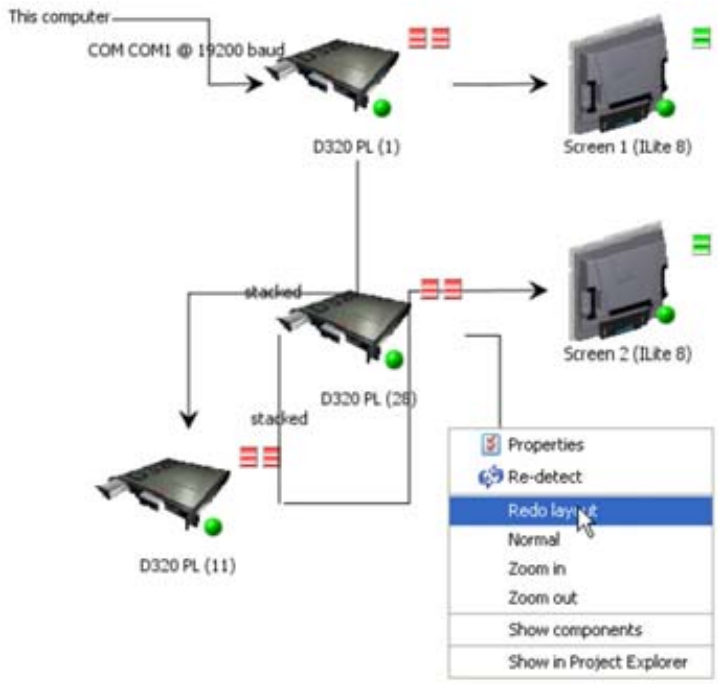


Image 7-88
Redo layout

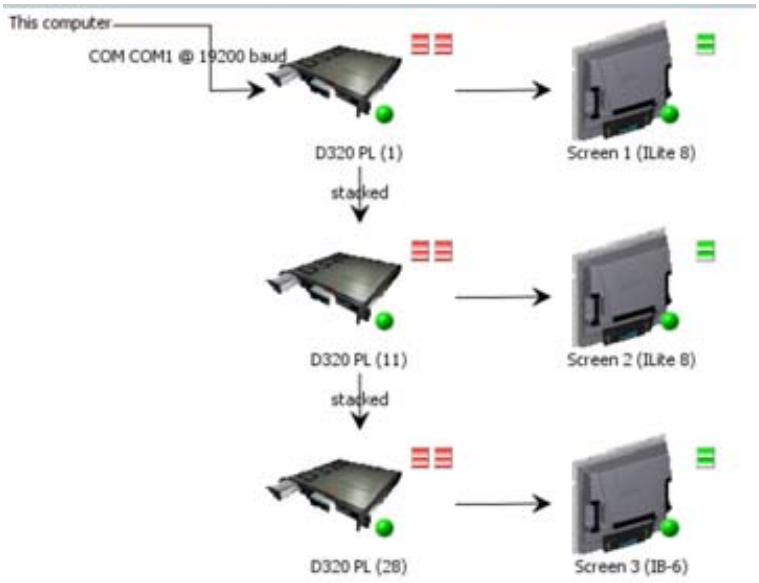


Image 7-89
Redo configuration layout result

7.13.4 Remove an item from a setup

How to remove via right click?

1. Right click on the item which must be removed from the setup.

   A content menu opens. (image 7-90)

2. Select *Remove*.

   The selected item in the setup is removed.

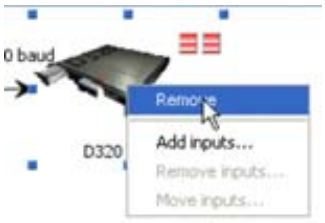


Image 7-90
Remove via right click

Possible messages

When deleting the single digitizer linked with a screen in a setup, Director Toolset will display a question dialog box to ask the user if he agrees that when continuing the deletion of the digitizer, the screen will be deleted too.

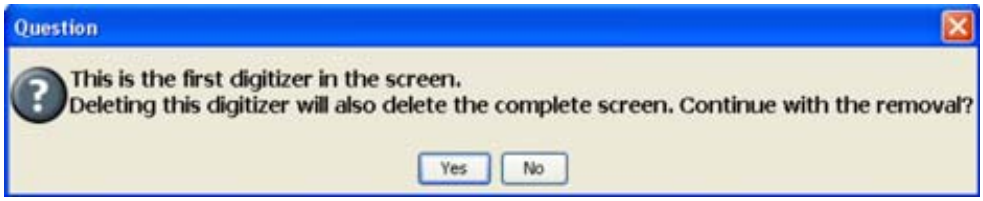


Image 7-91
Remove single digitizer in configuration

7.14 Mixing console

Overview

- Purpose of the mixing console
- Start up
- Using the Mixing console

7.14.1 Purpose of the mixing console

Overview

The mixing console is a handy tool to get an overview of the most common window settings of all input modules in the configuration. As the settings are combined in one handy window, it is easy to make adjustments to different windows without you have to browse to the separate settings of these windows. With this mixing console you save a lot of clicking actions. Only for advanced adjustment is it necessary to browse to the typical window settings.

The mixing console allows to adjust window per window, but also multiple windows at the same time. The multiple selection can be sources of the same type (e.g. all video sources) or sources from different types which are manually selected.

The following adjustment can be done :

- Adjust the window position
- Adjust the window dimensions
- Adjust the window Z-order
- Adjust the viewport position
- Adjust the viewport dimensions
- Adjust the opacity (alpha blending)

7.14.2 Start up

How to start up ?

1. Within the Configurator, click on *View* on the menu bar and select *Mixing console*. (image 7-92)

   The Mixing console dialog box appears. (image 7-93)

Image 7-92
Start up Mixing console

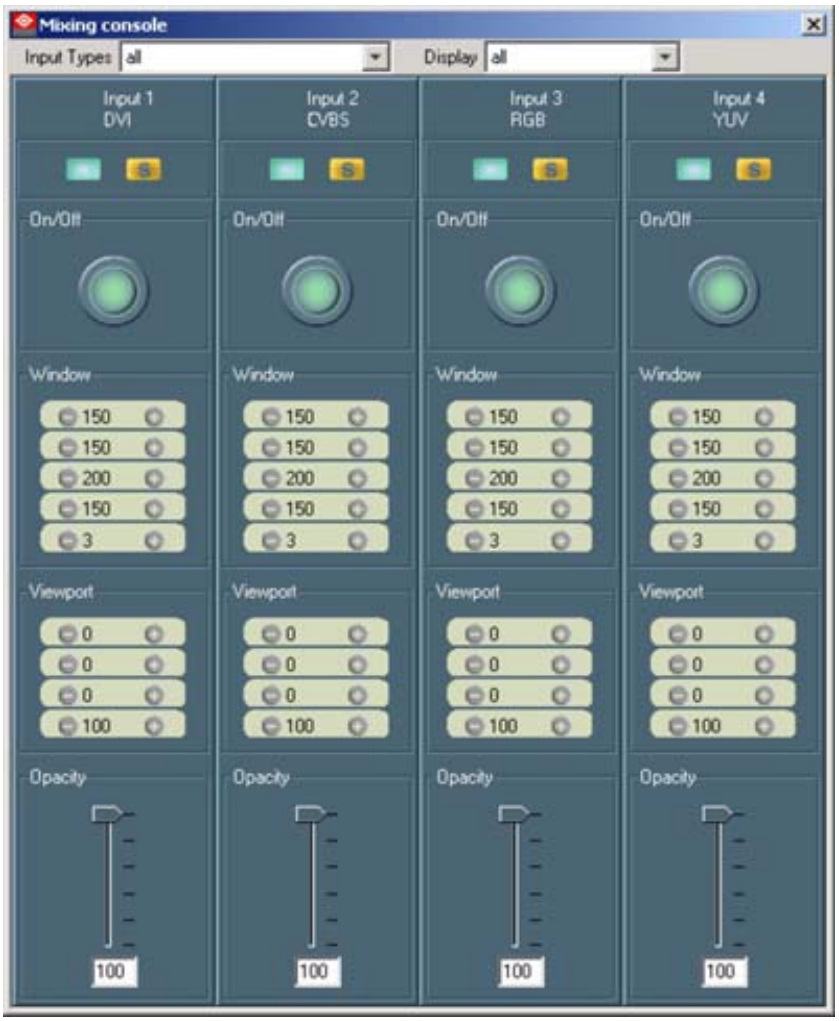


Image 7-93
Mixing console

7.14.3 Using the Mixing console

Input overview

The input overview on the mixing console depends on the selection in the combo boxes associated with *Input Type* and *Display*.

Image 7-94
Input selection

Image 7-95
Display selection

Possible combinations:

Input Type	Display	Result
All	All	All inputs (windows) will be displayed in the mixing console
All	Typical display selected	All inputs (windows) of the digitizer driving that display will be displayed in the mixing console.
Typical input type	All	All inputs of that specific type from any display will be displayed in the mixing console.
Typical input type	Typical display selected	All inputs of that specific type from a specific display will be displayed in the mixing console.

Input selection

An input can be activated or deactivated. When the input is activated, all adjustments will be executed on that activated input.

Multiple activations of inputs is possible. That means that all adjustments will be executed on the activated inputs.

An input module is selected when the first of the two icons has a light green color.

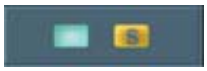


Image 7-96
Input selected

An input is not activated when the first of the two icons has a magenta color.

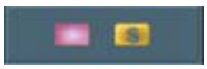


Image 7-97
Input not selected

To adjust one specific module only, press the yellow button, second icon of the two icons. The S (S = solo) becomes visible on the button.

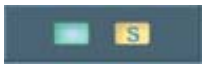


Image 7-98
Input selected as 'solo'

The selection button (first icon of the two icons) of all the other modules will switch to magenta, what means that these modules will not follow the adjustments.

At the same time:

- the visibility of all other inputs (windows) will be set to invisible (button becomes magenta).
- only the input (window) corresponding with the 'S' pressed button will be visible.

Window Visibility ON-OFF

The visibility of a window can be changed by clicking on the ON/OFF button.

Image 7-99
Visibility buttons

The color of the button indicates the visibility of the window.

When the color of the button is:

magenta	window not visible on the display
green	window visible on the display

An input (window) can be activated but not visible on the screen (visibility set to Off). As that non visible window is activated, it will follow the adjustments made on a visible window.

Window set up

To change the value, click on the **+** or **-** button. The value between both buttons will change accordingly.

When pushing continuously on the **+** or **-** button will increase the adjustment speed (counting by 10 instead of 1).

When the **Shift** key is pressed while clicking on the **+** or **-** button, the value of the adjustment will increment or decrement automatically until the **+** or **-** button is pressed again.

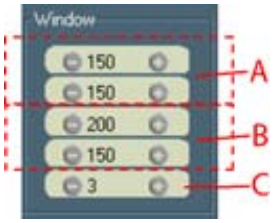


Image 7-100
Window indication

A start position window
B window dimensions
C Z-order

The first two values (A) give the start position of the window (first value = left start, second value = top start).

The third and fourth value (B) indicate the dimensions of the window (third value = horizontal dimension, fourth value = vertical dimension).

The fifth setting (C) gives the Z-ordering of the window. Windows are displayed on each other following a Z-ordering. The value indicates the relative position of that window in comparison with the other window. When the value is higher than that other window, then the window will be displayed in front of that other window. The window with the highest value will be displayed on top of the others.

When multiple windows are selected, the value of the other windows will increment or decrement with a same value. E.g. increment with 7 means that the same adjustment of the other selected windows will increment relatively with 7.

Viewport

To change the value, click on the **+** or **-** button. The value between both buttons will change accordingly.

Pushing continuously on the **+** or **-** button will increase the adjustment speed (counting by 10 instead of 1).

When the **Shift** key is pressed while clicking on the **+** or **-** button, the value of the adjustment will increment or decrement automatically until the **+** or **-** button is pressed again.

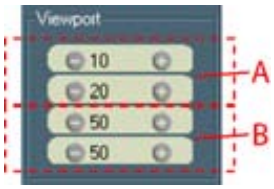


Image 7-101
Viewport indication

A Start position viewport
B Viewport dimensions

Enter the start position (left and top coordinate) (A) with the first two adjustments (expressed in pixels).

Enter the viewport dimensions with the third and fourth adjustment (B) (expressed in pixels).

Opacity (= alpha blending)

Click on the slider and drag the slider to the desired position or click in the value input field (below the slider) and enter the desired value with the keyboard.

8. D320 BASED DIGITIZER SETTINGS

Overview

- Device settings
- Settings
- Device properties

8.1 Device settings

To open the device settings

To open the device settings, just click on the device icon in the preview pane.

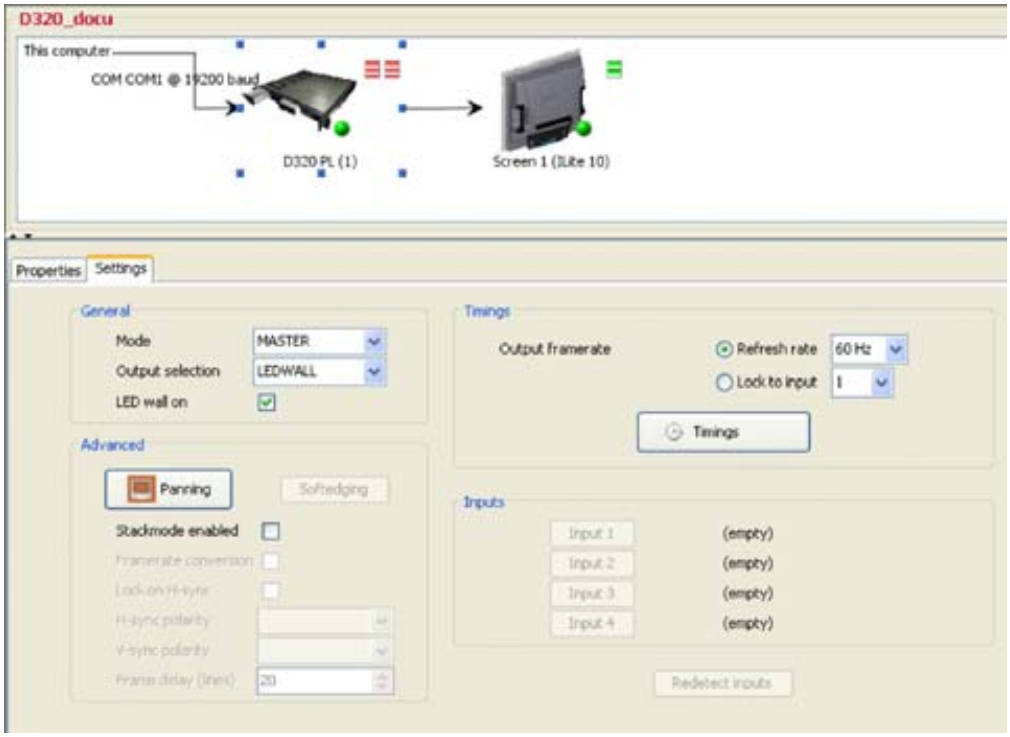


Image 8-1
Open the digitizer settings

Depending on the device type, the settings becomes available in the settings pane (lower pane).

8.2 Settings

Overview

- Activating the processing settings
- General
- Timings
- Pattern setup in normal mode
- Pattern setup in expert mode
- Advanced settings

- Input
- Factory defaults

Only for D320 based digitizers.

8.2.1 Activating the processing settings

How to activate ?

1. Click on the tab **Processing**. (image 8-2)

   The processing settings opens. Some items are grayed out in the processing settings.
   The grayed out items depends on:
   - the type of digitizer
   - the *Output selection* in part *General* of the processing tab.

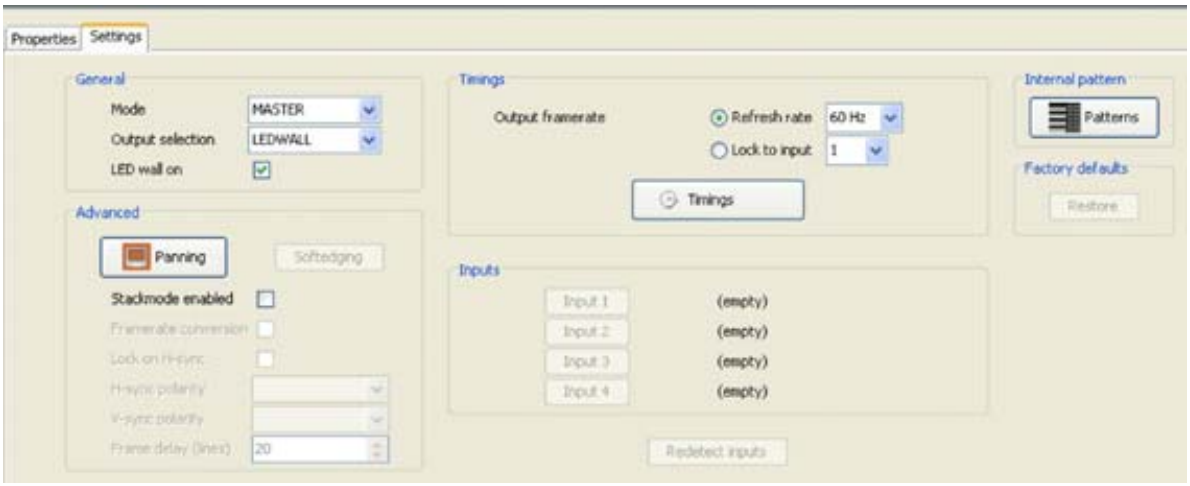


Image 8-2
Processing settings digitizer

8.2.2 General

Mode

Image 8-3
Digitizer mode selection

Click on the combo box next to *Mode* and select the appropriate digitizer position in the configuration.

There are 3 operation modes:

- Master : the addressed device is the first in a chain of multiple devices or is the first in the stack of devices.
- Slave Direct : for any other digitizer which is not the first one.
- Slave Resync : for any other digitizer which is not the first one and re-synching is necessary.

Example of a master - slave combination

Master - Slave in a chained configuration

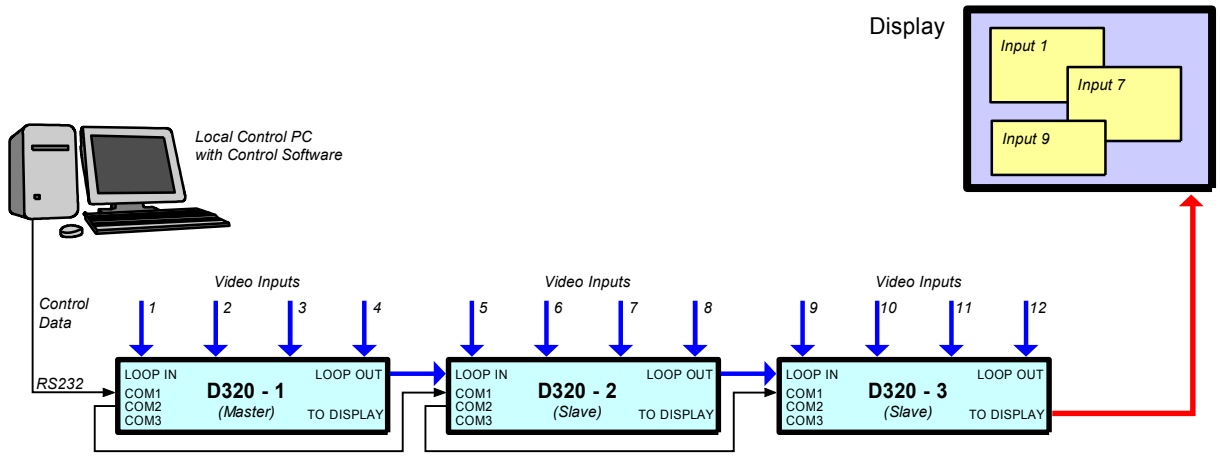


Image 8-4

Master - Slave in a stacked configuration

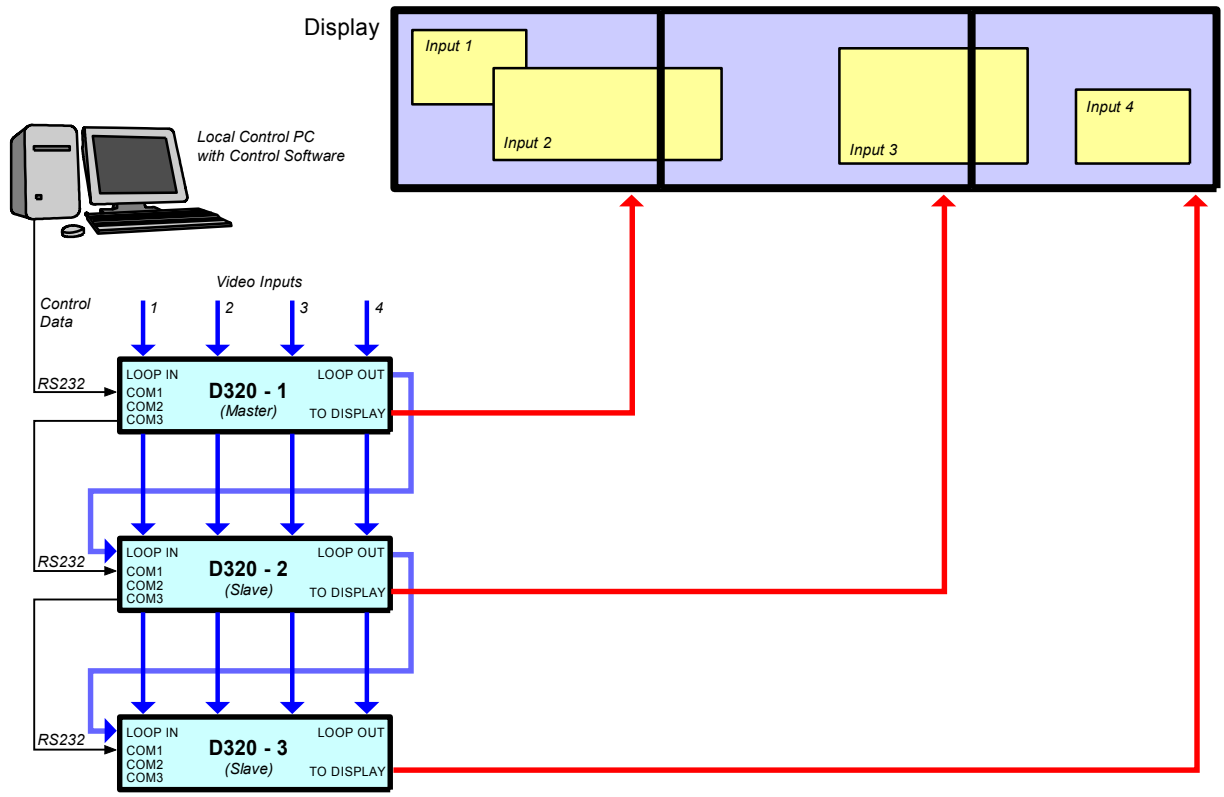


Image 8-5

Output selection

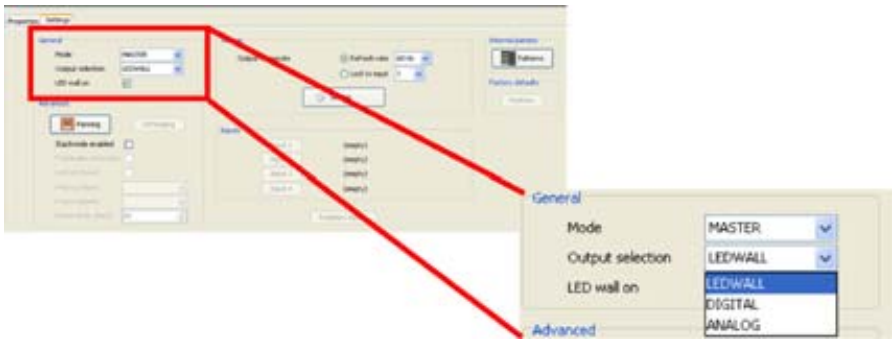


Image 8-6
Output selection digitizer

Click on the combo box next to *Output selection* and select the appropriate output.

There are 3 different outputs:

- LED Wall, can only be used by a Barco LED Wall.
- Digital Output, can be used by any display device which has a digital input.
- Analog Output, can be used by any display device which has an analog input.

The choice in *Output selection* will determine whether some items are grayed out or not in the rest of the settings in the *Processing* tab.

When switching from *LED wall* to *Digital* or *Analog*, the *LED wall on* function is disabled.

LED wall on-off

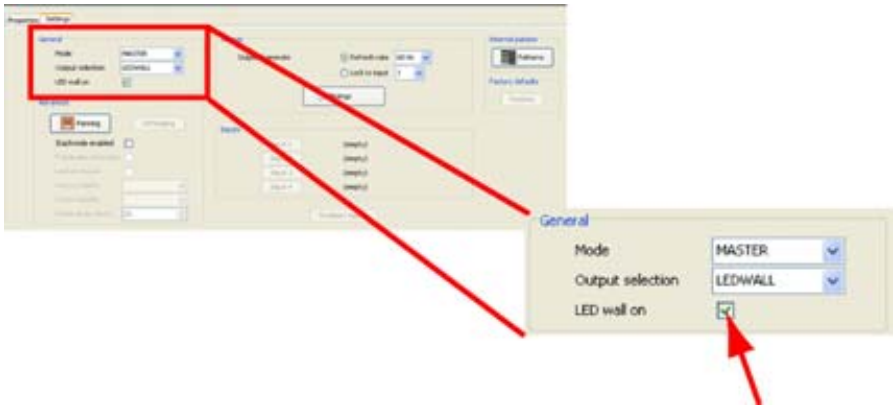


Image 8-7
LED wall on/off

This function is only active when *Output resolution* is set to *LED WALL*.

This function will switch the LED wall on or off in a online configuration. The status of the LED wall setting is indicated by dot on the digitizer icon.

- Green dot, *LED wall on* setting checked
- Red dot, *LED wall on* setting not checked

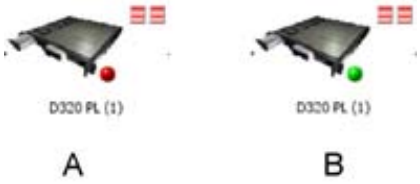


Image 8-8
Status LED wall on setting

The LED wall can only be switched on or off when no FiberLink is used. If a FiberLink is used the LED wall must be switched on or off in the FiberLink settings or the LED wall settings.

8.2.3 Timings

8.2.3.1 Introduction

Overview

The timings can be set via different ways which give the same result. Depending on the *Output selection* the timing pane contains 2 or 3 items to realize the timing settings.

For LED wall output, make first the following decision:

- is your wall smaller than or equal to 800 x 600 pixels? Select the output frame rate and click on **Timings** to select the default timings.
- is there a dimension, horizontally or vertically, of your wall which is greater than 800 or 600? Select the output frame rate and click on **Timings** to fill out the timings via the timing wizard or fill out the timings manually.

Example:

The active field of a digitizer can display by default 800 x 600 = 480000 pixels.

As long as the maximum number of pixels is not exceeded, the wall can be controlled by one digitizer. That means that a wall of e.g. 1000 x 400 can be controlled by one digitizer but the timings should be adapted accordingly. The default timings cannot be used here.

There are some limits in the dimensions :

- Horizontal pixels cannot exceed 1920 pixels. That means that you can build a wall of 1920 x 250 pixels.
- Vertical pixels cannot exceed 1200 pixels. That means that you can build a wall of 400 x 1200 pixels.

For Digital or Analog output, make first the following decision:

- Is the output image VESA standard? Select the output resolution and the frame rate. The timings are automatically filled out.
- Is the output image a non VESA standard? Select the frame rate and click on **Timings** to fill out the timings via the timings wizard or fill out the timings manually.

When the Director Toolset works in expert mode, sync generator timings and display timings can be set separately. To switch to expert mode, see chapter "5. Preferences", "General", page 76.

Make a choice in how to set the timing and act accordingly.

Schematic overview used timings

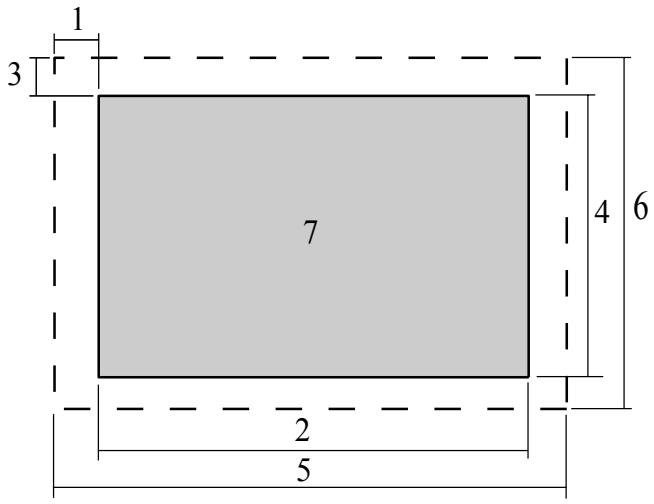


Image 8-9
Physical representation of the timings

1 Horizontal start
2 Horizontal active pixels
3 Vertical start
4 Vertical active lines
5 Horizontal total pixels
6 Vertical total lines
7 Active area of an input signal

The dotted area represents the total input signal. The colored area represents the active area of the input signal.

8.2.3.2 Output resolution (only for Digital or Analog output)

Overview

The selected output resolution for Digital or Analog output sets the timings according the VESA standard or the software defaults. The fields, displayed when the timing buttons is pressed, are already filled out according the previous selection.

How to select ?

1. Click on the combo box and select the corresponding setting. (image 8-10)
   The following settings are possible:
   - SVGA (800 x 600)
   - XGA (1024 x 768)
   - SXGA (1280 x 1024)
   - SXGA+ (1400 x 1050)
   - UXGA (1600 x 1200)
   - Default (800 x 600)

   When successfully switched to another standard, a message will be displayed. No further setup is necessary.

Image 8-10
Output resolution for digital or analog

8.2.3.3 Output framerate

Choices

For digital or analog output, the output framerate determine together with the resolution the timings of the output signal.

For LED wall output, the output framerate and the timings behind the timing button (default timings) determine the complete timings of the output signal.

Image 8-11
Output framerate

The output framerate can be triggered by an internal clock on 50 Hz or 60 Hz, or by a clock locked on an input source.

Check the radio button of your choice.

When *Lock to input* is selected, click on the combo box next to it and select the input to which it must be locked.

8.2.3.4 Timing window

8.2.3.4.1 Start up

How to start up ?

1. Click on the **Timings** button. (image 8-12)

   The *Timings* window opens. (image 8-13)

   When Director Toolset runs in normal mode, only one tab page, sync generator, will be displayed with the proposed settings filled out.

   When Director Toolset runs in expert mode, two tab pages, sync generator and display interface are available and can be adjusted separately.

Image 8-12
Open Timings window

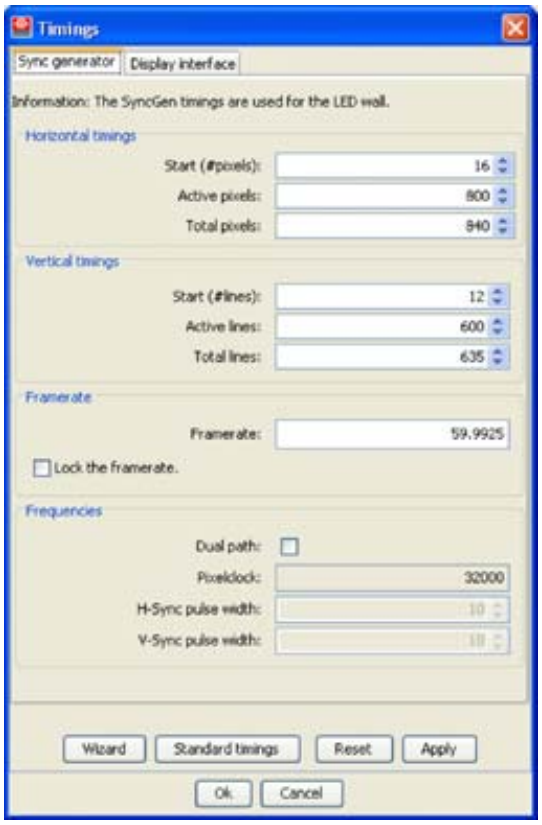


Image 8-13
Timings window

Wall positioning message

Started from an 'online configuration', when the LED wall connected to the digitizer and is not yet positioned, a message will be displayed to start first with the Tile positioning. In a 'offline configuration', tile positioning will be done by default.

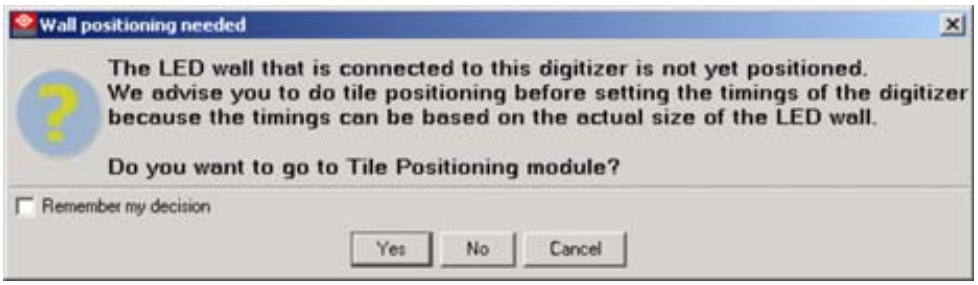


Image 8-14
Wall positioning message

8.2.3.4.2 How to fill out the timings ?

Overview

The following ways are possible to fill out the timings:

- via the Timing wizard, see "Timing wizard", page 210.
- via the selection of standard timings, see "Standard timings", page 215.
- via a manual fill out of timing sheet, see "Sync generator, manually fill out", page 216.

8.2.3.4.3 Timing wizard

How to start up ?

1. Click on **Wizard** to start up the timing wizard. (image 8-15)

   The timing window Welcome page will be displayed. (image 8-16)

   The *Timings Wizard* will guide you through the process of setting the correct resolution, frequency and/or framerate for your configuration. By using a set of questions, this wizard will try to compute the best fit configuration depending on several parameters.

2. If you want to abort the wizard without making any changes, press **Cancel**. Otherwise press **Next** to continue to the next screen.

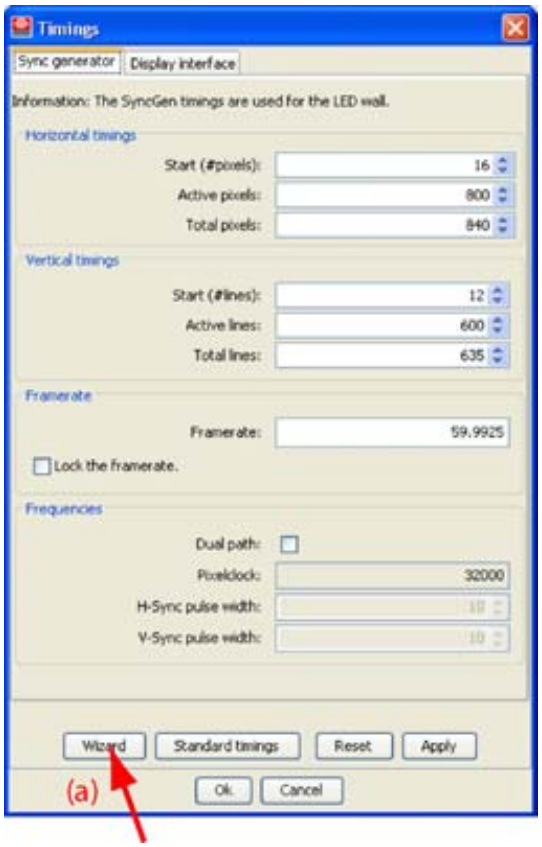


Image 8-15
Timing wizard selected

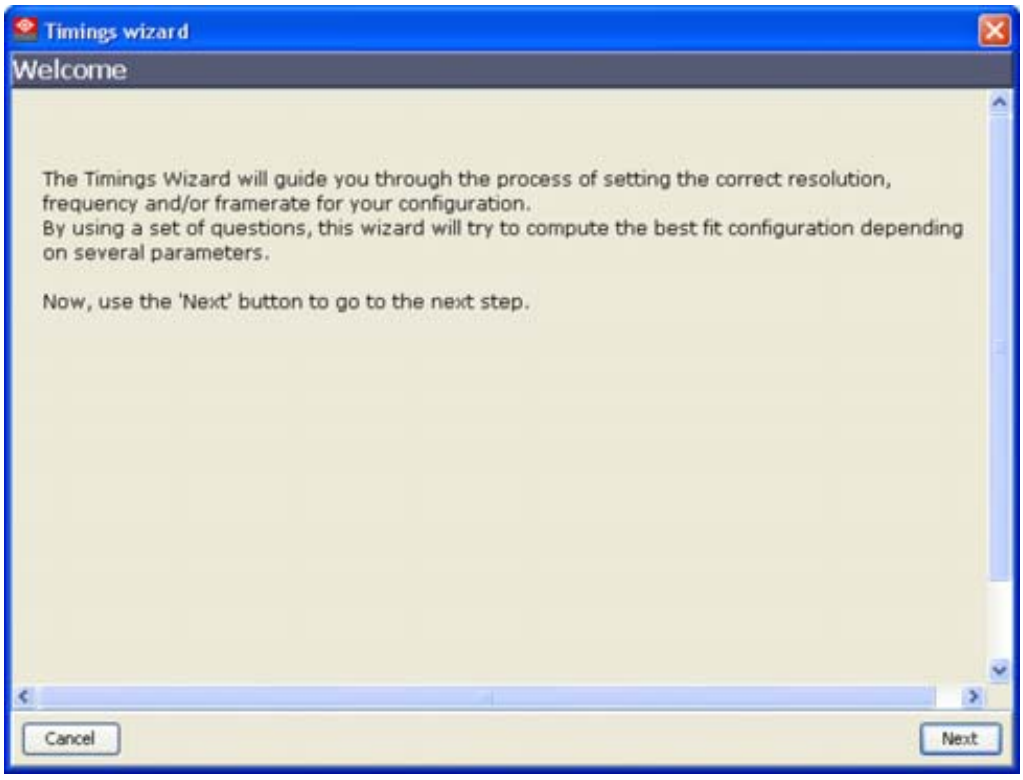


Image 8-16
Timing wizard start up

Input type selection

To calculate the best timings, it is important to know what kind of video you want to play on the system.

1. Click with the mouse on the radio button of your choice. (image 8-17)
   The following types are possible:
   - motion sensitive video (e.g. DVD, camera, doremi, moving images)
   - static or semi static images (e.g. slide shows, flash animations, graphics)
2. When you want an Enlarged active field, check the check box in front of *Enlarged active field*.
   Tip: *It is recommended to enlarge the active field.*

   The calculated active field will be enlarged, when possible, with 3 to 5 pixels in the horizontal and vertical direction.
3. Click **Next** to continue with the next page.
   Click **Previous** to return to the previous page.

   If *Motion sensitive video* is selected, the wizard will continue with the Frame rate and skip the resolution.

   If *Static or semi static images* is selected, the wizard will continue with the resolution of the image.

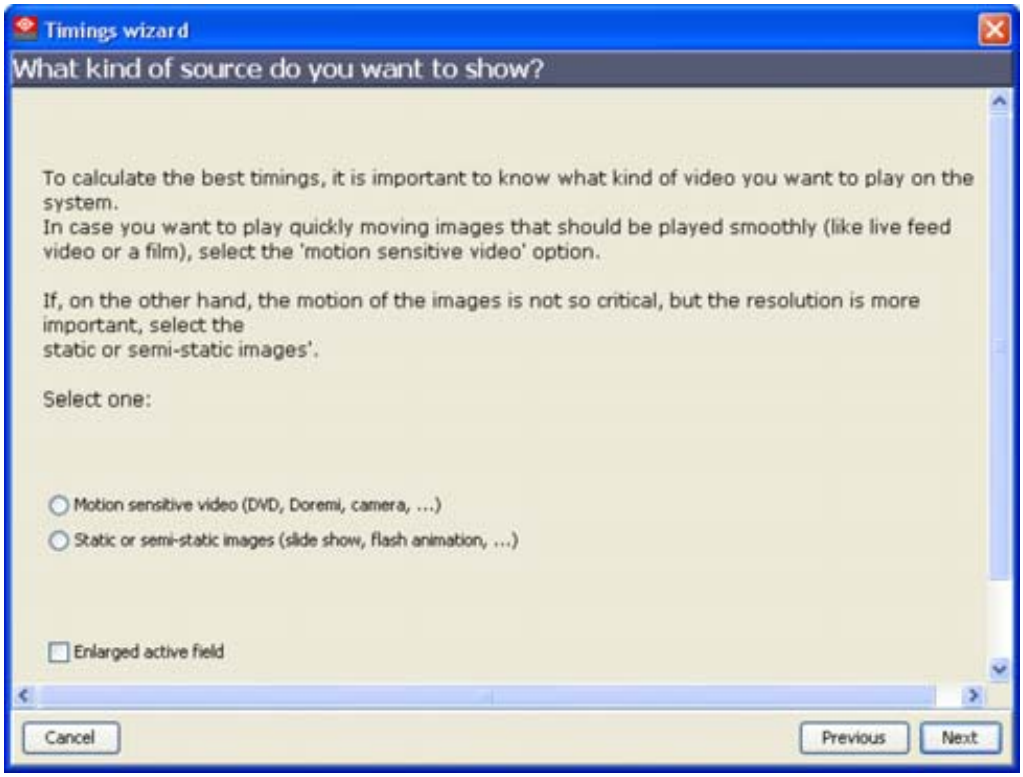


Image 8-17
Type of input selection

Frame rate (when Motion sensitive video is selected)

1. Click with the mouse on the radio button corresponding with your video input source. (image 8-18)
   The possible choices to enter the frame rate (vertical frequency) of your video source are:
   - PAL/SECAM (50Hz)
   - NTSC (60Hz)
   - Other : any frequency in the range 25Hz to 100Hz can be filled out.
2. Click **Next** to continue with the next page.
   Click **Previous** to return to the previous page.

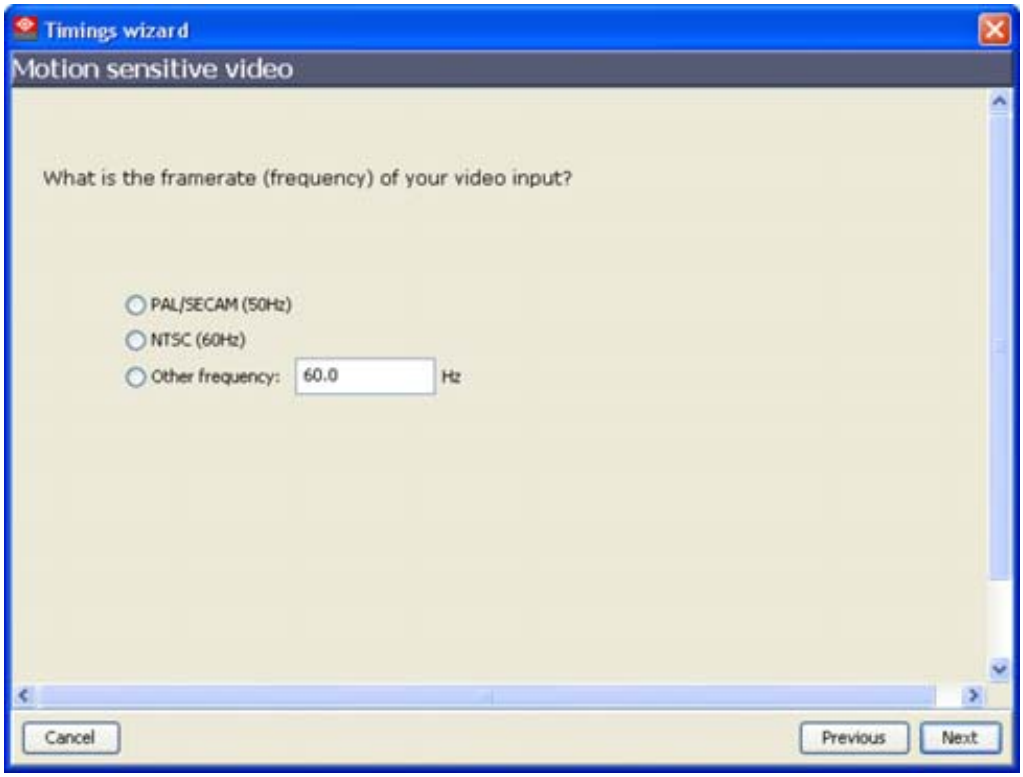


Image 8-18
Frame rate

Resolution based setup (when Static or semi-static images is selected)

1. Fill out the image output resolution of the image. (image 8-19)

   Horizontal resolution : pixels

   Vertical resolution : lines

   When the background of the input field is red, the entered value is not numeric or is out of specification.

2. Click **Next** to continue with the next page.
   Click **Previous** to return to the previous page.

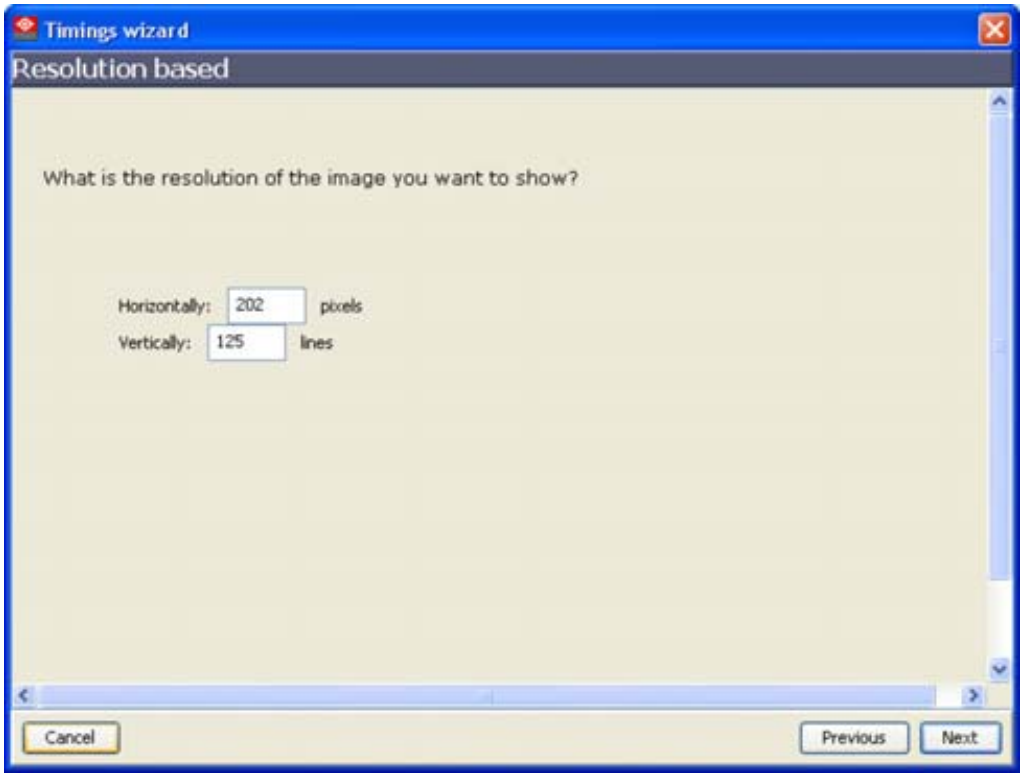


Image 8-19
Resolution based setup

Finishing the timing wizard

The final screen will give an overview of the calculated timings based on the entered data. It is still possible to adjust the timings and frequencies according your needs.

1. Click on the up or down button of the setting you want to change (image 8-20)
   Or,
   click in the input field and enter a new value.
2. Click Finish to finish the timings wizard and to apply the settings.

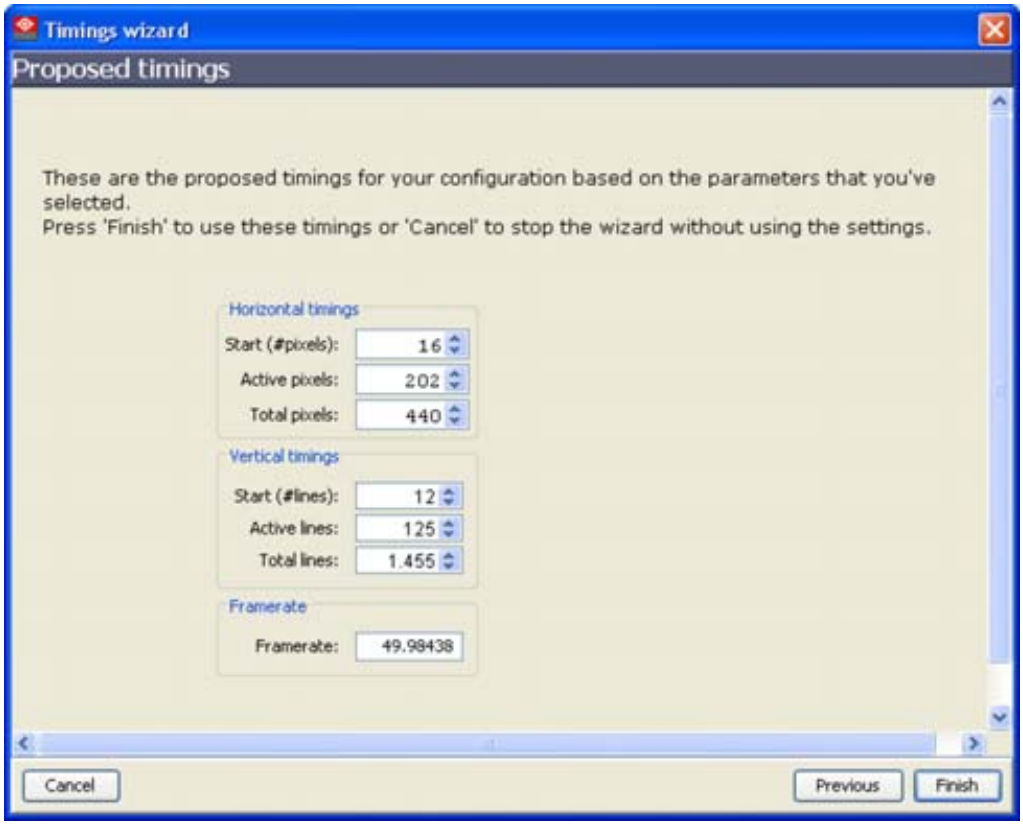


Image 8-20
Finishing the timing wizard

8.2.3.4.4 Standard timings

How to select ?

1. Click on **Standard timings** (a). (image 8-21)

   The *Standard timings* window opens (b). The settings are given as read only values.

   When *LEDWALL* is selected in *General*, *Output selection* (image 8-6), the standard timings are set to *Default*. Continue with step 4.

   When *Digital* or *Analog* is selected in *General*, *Output selection* (image 8-6), all VESA standard can be selected. Continue with step 2.

2. Click on the combo box next to *Select an output resolution* (c).
3. Select the desired standard timings.
4. Click **OK** to activate (d).

   When the output selection is *Digital* or *Analog*, the *Sync generator* and *Display interface* settings will be adapted according the selected standard timings.

   When the output selection is *LED wall*, only the *Sync generator* settings will be adapted according the default timings. The *Display interface* settings are fixed on 800 x 600.

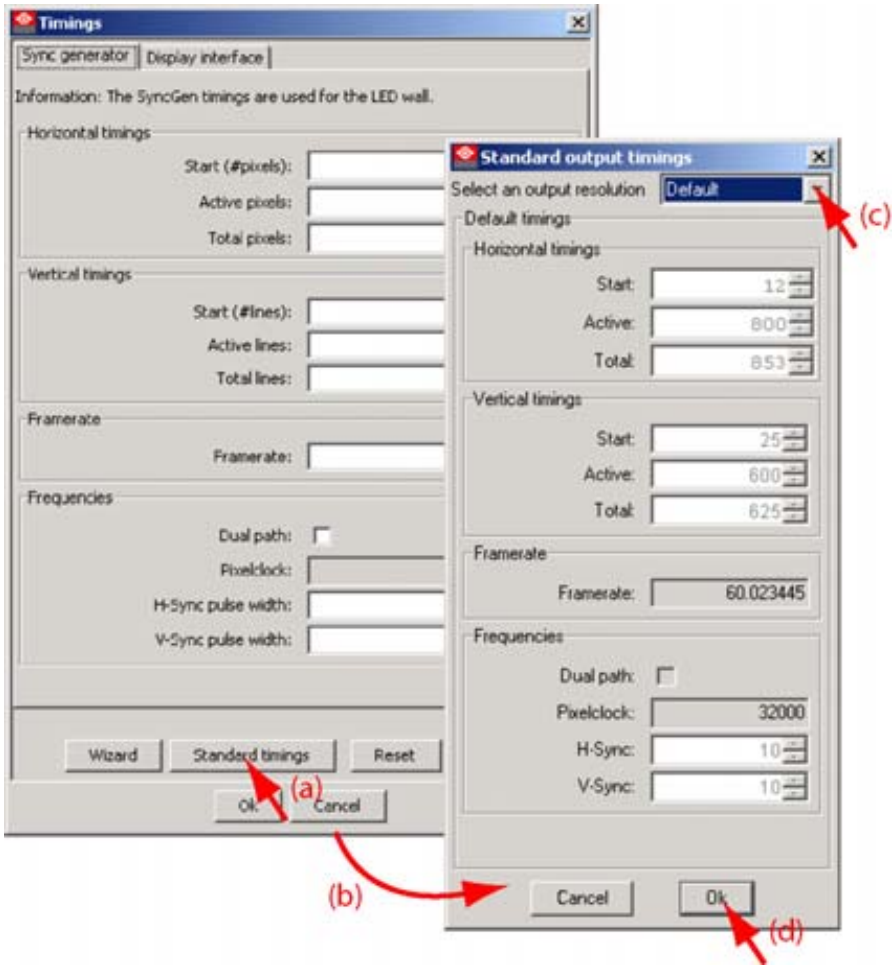


Image 8-21
Standard timings selection

8.2.3.4.5 Sync generator, manually fill out

Sync generator settings can be manually adjusted by clicking on the up or down button or by clicking in the input field and entering the desired value, using the numeric keys on the keyboard.

Overview

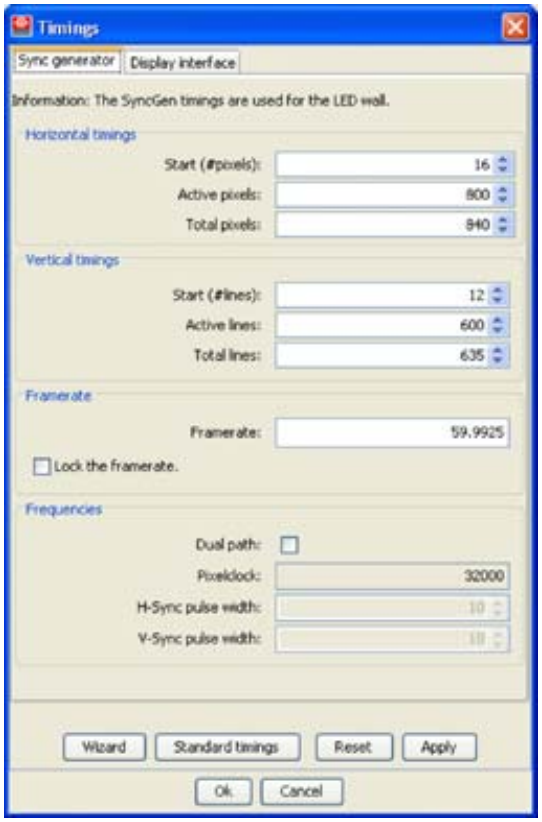


Image 8-22
Sync generator timings

The sync generator settings are use to for the digitizer LED wall output.

Horizontal timings

Start: start of the active pixels. Horizontal start position of the active image area, referenced to Horizontal sync.

Active: the number of pixels that are really used (= the actual width of the image/video that will be shown).

Total: the number of pixels in a line (= max. width). Total = Start + Active + number of trailing blanking pixels.

Vertical timings

Start : start of the active lines. Vertical start position of the active image area, referenced from Vertical sync.

Active : the number of lines that are really used (= the actual height of the image/video that will be shown).

Total : the number of lines in a frame (= max. height). Total = Start + Active + number of trailing blanking lines)

Frame rate

Vertical frequency of the input signal.

Lock to frame rate : When checked, the frame rate will be locked to the current value. Changing the horizontal and vertical timings will not change the frame rate anymore.

Frequencies

Dual path : the pixel clock can work in 2 ways: single or dual. When in dual path, the number of information send to the wall is doubled for the same clock. .

To work dual, check the check box.

This function is by default used in Single path.

Can only be used for ILite 6-8-10-12 tiles and IB-6 tiles. With some sources, artifacts are possible when dual path is used.

Pixelclock : read only value

H-Sync : The width of the horizontal sync signal. This should always be 10 pixels.

V-Sync : The width of the vertical sync signal. This should always be 10 lines.

8.2.3.4.6 Display interface

Display interface is only accessible when in *Expert* mode.

When Output selection is set to LED wall, the displayed values cannot be changed as the monitor output is always 800 x 600.

Overview

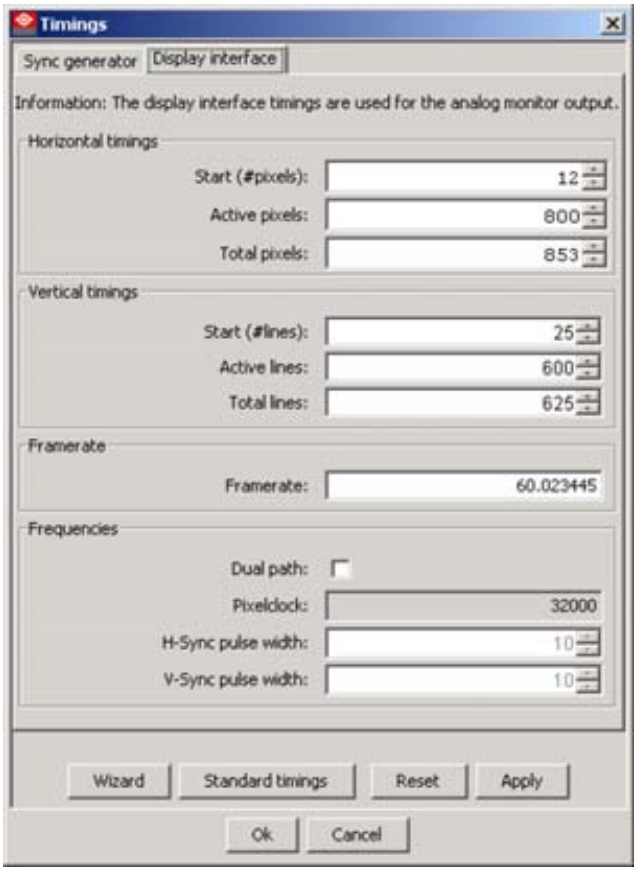


Image 8-23
Display interface timings

The display interface timings are used to drive the analog monitor output. These can be adapted to the specifications of the used monitor.

When in LED wall mode, the output is standard 800 x 600. As only a small part of the complete image is monitored, panning must be used to see other parts.

Horizontal timings

Start: start of the active pixels. Horizontal start position of the active image area, referenced to Horizontal sync

Active: the number of pixels that are really used (= the actual width of the image/video that will be shown).

Total: the number of pixels in a line (= max. width). Total = Start + Active + number of trailing blanking pixels.

Vertical timings

Start : start of the active lines. Vertical start position of the active image area, referenced from Vertical sync.

Active : the number of lines that are really used (= the actual height of the image/video that will be shown).

Total : the number of lines in a frame (= max. height). Total = Start + Active + number of trailing blanking lines)

Frame rate

Vertical frequency of the input signal.

Frequencies

Dual path : the pixel clock can work in 2 ways: single or dual. When in dual path, the number of information send to the wall is doubled for the same clock. .

To work dual, check the check box.

This function is by default used in Single path.

Pixelclock : read only value

H-Sync : The width of the horizontal sync signal. This should always be 10 pixels.

V-Sync : The width of the vertical sync signal. This should always be 10 lines.

8.2.4 Pattern setup in normal mode

How to select ?

1. Click on the **Patterns** button (a). (image 8-24)

   The *Internal patterns* window opens (b).

2. Check *Show internal pattern* (c).
   Tip: *Move your mouse over a pattern button to display the name of that pattern in a tool tip.*

   The six pattern buttons become available (d).
   - Byte level pattern (1)
   - Multiburst pattern (2)
   - Vertical ramps (3)
   - Horizontal ramps (4)
   - Crosshatch pattern (5)
   - Block pattern (6)

3. Click on the desired pattern button (e).

The pattern specific settings become available (f).

Pattern	Specific settings
Bytelevel pattern	Color / Amplitude
Multiburst pattern	Color / Width
Vertical ramp	Color / Vertical motion
Horizontal ramp	Color / Horizontal motion
Crosshatch pattern	Color / Horizontal motion / Vertical motion / Pixel width
Block pattern	Color

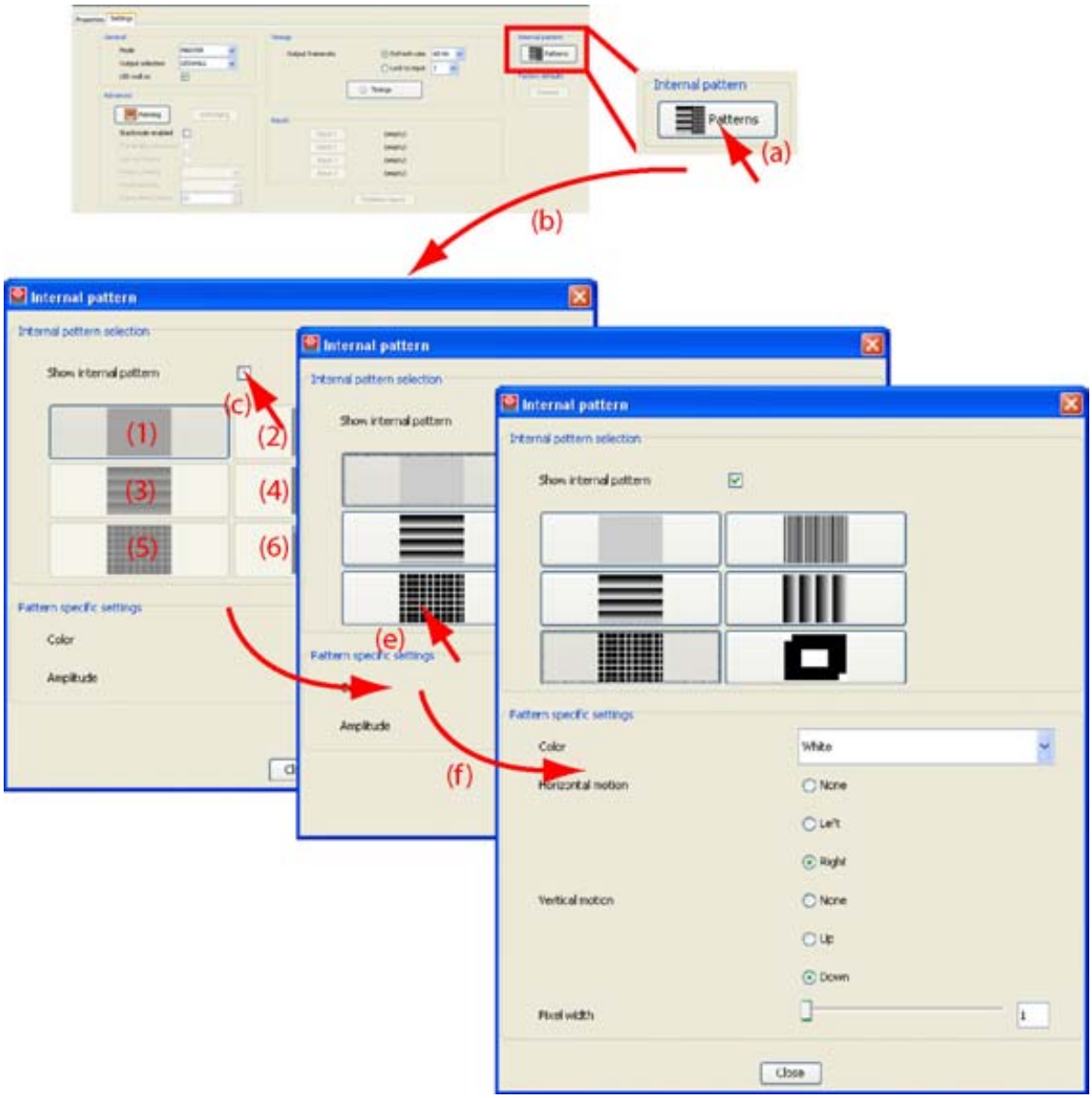


Image 8-24
Select internal pattern

8.2.5 Pattern setup in expert mode

How to select ?

1. Click on the **Patterns** button.

   The *Internal patterns* window opens. (image 8-25)

   Two tab pages are available, Sync generator (used for the LED wall) and Display interface (used for the analog monitor output).

   For how to select a pattern and the different specific settings, see "Pattern setup in normal mode", page 219.

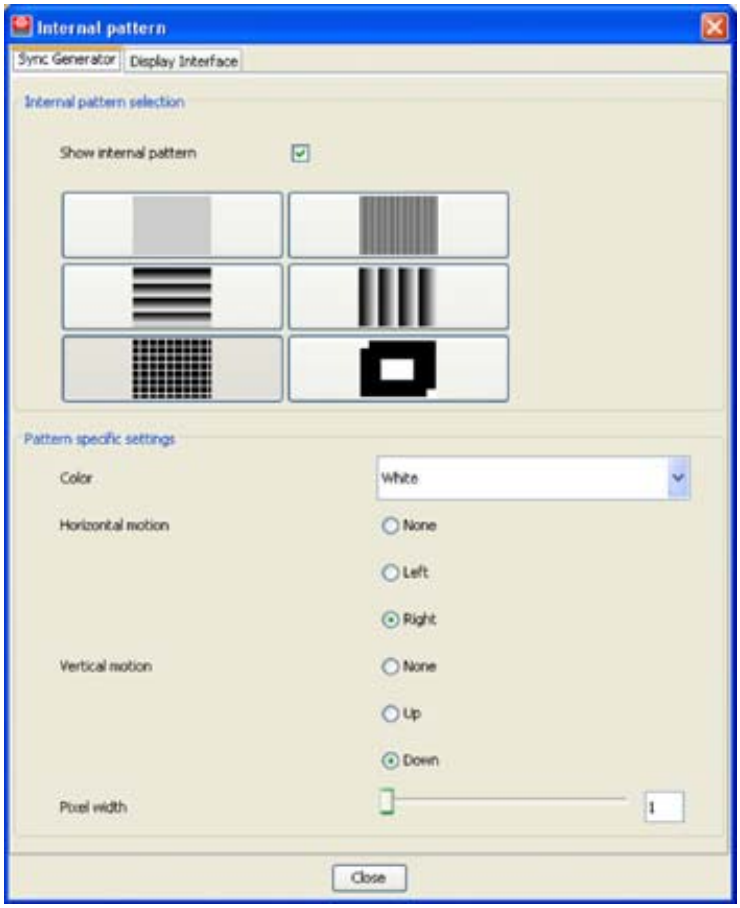


Image 8-25
Patterns window in expert mode

8.2.6 Advanced settings

Overview

- Panning
- Softedging
- Other Advanced settings

8.2.6.1 Panning

Panning

A part of the image is displayed on a monitor preview. To get an overview of the complete image, that part can be moved, panned so that another part of the image becomes visible on the monitor.

What is possible ?

A monitor preview is only possible:

- when in *General*, *Output selection* is set to *LED wall* (see "General", page 202).
- and the LED wall is connected to the digitizer via a split cable (one output for the LED wall and one output for the monitor).

The part content of the LED wall becomes visible on the monitor screen. The window view can be moved over the complete active area of the LED wall.

How to activate ?

1. Click on **Panning**.

   The *Monitor panning* window opens.

2. Check *Enable monitor panning* to start. (image 8-26)

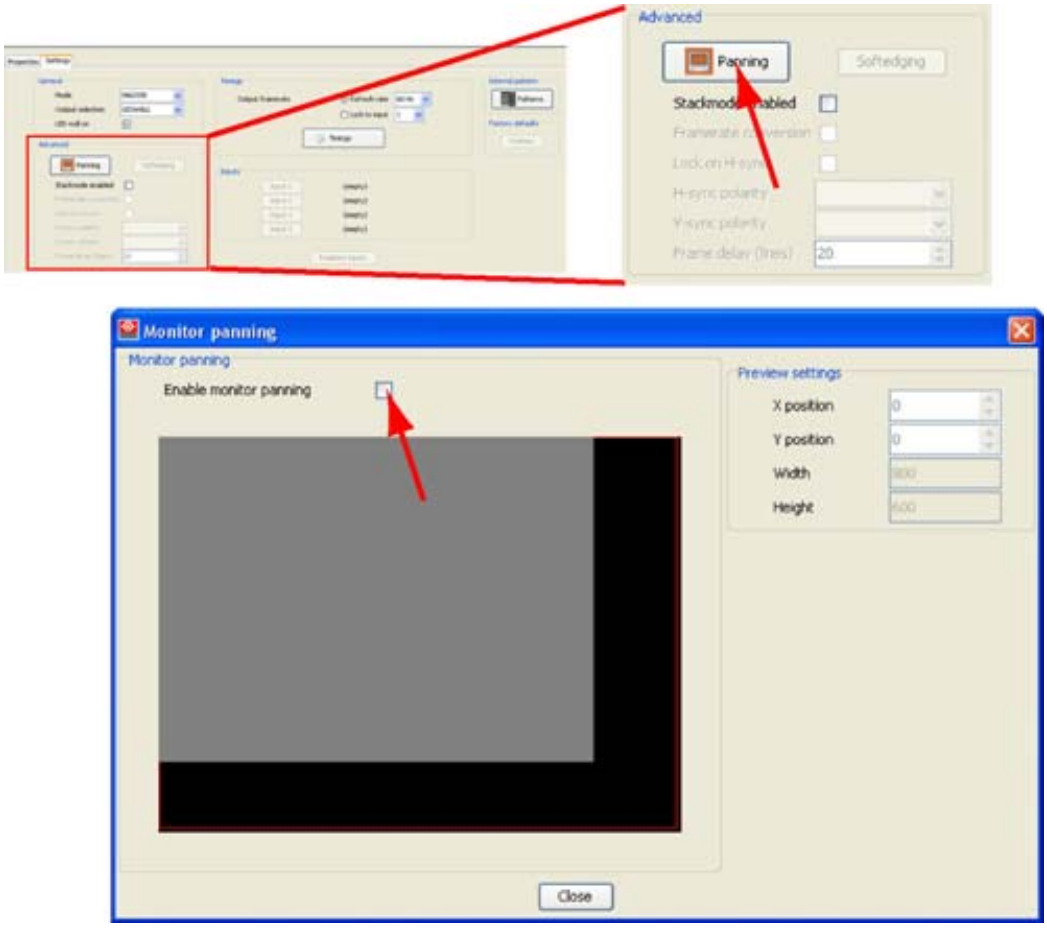


Image 8-26
Start up panning

Panning via click and drag

1. Click in the panning window and hold down the mouse button.
2. Drag the window to the desired location and release the mouse.

Panning via the coordinates

1. Click on the up or down arrow buttons next to X position and Y position until the desired preview is visible. (image 8-27)
   Or,
   click in the X and Y position input field and enter the desired value with the keyboard.

Image 8-27
Panning via the coordinates

8.2.6.2 Softedging

When is softedging available ?

How to activate ?

1. Click on **Softedging** (a). (image 8-28)

   The *Softedging window* opens (b).
2. Check *Use softedging* to activate the settings (c).

   All settings become available.

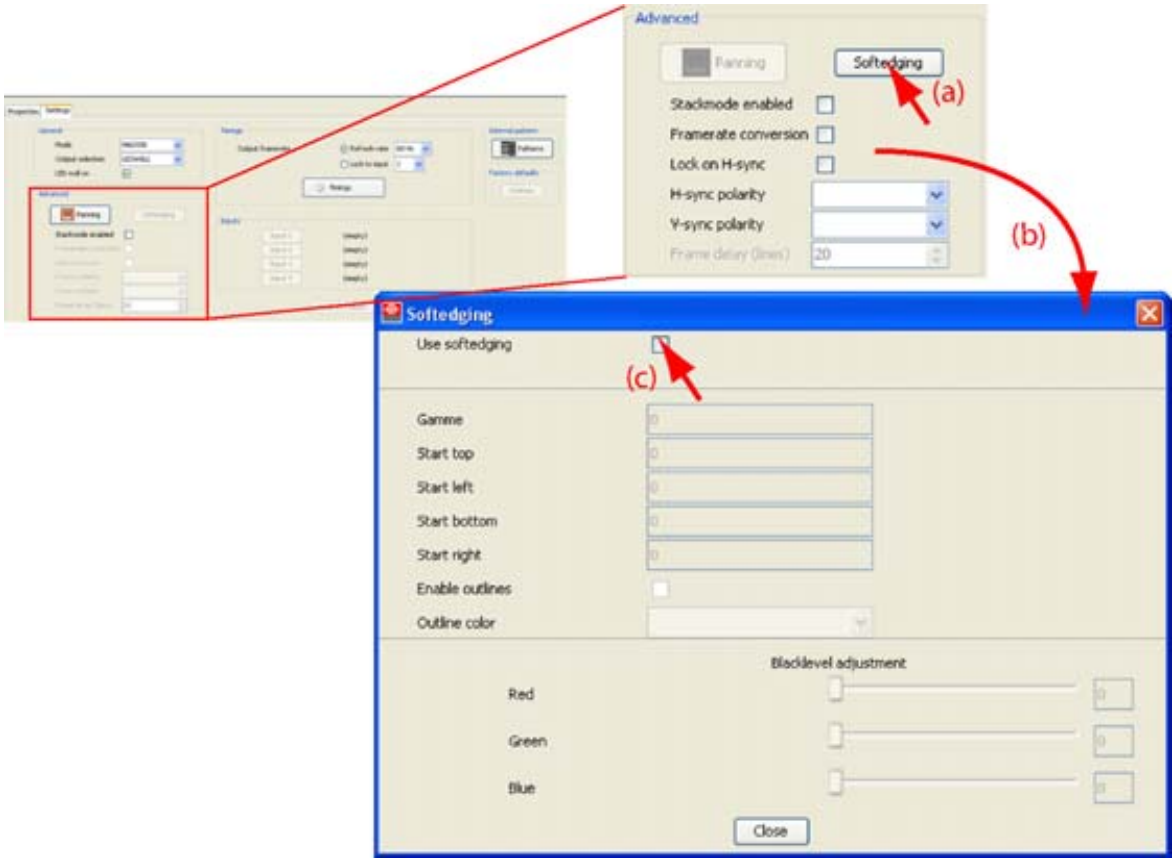


Image 8-28
Starting up Softedging

Gamma value

Set the gamma value the same as the gamma value of the projector.

Positions

Set the values for Start left, Start right, Start top and Start bottom until the border of the overlap area is in the desired position (value between 0 and 255). Set the width of the first projector and repeat for the second one.

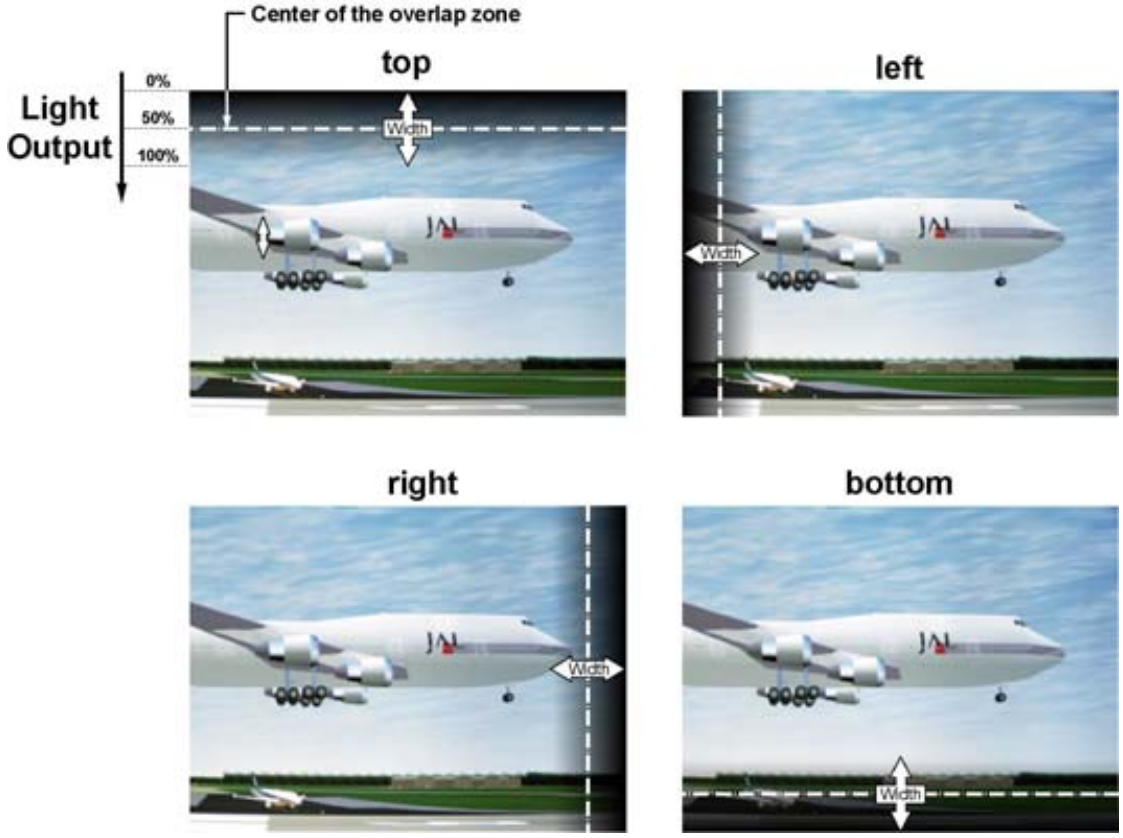


Image 8-29

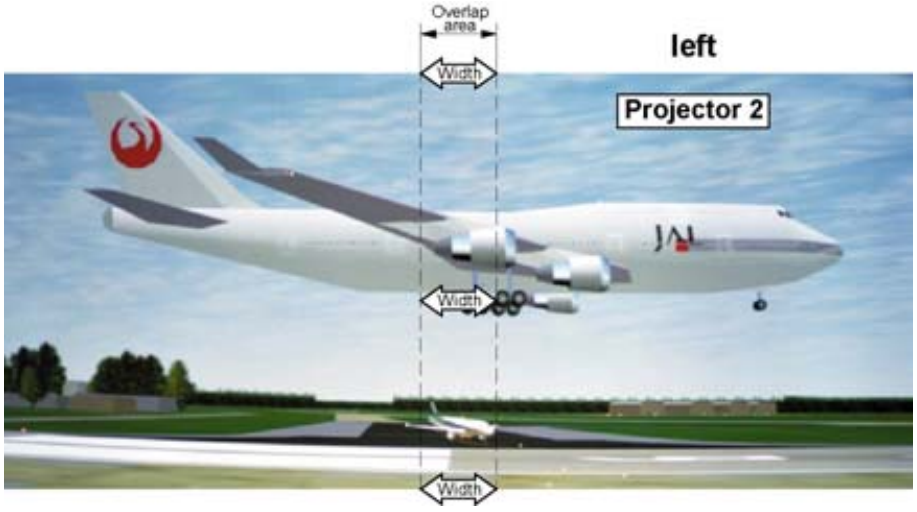


Image 8-30

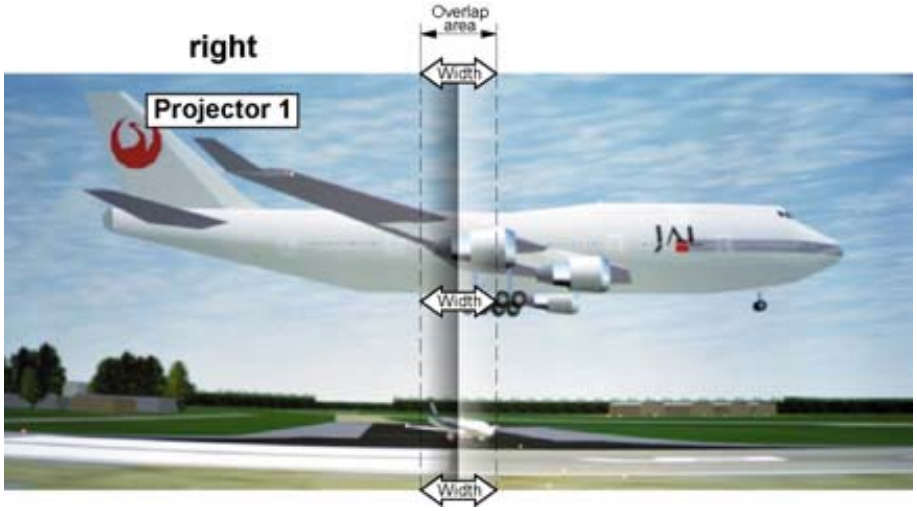


Image 8-31

Outlines

To display outlines, check the check box next to *Enable outlines*.

Once checked, the color choice becomes available. Click on the combo box and select the desired color for the outlines.

Black level adjustment

For dark images, the overlap zone will be brighter than the rest of the image. Therefore, increment the black level of the non overlapped zones until the result is the same with the overlap zone.

Increment the value for Red, Green and Blue until the black level in the un-overlapped zone is the same as the black level in the overlapped zone.

8.2.6.3 Other Advanced settings

Stack mode enabled

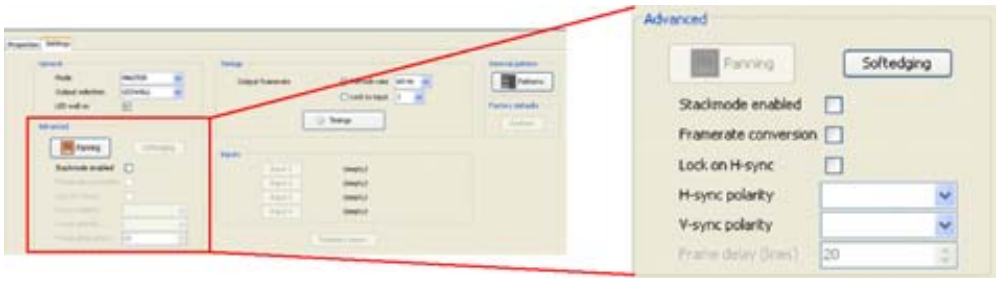


Image 8-32
Advanced settings

Check when stacking of digitizers is necessary.

Frame rate conversion

Check when you are working with CRT projectors.

This Frame Rate Conversion option exclude the *Lock on H-Sync*.

Lock on H-Sync

Check Lock on H-Sync when not using CRT projectors (in all other cases) and uncheck Frame rate conversion. Check this especially when working with moving images.

Horizontal Sync polarity

The horizontal sync polarity can be positive or negative. The position depends on the display.

To change, click on the combo box and select the corresponding polarity.

Vertical Sync polarity

The vertical sync polarity can be positive or negative. The position depends on the display.

To change, click on the combo box and select the corresponding polarity.

8.2.7 Input

Only for D320 based digitizers.

Overview

Click on **Input** tab to get an overview of the modules installed in the digitizer.

To configure one of these inputs, click on the corresponding Input button. The input settings window will open.

Image 8-33
Input configuration

For more information about the input configuration, see "Input modules for D320 based digitizer", page 413.

When online connected, redetection of the inputs is possible by clicking on the **Redetect input** button. When redetection is successful, a message will be displayed.

Image 8-34
Input redetect message

8.2.8 Factory defaults

Overview

Click on **Restore** to load all factory settings for the digitizer.

Image 8-35
Restore to factory settings

A question is displayed to ask for confirmation as all current settings will be lost.

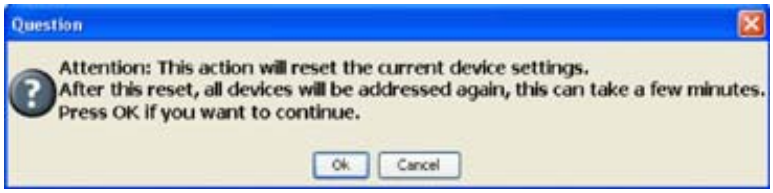


Image 8-36
Confirmation question

8.3 Device properties

How to activate?

Only for D320 based digitizers.

Click on the tab **Device properties** to open the device properties.

Overview

The device properties give general information about the digitizer. Some information is only correctly displayed when online connected.

Image 8-37
Device properties

The following information can be found:

- Device type
- Address
- Number of inputs
- Serial number
- Software version
- Runtime

When a LED PRO image processor is used, the device properties are given immediately when the LED PRO is selected. On the LED wall status can be changed. All other settings are read only.

9. DX-700 DIGITIZER SETTINGS

Overview

- Introduction
- Properties
- General settings
- Configuration settings
- Setup Input Sources

9.1 Introduction

Opening the settings

To open the device settings, just click on the digitizer icon in the preview pane.

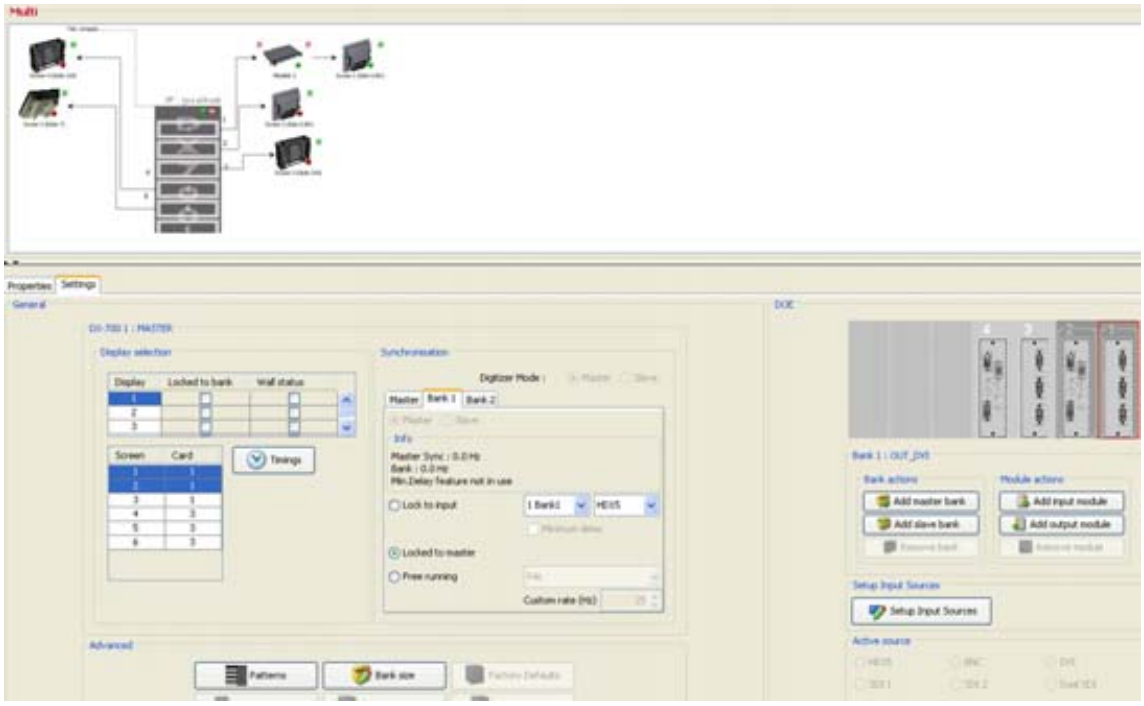


Image 9-1
Settings start up

The settings become available in the settings pane (lower pane).

For more information about banks, grouping etc, see "About a DX-700 digitizer", page 165.

9.2 Properties

Overview

Click on the Properties tab to display the DX-700 properties. All properties are read only.

Image 9-2
Properties settings

The following properties are displayed:

- Name of the digitizer
- Type
- Serial Address
- Number of slots
- Serial number
- Software version
- Run time
- IP address
- MAC address

9.3 General settings

Overview

- Accessing the General settings
- Output (display)
- Advanced settings

9.3.1 Accessing the General settings

How to access

1. Click on the **Settings** tab.

   All settings are displayed. The *General* settings are located in the first column. (image 9-3)

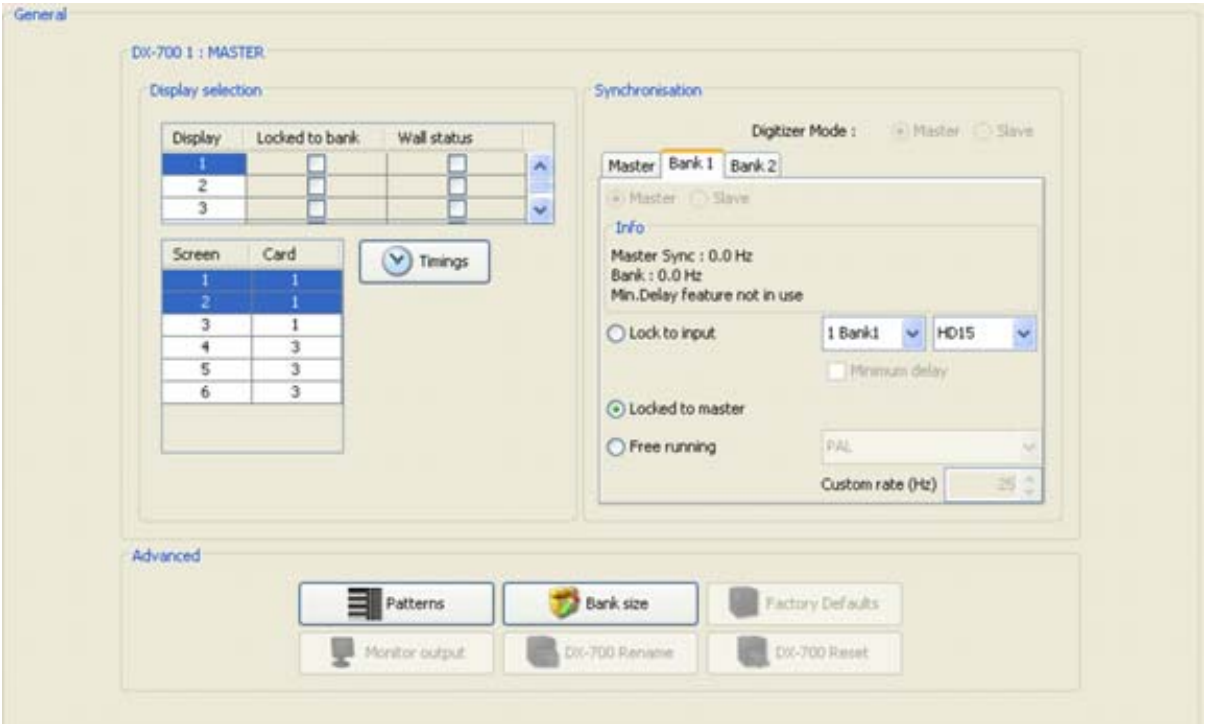


Image 9-3
General settings DX-700

9.3.2 Output (display)

Overview

- About outputs and displays
- Display selection
- Wall status
- Lock to bank
- Synchronization, master
- Synchronization, bank
- Output Timings

9.3.2.1 About outputs and displays

Selected digitizer

The name of the selected digitizer is given on top of the complete selection box. All information in this selection box concerns only this digitizer.

Displays

Outputs with the same tile types and within the same bank are organized in displays. When selecting a display, all outputs grouped in that display are selected. Separate outputs in a display can be split into different displays using the *Stacked* tag in the *Operations* module.

Screen

Outputs (screens) are only given as an indication and are not selectable. The right column indicates the output card number. The left column indicates the screen number in the bank.

9.3.2.2 Display selection

How to select ?

Click on a display number in the left column. The background changes to dark blue. The corresponding outputs are selected at the same time.

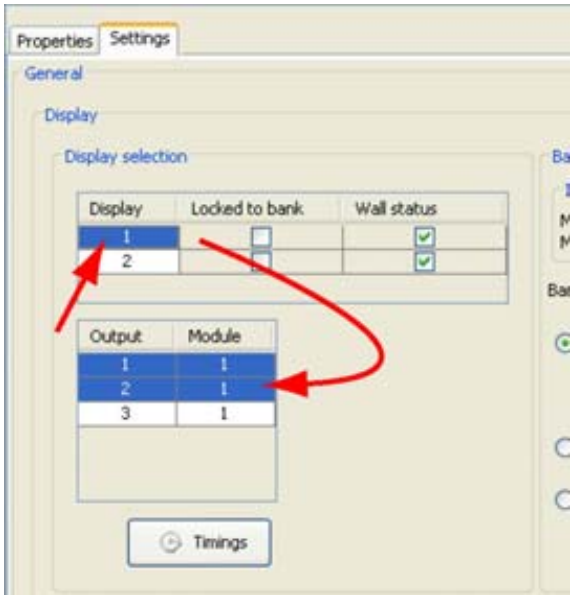


Image 9-4
Display selection

Once the selection is made in *Display selection*, this selection is also activated in *Patterns* and in *Timings*.

When changing the display selection in *Patterns* or *Timings*, this change will be reflected in *Display selection*.

9.3.2.3 Wall status

What is possible ?

The LED walls, grouped in displays, connected to the outputs can be switched on and off by checking the Wall status check box.

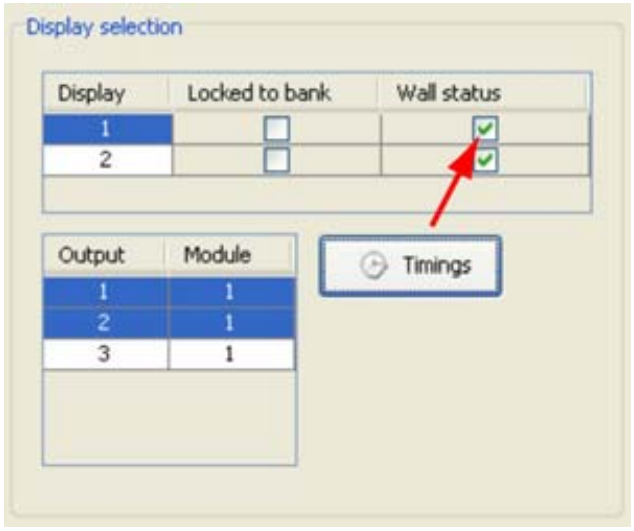


Image 9-5
LED wall on/off

The status of the check box below *Wall status* determines the status of the LED walls:

Checked	Display on (all LEDwalls connected to the grouped outputs on)
Not checked	Display off (all LEDwalls connected to the grouped outputs off)

To switch on-off all LED walls

To switch on or off all LED walls connected to the DX-700 at once, just click on the dot on the right upper corner of the digitizer picture in the preview.

- Green dot : all LED walls are on.
- Red dot : all LED walls are off

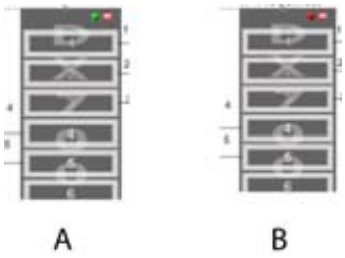


Image 9-6
Status all LED walls

A All LED walls ON
B All LED walls OFF

9.3.2.4 Lock to bank

Overview

The outputs to a display can be lock to the bank settings or they can use the timings.

Check or uncheck the setting below *Locked to bank* for the corresponding displays. On the same output card, 2 displays can have a different setting.

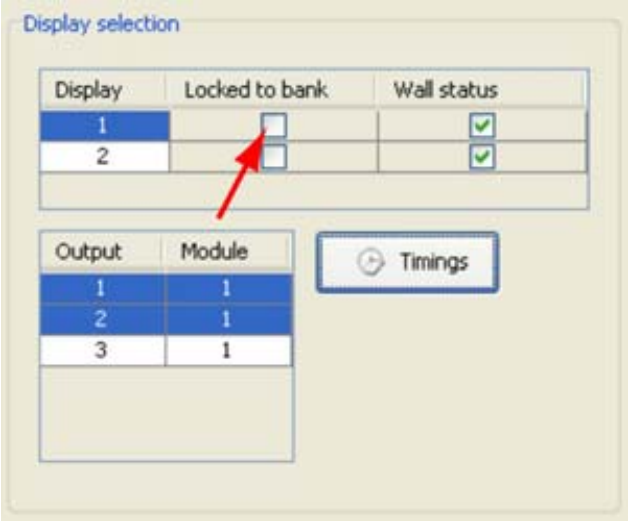


Image 9-7
Lock to Bank

When checked : display follows the setting of the corresponding bank, that means that the setting in *Synchronization, selected tab page* is used to lock the output signal. Locking can avoid that some windows in the output signal are slowly moving or trembling.

When not checked : not locked, the output timings are used for the output signal.

When minimum delay is required, locked to bank must be selected and the synchronization on bank level must be set to lock to input with the input selected for which minimum delay is required.

9.3.2.5 Synchronization, master

The synchronization setting of the master is only used when the synchronization setting of the bank is set to *Locked to master*.

Lock to input setup

When *Lock to input* is selected, the master is locked to a specific input on a selected input module. In this mode, the master is synchronous with external equipment.

To select the input card, click on the drop down box and select the input card. To select the input source, click on the second drop down box and select the input source on the selected card. The input source is not necessary the active source.

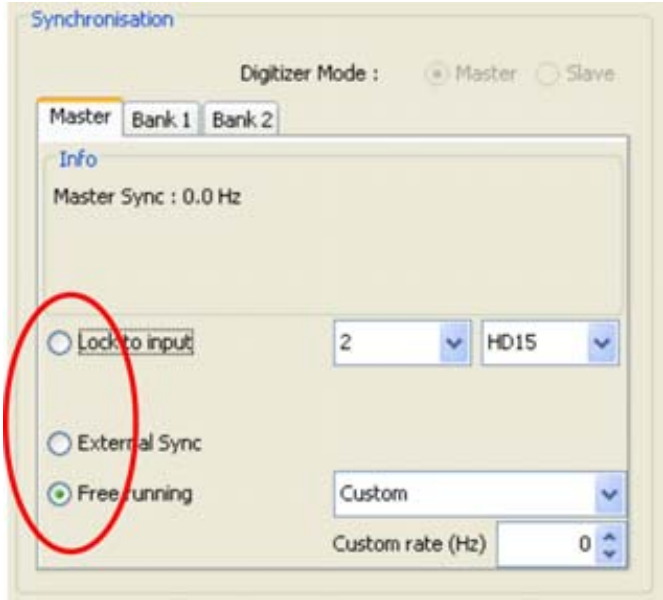


Image 9-8

External sync locking

When *External sync* is selected, the system is locked to an external black burst or composite sync signal, that is connected to one of the DX-700's two Genlock Inputs on the System Module. Ensure that a black burst or composite sync signal is properly connected.

Free running

When *Free running* is selected, the DX-700 is locked to its internal timing generator — and not to an external source. In this mode, the system is not synchronous with other equipment in your video system, but the refresh rate can be set.

The user can lock to vertical frequency of a PAL, SECAM, NTSC or PC signal or to a custom frequency.

To make the selection, click on the drop down box and select the way of locking.

When *Custom* is selected, the *Custom rate* can be filled out. Click on the up down control of the spin box until the desired value is reached or click in the input field and enter the desired value with the keyboard.

9.3.2.6 Synchronization, bank

Setting per display

The *Bank synchronization* settings are only used when *Lock to Bank* is activated for a display.

What can be done ?

In a multi bank setup, each bank has its own synchronization settings. A slave bank follows automatically the synchronization setting of the master bank.

When the display is *locked to Bank*, it can be locked to an input, locked to master, external sync or it can be free running.

Video processing delay through the DX-700 is affected by the selected genlock mode, the type of input, and the minimum delay mode. This settings is bank dependent.

Master - slave selection

When a bank is selected, the bank can be configured as a master bank or as a slave bank just by clicking on the corresponding radio button.

The first bank in a single DX-700 or the first bank in the first DX-700 in a stacked configuration is always master bank.

The master bank can be followed by a new master bank or a slave bank.

Info

The info part gives an overview of the current locking frequencies and the minimum delay setting.

DX-700 Video Processing Delay

Minimum Delay Mode	Selected Genlock Mode	Delay for Interlaced Sources	Delay for Progressive Sources
Disabled	Free running	4 fields	3 fields
	External locking	4 fields[1]	2 fields[1]
	Lock to input	4 fields[2]	2 fields[3]
Enabled	Input	N/A	20 lines[3]

How to lock a display

Select first a display, see "Display selection", page 232 and check *Locking to Bank* for that display.

Go to the *Synchronization* pane and select the corresponding bank. Select now the way of locking by clicking on the desired radio button in front of *Lock to input* or *Lock to master* or *External sync* or *Free running*.

1. Value applies to all sources that are also genlocked to the same composite or black burst reference signal as the DX-700.
2. For the genlock-selected interlaced source only.
3. For the genlock-selected progressive source only. 3 fields for other progressive sources.

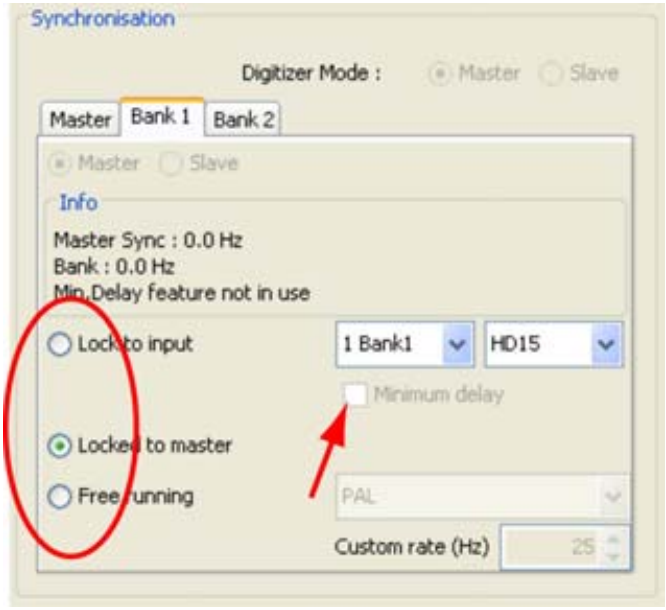


Image 9-9
Genlock LED wall

Lock to input setup

When *Lock to input* is selected, the display or displays connected to that bank are locked to a specific input on a selected input module. In this mode, the displays are synchronous with external equipment. The minimum delay mode can also be enabled or disabled.

To select the input card, click on the drop down box and select the input card. To select the input source, click on the second drop down box and select the input source on the selected card. The input source is not necessary the active source (except when minimum delay is checked).

Minimum delay

If the input source must be processed with a minimum delay, check the check box.

Only one source on the input card can be processed with minimum delay.

Minimum delay can only be set on bank level.

When enabled, input video is processed through the entire system in approximately 20 lines, and the following rules must be applied:

- The DX-700 output must be locked to its associated input source, such as an Encore or ScreenPRO-II system.
- Within the overall “canvas,” outputs cannot be positioned (grouped) vertically in a single bank, it is locked on top of the backplane (active area).
- Default viewport must be used
- No scaling between window and viewport is allowed (1 : 1)
- The “low-delay” input must be progressive.

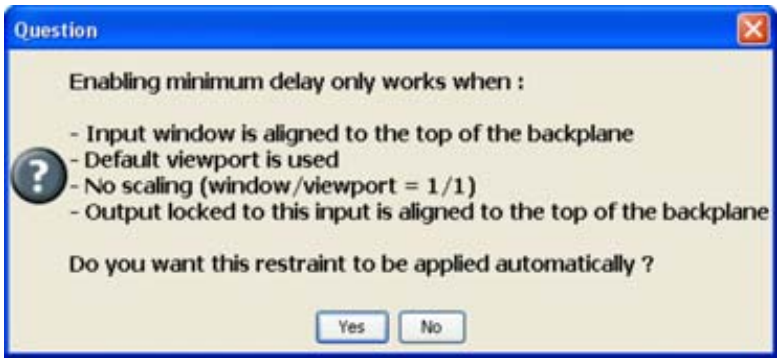


Image 9-10
Minimum delay restraint

If you are agree, click **Yes** to apply automatically the restraint and to set the minimum delay. When minimum delay is set, the viewport and window settings are locked in the *Operations* module.

If you are not agree, click **No**.

External sync locking

When *External sync* is selected, the display is locked to an external black burst or composite sync signal, that is connected to one of the DX-700's two Genlock Inputs on the System Module. Ensure that a black burst or composite sync signal is properly connected.

Locked to master

When *locked to master* is selected, the display is locked according the master lock settings. To change these settings, click on Master tab. For more info, see "Synchronization, master", page 234.

Free running

When *Free running* is selected, this bank of the DX-700 is locked to its internal timing generator — and not to an external source. In this mode, the system is not synchronous with other equipment in your video system, but the refresh rate can be set.

The user can lock to vertical frequency of a PAL, SECAM, NTSC or PC signal or to a custom frequency.

To make the selection, click on the drop down box and select the way of locking.

When *Custom* is selected, the *Custom rate* can be filled out. Click on the up down control of the spin box until the desired value is reached or click in the input field and enter the desired value with the keyboard.

9.3.2.7 Output Timings

The Timings are used when *Lock to Bank* is not selected.

9.3.2.7.1 Activating the output timings

The timings are set per display.

How to start up

1. Within the Advanced settings, click on **Timings**. (image 9-11)

The *Timings* window opens.

When *Lock to Bank* is checked and then *Timings* is clicked, the window opens with a message in red. The horizontal active pixels and vertical active lines can still be corrected when necessary to display the image correctly. The total horizontal pixels and total vertical lines are fixed. Use this correction only in exceptional cases. (image 9-12)

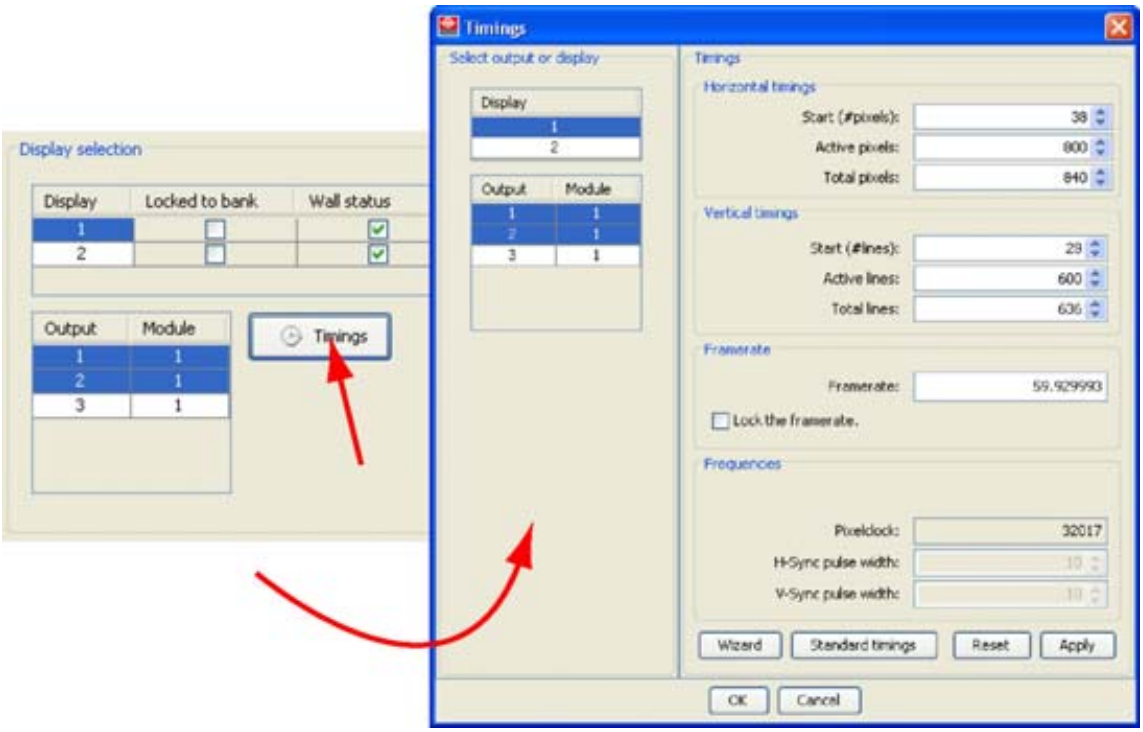


Image 9-11
Startup timings

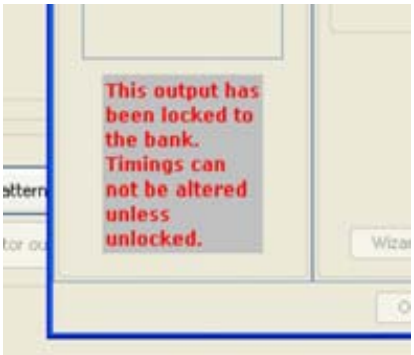


Image 9-12
Lock message

9.3.2.7.2 About the use of the Timings window

How to start ?

Each display connected to the DX-700 can have its own timing. Start by selecting a display in display selection or in the timings window.

How to handle ?

1. Select the display.
2. Adjust the timings.

Timing wizard

The timing wizard will guide you through the process of setting the correct resolution, frequency and/or framerate for your setup. By using a set of questions, this wizard will try to complete the best fit setup depending on several parameters.

For more information, see "Timing wizard", page 210.

Standard timings

When starting the standard timings window, the settings are given as read only values. The standard timings will be different depending on the output module type (DVI or NNI)

9.3.2.7.3 Timing window, manually fill out

Overview

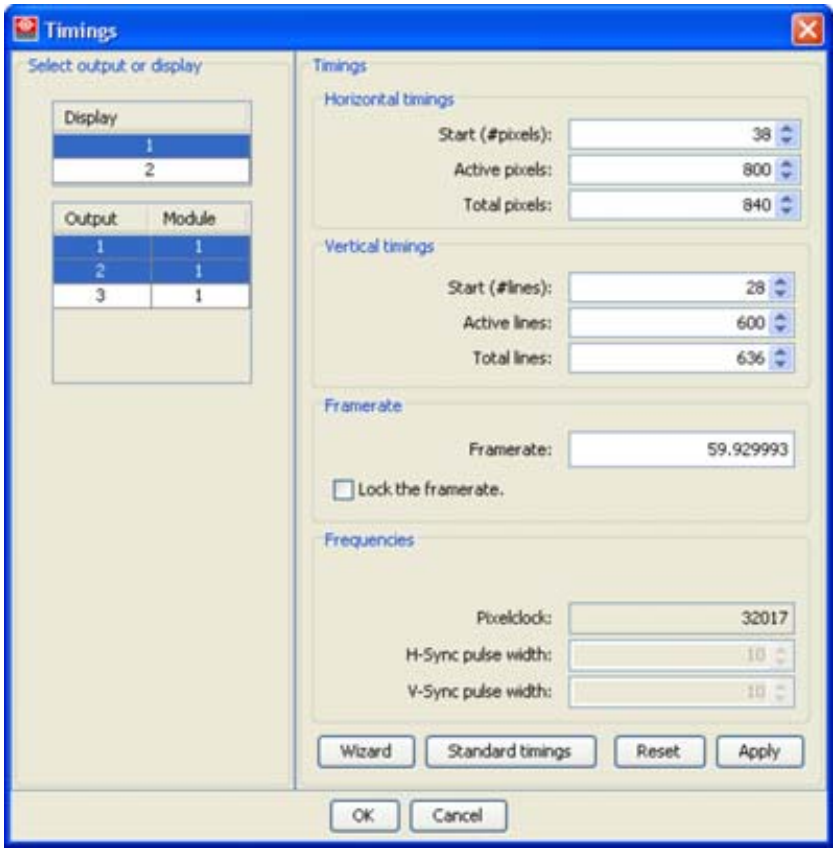


Image 9-13
Timing window

Select first a display.

To adjust a setting, click on the up down control of the spin box next to a setting or click inside the input field and enter the desired value with the keyboard. When the background of some values becomes red, means that some timings are allowed and have to be changed.

Horizontal timings

Start: start of the active pixels. Horizontal start position of the active image area, referenced to Horizontal sync.

Active: the number of pixels that are really used (= the actual width of the image/video that will be shown).

Total: the number of pixels in a line (= max. width). Total = Start + Active + number of trailing blanking pixels.

Vertical timings

Start : start of the active lines. Vertical start position of the active image area, referenced from Vertical sync.

Active : the number of lines that are really used (= the actual height of the image/video that will be shown).

Total : the number of lines in a frame (= max. height). Total = Start + Active + number of trailing blanking lines)

Frame rate

Vertical frequency of the input signal.

Lock to frame rate : When checked, the frame rate will be locked to the current value. Changing the horizontal and vertical timings will not change the frame rate anymore.

Frequencies

Pixelclock : read only value

H-Sync : The width of the horizontal sync signal. This should always be 10 pixels.

V-Sync : The width of the vertical sync signal. This should always be 10 lines.

9.3.3 Advanced settings

Overview

- Internal patterns
- Monitor output
- Factory defaults
- Bank size
- DX-700 rename
- DX-700 reset

9.3.3.1 Internal patterns

Overview

- Internal pattern selection
- Pattern specific settings

Internal patterns are selected per output or per display. When selected per display, all outputs in the display will show the selected pattern.

9.3.3.1.1 Internal pattern selection

How to select

1. Click on **Pattern** (1). (image 9-14)

   The *Internal pattern* window opens (2).

2. Select an output or multiple outputs or a display (3).

   The pattern will be applied to all selected outputs or displays.

3. Check *Show internal pattern* (4).

4. Click on the desired pattern (5).

Some patterns have specific settings which can be adjusted via the second part of the window. For more explanation, see "Pattern specific settings", page 242.

Available patterns :

Horizontal ramps	
Vertical ramps	
100% color bars	Saturated color bars
Grid 16x16	Hatch pattern with squares of 16 pixels by 16 pixels
Grid 32x32	Hatch pattern with squares of 32 pixels by 32 pixels
V-lines	Vertical lines
75% bars	75% color bars
50% gray	
16 gray steps	
16 horizontal gray steps	
White	Full white pattern
Black	Full black pattern
Green	Full green pattern
Red	Full red pattern
Blue	Full blue pattern
Adjustable RGB	Red, green and blue are individually adjustable
Adjustable grid	Grid size adjustable

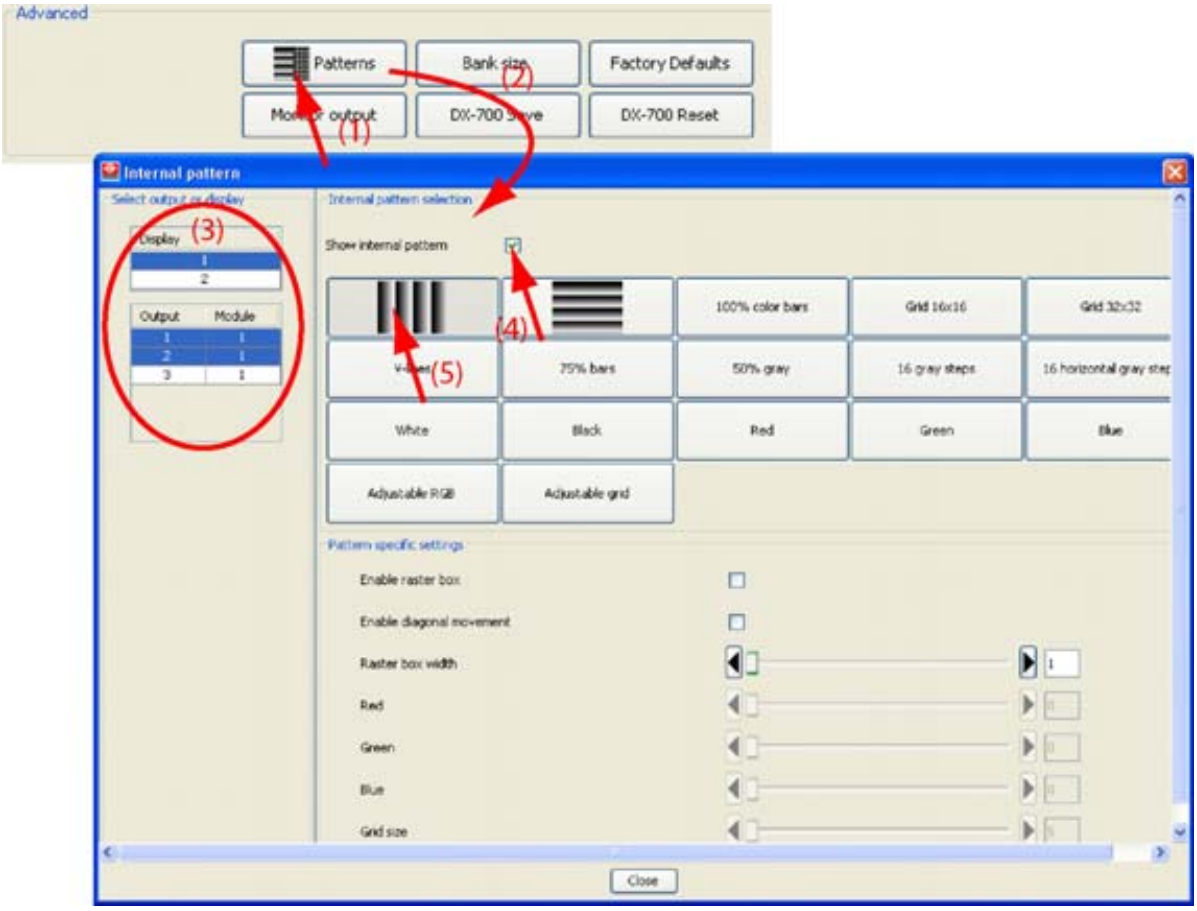


Image 9-14
Internal pattern

9.3.3.1.2 Pattern specific settings

Raster box

A box which encompass an individual output's pixel area, the entire stacked output or the perimeter of a PIP. This will be helpful to position the wall correctly in the active field of the digitizer.

Checked	Raster box displayed
Not checked	No raster box displayed

Image 9-15
Pattern specific settings

Diagonal movement

The displayed pattern or image can be moved in a diagonal way.

Checked	Image is moving in a diagonal way
Not checked	No movement

Any test pattern can be put into diagonal motion.

Raster box width

Indicates the pixel width of the line of the raster box.

Red, Green and Blue

Color adjustment used for the *Adjustable RGB* pattern.

0 indicates no red, green or blue. 255 indicates full red, green or blue.

Grid size

Indicates the number of pixels between 2 lines in a grid. Is only used for the *Adjustable grid* pattern.

9.3.3.2 Monitor output

What can be done ?

The monitor can display a preview of all displays at once or a single display or single screen in a display. The displayed image is scaled to the selected resolution for the monitor.

Monitor output setup

1. Click on **Monitor output**. (image 9-16)

   The *Monitor output* window opens.

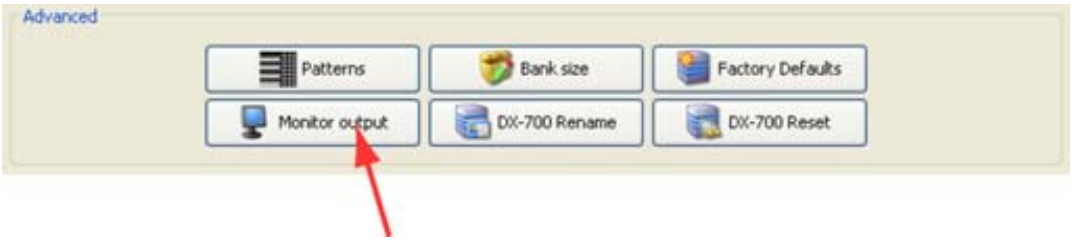


Image 9-16
Start monitor output setup

Select resolution

1. Clink on the drop down box next to Monitor resolution. (image 9-17)
2. Select the desired resolution.
   Note: *Take care that the selected resolution is supported by your monitor.*

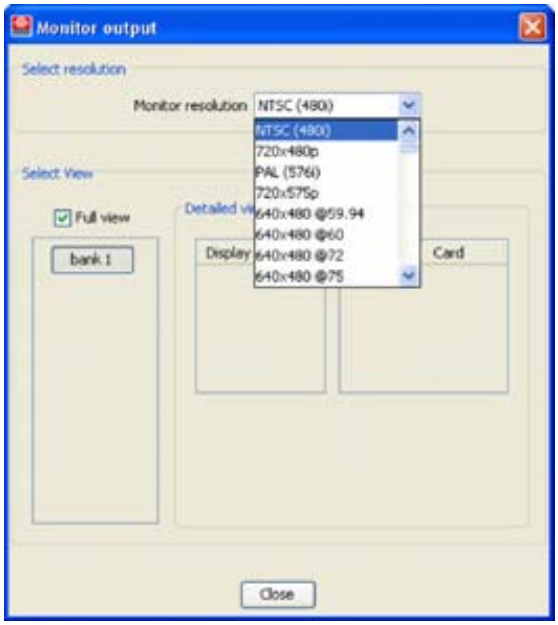


Image 9-17
Monitor resolution selection

Select a full view

1. To display a full view, check the check box in front of Full view.

Select a partial view

1. Uncheck the check box in front of Full view.

   The detailed view selections become available.

2. To display a typical display, click on the corresponding display in the Display column. (image 9-18)
3. To display a typical output, click on the corresponding output in the Output column. (image 9-19)

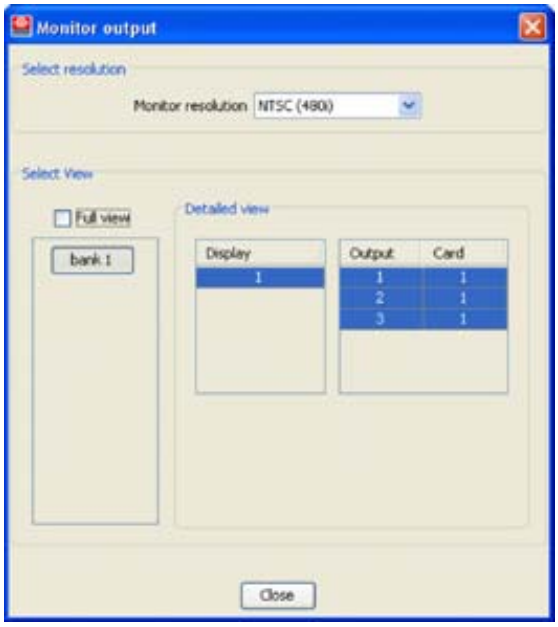


Image 9-18
Full display selection

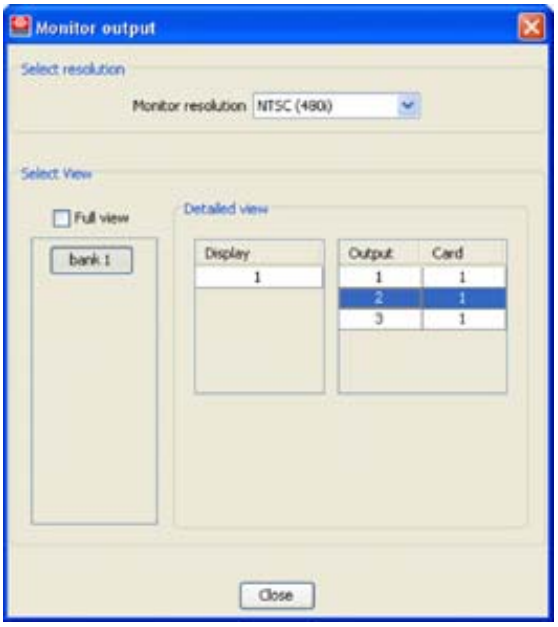


Image 9-19
Output selection

9.3.3.3 Factory defaults

How to go back to the factory defaults

1. Click on **Factory Defaults**. (image 9-20)

   A confirmation question is displayed. When you continue, the current device settings are reset and all devices are addressed again. Depending on the number of devices, this action can take a few minutes. (image 9-21)

2. Click **OK** to continue.

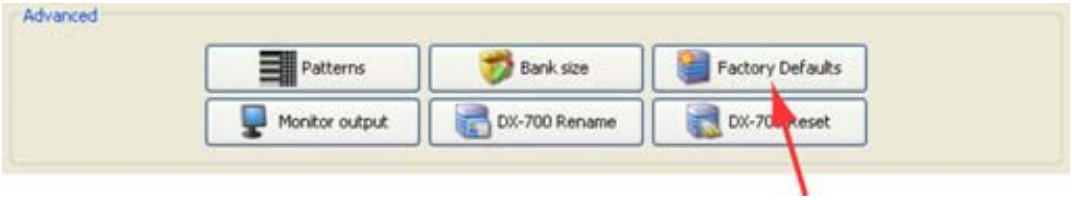


Image 9-20
Factory defaults

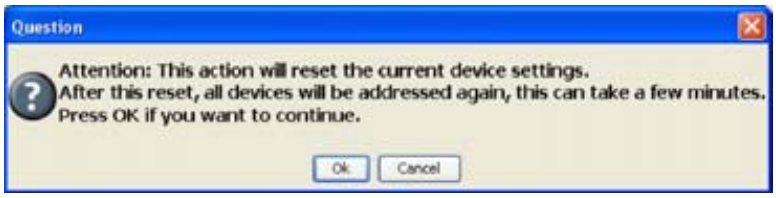


Image 9-21
Factory defaults, confirmation

9.3.3.4 Bank size

About bank size

A bank (master or slave) has a maximum “canvas” size of 2048 x 1080 pixels (or 1080 x 2048), equals 2.212.000 pixels. This overall region can be divided as required between three outputs (using one output module), or six outputs (using two output modules).

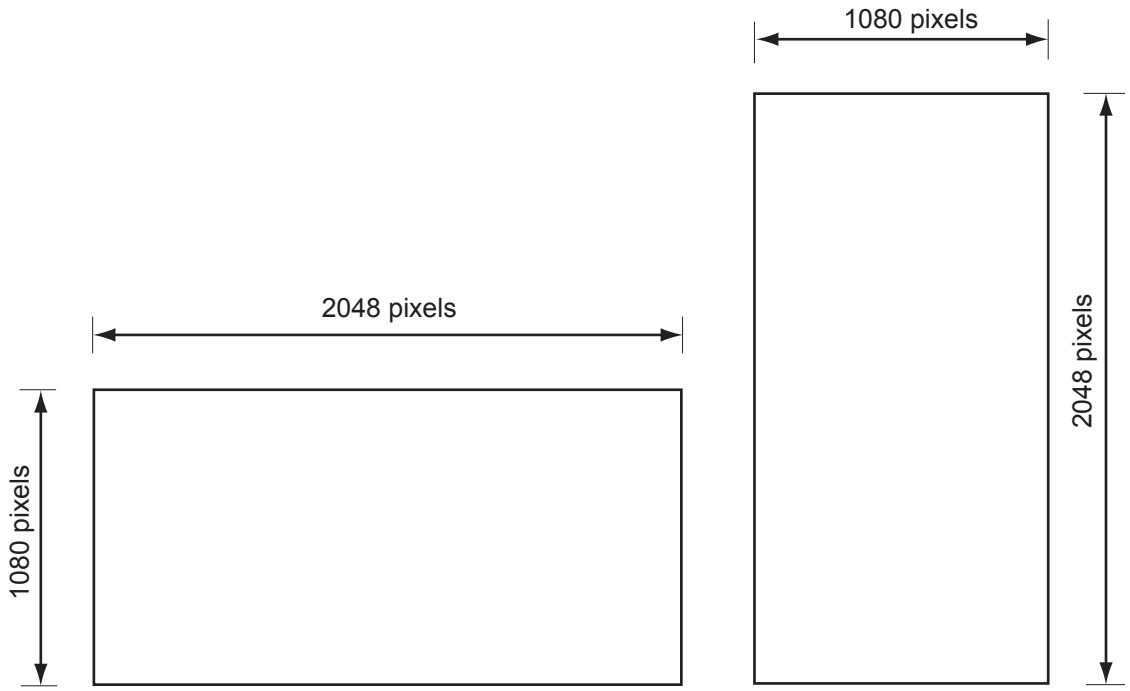


Image 9-22
DX-700 canvas examples

The canvas size can be changed to any value within the maximum size.

The orientation can be different between a master bank and a slave bank or between different slave banks.

How to change bank size

1. Select a bank by clicking on the bank tab pages in the Synchronization pane.
2. Click on **Bank size**. (image 9-23)

   The bank size window for the selected bank opens.
3. Click on the up down control of the spin box until the desired value is reached for horizontal total and vertical total
   Or,
   click in the input field and enter the desired value with the keyboard.

   When the background of the input box changes to red, a non valid value is entered. The maximum value must be between 2048 horizontal total and 1080 vertical total or between 1080 horizontal total and 2048 vertical total.

   Reducing the canvas size means also reducing the possibilities for grouping of the outputs.
4. Click on **Apply** to apply the new bank size settings.
5. Click **Close** to close the window.

Image 9-23
Bank size adjustment

Return to bank default resolution

Whatever the current resolution of the bank size is, returning the default resolution is possible by clicking on **Landscape** or **Portrait**.

Landscape will set the resolution to 2048 x 1080.

Portrait will set the resolution to 1080 x 2048.

Click on **Apply** to apply the new bank size settings.

9.3.3.5 DX-700 rename

What can be done ?

The current selected digitizer can be renamed to almost any name. The number of characters is limited to 31.

Some characters are not allowed in the name. This restriction is checked is online checked by Director Toolset.

Renaming a DX-700 is only possible in an online setup.

How to rename

1. Click on DX-700 rename. (image 9-24)

   A rename dialog opens.

2. Enter the new name and press OK.

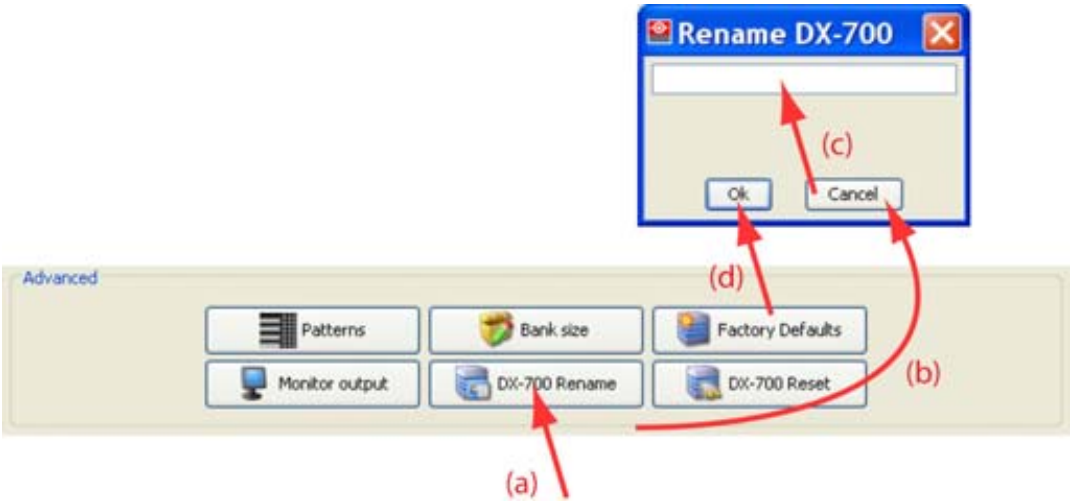


Image 9-24
Rename digitizer

9.3.3.6 DX-700 reset

How to restart

1. Click on **DX-700 reset**. (image 9-25)

   A confirmation question is displayed. The LED wall will be unavailable during the reset. (image 9-26)

2. Click **OK** to restart the DX-700.

   The DX-700 restarts and the connection is reestablished.

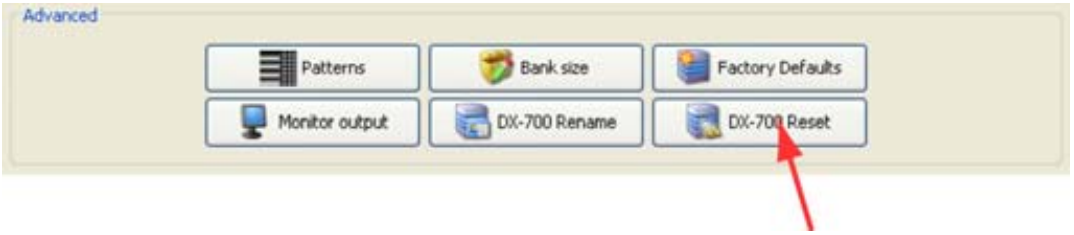


Image 9-25
Start DX-700 reset

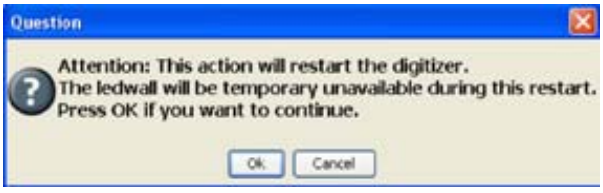


Image 9-26
Restart confirmation

9.4 Configuration settings

Overview

- Accessing the configuration settings
- Add output card
- Add input card
- Remove a card
- Add master bank
- Add slave bank
- Remove a bank
- Active source selection

9.4.1 Accessing the configuration settings

How to access

1. Click on the **Settings** tab.

   All settings are displayed. The *Configuration* settings are located in the second column. (image 9-27)

Image 9-27
Configuration settings

9.4.2 Add output card

Adding an extra output card to the setup is only possible in offline mode.

How to add?

One bank can contain up to two output cards, each supporting 3 outputs.

For more information about adding an output card, see "Add an extra output card to the DX-700", page 172.

9.4.3 Add input card

Adding an extra input card to the setup is only possible in offline mode.

How to add?

One bank can contain up to five or six input cards, depending on the number of output cards. All input cards must be left from the output card(s). No blank slots are allowed between the output cards and the first input card and between two input cards.

For more information about adding an output card, see "Add input cards to the DX-700", page 174.

9.4.4 Remove a card

Removing a card (input or output is only possible in offline mode).

How to remove

When multiple input cards and multiple output cards are available in the setup, some of these cards can be remove. The last output card and the last input card cannot be removed from the setup.

For more information on removing an output card, see "Remove an output card from the DX-700", page 173.

For more information on removing an input card, see "Remove input card(s) from the DX-700", page 174.

9.4.5 Add master bank

How to add

A DX-700 can contain multiple banks. The number of banks a DX-700 can contain depends on the number of output and input cards used in the first bank. There must be at least 2 slots free in the DX-700 before a new master bank can be created.

For more information on adding a new master bank, see "Add a master bank to a DX-700", page 175.

9.4.6 Add slave bank

How to add

A DX-700 can contain multiple banks. The number of banks a DX-700 can contain depends on the number of output and input cards used in the first bank. There must be at least 2 slots free in the DX-700 before a slave bank can be created.

For more information on adding a new slave bank, see "Add a slave bank to a DX-700", page 176.

9.4.7 Remove a bank

How to remove

When multiple banks are available in the DX-700, then some of these banks can be remove. The last bank in a DX-700 cannot be removed. There should always be a bank available in the digitizer.

For more information on removing a bank, see "Remove a bank from a DX-700", page 177.

9.4.8 Active source selection

What can be done ?

One input of an input card can be set as active source.

How to select

1. Click on an 'universal' input card in the configuration preview. (image 9-28)

   The current active source is indicated in Active source.

2. To select or change the active source, click on the radio button of your choice.

   The following source are possible:

HD15	This port accepts RGBHV inputs up to QXGA, with a maximum 240 MHz pixel clock.
BNC	Composite, S-Video or Component input.
DVI	This port accepts single or dual DVI inputs, with resolutions up to QXGA (2048 x 1536) with a maximum 240 MHz pixel clock.
SDI 1	HD / SDI input.
SDI 2	HD / SDI input.
Dual SDI	Dual HD-SDI source to connectors 1 and 2 (HD / SDI input).

Image 9-28
Active source selection

9.5 Setup Input Sources

Overview

- Input source settings, sources
- Image processing
- Input balance
- Video effects
- Internal timings

9.5.1 Input source settings, sources

Overview

To get access to the setup of the input sources, click on **Setup Input Sources**.

Image 9-29
Start up Setup Input Sources

The available banks are indicated in the bank row (a). The bank with the current active source has a gray background.

The active source for that card is indicated in the button itself. The button background of the current selected card is gray (b).

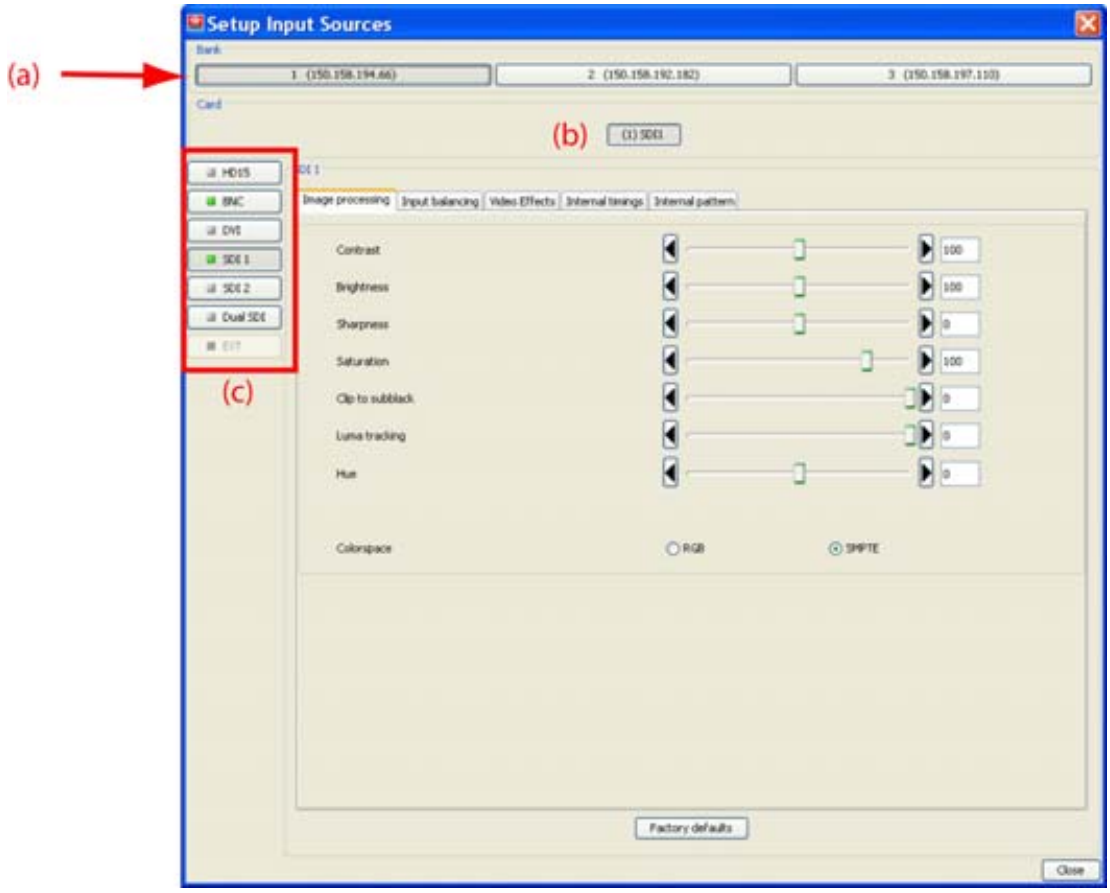


Image 9-30
Setup Input Sources

Each card has different inputs which are indicated in the left column (c). The current selected input (by default the active source) has a gray background and a green square in front of the name. The different settings from Image processing over Input balance etc. can be adjusted for the selected source on the selected card.

Source description

HD15 - One 15-pin D connector is provided for the RGBHV input. This port accepts RGBHV inputs up to QXGA, with a maximum 240 MHz pixel clock.

BNC - Three BNC connectors (Y / Comp, C / Pb and Pr) are provided for either a composite, S-Video or Component input.

DVI - One DVI-I connector is provided for the DVI IN port. This port accepts single or dual DVI inputs, with resolutions up to QXGA (2048 x 1536) with a maximum 240 MHz pixel clock.

SDI - Two BNC connectors (labelled 1 and 2) are provided for the HD / SDI input.

Dual SDI - Connect the (two-wire) Dual HD-SDI source to connectors 1 and 2 (HD / SDI input).

For more information about the input card, consult the User's Guide of the DX-700.

9.5.2 Image processing

The settings in the image processing tab are slightly different from source to source.

Overview

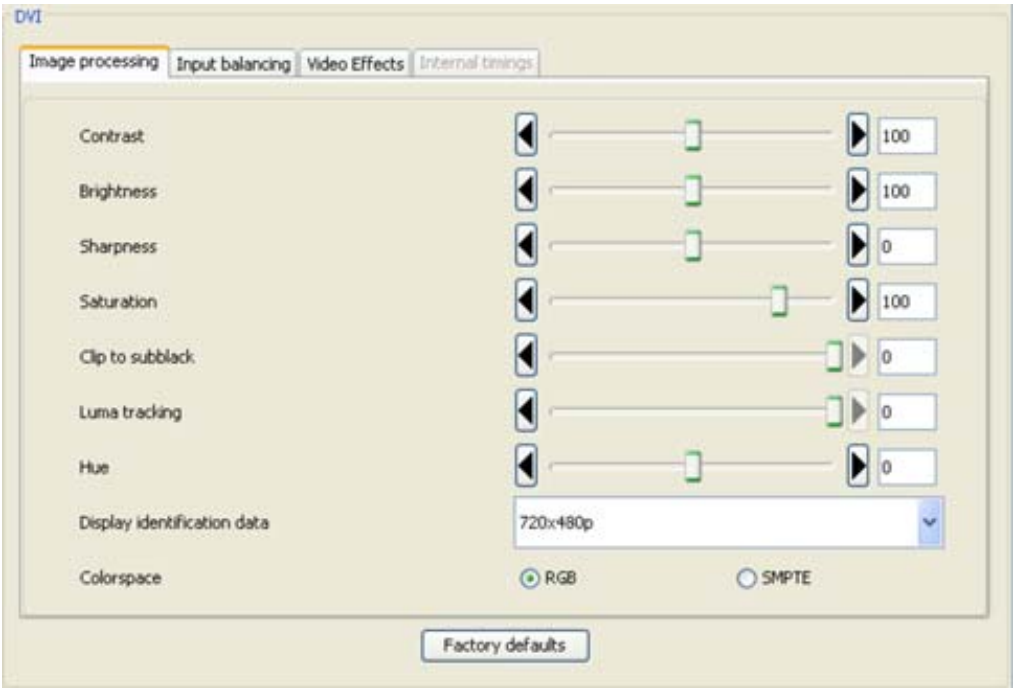


Image 9-31
Image processing

For sliders, click on the slider, hold down the mouse button and move to the desired location or

click on the input field and enter the desired value with the keyboard.

For drop down boxes, click on the drop down box and select the desired value.

Contrast

Use the slider to determine a good color reproduction. Adjust the contrast to the level you prefer, according the ambient lighting conditions.

Adjustable between 75 and 125.

Brightness

Brightness is the intensity of the displayed signal.

Adjustable between 75 and 125.

Sharpness

Sharpness is used to adjust the image sharpness impression of an image. Adjust sharpness completely conform own preferences.

Adjustable between - 10 and + 10.

Saturation

Saturation is the intensity of the color. 0 is pure black & white.

Adjustable between 0 and 125

Clip to subblack

Clip to Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes.

Adjustable between - 15 and 0.

Luma tracking

Luma tracking adjusts the level of green haze appearing in the low lights.

Adjustable between - 15 and 0.

Hue

Only for BNC sources, DVI and SDI / HDSDI.

Hue adjusts the gradation of color.

Adjustable between - 90 and + 90.

Display identification data

Only for DVI source.

This is the resolution which allows to configure the DVI input according to a standard. These resolutions can be recognized by the graphic card of the source through e.g. DDC communication.

Colorspace

Not for SDI / HDSDI.

The color space (color gamut), the collection of colors which can be reproduced, can be adjusted between RGB and SMPTE (American standard).

Check the radio button to select the correct color space.

Minimum delay

If the input source must be processed with a minimum delay, check the check box.

Only one source on the input card can be processed with minimum delay.

When enabled, input video is processed through the entire system in approximately 20 lines, and the following rules apply:

- The DX-700 output must be locked to its associated input source, such as an Encore or ScreenPRO-II system.
- Within the overall “canvas,” outputs cannot be positioned (grouped) vertically in a single bank.
- The “low-delay” input must be progressive.

9.5.3 Input balance

Overview

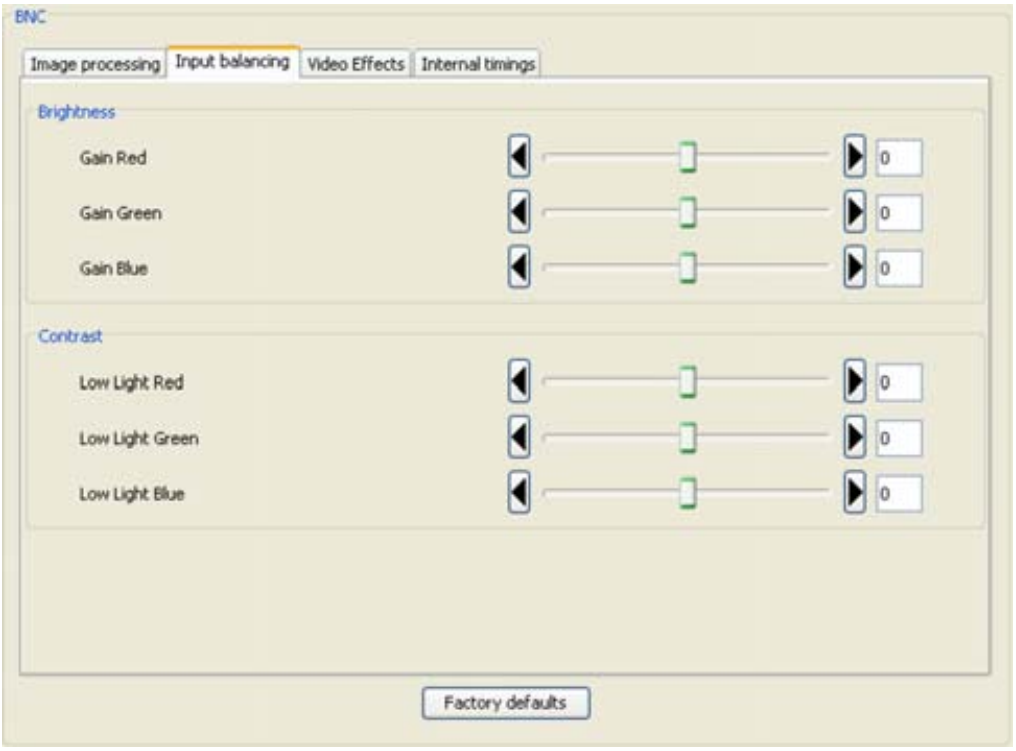


Image 9-32
Input balance

For sliders, click on the slider, hold down the mouse button and move to the desired location or

click on the input field and enter the desired value with the keyboard.

About the input balance

When transporting signals, there is always a risk of deterioration of the information contained in the signals.

The objective in input balancing is to “set” the same black level (low lights) and the same white level (gain) for the three colors of a particular input source.

To balance the three color signals of a particular source there are conditions; in fact we must know the black and the white level of the source i.e. :

1. The source in question must be able to generate a white signal, ideally a 100% (background) full screen pattern.
2. The source in question must be able to generate a black signal, ideally a 100% (background) full screen pattern.

An alternative to a full white/black pattern is the standard gray scale pattern. The black bar can be used for the low lights adjustment and the white bar can be used for the gain adjustment.

Performing white input balance (gain adjustment) - Brightness

1. Click on the Red gain slider and adjust on a minimum value.
2. Click on the Blue gain slider and adjust on a minimum value.
3. Click on the Green gain slider and adjust until bright spots appear on the screen.
4. Click on the Blue gain slider and adjust until bright spots appear on the screen.
5. Click on the Red gain slider and adjust until bright spots appear on the screen.

The image should be noisy neutral gray.

How to adjust the low lights (black input balance) - Contrast

1. Click on the Red low lights slider and adjust on a minimum value.
2. Click on the Blue low lights slider and adjust on a minimum value.
3. Click on the Green low lights slider and adjust until bright spots appear on the screen.
4. Click on the Blue low lights slider and adjust until bright spots appear on the screen.
5. Click on the Red low lights slider and adjust until bright spots appear on the screen.

The ones uses a gray scale pattern, the bright spots should appear in the black bar.

9.5.4 Video effects

Overview

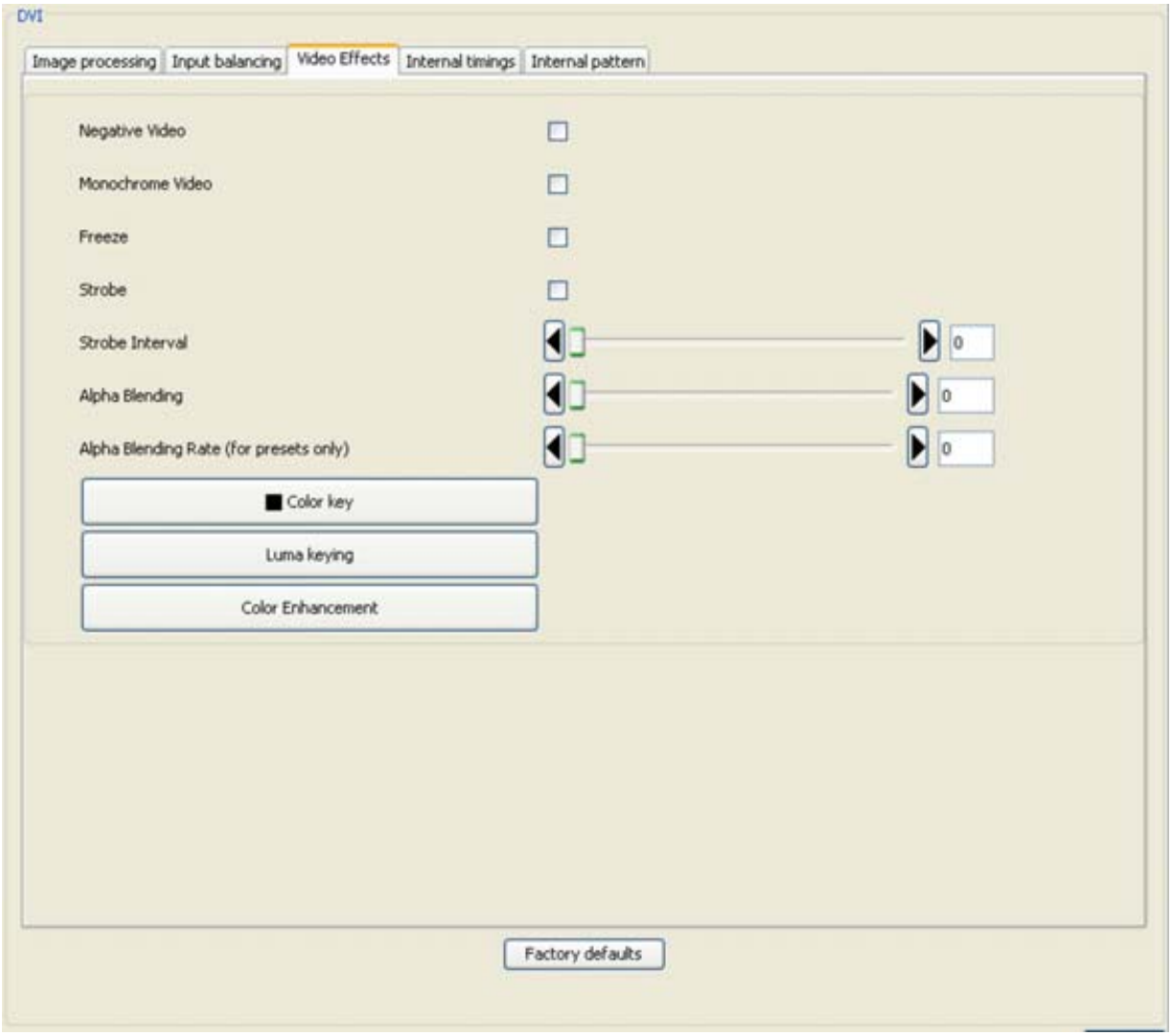


Image 9-33
Video effects

9.5.4.1 Video effects, video enhancement, negative video, freeze

Negative video

Enable or disable the *Negative Video* check box to reverse the polarity of the image.

Image 9-34
A Normal image
B Negative image

Monochrome video

Enable or disable the *Monochrome* check box to remove or enable the image's chroma information.

Image 9-35
A Normal image
B Monochrome image

Freeze

Enable or disable the *Freeze* check box to freeze and un-freeze the input.

Strobe

Enable or disable the *Strobe* check box, which when enabled, acts as a programmable freeze. Use the Strobe Slider to set the freeze interval (in frames).

Strobe interval

Strobe slider to set the freeze interval in frames.

When Strobe is enabled each x frames an image is displayed and remains on the display until the next frame in the interval is reached. It acts as a programmable freeze.

9.5.4.2 Alpha Blending

Overview

Alpha blending (also called opacity) can be executed on a graduation scale of 0 - 16384. With 16384 being transparent or invisible and 0 being solid.

Image 9-36

Image 9-37

Image 9-38

The source (window) on which alpha blending will be applied must have a higher Z-order number than the second source (window).

Adjusting the alpha blending

Select the **Video Effects** tab.

Click on slider and move the slider till the desired alpha blending is obtained or

click in the input field and enter the desired value with the keyboard (image 9-33).

Alpha blending rate

This is only used when applying a preset with a different alpha blending setting.

The alpha blending rate indicates how many seconds the DX-700 must use to fade from one value to the other.

To set the transition time, click on the slider and move this slider till the desired alpha blending rate is obtained or

click in the input field and enter the desired value with the keyboard (image 9-33).

9.5.4.3 Color key

Example images of color keying

Take e.g. two image. One taken on a full color background and the other a normal image. The full color background will be replaced by the second image via the principle of color keying.

Image 9-39
Zebra on a single color

Image 9-40
Full color image

Image 9-41
Result image after color keying

The source (window) on which color keying will be applied must have a higher Z-order number than the second source (window).

Start up

1. Click on the **Color key** button (image 9-33).

   The color key dialog box is displayed. (image 9-42)

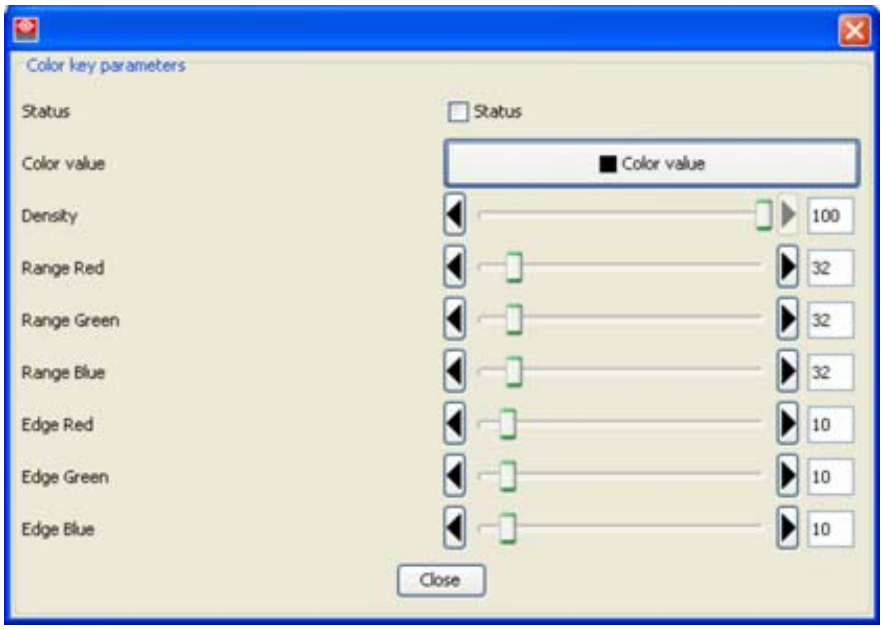


Image 9-42
Color key window

Status

Checked	color key is active
Not checked	color key is disabled

Color value

Click on the **Color value** button.

The color value window is displayed.

3 ways are now possible to select a color:

way 1	Via the swatches color window (swatches = color samples).
way 2	Via the HSB color window (HSB = Hue - Saturation - Brightness).
way 3	Via the RGB color window.

Way 1 : Select the desired color (via swatches).

Image 9-43
Color value via swatches

The first selected color will be indicated in *Recent*. When others are selected for a preview, the color indication will also be added in the *Recent* list as first one. The final selection can then be done out of the *Recent* list or out of the color pallet.

Each time a color is clicked, a preview will be given in the preview pane. Select one of the colors and press **OK** to activate the selected color.

Way 2 : Click on the **HSB** tab to display the color pallet.

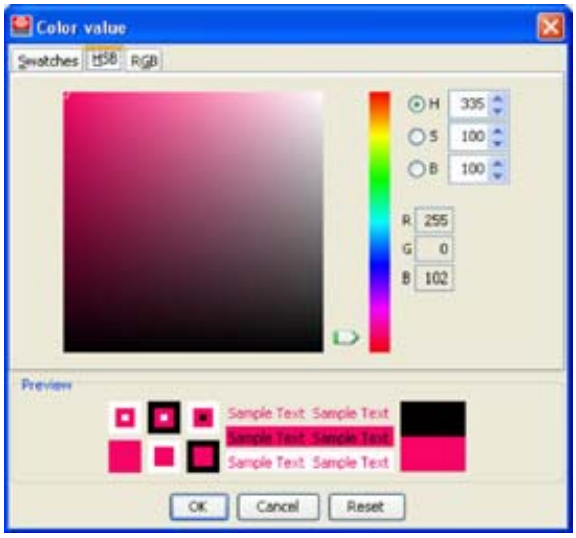


Image 9-44
Color value via HSB

A color can be selected in 2 ways:

- Slide the slider next to the color gamut until the desired color in the color pick field is reached, or fill out the HSB value until the desired color is reached in the pick up field.
- Click in the color field to display the white circle. Drag that circle to the desired tint of the chosen color.

A preview will be given in the preview pane. Press **OK** to activate the selected color.

Way 3 : Click on **RGB** tab to display the RGB selection sliders.

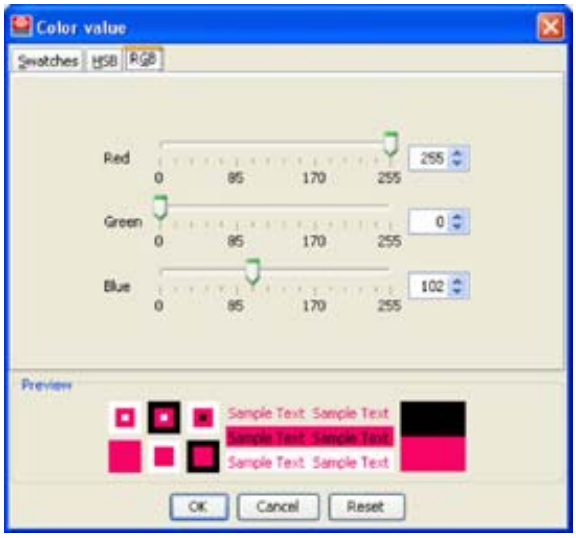


Image 9-45
Color value via RGB

Move the sliders until the desired color is reached. Or fill out the RGB values in the input boxes.

A preview will be given in the preview pane. Press **OK** to activate the selected color.

Density

Use the *Density* slider to adjust the opacity of the keyed image, from fully opaque to fully transparent.

Range (= tolerance)

Use the Red Range slider to adjust the key's clip along the Cyan vector (as demonstrated using a CIE color chip chart).

Use the Green Range slider to adjust the key's clip along the Magenta vector.

Use the Blue Range slider to adjust the key's clip along the Yellow vector

Edge

Use the Red Edge slider to adjust the background mask to/from black along the Cyan vector.

Use the Green Edge slider to adjust the background mask to/from black along the Magenta vector.

Use the Blue Edge slider to adjust the background mask to/from black along the Yellow vector.

The Color key menu on the DX-700 touch panel uses Threshold / Mask instead of Range / Edge.

9.5.4.4 Color enhancement

Overview

- Color enhancement
- Preview (capture) part of image
- Create an enhanced color

9.5.4.4.1 Color enhancement

Color enhancement

This is the method of substituting a certain color (color range) by another color.

Example images of color enhancement

The light green background of the first image can be enhanced to a more darker, saturated background. The same can be done for any other object in an image (foreground or background).

Image 9-46
Zebra on green field

Image 9-47
Zebra on enhanced green field

This way of enhancing can be done on two different colors (color ranges) to accentuate some special features.

Start up

1. Click first on the **Video effects** tab to display the video effects page (image 9-33).
2. Click on **Color enhancement**.

   The Color enhancement window opens. (image 9-48)

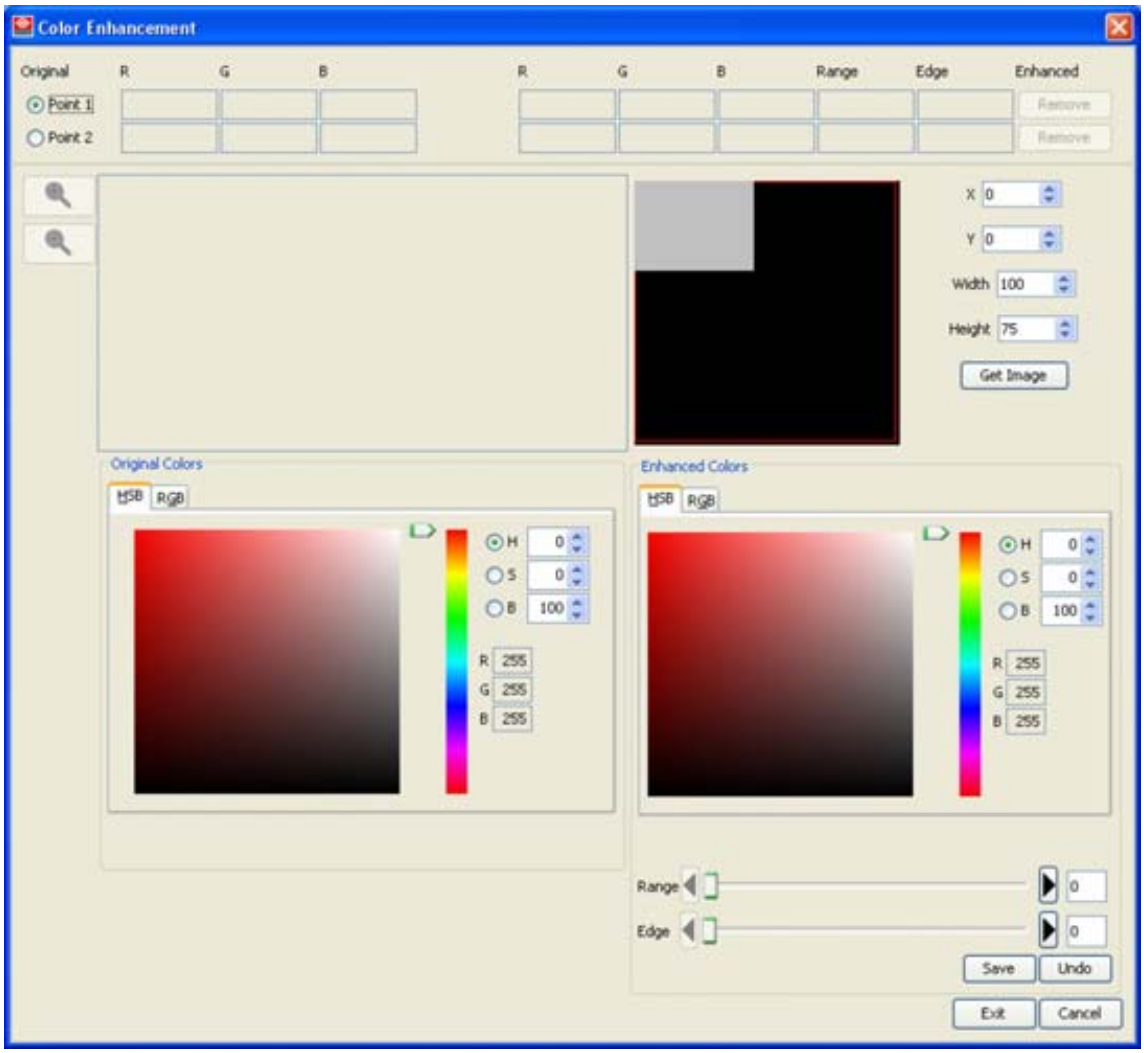


Image 9-48
Color enhancement window

9.5.4.4.2 Preview (capture) part of image

What can be done ?

When Color enhancement is clicked, a white square appears on the screen. In the color enhancement window this square is represented by gray rectangular. The dimensions and the position on the screen of this rectangular can be changed. When Get image is pressed, the content of that rectangular is captured en transferred to the software. Note that the larger the rectangular the longer it will take to transfer the content.

From that preview, a specific color can be selected for further processing.

Once a preview is created, with zoom in or zoom out, a more detailed or less detailed image can be displayed.

How to select a preview

1. Change the dimension of the rectangular by clicking on the up down control of the spin box next to *Width* and *Height*
   Or,
   click in the input field of *Width* and *Height* and enter the desired value with the keyboard. (image 9-49)
2. Click on the gray square in the screen view and drag the square to the desired location on the screen

Or,
click on the up down control of the spin box next to *X* and *Y* until the gray square is on its desired position
Or,
click inside the input box of *X* and *Y* and enter the desired coordinates with your keyboard.

3. Click on **Get Image**.

   While the image is captured and transferred to the software a status bar is displayed. (image 9-50)

   The real image behind the covered part is displayed in the right pane as an enlarged image. The larger the dimensions of the preview rectangular, the longer it will take to capture the image. (image 9-51)

4. Use the zoom in and zoom out buttons to displayed more or less detail of the captured image.

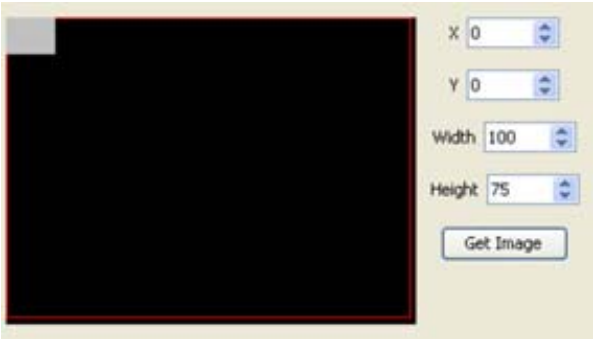


Image 9-49
Preview selection

Image 9-50

Image 9-51
Capture result

When moving the gray square to another location on the screen a new Get Image is necessary to capture the covered image.

9.5.4.4.3 Create an enhanced color

What can be done ?

A specific color can be pickup in the previewed image. To this color, a range can be added to cover also small differences and an edge can be defined to make the transitions smoothly. Once this is defined, the enhanced color can be defined which will be used to replace the selected color in the complete image.

How to create an enhancement point

1. Make first the selection between *Point 1* and *Point 2*. Click on the corresponding radio button.
   Note: *Point 2 is only selectable when Point 1 is already filled out.*
2. Click on the desired point in the preview window. (image 9-52)

The selected color will be indicated on the *Original colors* window and in the *Enhanced colors* window with a white circle.

The HSB and RGB values of the selected color are indicated in the input boxes.

A bigger preview is also given just below the color diagram.

Switching between HSB and RGB is possible just by clicking on the corresponding tab page.

Adjustment to the selected color are still possible, see Adjusting the color.

3. If a range is necessary, click on the Range slider and drag until the desired range is displayed
   Or,
   click in the input field next to the Range slider and enter the desired value with the keyboard.
4. If an edge (transition) is necessary, click on the Edge slider and drag until the desired range is displayed
   Or,
   click in the input field next to the Edge slider and enter the desired value with the keyboard.
5. To set the enhanced color in the Enhanced colors window, see Adjusting the color.

   The enhanced color (substitution color) is displayed in preview next to the original selected color.
6. If you want to use these settings for the selected point, click **Save**. Otherwise click **Undo** to and restart the procedure.

   When Save is clicked, the RGB values of the original color, the enhanced color and the range and edge are filled out next to the selected point.
7. If a second point is necessary, repeat this procedure.

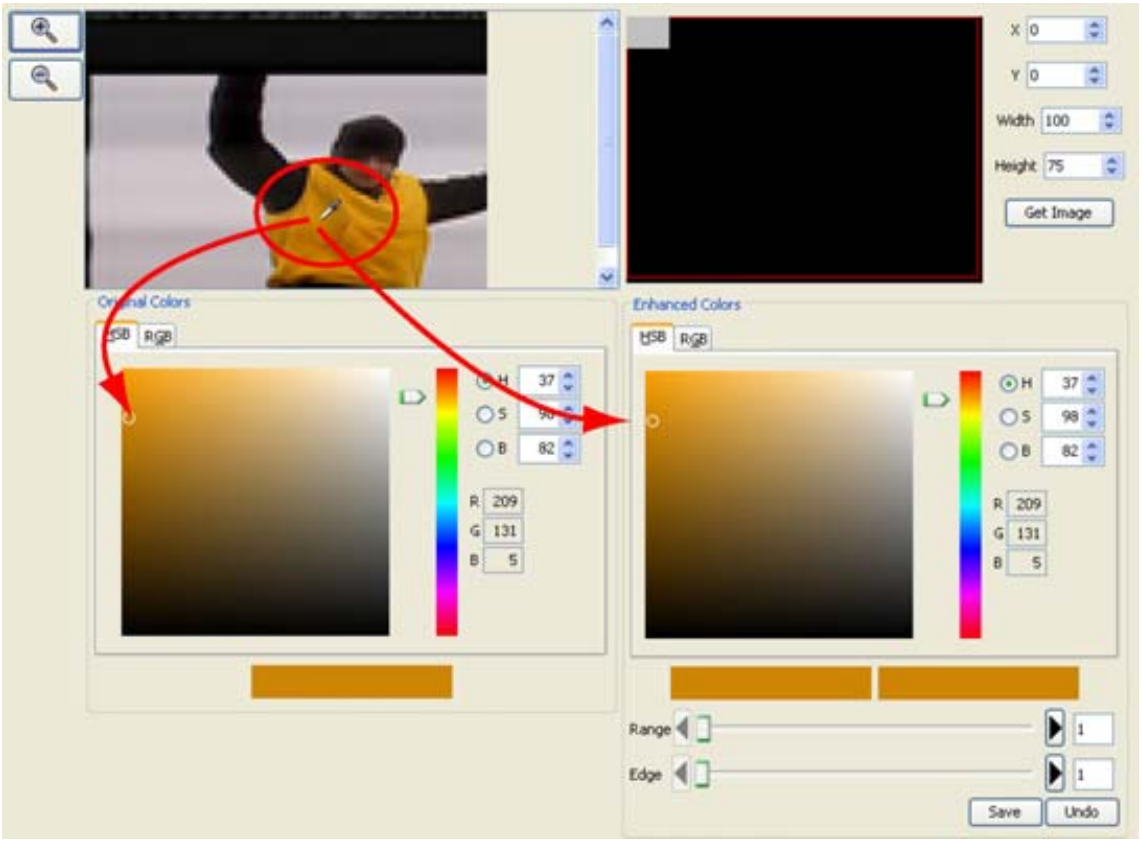


Image 9-52
Color selection

To remove the settings of a point, click on Remove next to the values for this point.

To update the values of an existing Point, just update the desired values and click Save again.

Adjusting the color (HSB)

1. Slide the slider next to the color gamut until the desired color in the color pick field is reached (image 9-53)
   Or,
   fill out the HSB value until the desired color is reached in the pick up field
   Or,
   click on the up down control of the spin boxes until the desired color is reached in the pick up field.
2. Click in the pick up field on the white circle or to display the white circle and drag that circle to the desired tint of the chosen color.

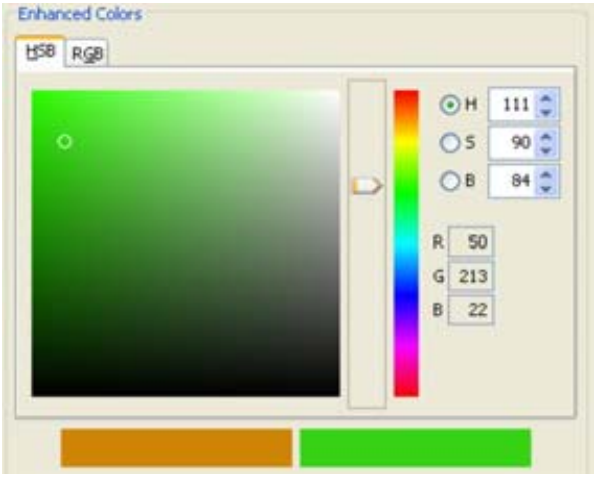


Image 9-53
HSB color enhancement

RGB values are only given as indication.

Adjusting the color (RGB)

1. Move the sliders until the desired color is reached (image 9-54)
   Or,
   fill out the RGB values in the input boxes.

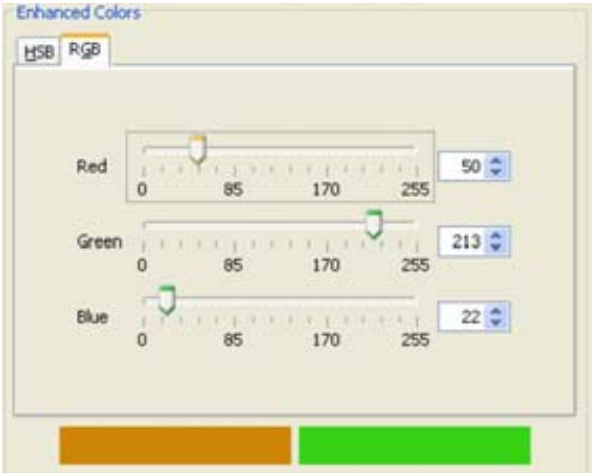


Image 9-54
RGB color enhancement

9.5.5 Internal timings

Only for HD15 and BNC sources.

Overview

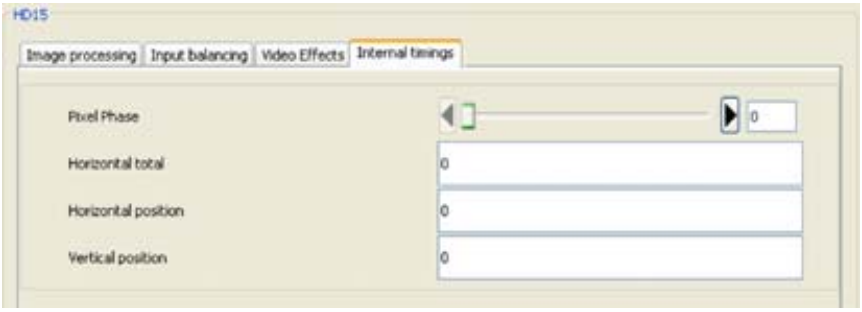


Image 9-55
Internal timings

Pixel phase

Use the Pixel Phase slider to select where pixels are sampled (ideally, on the pixel's peak). For optimum visual results when adjusting high-resolution sources, project a burst test pattern and adjust the sampling for the minimum noise.

Horizontal total

Enter the *Horizontal Total* value to set the total pixel count per line.

Horizontal position

Enter the *Horizontal Position* value to set the start of the active area's horizontal offset from horizontal sync.

Vertical position

Enter the *Vertical Position* value to set the start of the active area's vertical offset from Vertical sync.

10. LED-PRO BASED DIGITIZER SETTINGS

Overview

- Introduction
- Properties
- General settings
- Synchronization
- Timings window
- Input settings

10.1 Introduction

Opening the settings

To open the device settings, just click on the digitizer icon in the preview pane.

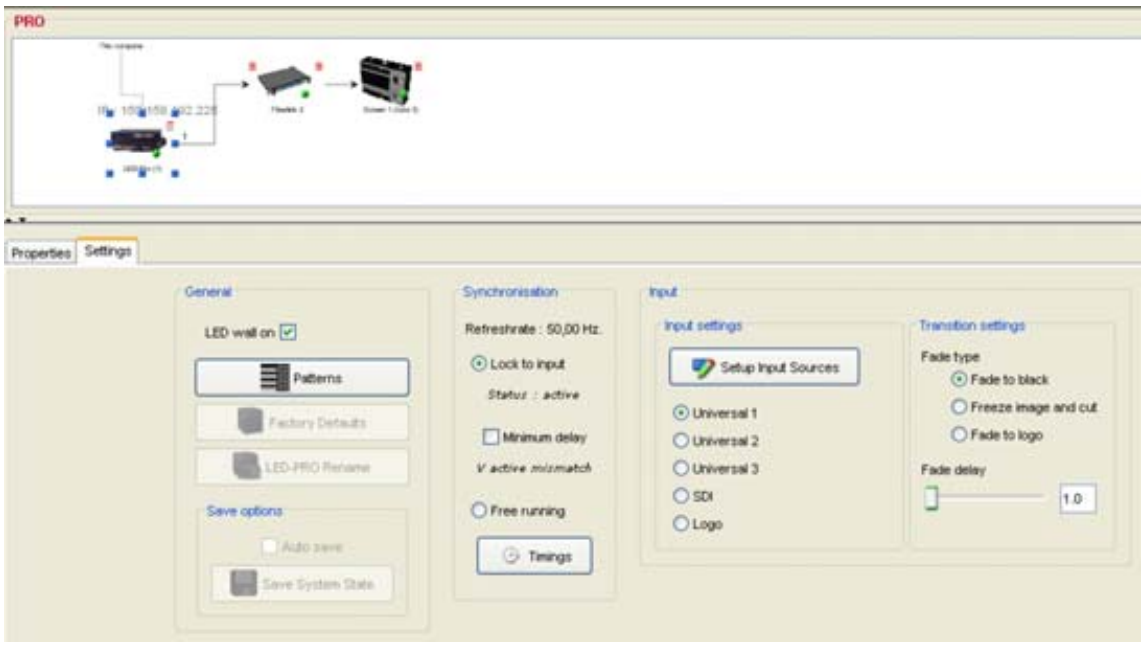


Image 10-1
LED-Pro settings

The settings become available in the settings pane (lower pane).

10.2 Properties

Overview

Click on the **Properties** tab to display the LED-Pro properties. All properties are read only.

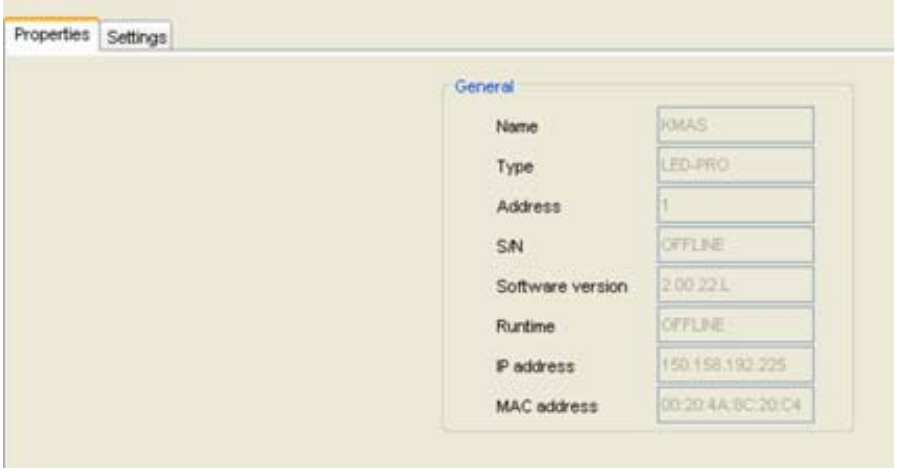


Image 10-2
LED-Pro properties settings

The following properties are displayed:

- Name
- Type
- Address
- Serial number
- Software version
- Runtime
- IP address
- MAC address

10.3 General settings

Overview

- Accessing the Settings
- LED wall on - off
- Patterns
- Factory defaults
- LED-Pro rename
- Save options

10.3.1 Accessing the Settings

How to access

1. Click on the **Settings** tab.

   All settings are displayed. The General settings are located in the first column. (image 10-3)

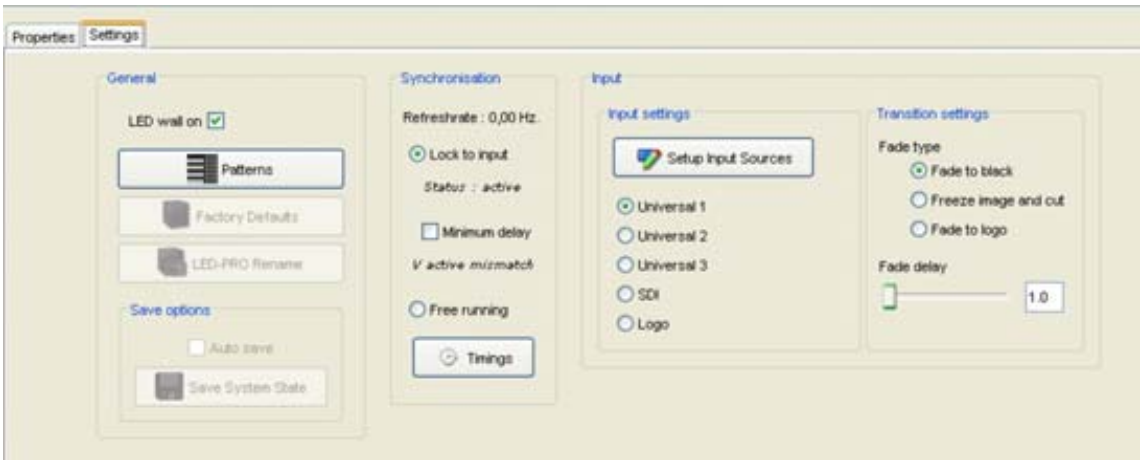


Image 10-3
Settings LED-Pro

10.3.2 LED wall on - off

How to switch

1. In an online configuration, check the check box next to LED wall on to switch on the LED wall.
   Uncheck the check box to switch off the LED wall.
   Or,
   click on the green dot on the digitizer icon to switch off the LED wall
   Click on the red dot on the digitizer icon to start up the LED wall

   A *Warning shutdown display* is displayed. (image 10-4)
2. If you are sure to switch off the LED wall, click **Yes**.

Image 10-4
LED wall off message

10.3.3 Patterns

Internal pattern selection

1. Click on Pattern (1). (image 10-5)

   The *Internal pattern* window opens (2).
2. Check *Show internal pattern* (3).

   Pattern selection buttons become available.
3. Click on the desired pattern.

Available patterns:

- Horizontal ramp
- Vertical ramp
- 100% color bars
- 75% color bars
- Grid 16x16
- Grid 32x32
- Multi burst
- White
- 50% gray
- Black
- Gray steps 1
- Gray steps 2

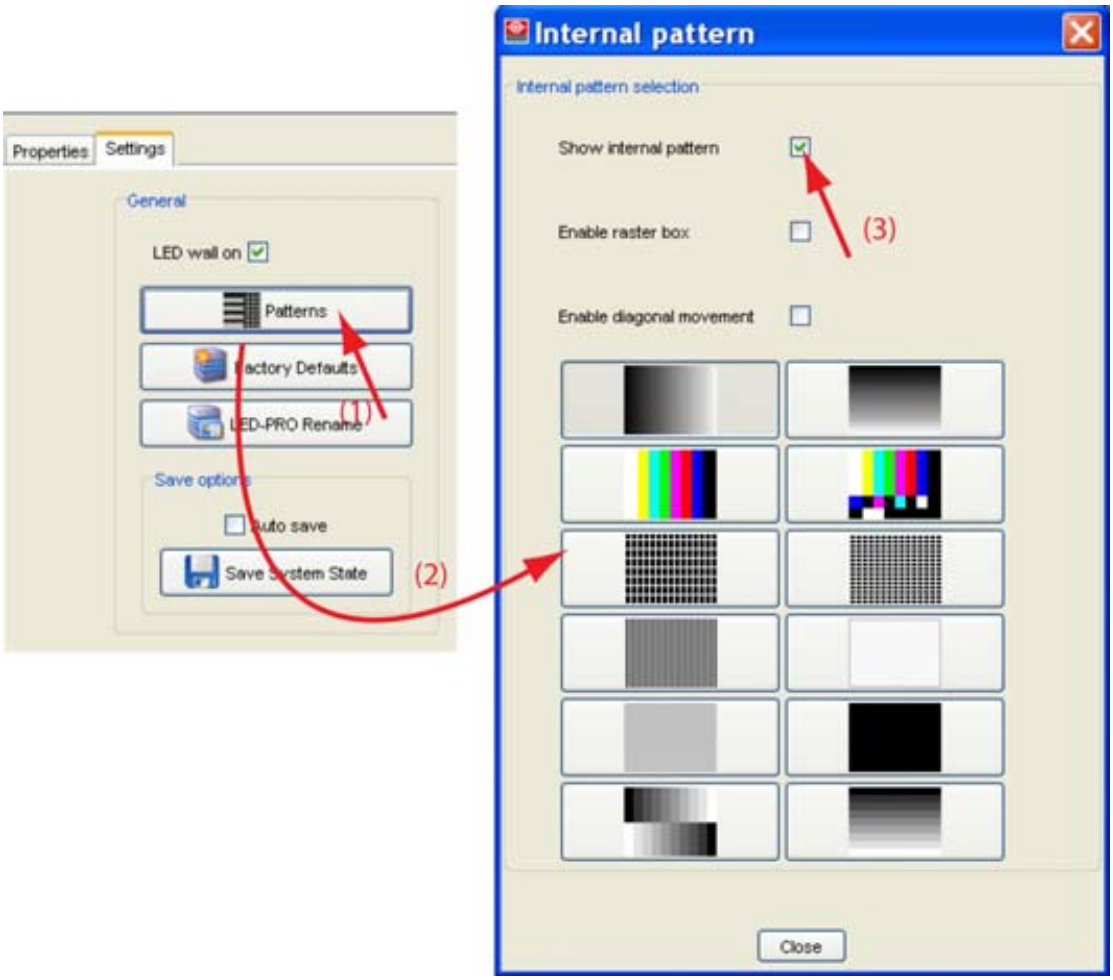


Image 10-5
Internal patterns

Raster box

A box which encompass an individual output's pixel area, the entire stacked output . This will be helpful to position the wall correctly in the active field of the digitizer.

Checked	Raster box displayed
Not checked	No raster box displayed

To display the raster box, check the check box next to *Enable raster box*.

Diagonal movement

The displayed pattern or image can be moved in a diagonal way.

Checked	Image is moving in a diagonal way
Not checked	No movement

Any test pattern can be put into diagonal motion.

To start the diagonal movement, check the check box next to *Enable diagonal movement*.

10.3.4 Factory defaults

How to go back to the factory defaults

1. Click on **Factory Defaults**. (image 10-6)

   A confirmation question is displayed. When you continue, the current device settings are reset and all devices are addressed again. Depending on the number of devices, this action can take a few minutes. (image 10-7)

2. Click **OK** to continue.

Image 10-6
Select factory defaults

Image 10-7
Factory defaults, confirmation

10.3.5 LED-Pro rename

How to rename

1. Click on **LED-Pro Rename** (1). (image 10-8)

   The *Rename LEDPro* window opens (2) with the current name filled out (3).

2. Select the current name and enter a new name (3).
3. Press **OK** (4).

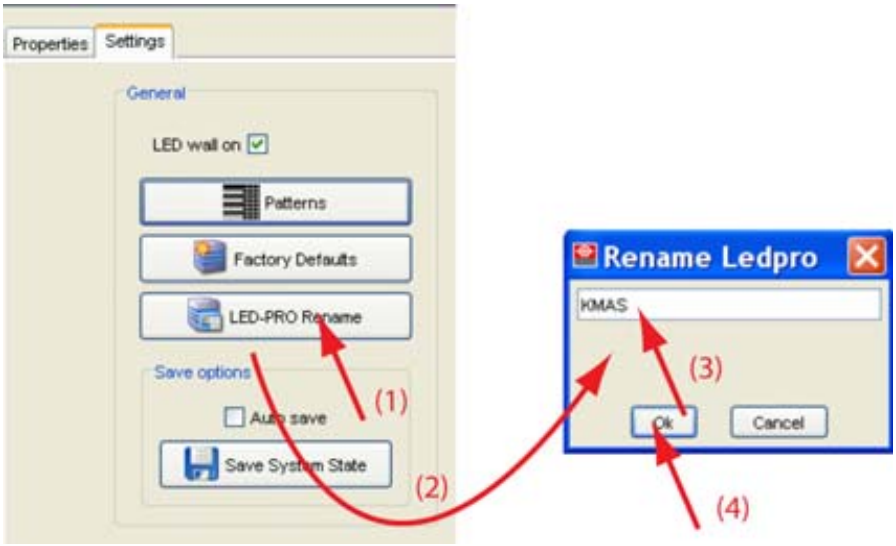


Image 10-8
Rename digitizer

10.3.6 Save options

What is possible ?

The current settings for the digitizer and the LED wall can be saved automatically inside the LED-Pro to minimize the risk of loosing settings when switching off the power. Or, that automatic mechanism can be switched off and a save on command becomes active..

To setup the save options

1. For an automatic save, check the check box in front of *Auto save* (1). (image 10-9)

   When not checked, auto save is disabled and the **Save System State** button becomes active.

2. For a manual save with the auto save unchecked, click on **Save System State** (2).

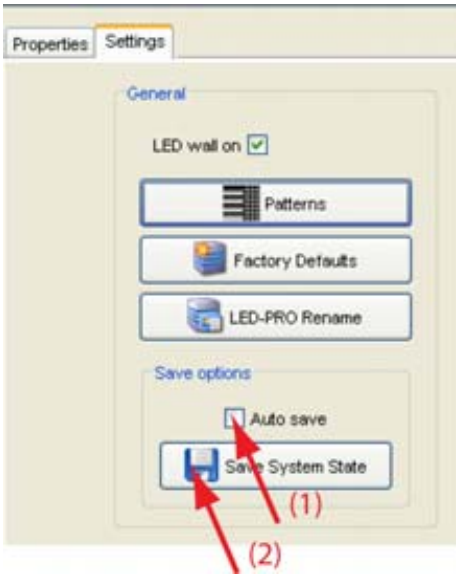


Image 10-9
Save option

10.4 Synchronization

Lock to input

When Lock to input is selected, the system is locked on input signal. In this mode, the system is synchronous with external equipment. The minimum delay can also be enabled or disabled.

To select Lock to input, click on the radio button just before *Lock to input*.

Image 10-10
Synchronization

Minimum delay

If the input source must be processed with a minimum delay, check the check box.

When enabled, the following rules must be applied:

- Input is locked to the LED-Pro
- Input viewport VSize equals the Output window VSize.
- Input locked to this LED-Pro is aligned to the top of the backplane.

If you agree, click **Yes** to apply automatically the restraint and to set the minimum delay. If the vertical size of the output window is larger than the maximum vertical size of the input viewport, then minimum delay cannot be enabled. Change first the timings of the output window.

When minimum delay is set, the viewport and window settings are locked in the *Operations* module.

If you are not agree, click **No**.

Free running

When *Free running* is selected, the LED-Pro is locked to its internal timing generator — and not to an external source. In this mode, the system is not synchronous with other equipment in your video system.

10.5 Timings window

About the timings window

When the digitizer is lock to input, then the timings inside the timing window cannot be altered until Lock to input is unlocked.

When Free running is selected, the timings are accessible.

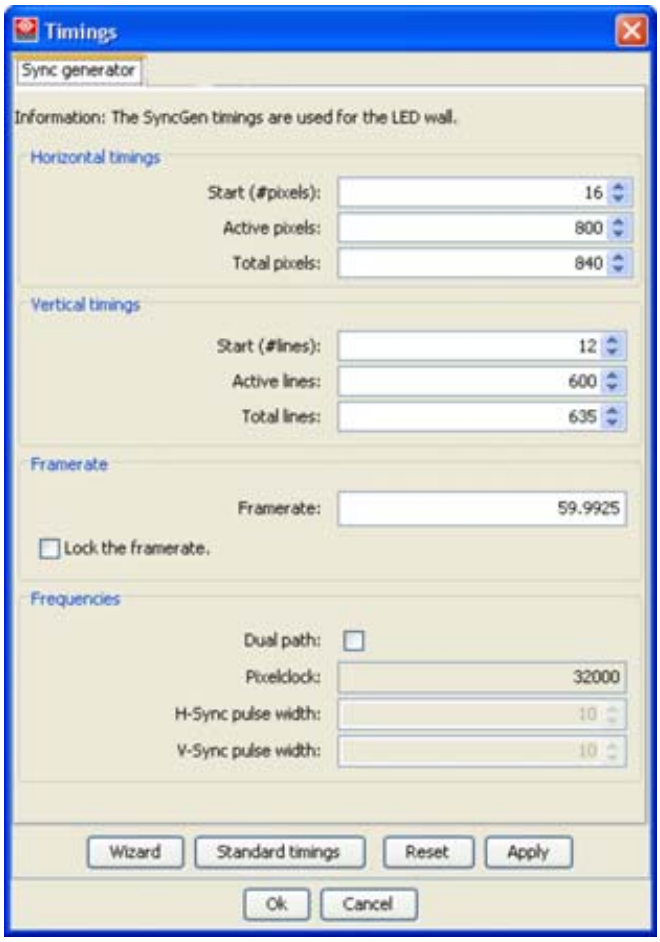


Image 10-11
Timings

Timing wizard

The timing wizard will guide you through the process of setting the correct resolution, frequency and/or framerate for your setup. By using a set of questions, this wizard will try to complete the best fit setup depending on several parameters.

For more information, see "Timing wizard", page 210.

Standard timings

When starting the standard timings window, the settings are given as read only values. The standard timings will be different depending on the output module type (DVI or NNI)

Horizontal timings

Start: start of the active pixels. Horizontal start position of the active image area, referenced to Horizontal sync.

Active: the number of pixels that are really used (= the actual width of the image/video that will be shown).

Total: the number of pixels in a line (= max. width). Total = Start + Active + number of trailing blanking pixels.

Vertical timings

Start : start of the active lines. Vertical start position of the active image area, referenced from Vertical sync.

Active : the number of lines that are really used (= the actual height of the image/video that will be shown).

Total : the number of lines in a frame (= max. height). Total = Start + Active + number of trailing blanking lines)

Frame rate

Vertical frequency of the input signal.

Lock to frame rate : When checked, the frame rate will be locked to the current value. Changing the horizontal and vertical timings will not change the frame rate anymore.

Frequencies

Dual path : the pixel clock can work in 2 ways: single or dual. When in dual path, the number of information send to the wall is doubled for the same clock. .

To work dual, check the check box.

This function is by default used in Single path.

Can only be used for ILite 6-8-10-12 tiles and IB-6 tiles. With some sources, artifacts are possible when dual path is used.

Pixelclock : read only value

H-Sync : The width of the horizontal sync signal. This should always be 10 pixels.

V-Sync : The width of the vertical sync signal. This should always be 10 lines.

10.6 Input settings

10.6.1 Input selection

About inputs

Only one input can be activated at the same time.

The following inputs are available:

Universal 1	Two DVI-I connectors. This input accepts DVI signals, and via a DVI-I to HD-15 adaptor, also accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.
Universal 2	Two HD-15 connectors. This input accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.
Universal 3	Five BNC connectors. This input accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.
SDI	One BNC connector. This input accepts SD-SDI or HD-SDI signals
Logo	Display the stored logo

For more information about the inputs, consult the LED-Pro's user guide.

How to select an input

1. Click on the radio button of your choice to select the desired input.
   Or,
   click on **Setup Input Sources** and click on the desired source button on the upper left corner. (image 10-12)

Image 10-12
Input selection

10.6.2 Setup Input Sources

Overview

- Input Source settings, sources
- Image processing
- Input balance
- Internal timings

10.6.2.1 Input Source settings, sources

How to select

1. Click on **Setup Input Sources** to access the source settings.
2. Click on a source button to select a source. (image 10-13)

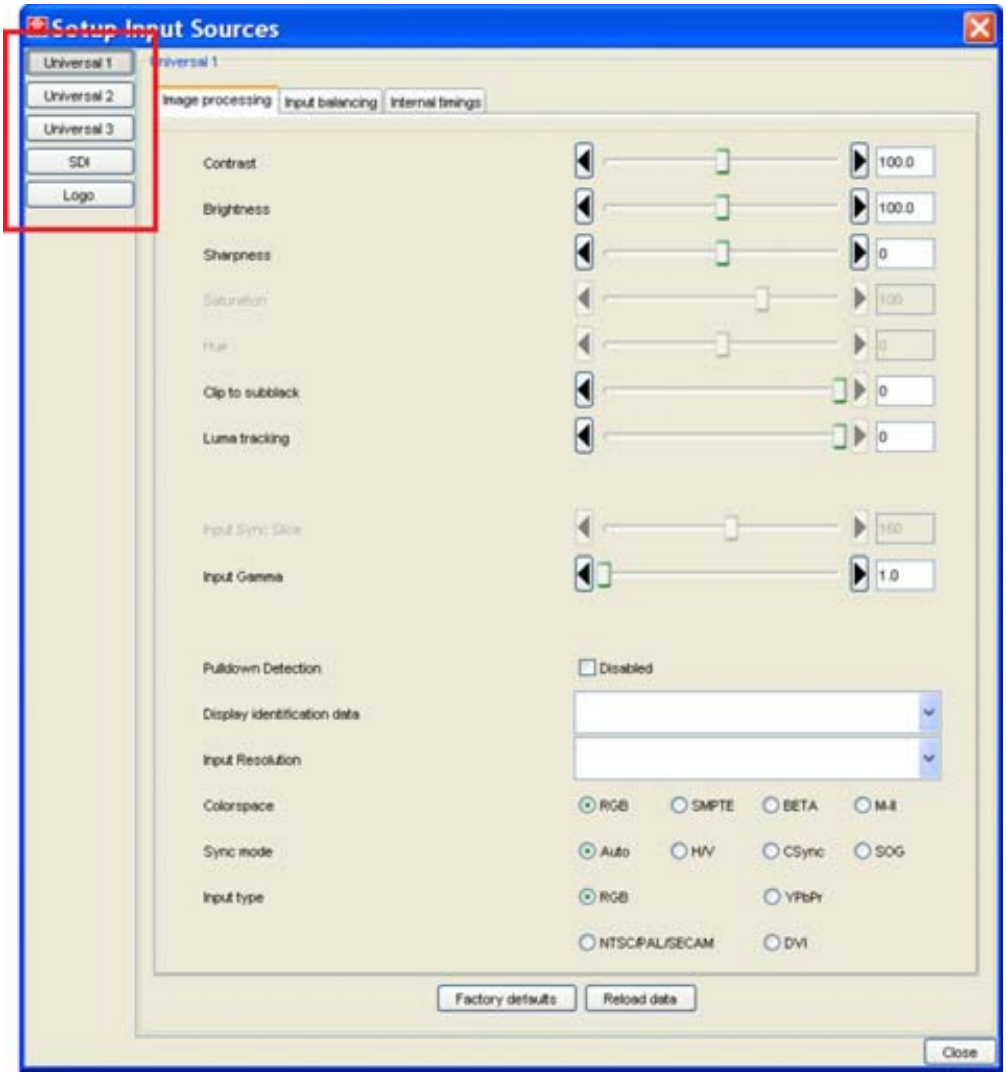


Image 10-13
Source selection in Setup input sources

Source description

Universal 1 - Two DVI-I connectors are provided for Universal Input 1 — one for the input and the other for a buffered loop-through. This input accepts DVI signals, and via a DVI-I to HD-15 adaptor, also accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.

Universal 2 - Two HD-15 connectors are provided for Universal Input 2 — one for the input and the other for a buffered loop-through. This input accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.

Universal 3 - Five BNC connectors are provided for Universal Input 3 — each with a buffered loop-through. This input and accepts RGB, YUV, S-Video (Y/C), or composite (NTSC, PAL or SECAM) signals.

SDI - One BNC connector is provided for the SDI Input. This input accepts SD-SDI or HD-SDI signals.

10.6.2.2 Image processing

Overview

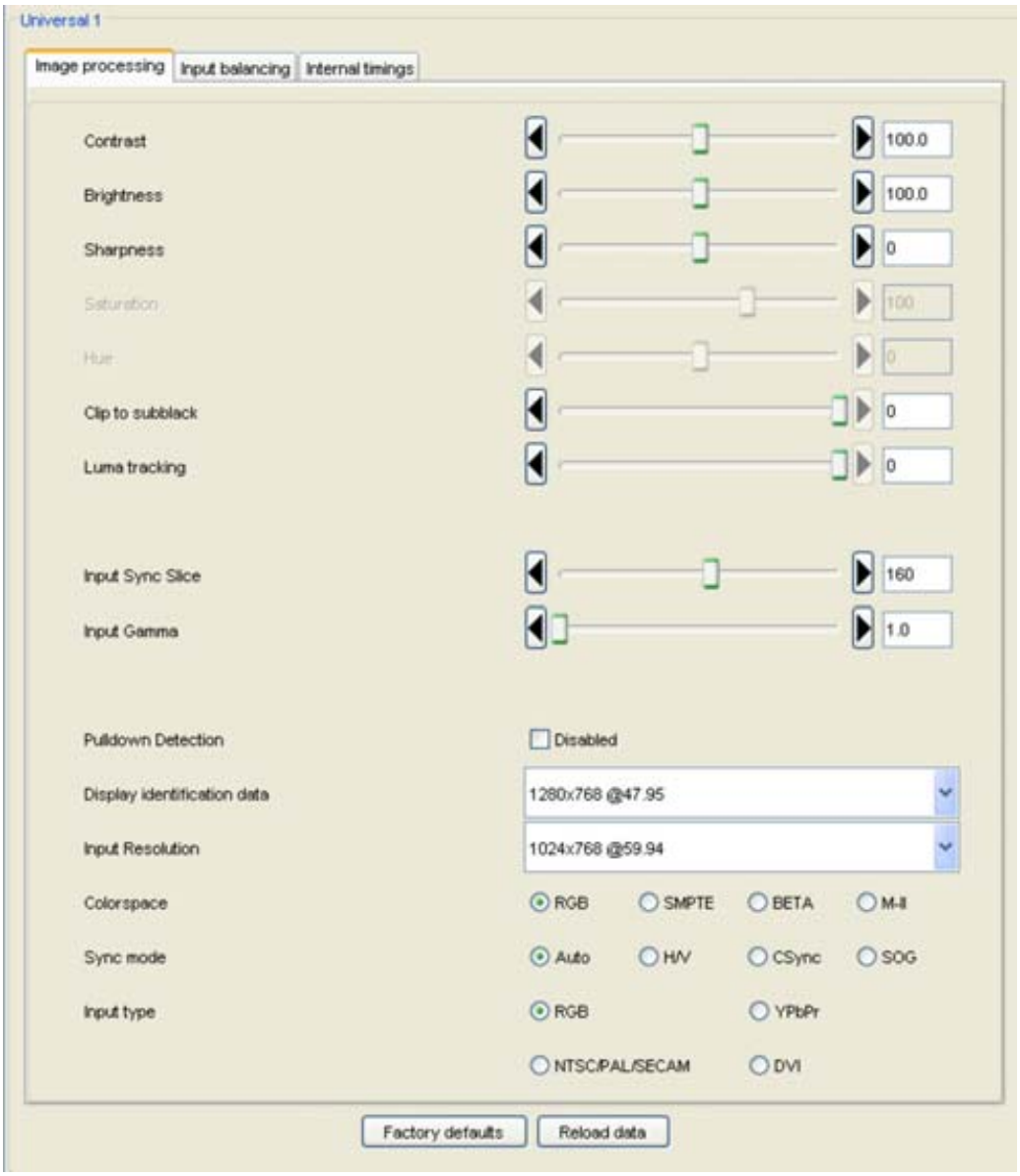


Image 10-14
Image processing

For sliders, click on the slider, hold down the mouse button and move to the desired location or click on the input field and enter the desired value with the keyboard.

For drop down boxes, click on the drop down box and select the desired value.

Contrast

Use the slider to determine a good color reproduction. Adjust the contrast to the level you prefer, according the ambient lighting conditions.

Adjustable between 75 and 125.

Brightness

Brightness is the intensity of the displayed signal.

Adjustable between 75 and 125.

Sharpness

Sharpness is used to adjust the image sharpness impression of an image. Adjust sharpness completely conform own preferences.

Adjustable between - 10 and + 10.

Saturation

Saturation is the intensity of the color. 0 is pure black & white.

Adjustable between 0 and 125

Hue

Only applicable for non RGB source.

Hue adjusts the gradation of color.

Adjustable between - 90 and + 90.

Clip to subblack

Clip to Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes.

Adjustable between - 15 and 0.

Luma tracking

Luma tracking adjusts the level of green haze appearing in the low lights.

Adjustable between - 15 and 0.

Input sync slice

This function enables you to select the sync comparator threshold for RGsB (RGB with Sync on Green) or YPbPr analog component video sources.

- The value ranges from 20mV to 280mV, adjustable in steps of 10mV.
- The default value is 160mV.

The default Sync Slice level has been optimized for virtually all sources that will be encountered and should rarely, if ever, require adjustment. However, the ability to adjust the level is provided to improve sync detection and synchronization in cases of extremely noisy RGsB or YPbPr video signals.

Input gamma

Sets in put gamma for the selected source.

Adjustable between 1.0 and 3.0 with an increment of 0.1

Pulldown detection

This function allows you to enable or disable 3:2 Pulldown Detection.

The function should be enabled to process video derived from film source material

- The function only applies to standard video inputs (composite, component, and s-video).
- The default mode is off.
- When LED-PRO detects Macrovision copy protection on the incoming YPbPr NTSC/PAL video, the value is automatically repositioned to 60mV to account for the reduced amplitude sync pulse.

Display identification data

Only for DVI source.

This is the resolution which allows to configure the DVI input according to a standard. These resolutions can be recognized by the graphic card of the source through e.g. DDC communication.

Input resolution

Select the input resolution of the signal.

Colorspace

Not for SDI / HDSDI.

The color space (color gamut), the collection of colors which can be reproduced, can be adjusted between RGB, SMPTE (American standard), BETA and M-II.

Check the radio button to select the correct color space.

The default selection for YPbPr is SMPTE. You may change this setting to BETA or M-II to allow the LED-PRO to correctly sample the Y, Pb and Pr components across their full dynamic range.

Sync mode

Make your choice between Auto, Horizontal/vertical sync, Composite sync and sync on green depending on your input signal.

Input type

Select the input type corresponding with the connected source. The following types are possible : RGB, YPbPr, NTSC/PAL/SECAM and DVI.

10.6.2.3 Input balance

Overview

Image 10-15
Input balance

For sliders, click on the slider, hold down the mouse button and move to the desired location or

click on the input field and enter the desired value with the keyboard.

About the input balance

When transporting signals, there is always a risk of deterioration of the information contained in the signals.

The objective in input balancing is to “set” the same black level (low lights) and the same white level (gain) for the three colors of a particular input source.

To balance the three color signals of a particular source there are conditions; in fact we must know the black and the white level of the source i.e. :

1. The source in question must be able to generate a white signal, ideally a 100% (background) full screen pattern.
2. The source in question must be able to generate a black signal, ideally a 100% (background) full screen pattern.

An alternative to a full white/black pattern is the standard gray scale pattern. The black bar can be used for the low lights adjustment and the white bar can be used for the gain adjustment.

Performing white input balance (gain adjustment) - Brightness

1. Click on the Red gain slider and adjust on a minimum value.
2. Click on the Blue gain slider and adjust on a minimum value.
3. Click on the Green gain slider and adjust until bright spots appear on the screen.
4. Click on the Blue gain slider and adjust until bright spots appear on the screen.
5. Click on the Red gain slider and adjust until bright spots appear on the screen.

The image should be noisy neutral gray.

How to adjust the low lights (black input balance) - Contrast

1. Click on the Red low lights slider and adjust on a minimum value.
2. Click on the Blue low lights slider and adjust on a minimum value.
3. Click on the Green low lights slider and adjust until bright spots appear on the screen.
4. Click on the Blue low lights slider and adjust until bright spots appear on the screen.
5. Click on the Red low lights slider and adjust until bright spots appear on the screen.

The ones uses a gray scale pattern, the bright spots should appear in the black bar.

10.6.2.4 Internal timings

Overview

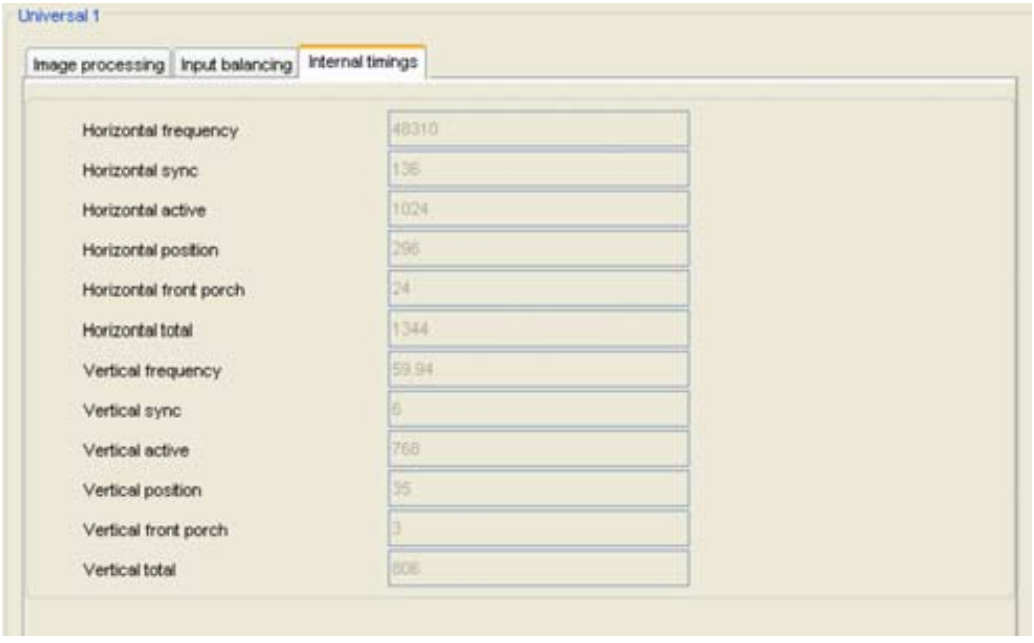


Image 10-16
Internal timings

The internal timings are only given as information.

10.6.3 Transition time

Fade type

The transition between two source can be handled in different ways:

- **Fade to black** : the currently selected channel fades to black, then the new channel's video transitions in. The transition rate is determined by the *Fade delay* value.
- **Freeze image and cut** : the currently selected channel freezes, the new channel's video is acquired and cut to the output. The transition rate is determined by the *Fade delay* value.
- **Fade to logo** : this mode is only selectable if there is stored LOGO image in non-volatile memory on the LED-Pro. The currently selected channel dissolves to the stored LOGO, then the new channel's video dissolves in. The transition rate is determined by the *Fade delay* value.

Image 10-17
Transition setup

Fade delay

Fade delay is the transition rate to go from one channel to another. It can be set between 1 and 5 seconds.

11. LED WALL SETTINGS

Overview

- LED wall device settings
- LED wall properties
- LED wall settings
- Tile overview

LED wall settings are only correctly filled out after *Tile positioning* is executed for each screen separately or after *IX configuration* is executed for OLite walls in customized mode, MiPIX, MiSTRIP or MiTRIX creations.

11.1 LED wall device settings

To open the LED wall device settings

To open the device settings, just double click on the LED wall device icon in the preview pane.

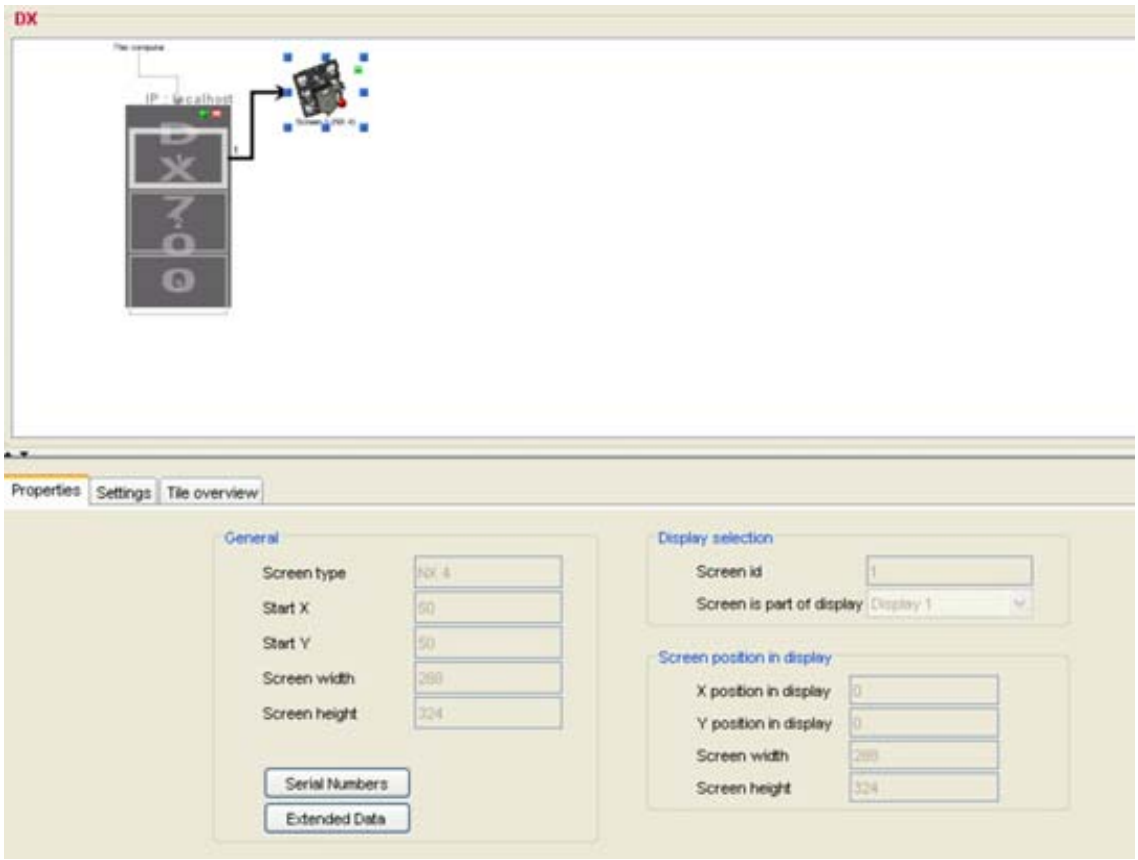


Image 11-1
Select LED wall settings

Depending on the device type, the settings becomes available in the settings pane.

The settings pane contains for all LED walls the same tab pages. Some items within these tab pages can be grayed out or are not visible, depending on the tile type.

11.2 LED wall properties

Overview

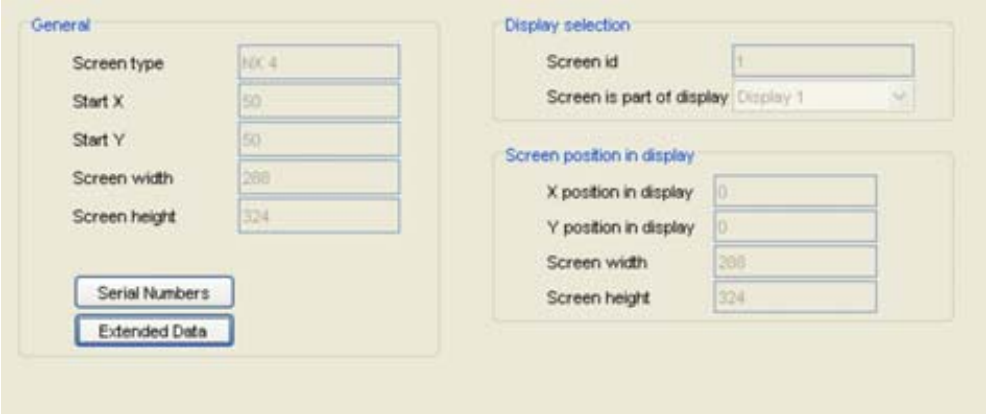


Image 11-2
LED wall properties

All values are read only value.

General

Gives an overview of :

- Screen type : used tile type
- X-start : X-coordinate of start position. When the background is red, execute first tile positioning.
- Y-start : Y-coordinate of start position. When the background is red, execute first tile positioning.
- Screen width : width of the screen.
- Screen height : height of the screen.

Serial number

The serial numbers of all tiles can be downloaded and saved in a csv file.

To download the serial numbers, click on **Serial Numbers**. When not all serial numbers are yet downloaded, a message appears to ask if you want to download all serial numbers. Click **OK** to continue.

When all numbers are downloaded, a browse window opens and a proposed file name is already filled out. Change the file name if necessary and browse to the desired location. Click **Save**.

Screen selection

Gives the screen id (number within a display) and the display name to which the screen belongs.

Extended data (only for NX tiles)

Extended data of an NX tile or NX wall can be stored on file so that a hot swap can be done.

To store the data, click on **External Data** to open the *Hot swap* window.

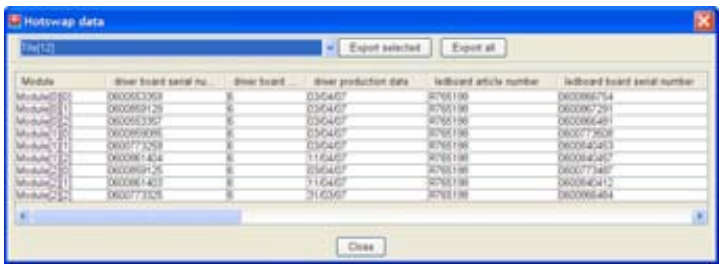


Image 11-3
Hotswap data

Select the tile for which an export must be done and click on **Export selected**. Or click on **Export all** to export the data for all tiles.

A browse window opens and the a proposed file name is already filled out. Change the file name if necessary and browse to the desired location. Click **Save**.

Screen position in display

The start position within the selected display and the dimensions of the selected screen within that display.

11.3 LED wall settings

11.3.1 Access to the settings

How to get access?

1. Double click on the LED wall icon in the preview pane. (image 11-4)

   The settings pane will be displayed.

2. Click on the tab **Settings**.

   The settings of the LED wall will be displayed.

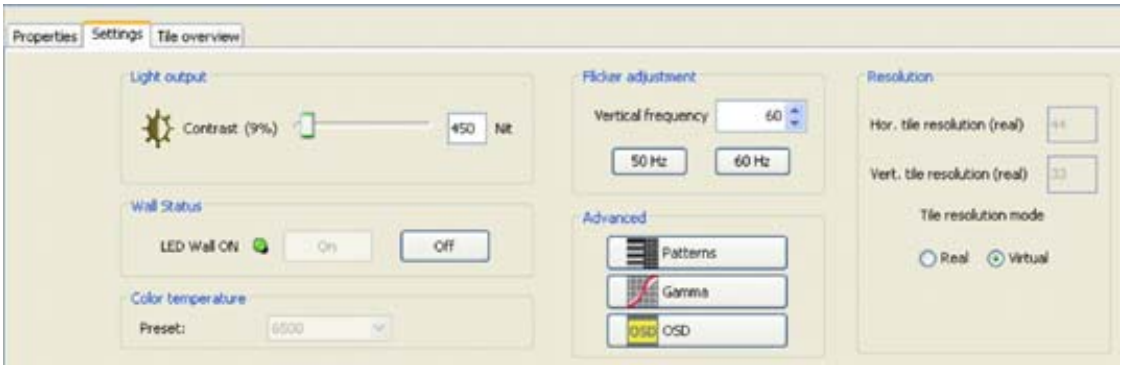


Image 11-4
Settings selected

11.3.2 Contrast adjustment for MiSTRIP and MiTRIX

General Contrast adjustment

1. Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit. (image 11-5)

Wall type	Contrast values
MiSTRIP	0 and 5000 Nit
MiTRIX	0 and 3000 Nit

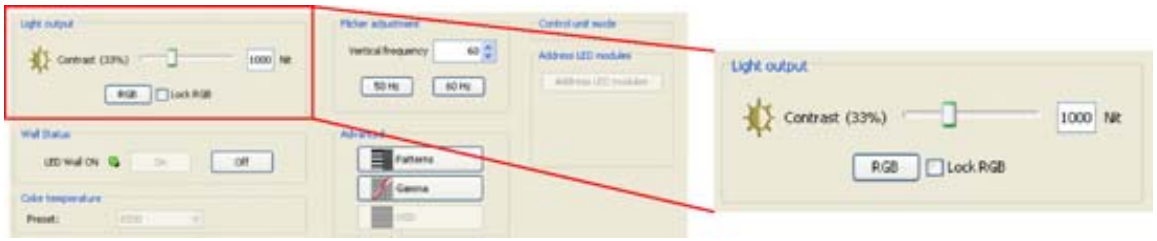


Image 11-5
General contrast adjustment

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

Image 11-6
Contrast adjustment on RGB

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

11.3.3 Contrast adjustment for OLite

Boost mode only for OLite-510

General Contrast adjustment

Image 11-7
General contrast adjustment OLite

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

Wall type	Contrast values
OLite-510	0 and 5000 Nit (7000 Nit in boosted mode)
OLite-612	0 and 6000 Nit (no boost mode)

When OLite-510 is used in *Tile* mode, contrast boosting is possible. Therefore, check the checkbox in front of *Boosted contrast*.

When in **OLite tile mode**, a message box will be displayed.

Contrast boosting is only allowed for moving video images and the maximum ambient temperature may not exceed 30 °C.

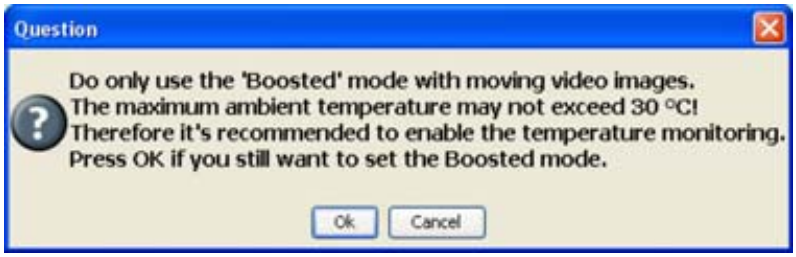


Image 11-8
OLite boosted mode question

When both condition are available, click OK to start the boosting.

When in **OLite customized mode**, and contrast boosting is checked, the following error will be displayed : “Boost mode is only allowed in ’Tile’ mode ! At least one controller has been set to ’Customized’ mode.”

Image 11-9
Contrast boosting error

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

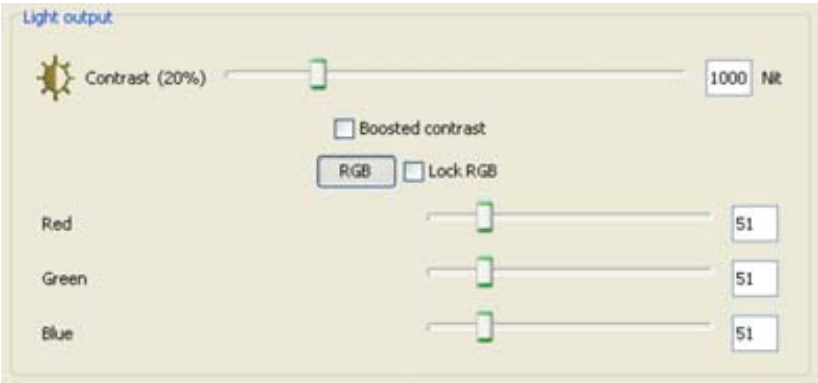


Image 11-10
Contrast adjustment on RGB

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

11.3.4 Contrast adjustment for ILite and IB-6

General Contrast adjustment

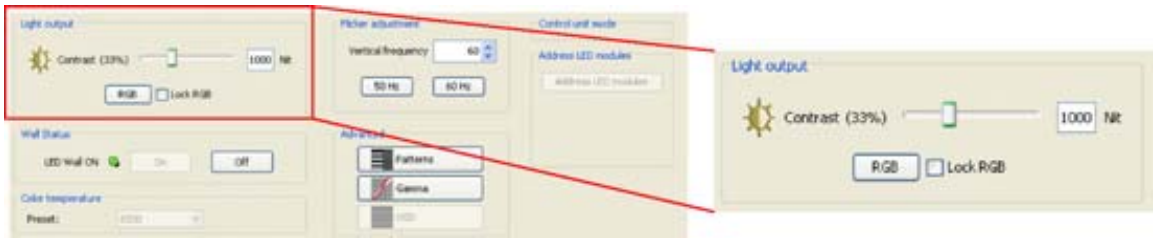


Image 11-11
General contrast adjustment ILite

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

Wall type	Contrast values
ILite	0 and 2000 Nit
ILite MD	0 and 1500 Nit
IB-6	0 and 1500 Nit

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

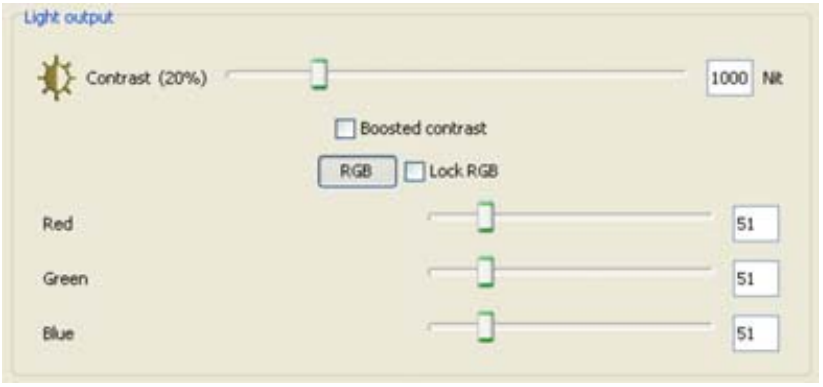


Image 11-12
Contrast on RGB separately

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

11.3.5 Contrast adjustment for NX-4, T-20, TF-20, DB-x20, DLite, SLite, SP10, MiPIX and MiSPHERE

Contrast adjustment

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

Image 11-13
Contrast adjustment NX-4, T-20, TF-20, DB-x20, DLite, SLite, MiSPHERE and MiPIX

Wall type	Contrast values
DLite	0 and 5000 Nit
SLite	0 and 5000 Nit
MiPIX wall	0 and 1300 Nit
MiSPHERE	0 and 300 Nit
SP10	0 and 5000 Nit
NX-4	0 and 2000 Nit
T-20, TF-20, DB-x20	0 and 6500 Nit

11.3.6 LED wall status

LED wall on - off

The LED wall can be switched on/off by clicking on the On or Off button within the Wall status pane.

A LED indication next to the buttons shows the wall status.

- Green : LED wall on
- Red : LED wall off

Image 11-14
Wall status

The LED wall indication on the pictographs of all devices will follow the setting of the LED wall status.

11.3.7 Color temperature

Overview

Image 11-15
Color temperature

The preset color temperature value is indicated as read only value. To change this value, see see "Calibration", page 445.

11.3.8 Flicker adjustment

Not for Category 2 (new generation) tiles.

Vertical frequency

Image 11-16
Flicker adjustment

If the vertical frequency is 50 Hz or 60 Hz, click on one of the predefined buttons. When the vertical frequency is another value, click on the up down control of the spin box next to Vertical frequency until the desired value is reached or click in the input field and enter the value with the keyboard.

Even when the vertical frequency is correctly filled out, it is still possible that a flickering in the image is visible. To solve that flickering, reduce a little the vertical frequency. E.g. when there is flickering on 50 Hz, reduce to 49.9 Hz. If there is still flickering, reduce again with 0.1 Hz. Do not reduce drastically, otherwise the light output will reduce too.

11.3.9 Advanced settings

Overview

- Show internal pattern
- Gamma adjustment
- Show OSD information
- Overview OSD information for ILite and IB-6 displays
- Overview OSD information for SLite displays and SP10
- Overview OSD information for OLite displays
- Overview OSD information for NX-4 displays
- Overview OSD information for T-20, TF-20 and DB-x20 displays

11.3.9.1 Show internal pattern

Display full color internal pattern

1. Click on **Patterns** (a). (image 11-17)

   The *Pattern* window opens (b).

2. Check the check box next to *Show internal pattern* (c).

Not Checked	external sources will be displayed
Checked	internal pattern will be displayed

3. Define the pattern color by checking the appropriate color.
   The following are possible:
   - Red
   - Green
   - Blue

   A combination of one of the 3 colors is also possible.

   A fixed color will be displayed on the wall.

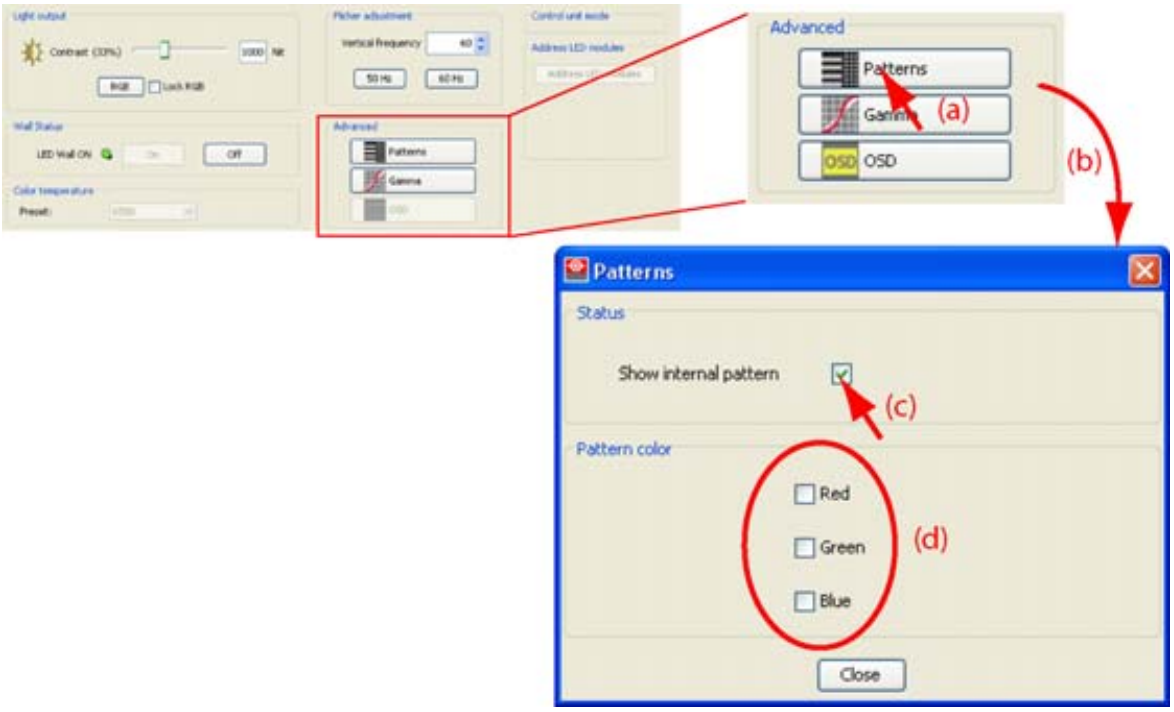


Image 11-17
Show internal pattern for ILite/DLite/SLite/OLite

Typical test patterns for MiPIX, OLite, MiSTRIP and MiTRIX

To display the usual test pattern, follow the procedure as described just above.

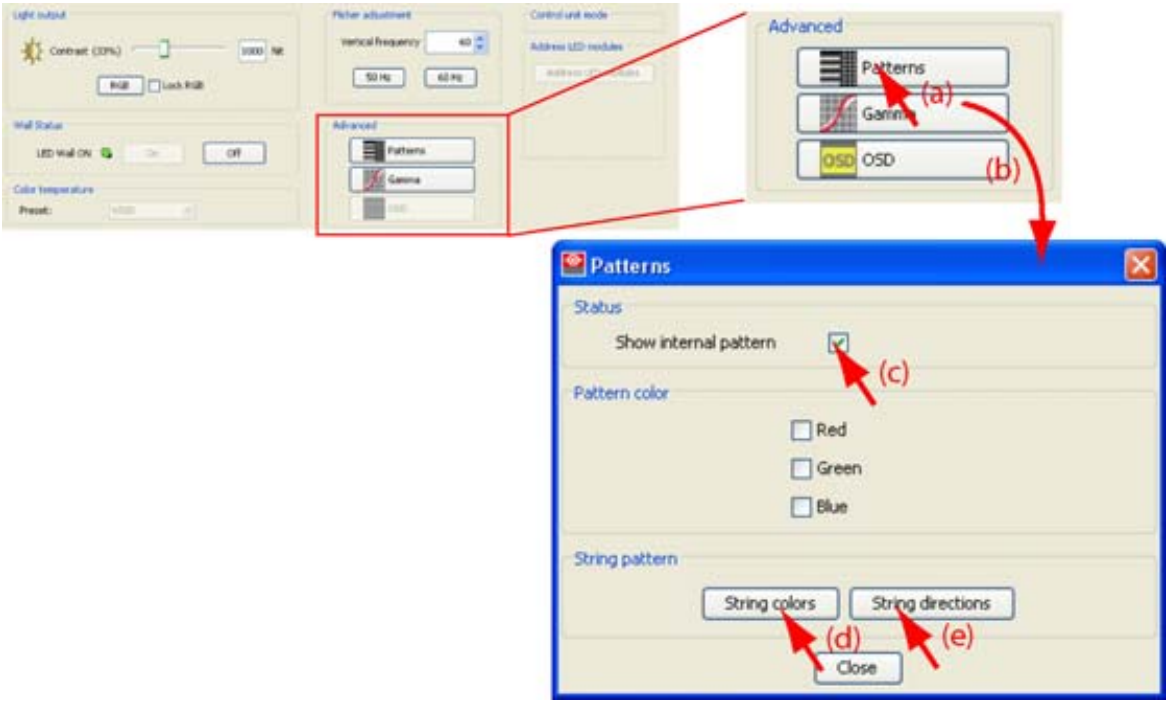


Image 11-18
Show internal pattern for MiPIX and OLite customized mode

String colors : to see how the MiPIX, OLite customized mode blocks or MiSTRIP or MiTRIX units, are connected, starting from the control unit till the end of the string, click on **String colors**.

Blocks belonging to string :

String no.	String color
1	will color red
2	will color green
3	will color blue
4	will color yellow
5	will color magenta (for OLite, MiSTRIP)
6	will color cyan (for OLite, MiSTRIP)

String direction : Only for **MiPIX**. The string (wiring direction), started by the control unit, can be visualized. Click on **String direction** to see a running light, running from the control unit to the end of the string, in the direction of the wiring.

11.3.9.2 Gamma adjustment

How to start up ?

1. Press **Gamma** button in *Advanced*. (image 11-19)

   The gamma dialog box will be displayed. The content of this dialog box depends on type of the wall. For some wall type gamma can be adjusted per color, for others all colors will be adjusted at the same time.
   Possible actions :
   - adjust the gamma independently in six regions of the characteristic gamma curve.
   - select from one of the ten preset controls.

Image 11-19
Start up Gamma adjustment

For the adjustment procedure, see "Gamma adjustment of a display", page 595.

11.3.9.3 Show OSD information

Not available for walls with DLite tiles, MiPIX-20 blocks, MiSTRIP or MiTRIX units.

How to show ?

1. Click on **OSD** in *Advanced* (a). (image 11-20)

   The *OSD* window opens (b).

2. Check *Enable OSD* to allow OSD messages to be displayed on the display (c).
3. Click on the combo box and select the info to be shown (d).
4. Keep selected item from combo box visible on the screen (e). When checked, the OSD information remains on the screen. Otherwise the information is removed after 10 seconds.
5. Loop OSD, if selected then all settings will be shown one after each other with an interval of 10 seconds (f).
6. Allow system pop-ups, when something goes wrong the system can pop-up a message on the display. When checked, the message will be displayed.

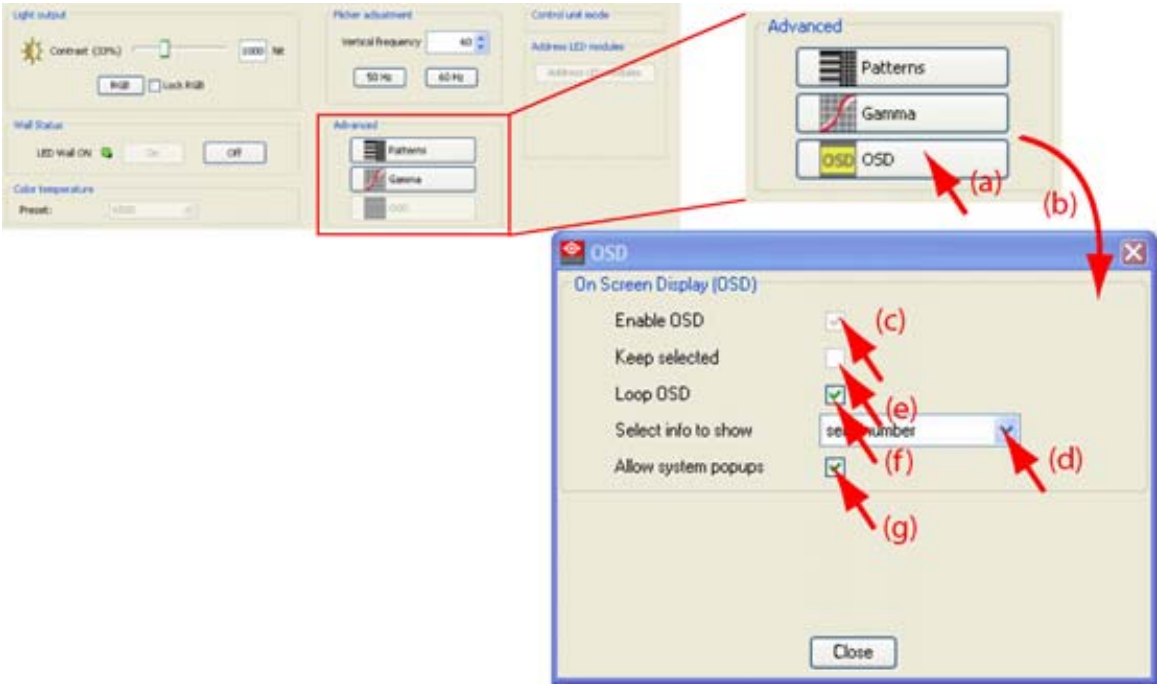


Image 11-20
Show OSD

11.3.9.4 Overview OSD information for ILite and IB-6 displays

Overview

Address	To get an overview of the addresses of the tiles
Runtime	Gives the total run time of the wall
Serial number	Gives an overview of the serial numbers of the tiles
Horizontal window	Horizontal start cut out window tile
Vertical window	Vertical start cut out window tile
Maximum peak	Maximum PWM (pulse width modulation) peak
Software version	Installed software version
Temp. driver upper left	Temperature of driver upper left in a tile
Temp. driver lower right	Temperature of driver lower right in a tile
Temp. driver upper right	Temperature of driver upper right in a tile
Temp. driver lower left	Temperature of driver lower left in a tile
Temp. controller	Temperature of controller
Firmware version	Installed firmware version
Analog contrast	Contrast values per color

Digital contrast	Contrast values per color
Voltage control and link voltage	
Voltage LED's	Voltage on the LED's per color
Link direction	The direction how the tiles are linked. E.g. from left to right and from up to down.

11.3.9.5 Overview OSD information for SLite displays and SP10

Overview

Address	To get an overview of the addresses of the tiles
Runtime	Gives the total run time of the wall
Serial number	Gives an overview of the serial number of the tiles
Software version	Gives installed software version
Firmware version	Gives installed firmware version
Analog contrast	Contrast values per color
Digital contrast	Digital contrast values per color
Measurement system	Type of measurement system used
Temp. controller	Temperature of controller.
PWM peak	Gives the pulse width modulation
Horizontal window	Horizontal start cut out window tile. Horizontal begin and end position is given of the window.
Vertical window	Vertical start cut out window tile. Vertical begin and end position is given of the window.
Fan status	Gives information about the status of the fans. ON or OFF
Baudrate	Gives information about the baud rate
Resync status	
Calibration status	Gives information about the calibration
Frame count driver 1-6	
LED board driver match	Check if LED board is still the original LED board

11.3.9.6 Overview OSD information for OLite displays

Overview

Address	To get an overview of the addresses of the tiles
Runtime	Gives the total run time of the wall
Serial number	Gives an overview of the serial number of the tiles

Software version	Gives installed software version
Firmware version	Gives installed firmware version
Digital contrast	Digital contrast values per color
Horizontal window	Horizontal start cut out window tile. Horizontal begin and end position is given of the window.
Vertical window	Vertical start cut out window tile. Vertical begin and end position is given of the window.
PWM peak	Gives the pulse width modulation
Fan status	Status of the fan is given.
Calibrator status	Calibration status for each color
Calibrator check	Modules with a calibration error will be colored red.
min max software	Reads out the minimum and the maximum software of the LED modules connected to the same controller.
min max firmware	Reads out the minimum and the maximum firmware of the LED modules connected to the same controller.
min max meassystem	Reads out the minimum and the maximum used measuring system of the LED modules connected to the same controller.

11.3.9.7 Overview OSD information for NX-4 displays

Overview

Address	To get an overview of the addresses of the tiles
Software version	Gives installed software version
Firmware version	Gives installed firmware version
Actual frame rate	Current used frame rate on the tile
Serial	Serial number of the control box
Window	Coordinates of the tile in the wall
Digital contrast	Digital contrast values per color
RAM address	Temporary address, only used during the routing
Temperature	Temperature CTRL and average temperature modules
Link errors	shows the number of link errors. Indicator of missing pixels, bad connectors, cables, etc.
Number modules	Shows how many modules found on each output (3 outputs)
Serial number	Barcode number of the board
Routing info	Displays how the data path is built up. Yellow arrow is incoming path, green arrow is outgoing path.

Firmware version CPLD	Firmware version of CPLD
Software version backup	Version of backup software. Backup software is only used when main software is corrupt. It enables updating of new software
Software version backup	
Firmware version backup	Version of backup firmware. Backup firmware ensures that the system keeps working when the firmware is corrupt.
Carousel cnt	Unique number
Carousel meas. system	2 times 4 digits which indicate the carousel and environment circumstances during the measurement.
Module meas. system	2 times 4 digits which indicate the module and environment circumstances during the measurement.
Module runtime	Indicates the total run time of the module in hours
module software	Module software version
module firmware	Module firmware version
module software backup	Version of the backup software.
module backup fpga	Version of the backup fpga
module serial number	serial number of the module
module temperature	temperature on the module
module fan status	Indicates the working condition of the fan
Central marker	
tile creative mode	

11.3.9.8 Overview OSD information for T-20, TF-20 and DB-x20 displays

Overview

Address	To get an overview of the addresses of the tiles
Software version	Gives installed software version
Firmware version	Gives installed firmware version
Run time	Indicates the total run time in hours
Serial number	Serial number of the control box

Window	Coordinates of the tile in the wall
baudrate	gives information about the baud rate
tile unit type	
Temperature controller	Temperature of the control unit
Analog contrast	Analog contrast values
Digital contrast	Digital contrast values per color
Horizontal window	Horizontal start cut out window tile. Horizontal begin and end position is given of the window
Vertical window	Vertical start cut out window tile. Vertical begin and end position is given of the window
Voltage 1	
Voltage 2	
pwm-ma	
fanstatus	Status of the fan is given
Resync status	
Calibration status	Calibration status for each color
Measuring system	Type of measuring system used
psu-status	
fan speed	Gives information about the fan speed
cpld version	
vert frequency	Gives information about the vertical frequency
frame cnt 0	
frame cnt 1	
frame cnt 2	
frame cnt 3	
frame cnt 4	
frame cnt 5	
frame cnt 6	

11.3.10 Resolution

Resolution

- Horizontal tile resolution : expressed in pixels
- Vertical tile resolution : expressed in pixels
- Tile resolution mode : can be *real* or *virtual*.

Image 11-21
LED wall resolution

Tile resolution mode

For **DLite** and **SLite** displays the resolution mode can be set to *real* or *virtual*. For all others, the resolution mode is set to *real*.

Real	one pixel contains 5 LEDs (2 red, 2 green and 1 blue)
Virtual	one pixel contains 3 LEDs (1 red, 1 green and a common blue)

11.3.11 Control unit mode

Only for OLite.

Overview

The mode can be :

- OLite rental tile mode, blocks are organized per tile.
- OLite creative mode, blocks can be creatively organized.

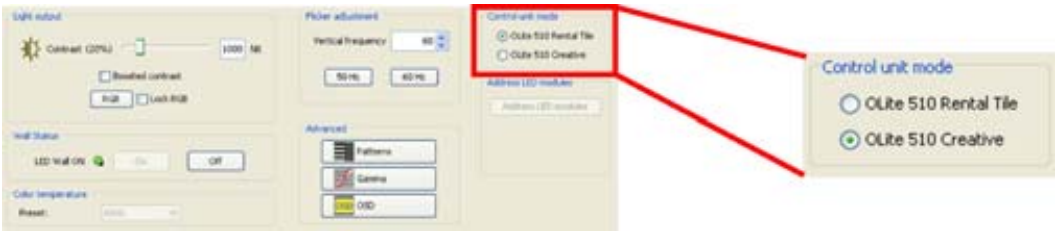


Image 11-22
Control unit mode

When used in creative mode,

For OLite 510, the controller can only control a maximum of 64 blocks. These blocks can be connected to 6 available outputs of the controller. Each output can only control a maximum of 16 blocks.

For OLite 612, the controller can only control a maximum of 48 blocks. These blocks can be connected to 6 available outputs of the controller. Each output can only control a maximum of 12 blocks.

11.3.12 Address LED modules

Only for OLite, MiSTRIP and MiTRIX

Overview

When in an online setup, each LED modules can receive an address so that the modules are individually addressable. To give an address to each module, just click on **Address LED modules**.

Image 11-23
Address LED modules

11.4 Tile overview

11.4.1 Introduction

Overview

Tile selection can be done on two ways :

- Via selecting a tile directly out of the list of tiles by clicking on the combo box.
- Via segment selection. A tile overview can be displayed. Double click on the desired tile to get the settings. When no segment is available yet, click first on **Launch Tile positioning** to create at least one segment.

Click on the radio button of your choice.

11.4.2 Get access to Tile overview

How to get access?

1. Double click on the LED wall icon in the preview to display the LED wall settings. (image 11-24)
2. Click on tab **Tile overview**.

   The tile overview settings will be displayed.

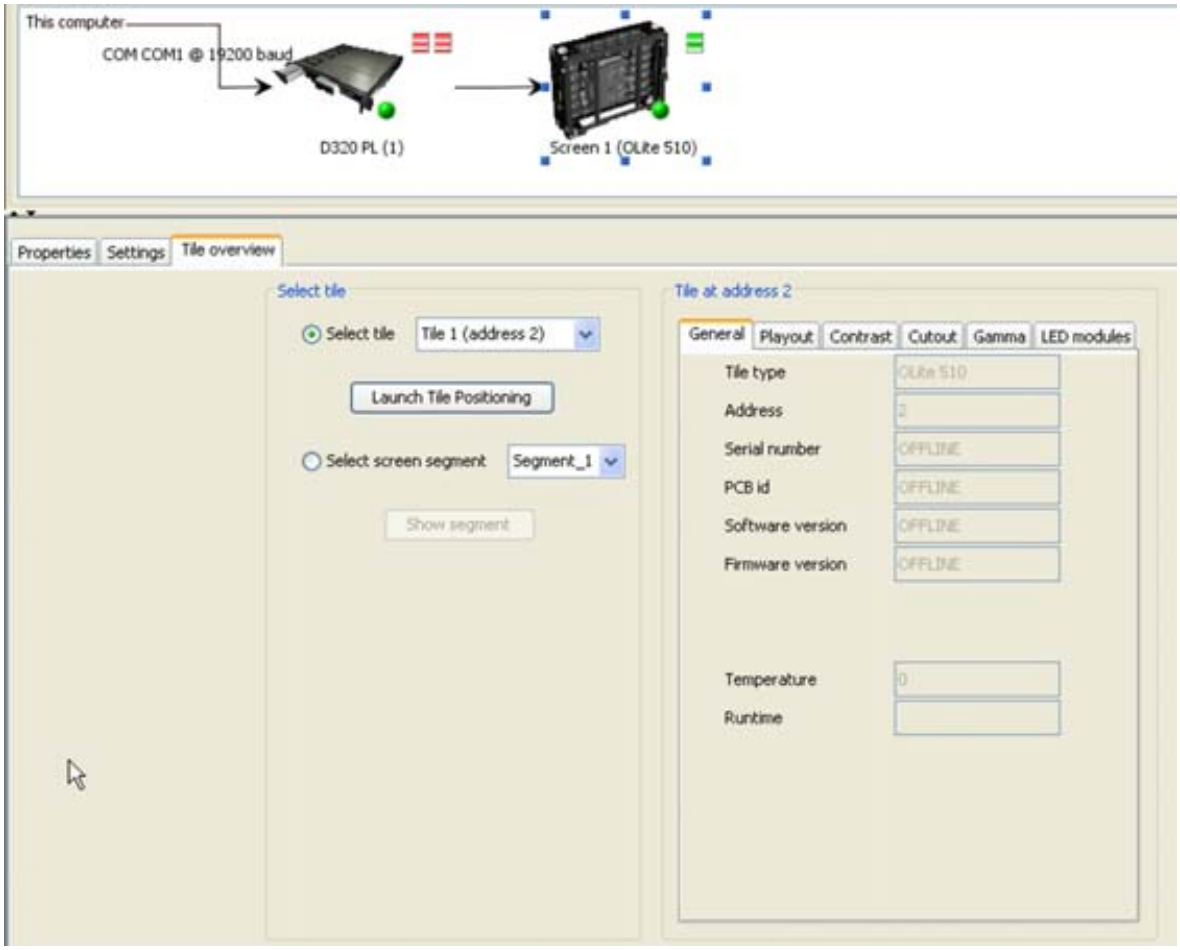


Image 11-24
Selecting Tile overview

11.4.3 Via Select tile

Tile information is only filled out in an online setup and when there is a connection with the devices.

How to get an overview ?

1. Check the radio button in front of *Select tile*. (image 11-25)
2. Click on the combo box next to *Select tile* and select the desired tile.

The information of the selected tile will be displayed in several tab pages.
The following tabs are available :

- General : gives general information about the tile.
- Playout : gives playout information. Mode can be switched between internal or external.
- Contrast : gives information about the analog and digital contrast settings.
- Cutout : gives information about the location of the tile in the display and the resolution.
- Gamma : the gamma curve used for this tile can be displayed.

For some tile types (creative tile types) an extra tab is available :

- LED modules : gives information about the number of strings and detailed information about a LED module in a string.

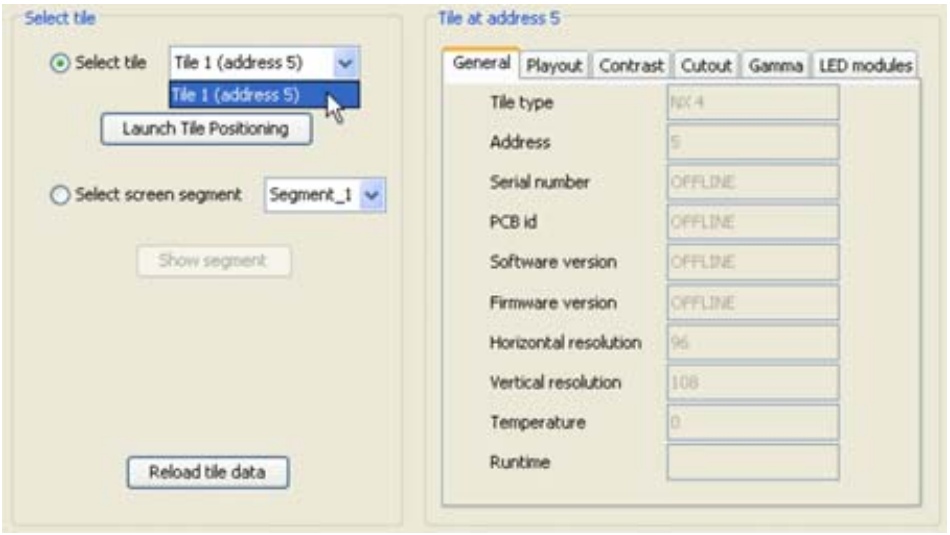


Image 11-25
Tile overview via select tile

Click on Reload tile data to refresh the tile information.

11.4.4 Via Segment selection

How to get an overview ?

1. Check the radio button next *Select screen segment* (a). (image 11-26)
2. Click on the combo box next to *Select screen segment* and select the desired segment (b).
3. Click on **Show segment** (c).

   The *Overview of segment* window opens (d).
4. Click on a tile (e).

The tile background changes to green.

The tile information will be displayed in tab pages (f).
The following tabs are available :

- General : gives general information about the tile.
- Playout : gives playout information. Mode can be switched between internal or external.
- Contrast : gives information about the analog and digital contrast settings.
- Cutout : gives information about the location of the tile in the display and the resolution.
- Gamma : the gamma curve used for this tile can be displayed.

For some tile types (creative tile types) an extra tab is available :

- LED modules : gives information about the number of strings and detailed information about a LED module in a string.

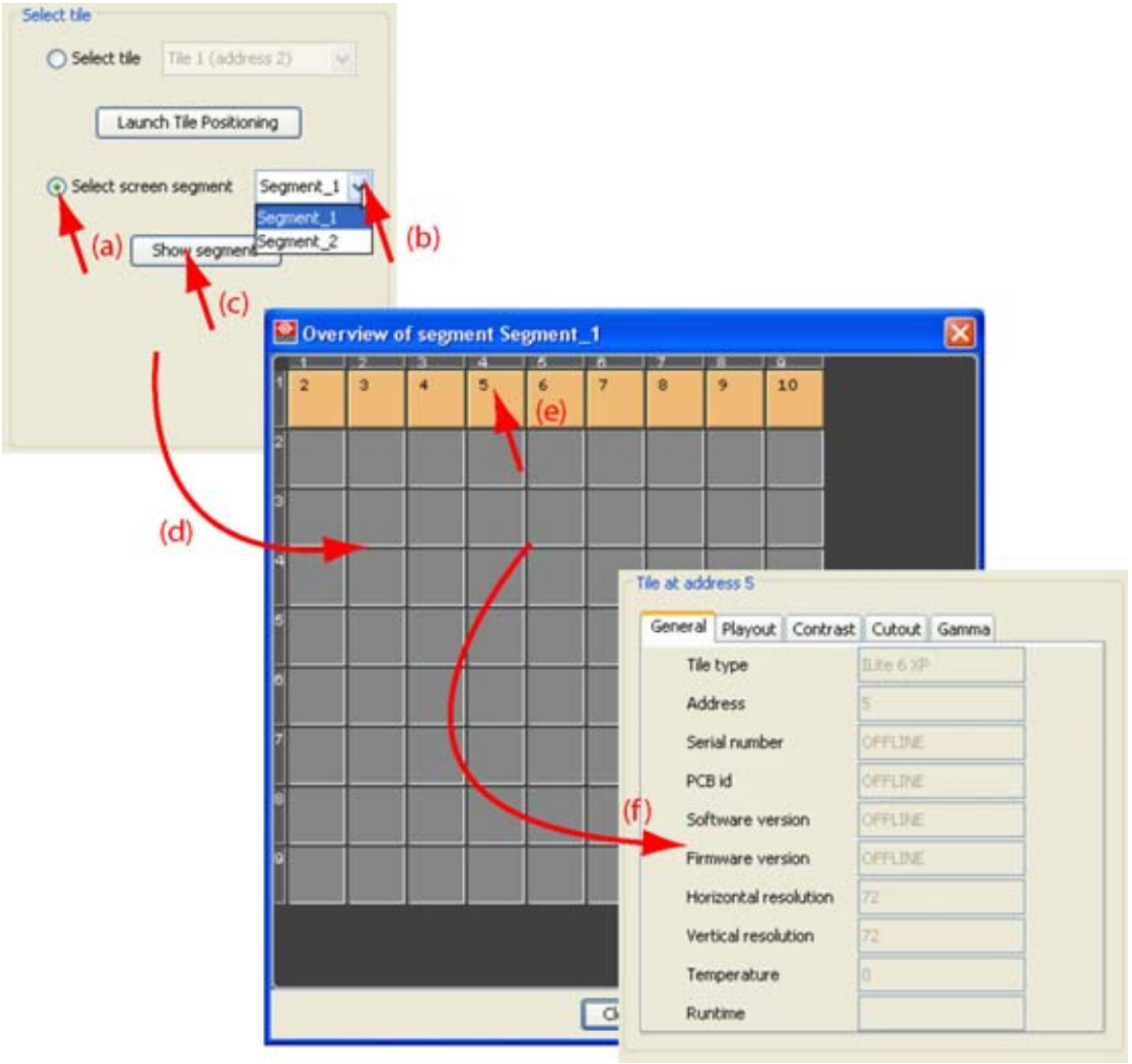


Image 11-26
Tile overview via segment selection

Click on Reload tile data to refresh the tile information.

11.4.5 Tile information tabs

Overview

The different tab pages give read only information about the tile.

Not all items are available for the different tile types.

Tab General

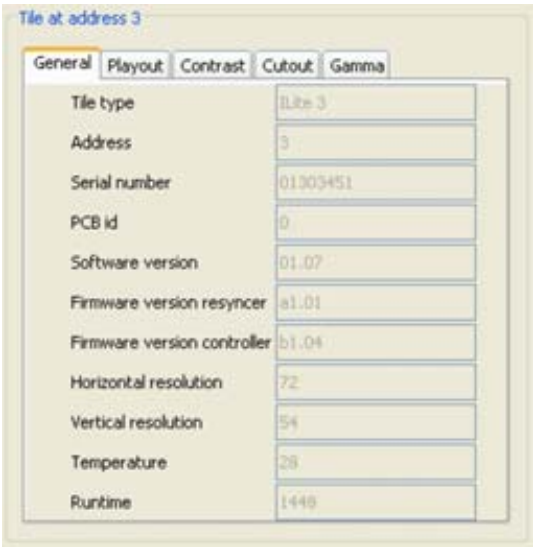


Image 11-27
Tile information, tab General

This tab gives read only information about the tile type, soft- and firmware, resolution, temperature inside the tile and the total run time since first start up.

Tab Playout

Image 11-28
Tile information, tab Playout

Mode setup:

- External : sources connected to the digitizer will be displayed on the tile.
- Internal : only the internal pattern of the tile will be displayed on the tile.

Read only information is given about the vertical frequency, PWM and MAclock.

For the internal pattern, to switch a color on or off, click on **Pattern**. The *Internal patterns* dialog box opens. Check or uncheck the desired color(s).

Tab Contrast

Image 11-29
Tile information, tab Contrast

Analog contrasts are read only values and are given only for information

Digital contrast can be adjusted tile by tile for each color separately to adjust some misalignment. Click on the slider and drag until the desired contrast is reached for that color or click on the input field, select the actual value and enter a new value with the keyboard. To reset this tile by tile alignment, change once the contrast of the complete wall.

Tab Cutout

Image 11-30
Tile information, tab Cutout

Read only information is given about the location of the tile inside the complete wall (Start x , y) and about the resolution of the tile (width and height).

Tab Gamma

Image 11-31
Tile information, tab Gamma

To get an overview of the used gamma curve, click on **Show gamma curve**. The used gamma curve will open in a separate window as read only.

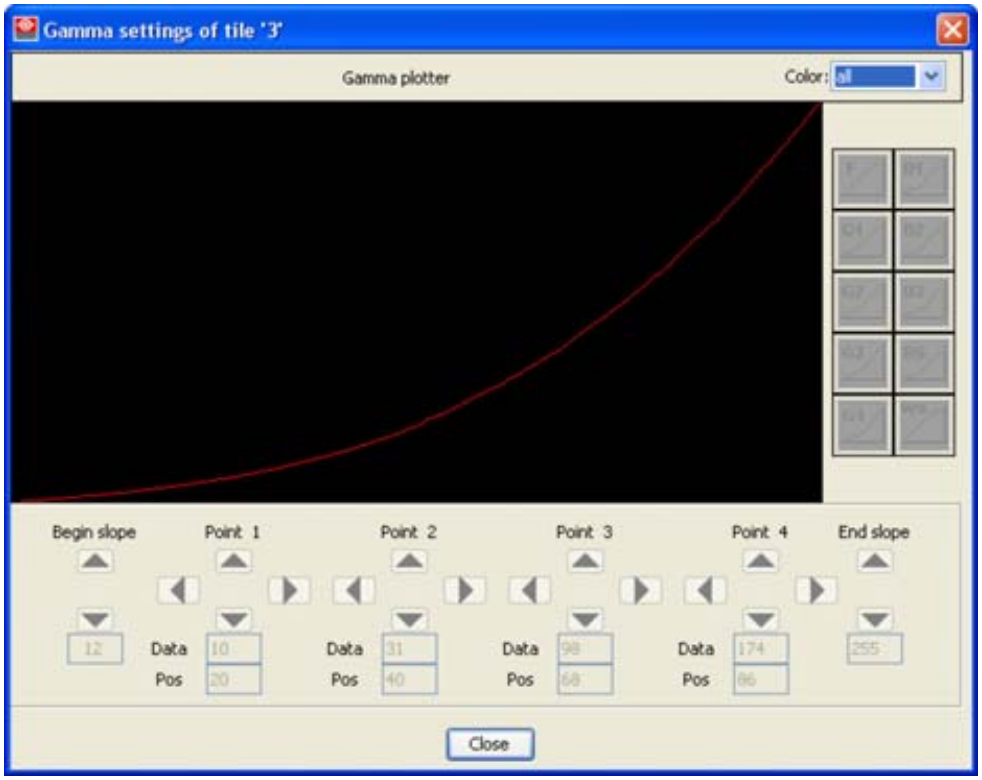


Image 11-32
Overview gamma curve tile

The curve cannot be changed. To change gamma for the complete wall, see "Gamma adjustment", page 296.

Tab OSD (only for SLite 10XP or SP10)

Fan fail warning. When a fan fail occurs, a warning is displayed on the corresponding tile. This warning remains on the screen till the problem is solved.

Image 11-33
Tile information, tab OSD

This warning can be removed from the tile or prevented to show up on the tile or on the complete wall.

To remove the warning or to prevent the warning to show up on selected tile, uncheck the check box in front of *Warning enabled*.

To apply the specific tile setting to all tiles, check the check box in front of *On all tiles*.

Click always **Apply** to apply the previous setup.

Warning enable checked and on all tiles unchecked	Warning will be displayed on the specific tile. The warning status for the other tiles is not influenced by the status of that specific tile.
Warning enable checked and on all tiles checked	When a warning occurred on a tile in the wall, the warning will be displayed on that specific tile.
Warning enable unchecked and on all tiles unchecked	When a warning occurred, this warning will be displayed on that specific tile. Warning status of the other tiles is not influenced by specific tile setting.
Warning enable unchecked and on all tiles checked	When a warning occurred on a tile in the wall, the warning will not be displayed on that specific tile.

Address LED modules

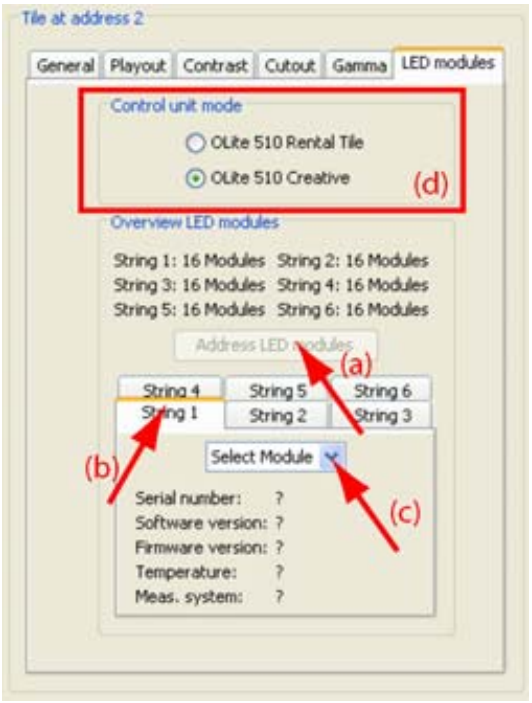


Image 11-34
LED module information

An OLite-510 tile is built up by 64 LED modules, an OLite-612 tile is built up by 48 LED modules. Each LED module must have its own address.

Each MiSTRIP or MiTRIX unit connected to a control box must have is own address.

A NX-4 tile is built up by 9 LED modules. Each LED module must have its own address.

When in an online configuration, each LED module receives an address so that the each module is individually addressable. To give an address to each module, just push on **Address LED modules** button (a).

The number of string are tile type dependent.

Overview LED modules

To get an overview of LED module specific information, just click one of the string tabs (b) and then select the desired LED module (c).

For each LED module, the :

- serial number
- software version
- firmware version
- temperature
- measuring system

can be red out.

Control unit mode on tile level

When in *Tile overview*, the control unit mode can be switched for each tile individually. That means that one tile can be *Rental* mode and a next tile can be *Creative* mode. Once one tile is set to Creative mode, the setting for the complete wall will be set to creative mode (Control unit mode setting in *Settings* tab). To return the complete wall to Rental mode, just click on the mode setting in *Settings* tab (d).

12. FIBERLINK SETTINGS

Overview

- Access to the settings
- Processing settings
- Transmitter and Receiver properties

12.1 Access to the settings

How to get access ?

1. Click on a FiberLink icon in the preview pane. (image 12-1)

   The settings open in the settings pane.

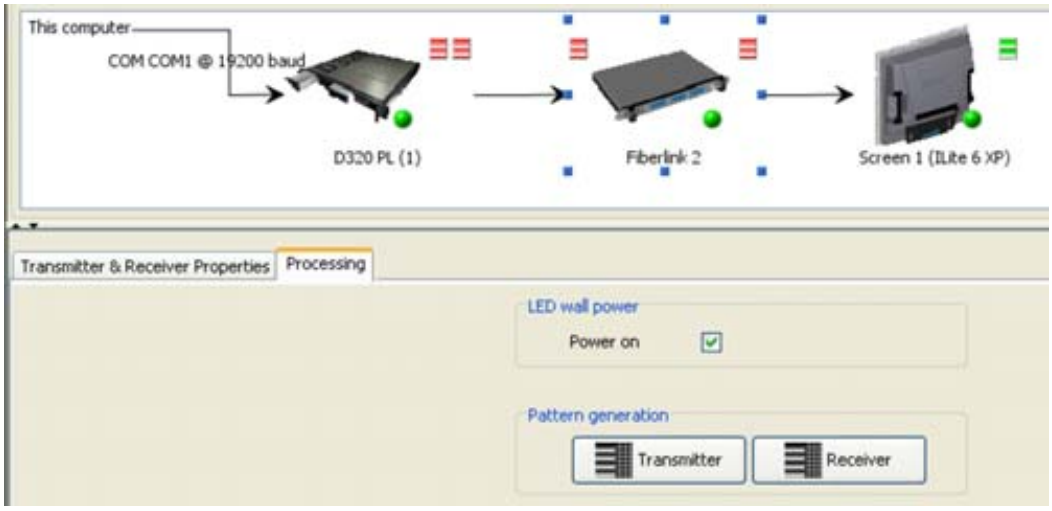


Image 12-1
Start up FiberLink settings

12.2 Processing settings

Overview

- Access the Processing settings
- Reconstruction Filter
- Key Reference
- LED wall power
- Pattern generation

12.2.1 Access the Processing settings

How to access ?

1. Click on tab **Processing**. (image 12-2, image 12-3)

   The processing settings will be displayed.

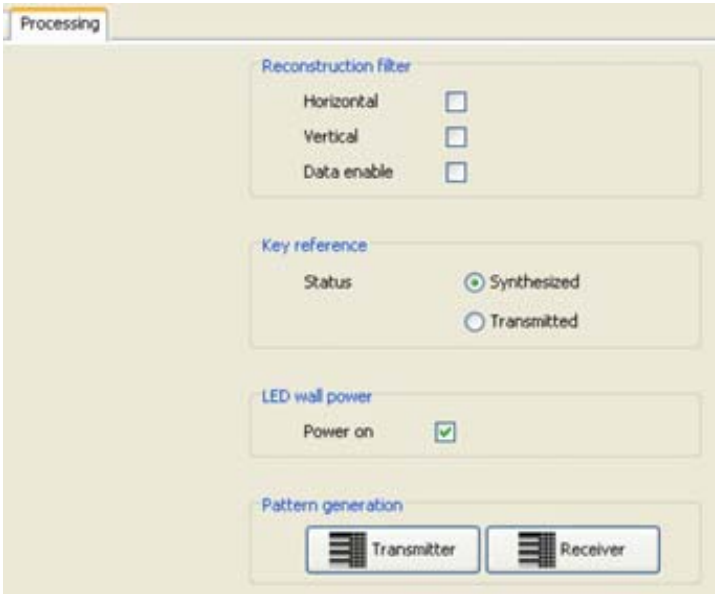


Image 12-2
Processing settings for FiberLink

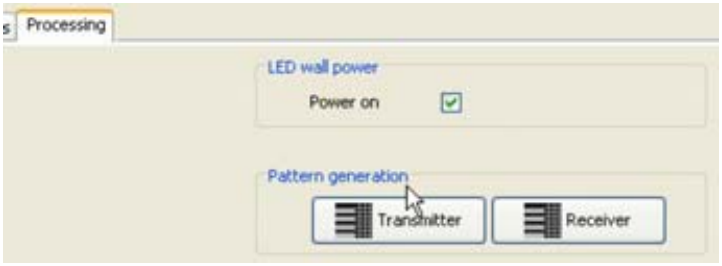


Image 12-3
Processing settings for FiberLink 2

12.2.2 Reconstruction Filter

Not for FiberLink 2

Overview

Image 12-4
FiberLink, reconstruction filter

The Receiver Controls tab appears if a FiberLink Receiver is selected at the top. In this tab, one can adjust some receiver controls in the event of lesser transmission quality. One can switch on three filters: the Horizontal Reconstruction Filter, the Vertical Reconstruction Filter and the Data Enable Reconstruction Filter.

Horizontal

The horizontal sync is rebuilt at receiver side through a reconstruction algorithm. This is useful when signal deterioration (e.g. bad cable quality) occurs.

Vertical

The vertical sync is rebuilt at receiver side through a reconstruction algorithm. This is useful when signal deterioration (e.g. bad cable quality) occurs.

Data Enable

The Data enable is rebuilt at receiver side through a reconstruction algorithm. This is useful when signal deterioration (e.g. bad cable quality) occurs.

12.2.3 Key Reference

Not for FiberLink 2

Status

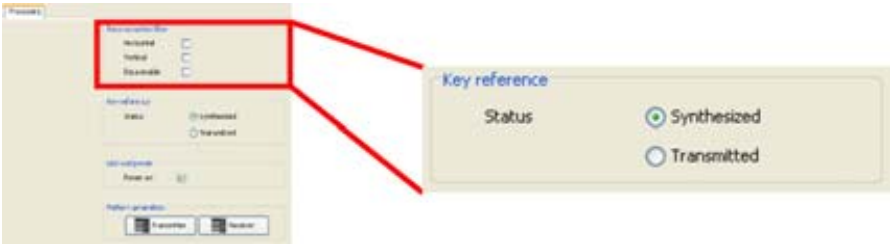


Image 12-5
FiberLink setting, key reference

If a key is inserted in the information transmission, this key will be checked at the receiver side. If the quality of the key is still good, Transmitted can be checked in the FiberLink settings, Key reference. In the worst case, synthesized key can be checked. The will be rebuilt on the receiver side.

Check the according radio button.

12.2.4 LED wall power

What is possible ?

The LED wall can be switched on or off.

Image 12-6
LED wall on-off with FiberLink 1

Image 12-7
LED wall on-off with FiberLink 2

When checked, the LED wall will be on. A green bullet will be added on the LED wall symbol to indicate the 'on' state of the LED wall.

When not checked, the LED wall will be off. A red bullet will be added on the LED wall symbol to indicate the 'off' state of the LED wall.

When the LED wall is switched off on the FiberLink, the LED wall status on the LED wall itself will be switched off also (red bullet on the LED wall icon). The status on the digitizer will not change.

12.2.5 Pattern generation

What can be done ?

An internal pattern, generated on the transmitter side or on the receiver side, can be set on the LED wall.

Image 12-8
Pattern generation

How to activate a pattern ?

1. Click on **Transmitter** or **Receiver**.

   The pattern selection window opens. (image 12-9)

2. To activate a pattern, check the check box next to *Generation enabled*.

   The different patterns become available.

3. Click on the desired pattern.
4. Click on the combo box next to *Color* to select the desired color.
5. Click on the radio button for the desired *Horizontal motion*.

   Possibilities are: Still, moving to the left or to the right.

6. *Multiburst set up*. Slide the slider till the desired multiburst value is reached.

   Set up value between 0 and 9.

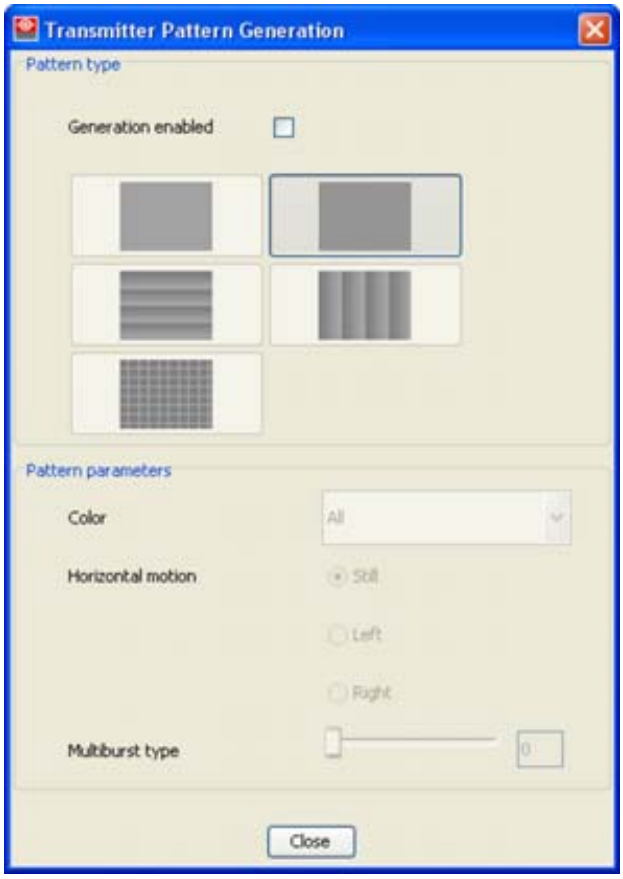


Image 12-9
Pattern selection window.

12.3 Transmitter and Receiver properties

Overview

The FiberLink Transmitter and Receiver properties box contains only read only information .

Image 12-10
Transmitter and Receiver properties

The following information is provided as read only information:

- address
- serial number
- PCB id
- software version
- firmware version
- run time

13. AEC SETTINGS

Overview

- Access to the settings
- AEC properties and settings

13.1 Access to the settings

How to get access?

1. Click on a AEC icon in the configuration preview. (image 13-1)

   The settings open in the settings pane.

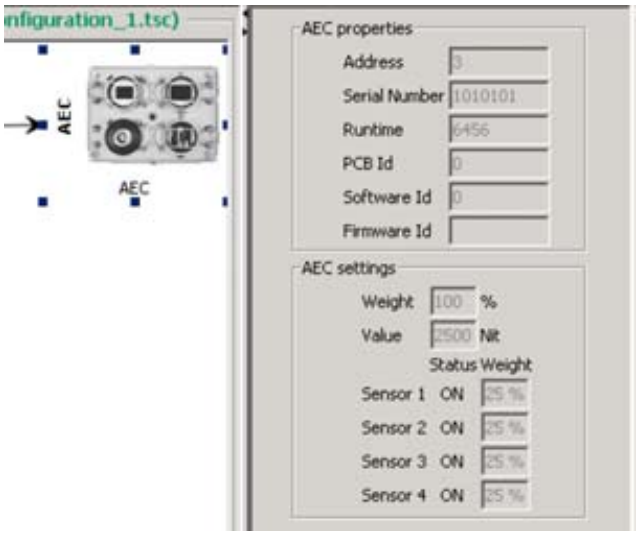


Image 13-1
Start up AEC settings

13.2 AEC properties and settings

Overview

All settings are read only values. To change a value, go to the Monitoring module and select Setup AEC settings.

The AEC properties give information about the device itself. This information can become handy when calling for service.

The AEC settings give read only information about the settings set up in the monitoring module.

14. TILE POSITIONING

Overview

- Introduction
- About segments
- Tile positioning window
- Display - Screen selection
- Copy screen position to other screens
- Tile positioning modes
- Positioning parameters, introduction
- Positioning parameters
- Grid properties for category I tiles
- Grid properties for category II tiles
- LEDwall mode internal - external
- Tile overview pane
- Grid editor
- Manual positioning of tiles
- Apply settings

14.1 Introduction

Purpose of Tile positioning

Before the collection of tiles can be used in as a wall, these tiles must be positioned within the active field of the digitizer.

The positioning can be done manually or via a grid. A complete wall can be positioned at once or tile by tile can be positioned.

Start up

To start up the tile positioning, just click on icon on the tool bar or

click on the menu bar on *Modules* and select *Tile positioning*.

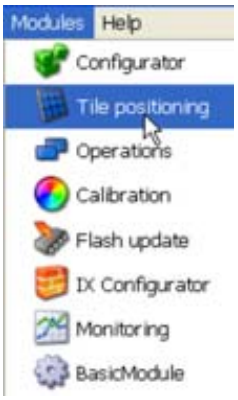


Image 14-1
Tile positioning start up

When starting Tile positioning when the setup contains at least one controller in creative mode, a message will be displayed to recommend the IX Module for doing the positioning.

Image 14-2

14.2 About segments

Segment

A segment is a collection of consecutive tiles within a screen. One screen can contain several segments.

Overview

A screen can be divided in one or more segments.

Within one segment, the tiles must be consecutive. Each segment of a screen can be separately positioned in the active field of the digitizer. That means that it is possible to display the same information on different segments. This technique can be used to create e.g. banners.

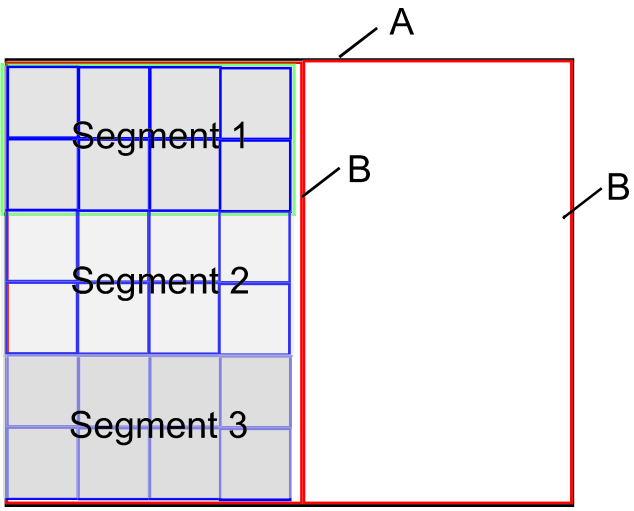


Image 14-3
Definition of segment

A Display
B Screen

The number of tiles in a segment can differ.

14.3 Tile positioning window

Overview

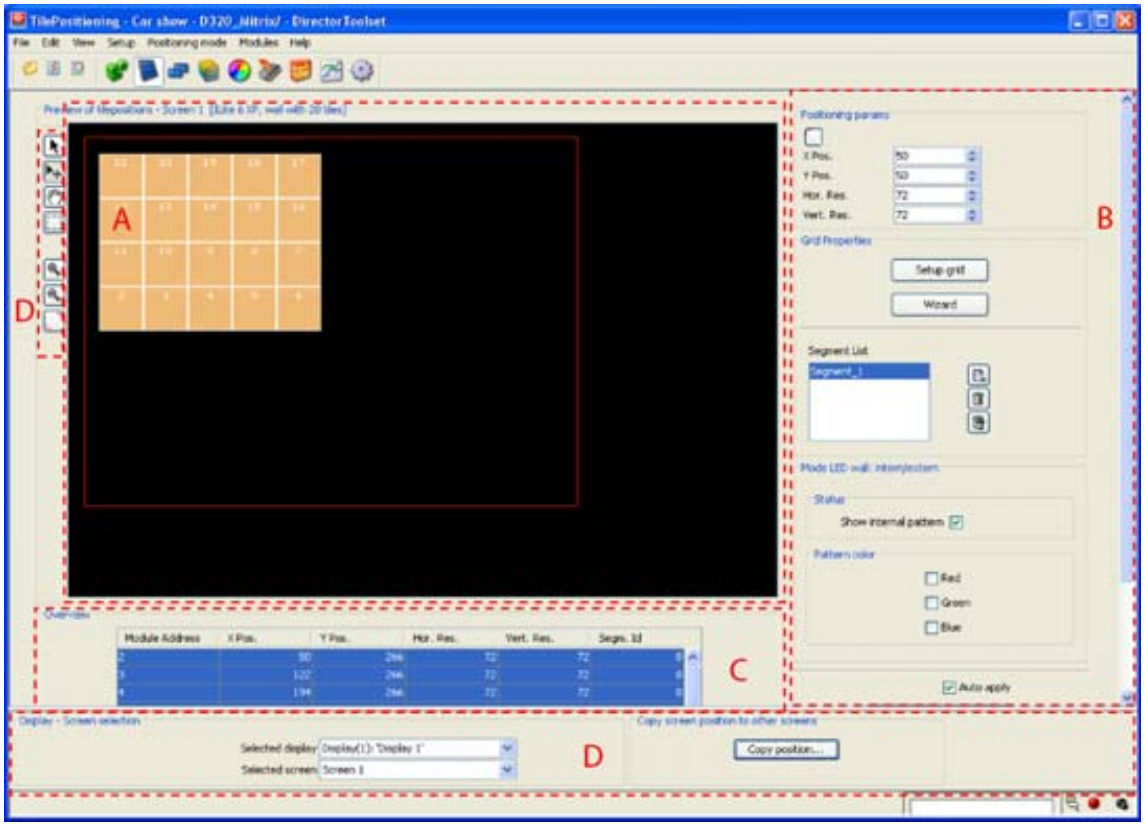


Image 14-4
Tile positioning window

A Preview pane
B Settings pane
C Overview pane
D Tile positioning tool bar

The tile positioning window contains 3 panes, the tile positioning preview pane, the settings pane and the overview pane.

Function icons in the preview pane

Arrow cursor. Use to select a segment in the preview pane.

Move function. Click on a segment. Four arrow cursor appears. Drag segment to desired location.

Pan function. To pan in the active area.

Tile selection tool. Mostly used in the manual grid positioning mode.

Zoom in

Zoom out

Best fit in the preview pane

About the boxes in the preview pane

Red rectangle : the red bordered rectangle indicates the timing window of the digitizer. Only the information within this rectangle will be displayed on the wall. This rectangle is also called **active field**.

The **colored squares** inside the red rectangle indicate the tiles. Squares (tiles) with the same color are grouped together in segments (see page 322).

14.4 Display - Screen selection

Introduction

Changes made in Tile positioning are typical for one screen in a complete display.

So, before starting with Tile positioning, first of all, Director Toolset must know for which display and for which screen the settings will be valid. Therefore, start by selecting the display and the screen.

E.g. When there is a setup with one digitizer and a wall, then there is only one display with one screen. When you have a stacked setup of two digitizers with a wall, then you have one display with 2 screens.

How to select ?

1. If the Display - screen selection pane is not visible, click first on the bottom line and drag this line upwards until the Display - screen selection pane becomes visible. (image 14-5)
2. For a display selection, click on the combo box and select the desired display (only for stack configuration, otherwise display 1 is filled out by default).
3. For a screen selection, click on the combo box and select the desired screen within the selected display. At least one screen is created in a display.

Image 14-5
Display-screen selection

14.5 Copy screen position to other screens

Introduction

When you have completely identical screen, equal tile type and equal number of tiles, the start position of each tile from one screen can be copied to one of more identical screens (tile positioning will be identical)..

How to copy

1. Click on **Copy position ...** (a). (image 14-6)

   The *Copy screen position to other screens* window opens (b).

2. Click on the combo box next to *Copy position from* and select the screen to start from (c).

   The list with possible destination screens is displayed next to *To selected screens*. By default all screen in the list are selected.

3. Select the destination. Multiple selection is possible by using the shift button while clicking on the screen names (d).
4. Click **OK** to execute the copy operation (e).

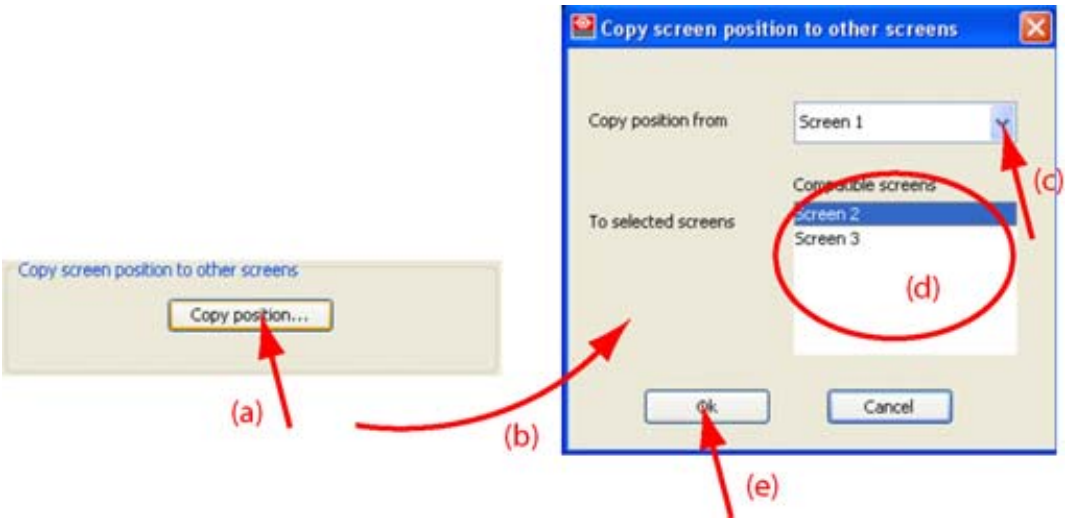


Image 14-6
Copy screen position

14.6 Tile positioning modes

Overview

Tile positioning can be done in 2 ways:

- Grid positioning : automatically positioning of the tiles in a grid
- Manual positioning : free positioning of the tiles within the active area.

Click on *Positioning*. The drop down menu opens and select the desired mode.

Image 14-7
Mode selection

14.7 Positioning parameters, introduction

Overview

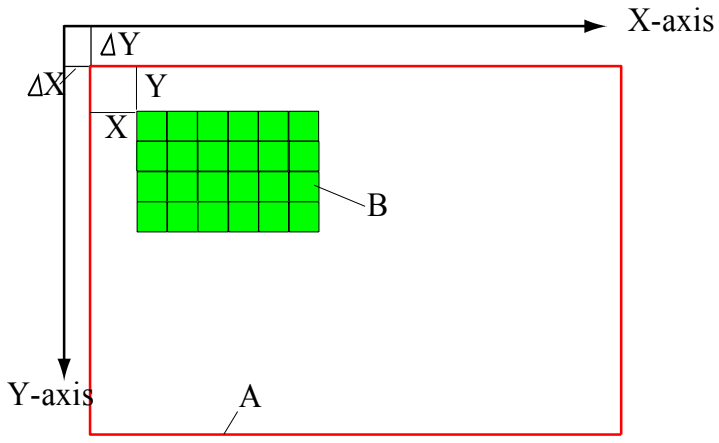


Image 14-8
Positioning parameters, introduction

A Active field digitizer
B Wall

The active field of the digitizer is positioned on a Δx and Δy of a fictive axis system. These Δ values are different for each type of wall and depend also on the used digitizer.

As a wall must be positioned within the active field, the x pos and y pos (start of the wall) equals x + Δx and y + Δy.

14.8 Positioning parameters

The changes of the positioning parameters are effective for the actual selected segment.

What can be done ?

The tiles should be positioned inside the active field of the digitizer. To jump in an easy way to this start position, click the positioning icon ( ). The color of the arrow inside the icon on the button, when clicked, changes from red to white. White indicates that the start coordinates are automatically filled out. Fine adjustment is possible.

The content of the Positioning parameter pane can differ from tile type to tile type.

Image 14-9
Positioning parameter pane for ILite, OLite, NX , MiSTRIP and MiTRIX

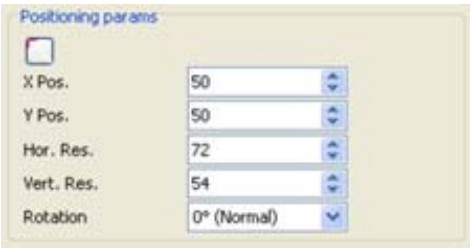


Image 14-10
Positioning parameter pane for ILite3

Image 14-11
Positioning parameter pane for MiPIX

Image 14-12
Positioning parameter pane for SLite and DLite

How to setup the start position?

1. When a display and screen is selected (see "Display - Screen selection", page 324), press the positioning button.

   The left - top corner of the wall (segment) will jump to the start position of the digitizer active field (approximately X-pos 23 - Y-pos 36)

2. When fine tuning is necessary, click on the up or down arrow keys next to the value of X-pos and Y-pos.

Or,
click in the input field and enter the desired value with the keyboard.

Tip: *When the dimensions of the wall are smaller than the active field of the digitizer, the start position may be set to other values. In that case it is still possible to place the input windows in the display area via the Operations module. This situation is very valuable when only a second part of the window must be displayed on the wall.*

Horizontal and vertical resolution

Give up the resolution in pixels. This resolution depends on the type of wall.

Maximum default values are already filled out for the connected display. The values can be changed by clicking on the up or down arrow button next to *Hor. res.* and *Vert. res.* When the values are lower than the maximum allowed values, an internal upscaling will take place.

When using different segments, the tile resolution can be different for each segment.

Resolution mode

Resolution mode is only for **DLite** and **SLite** tiles.

The resolution mode can be Real or Virtual (image 14-12).

Real checked	real resolution mode. One pixel contains 5 LEDs (2 red, 2 green and 1 blue)
Real not checked	virtual resolution mode. One pixel contains 3 LEDs (1 red, 1 green and a common blue)

When using different segments, the resolution mode must be equal for all segments.

Rotation

Only for **ILite 3** tiles.

The result of a combination of ILite 3 or OLite tiles can be landscape or portrait. As the content can be created in the other direction, it is possible to rotate the content so that is perfectly displayed (image 14-10).

To rotate the content, click on the combo box next to Rotation and select the desired rotation.

The following rotations are possible:

- normal
- 90° clockwise
- 180°
- 90° counter clockwise

Horizontal and vertical gap

Only for **MiPIX** blocks.

The value for the horizontal and vertical gap is the gap used between two MiPIX blocks (image 14-11).

The values can be changed by clicking on the up or down arrow button next to *Hor. gap* and *Vert. gap* or by clicking in the input field and entering the new value with the keyboard.

14.9 Grid properties for category I tiles

Grid properties setup is only for category I tiles (based on the DVI protocol) !

The position of the category II tiles are already determined by the DX-700, only an apply is necessary. For more info, see Grid properties for category II tiles.

Overview

- Introduction
- Grid properties DB-x20
- Create new segment
- Create new segment with used tiles
- Delete a segment
- Delete all segments
- Edit a segment
- Move segment in digitizer active field
- Positioning wizard
- Grid editor Introduction

14.9.1 Introduction

Overview

The grid properties are set up per segment. Each segment should be configured with rows and columns, cabling direction and start position.

If no segments are yet created, the software creates 1 segment for the hole screen by default. Further segmentation of the screen is now possible via a manual way (Setup grid) or via a wizard.

For DB-x20, no segment creation possible. Only a Default DB-x20 grid button available.

14.9.2 Grid properties DB-x20

Overview

As the DB billboards have a fixed size, all settings are fixed. When due to any reason one of the settings is changed, the **Default DB-x20** button will return all settings to their default value.

14.9.3 Create new segment

For each created segment, a new screen will be created in the Operations module. This new screen can be positioned anywhere in the active field of the digitizer.

About the term Module

To create segments, different modules can be selected, grouped together to form that segment. Depending on the used LED wall, module means sometimes tile and other cases control unit.

For **MiPIX** and **OLite**, module stands for **control unit**.

For all other LED walls, module stands for **tile**.

How to create ?

1. Click on the New segment icon (a) next to the segment overview list. (image 14-13)

   The select *Tiles for grid* window opens and shows all tiles in the display (b).

2. To see only the unused tiles, check *Show unused tiles only*.

3. Check the modules (tiles) which must be in the new segment.
   Note: *The modules must be consecutive.*

   To check all modules at once, click on the checked box at the bottom of the window.

   To uncheck all modules at once, click on the not checked box at the bottom of the window.

   To select a set of modules, click on the check box of the first module. Hold down the shift button and click on the check box of the last module in the selection. The background change to dark blue. Click now on the checked or unchecked box on the bottom of the window to set the property for the full selection.

4. Click **OK**.

   The *Grid editor* window opens.

5. To finalize the segment creation, follow the instruction given in *Grid editor, page 341*.

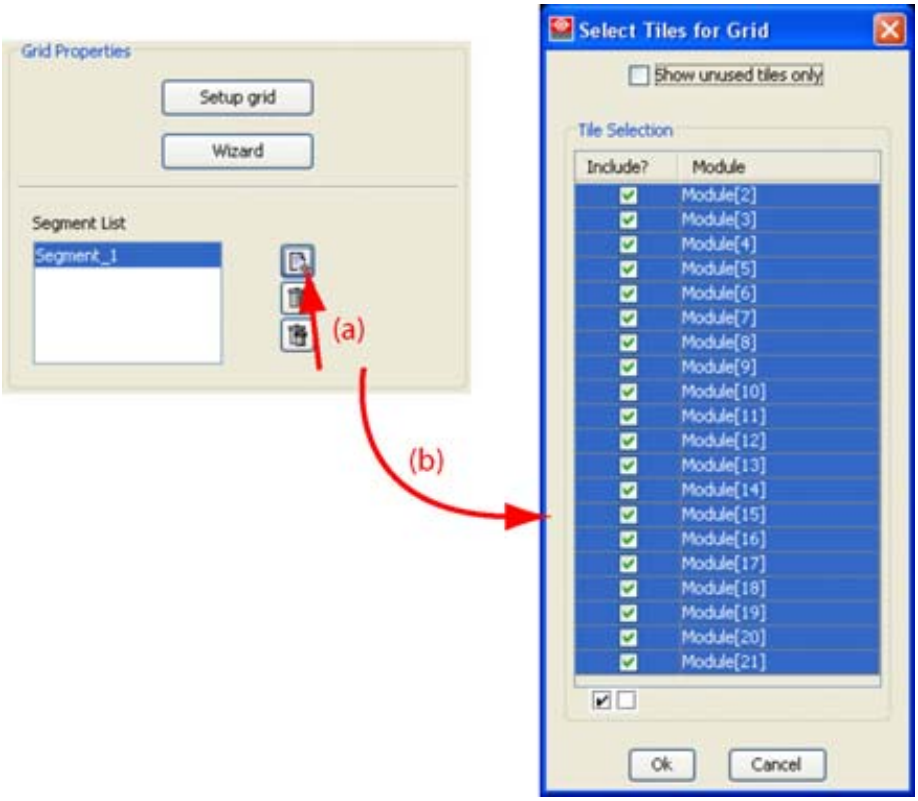


Image 14-13
Create new segment

All tiles added to a segment must always be used in that segment.

14.9.4 Create new segment with used tiles

For each created segment, a new screen will be created in the Operations module. This new screen can be positioned anywhere in the active field of the digitizer.

What is possible ?

By creating a new segment with used tiles, it is possible to split up an existing segment into two segments.

How to handle ?

1. Select the segment which should be split up. (image 14-14)
2. Write down the numbers of the tiles which must be grouped in a new segment.
3. Click on new segment icon (a).

   The select *Tiles for grid* window opens and shows all tiles in the display (b).
4. Uncheck all modules at once (c).
5. Check the modules with the numbers you have written down (d). Eventually add new tiles.
   Note: *Tile must be consecutive.*
6. Click **OK** (e).

   The new segment will be created. The number of tiles in the old segment will be reduced but the grid remains at it original dimensions. To change the grid, open this segment in *Grid editor* (see "Grid editor", page 341).

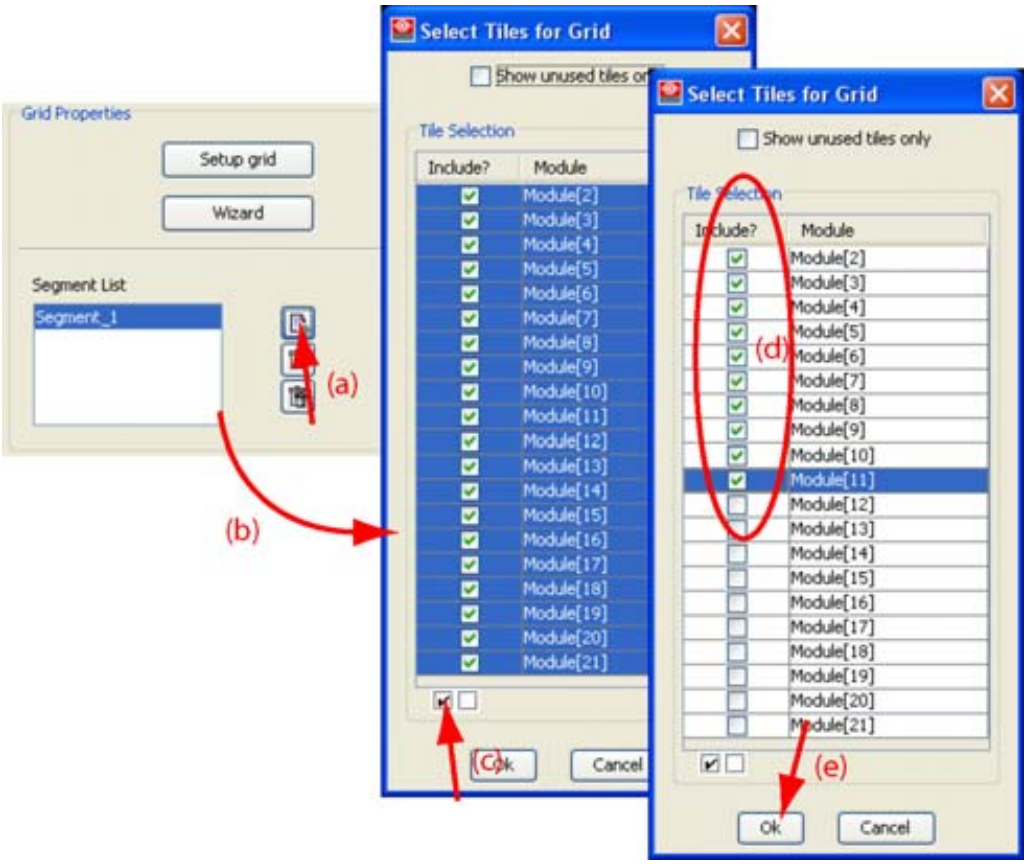


Image 14-14
Create new segment from existing one

14.9.5 Delete a segment

How to delete ?

1. Select the segment which must be deleted (a) in the segment overview list. (image 14-15)

   The background changes to dark blue.

2. Click on the **delete** icon (b).

   The segment will be remove. The tiles inside the segment becomes unused and can be used to create another segment or can be added to an existing segment as long as they are consecutive with the existing tiles.

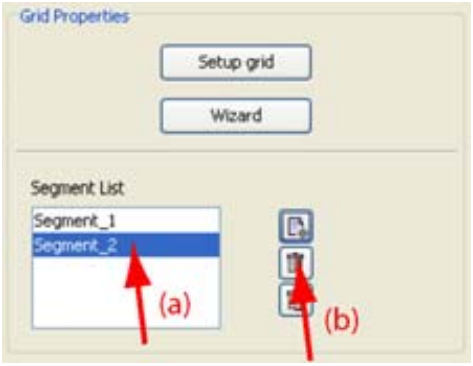


Image 14-15
Delete a segment

14.9.6 Delete all segments

How to delete ?

1. Click on the **delete all** icon (a). (image 14-16)

   A remove confirmation question is displayed. (image 14-17)

2. Click **Yes** to continue.

   All segments will be remove. The tiles inside the segments become unused and can be used to create new segments.

Image 14-16
Delete all segments

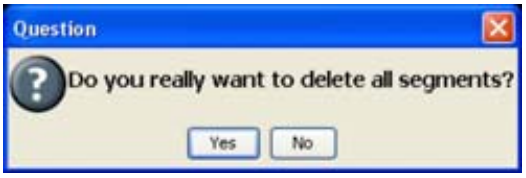


Image 14-17
Confirmation question

Once all segments are deleted and the Tile position module is reentered, the software asks to setup the grid now. Click Yes to create a new segment or no to continue without creating a segment.

14.9.7 Edit a segment

How to edit a segment ?

1. Click on segment in the list. (image 14-18)
   Or,
   click with the selection tool on the desired segment in the preview pane.
2. Click on **Setup grid**.

   The *Grid editor* opens. Follow the instructions given in "Grid editor", page 341.

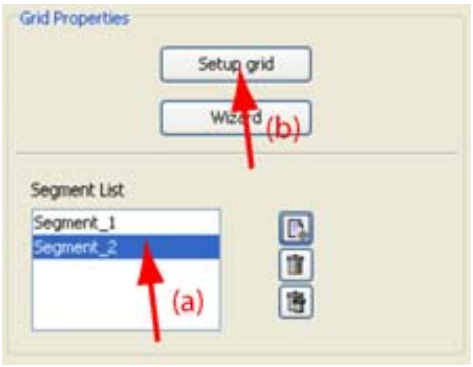


Image 14-18
Edit a segment

14.9.8 Move segment in digitizer active field

Via click and drag

1. Click first on the select-drag icon (a). (image 14-19)
2. Click now on the segment which must be moved and hold down the mouse button.

   The cursor changes to a four arrow cursor.
3. Drag the segment to the desired position.

   The start coordinates of the segment will change accordingly in the *Positioning parameters* pane.

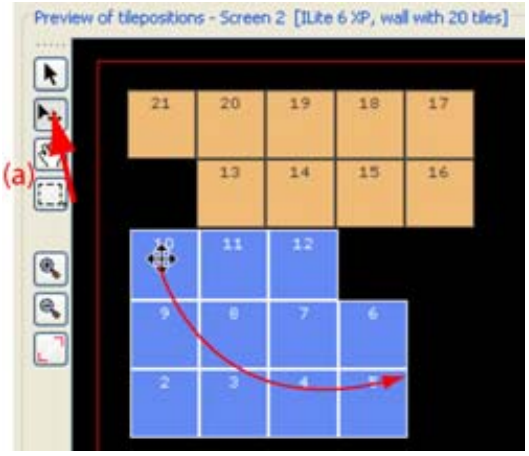


Image 14-19
Move a segment via drag and drop

Via the coordinates

1. Select the segment which must relocated (a) out of the list of created segments. (image 14-20)

   The start coordinates will be filled out in the *Positioning parameters* pane (b).

2. Click on the up down control of the spin box next to *X-pos* and *Y-pos* until the new coordinates are entered.
   Or,
   click in the input field of *X-pos* and *Y-pos*, and select the current value. Enter the new value with the keyboard.

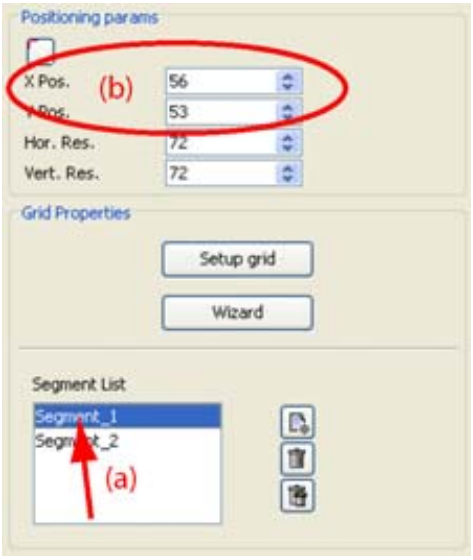


Image 14-20
Move segment via coordinates

14.9.9 Positioning wizard

Start up

1. Click on the **Wizard** button. (image 14-21)

   The wizard start up page will be displayed (image 14-22)

Next	Click next button to go one step further in the wizard.
Previous	Click previous button to return one step in the wizard.
Cancel	Click cancel to interrupt the wizard.

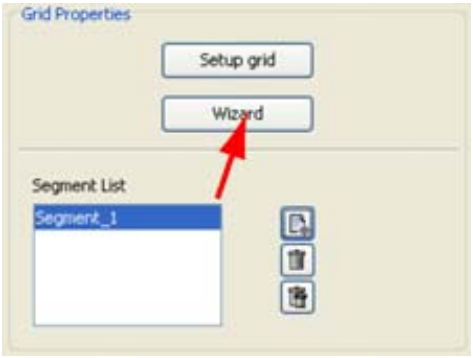


Image 14-21
Start up wizard

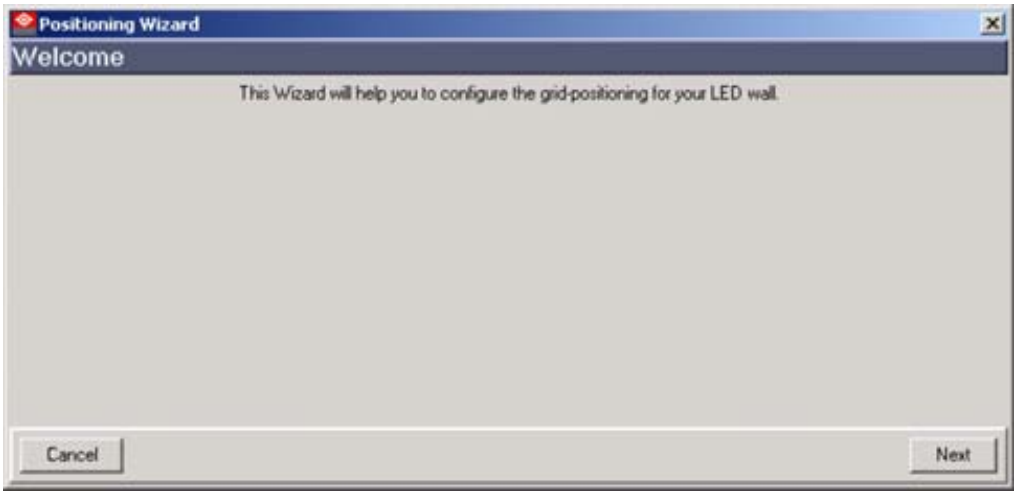


Image 14-22
Grid positioning wizard

Wall definition/segmentation

1. Make a decision of what content will be displayed on the display. (image 14-23)
   - If you want to display one full image on the screen select complete wall as one screen. Click **Next**. Continue with *Define the grid*.
   - If you want to make copies of the content and display this content a few times on the display, create different segments in the screen. Click **Next**. Continue with *Segment definition*.
   - If the content is divided into banners, select the third option (banner option). Click **Next** and continue with *Segment definition*.

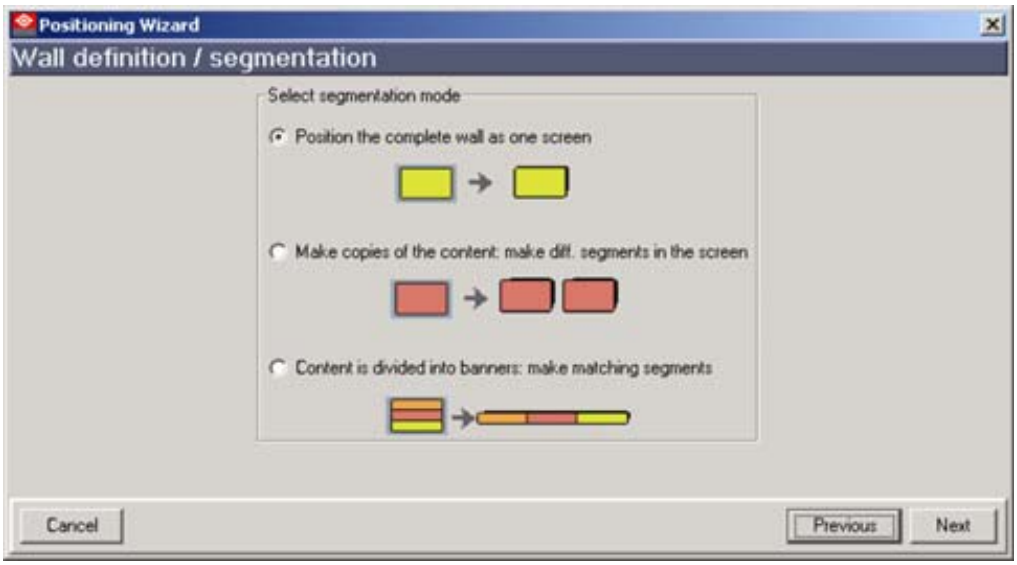


Image 14-23
Wall definition/segmentation

For each created segment, a new screen will be created in the Operations module. This new screen can be positioned anywhere in the active field of the digitizer.

Segment definition

1. Click on the combo box and select the number of segments necessary to display the desired image. (image 14-24)

2. Press Next to get an overview of the segments. (image 14-25)
3. Director Toolset assigned by default start address to each segment and set up columns and rows. The way of linking and the start position are filled out by default.
4. To change the start address or the number of columns or rows, just click in the corresponding field.

   The field will change into an edit field and up and down arrow buttons will be added.

   Click on the up or down buttons to change the value.
5. To change the start of the data cable, click in the corresponding field.

   A combo box appears. Click on that combo box and select the desired value.
6. To change the data direction, click in the corresponding field.

   A combo box appears. Click on that combo box and select the desired value.
7. Continue with the *Tile resolution*.

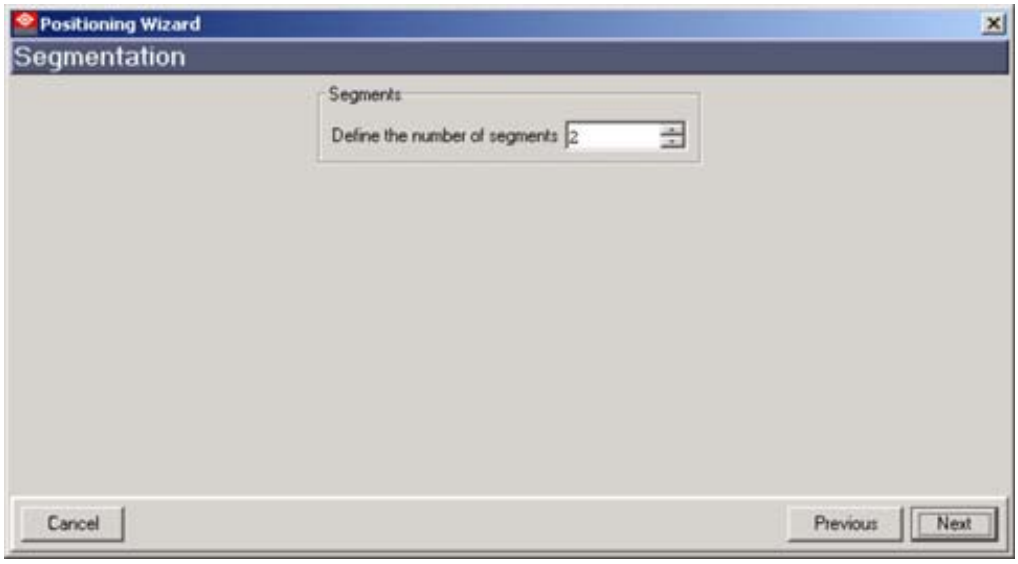


Image 14-24
Segment selection

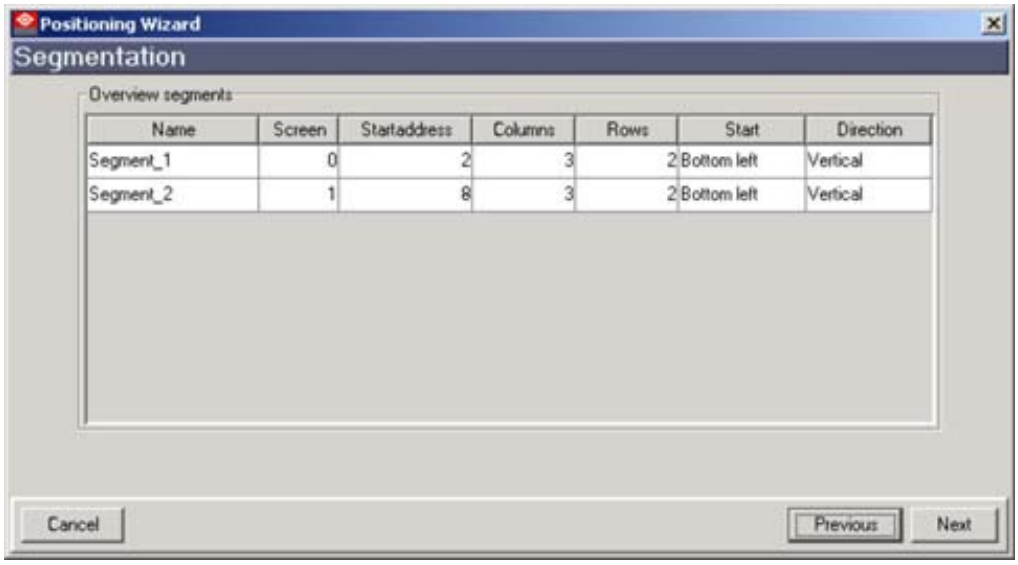


Image 14-25
Segment overview

Define the grid

1. Enter the grid properties by entering the number of columns and the number of rows. (image 14-26)
2. Continue with *Tile resolution*.

Image 14-26
Define the grid

For SP10, the rows are always 1. The input field will be grayed out.

The data start point is always *Bottom left* and the data direction is always *Horizontal*. Both fields are grayed out.

Tile resolution

1. Depending on the tile type (**DLite** and **SLite** tiles only), a *real* or *virtual* mode can be selected. (image 14-27)

Real	one pixel contains 5 LEDs (2 red, 2 green and 1 blue)
Virtual	one pixel contains 3 LEDs (1 red, 1 green and a common blue). Resolution is doubled.

2. The cutout dimensions can be adapted by clicking on the up or down arrow button.

   The cutout dimensions are default set to the tile resolution.

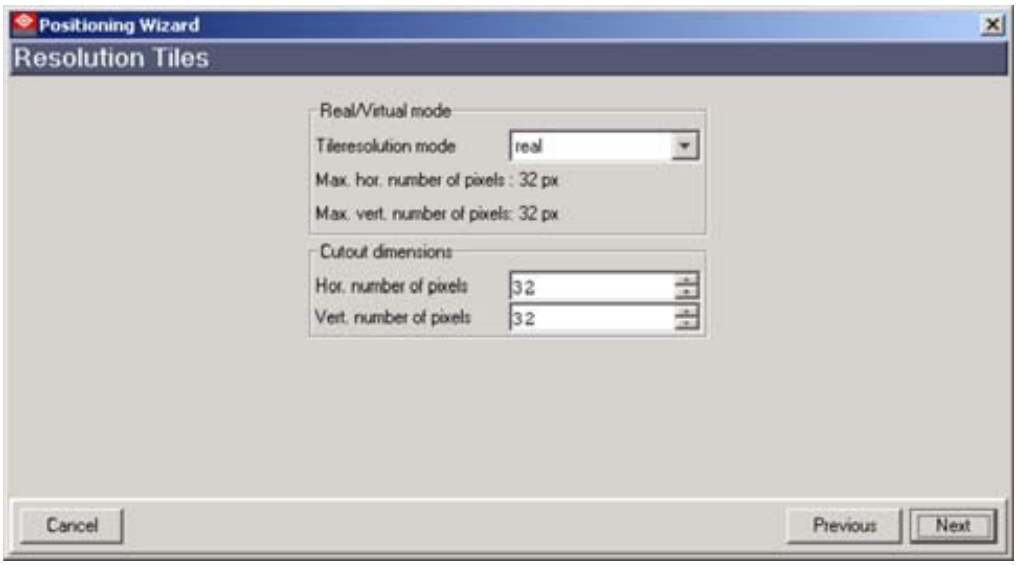


Image 14-27
Tile resolution

Start position

1. Click on the up or down arrow button to change the X and Y start position. (image 14-28)

   To enter the start values of the active field, click on the arrow button just above the manual input. The coordinates of the active field will be filled out and the arrow inside button becomes completely white. A small adjustment can be still necessary.

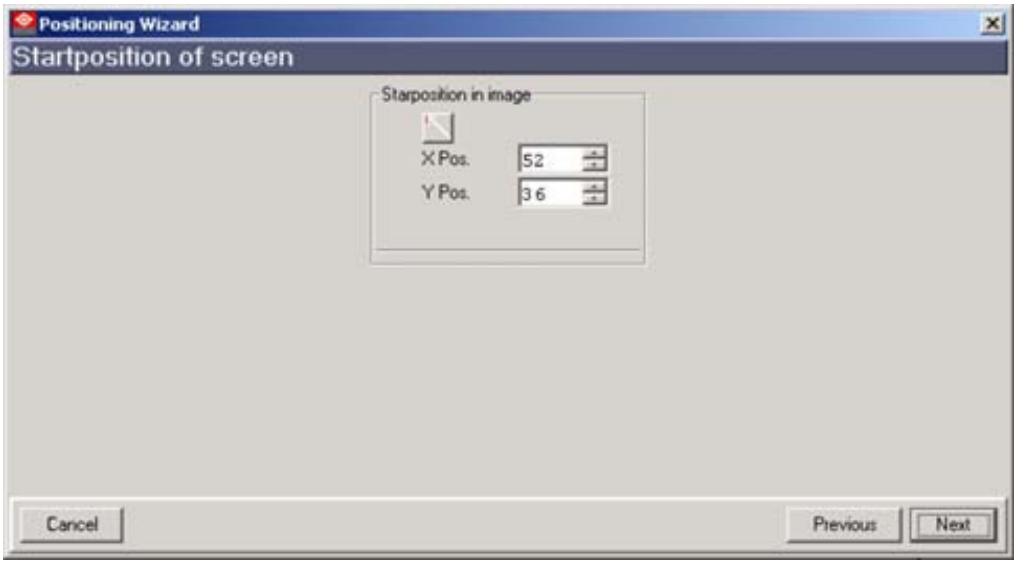


Image 14-28
Start position

Finishing the wizard

1. Click on Finish to create the segments. (image 14-29)
   Note: *The created segments can now be edited with the Grid editor.*

   The created segments are now visible in the segments overview list. To open this list, click on **Segments**.

   In the preview pane, the tiles of each segment will have a different color.

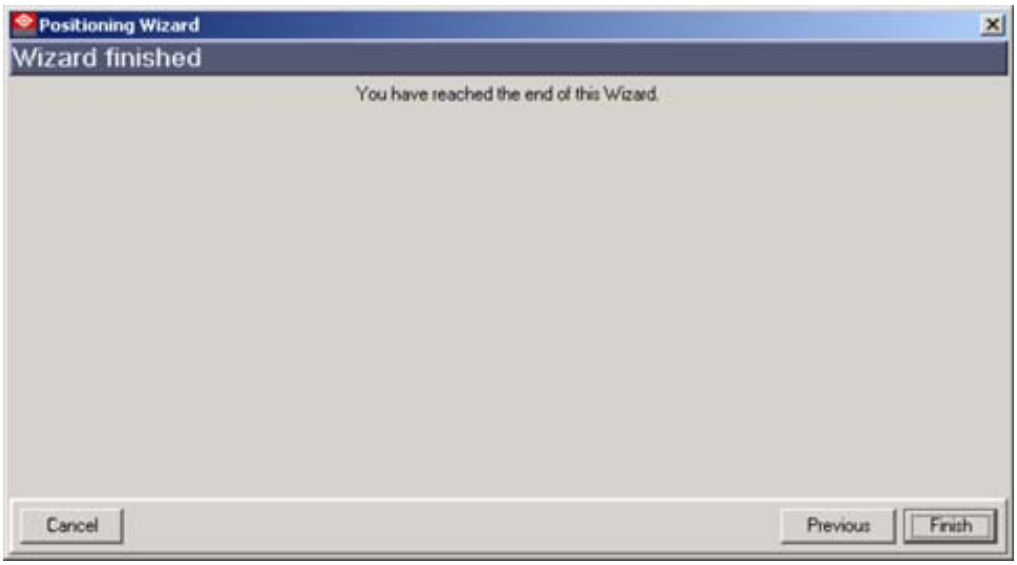


Image 14-29
Finish the wizard

14.9.10 Grid editor Introduction

Overview

With the grid editor it is possible to change the shape (configuration) of the segment. E.g. from 4 x 5 to a 6 x 6. Within the new dimensions the tiles can be manually repositioned to obtain the same tile layout as physically on the wall. A gap can be introduced between rows and columns.

For the complete explanation about the grid editor, see "Grid editor", page 341.

14.10 Grid properties for category II tiles

Overview

The positioning of the category II tiles in rental mode is determined by the DX-700. When using these tiles in creative mode, a snakewise grid is allowed, and that only when one output of the control unit is used during the setup of these tiles.

Image 14-30
Grid properties for NX

If a snakewise grid is desired, click on **Snakewise grid**.

Default Nx grid returns to previous autodetected grid and addressing.

14.11 LEDwall mode internal - external

Switch external - internal

1. Check or uncheck *Show internal pattern*. (image 14-31)

Unchecked no internal pattern shown.

Checked internal pattern shown. Loop colors and pattern colors become available.

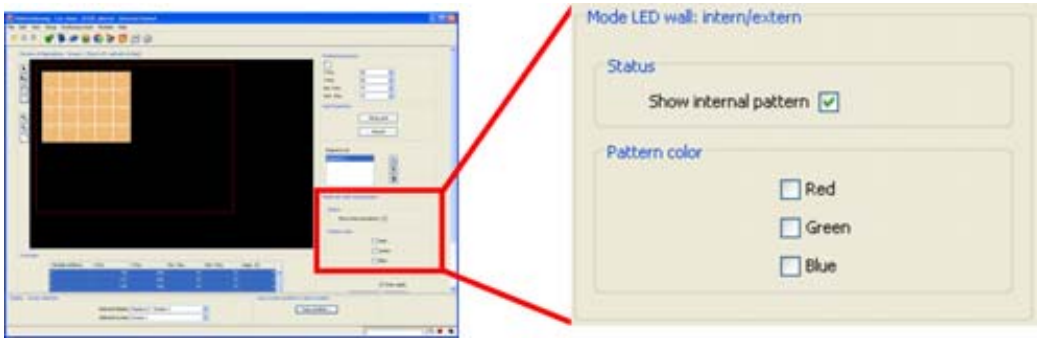


Image 14-31
Status display mode

Pattern color

1. If the internal pattern must be displayed, check specific color or combination of colors (image 14-31).

String pattern for MiPIX or MiSPHERE

1. Click on **String colors**. (image 14-32)

   The MiPIX blocks or MiSPHERE blocks connected to the same string will light up with the same specific color.

String no.	String color
1	will color red
2	will color green
3	will color blue
4	will color yellow

2. Click on **String direction**.

   The string (wiring direction), started by the control unit, can be visualized by a running light. The light runs from the control unit to the end of the string, in the direction of the wiring.

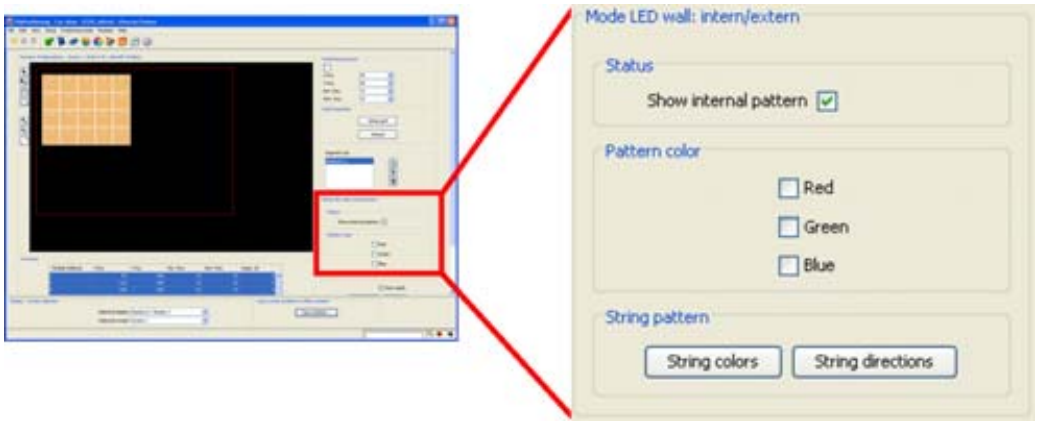


Image 14-32
String pattern for MiPIX

String pattern for OLite, NX, MiSTRIP or MiTRIX

1. Click on **String colors**. (image 14-33)

The OLite blocks, or NX modules, or MiSTRIP units or MiTRIX units, connected to the same string will light up with the same specific color.

String no.	String color
1	will color red
2	will color green
3	will color blue
4	will color yellow
5	will color magenta
6	will color cyan

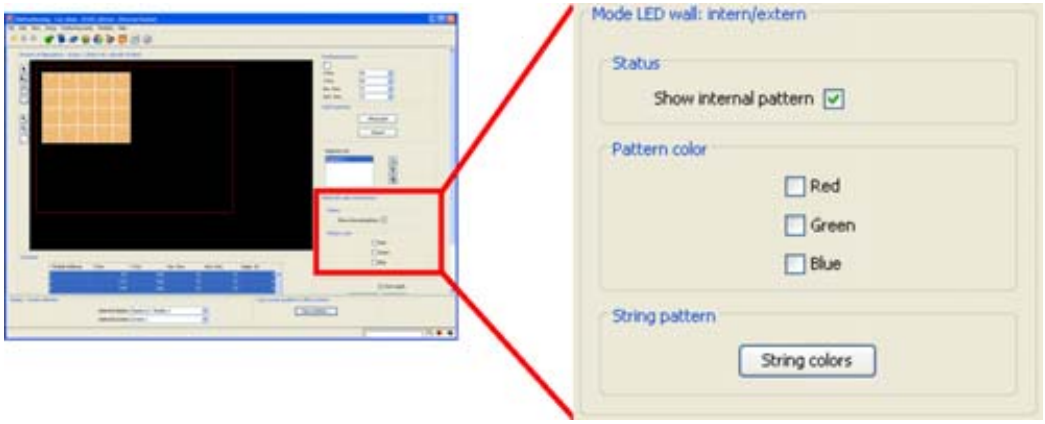


Image 14-33
String pattern for OLite

For MiTRIX, only 4 of the 6 outputs are used. For NX, only 3 strings are used.

14.12 Tile overview pane

Overview

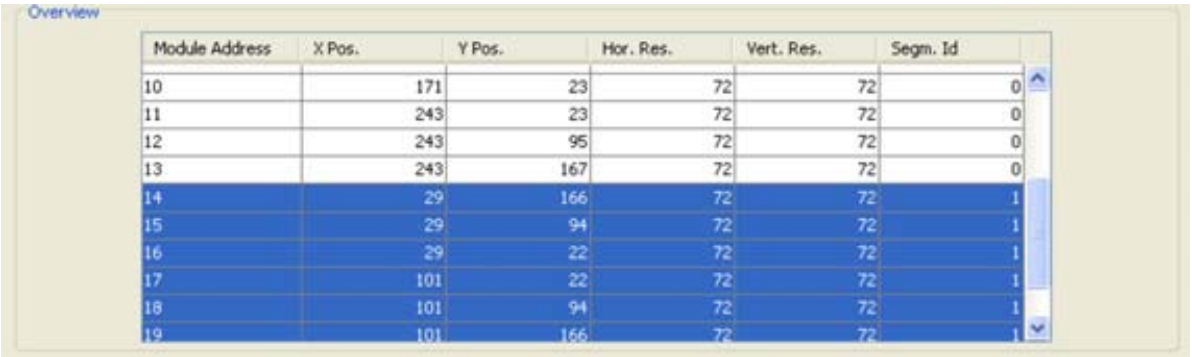


Image 14-34
Tile overview

The table gives an overview of all tiles, their position in the wall, the resolution and the segment number to which they belong. The tiles which belong to the selected segment are indicated by a dark blue background.

Tiles which are not member of a segment are indicated with “-1”.

All values are given as read only values. To change the values, select the corresponding segment and use the grid editor to adapt the settings.

14.13 Grid editor

Grid properties setup is only for category I tiles (based on the DVI protocol) !

The position of the category II tiles are already determined by the DX-700, only an apply is necessary.

Grid editor

The grid editor allows to edit a segment (with tiles) manually until the desired tile configuration is reached for the LED wall.

14.13.1 Start up of the Grid editor

How to start up ?

1. Select a segment out of the list (a). (image 14-35)
2. Click **Setup grid** (b).

   The *Grid editor* opens with a preview of the selected segment. (image 14-36)

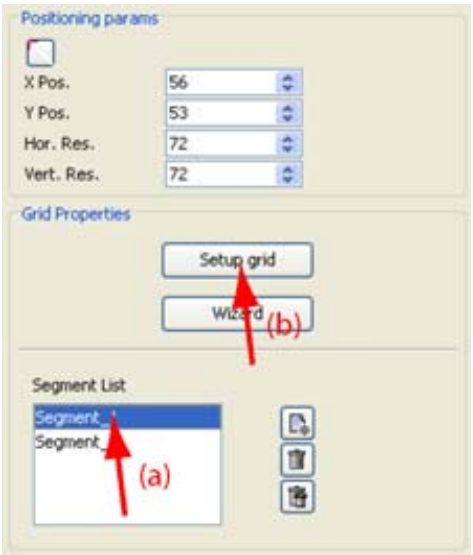


Image 14-35
Start up the grid editor

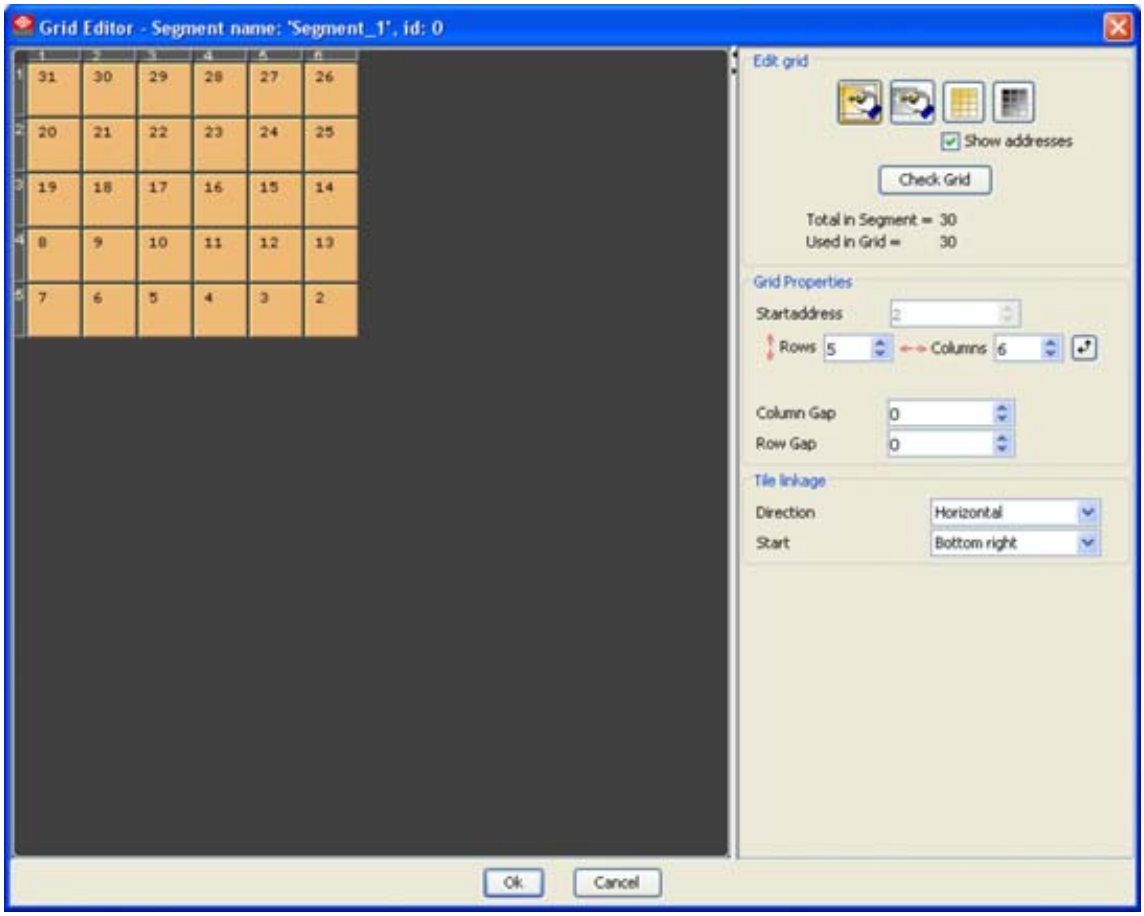


Image 14-36
Grid editor

14.13.2 Edit segment

Buttons

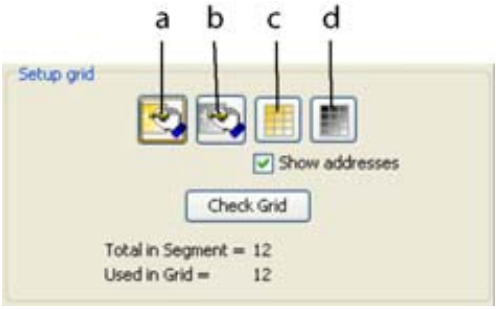


Image 14-37
Edit grid, buttons

a add a tile to grid

b remove a tile from grid

c fill grid completely with tiles

d remove all tiles from grid

Add tile to the grid

1. Click on the add tile button. (image 14-38)

   This button remains active till another buttons is pressed or the *Grid editor* is closed.

2. Click on a free grid location.

   The added tile will have the same color of the existing tiles as long as not all tiles in the segment are used. When all tiles are used, the added tile will be red.

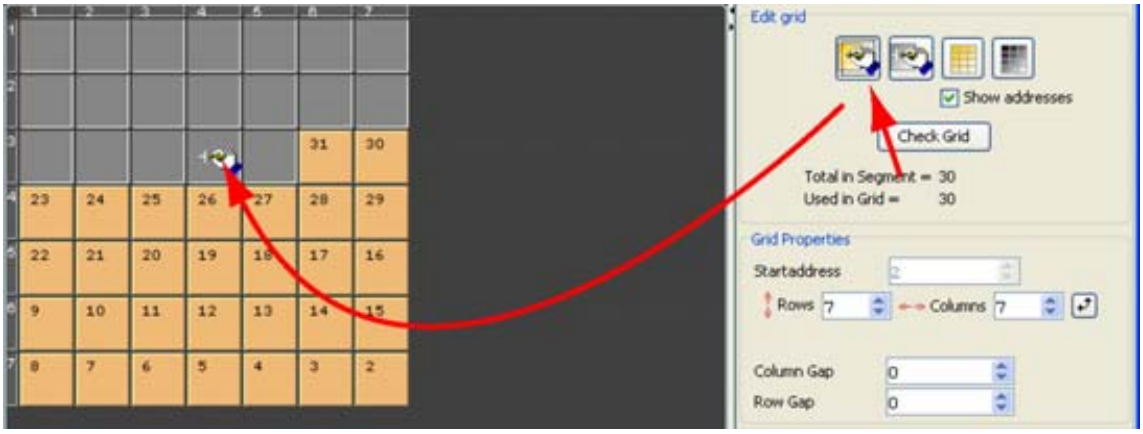


Image 14-38
Add tiles to grid

Remove tile from grid

1. Click on the remove tile button. (image 14-39)

   This button remains active till another buttons is pressed or the *Grid editor* is closed.

2. Click on an existing tile in the grid.

   The tile will be removed from the grid

Image 14-39
Remove tiles from the grid

Fill up grid completely or remove all from grid

Use the button *fill grid completely* to fill up the grid completely.

Use the button *remove all tiles* from grid to remove all the tiles in the grid

Before closing the Grid editor, click on check grid !

Check grid

Click on the button **Check grid** to check if everything is correctly placed.

The value next to *Total in segment* must be equal to the value next to *Used in grid*.

If the value *Used in grid* is lower than *Total in segment*, that means that not all tiles are used. Extra tiles must be manually added to the grid.

If the value *Used in grid* is greater than *Total in segment*, that means that more tiles are placed in the grid than allowed. Some tiles in the preview will be shown as red. Remove tiles from the grid until both values are equal. It is not necessary to remove the red colored tiles. It is also possible to remove tiles with the basic color. When removing one of these tiles, a red colored tile will take the basic color of a tile in the grid.

If the value Used in grid is equal to Total in segment, a message *Validity check is Ok* will be displayed.

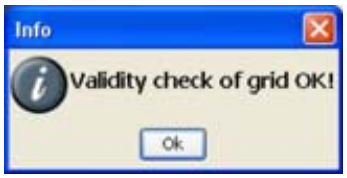


Image 14-40
Validity check info

Show addresses

When show addresses is check, every time a tile is removed or added, the addresses of the tiles will be recalculated.

14.13.3 Grid properties

Overview

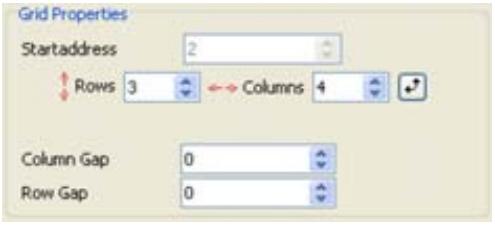


Image 14-41
Grid editor, grid properties

Start address

Start address of the first tile in the segment. The addresses are automatically assigned to the tiles and are shown as read only values.

Segment dimensions

The segment dimensions can be change by changing the number of rows and columns.

The number of tiles remains the same but another shape can be built with these tiles within the new dimensions.

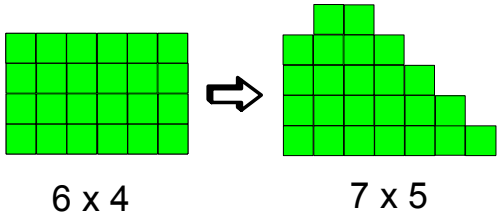


Image 14-42

To change the number of row and columns, just click on the two up down controls of the spin boxes next to *Rows* and *Columns*.

To switch the number of row with those of the columns, just click on the two arrow icon next to *Rows* and *Columns*.

Column and row gap

A gap expressed in pixels can be introduced between the columns and rows.

To change the column and row gap, click on the up down control of the spin boxes of *Column gap* and *Row gap* until the desired value is reached.

For MiPIX walls, the column and row gap in the *Grid Editor* is the gap between two MiPIX tiles and not between two MiPIX blocks. The value is default set to zero (0).

14.13.4 Tile linkage

What can be done ?

The data direction and the start point for the segment can be adapted.

Image 14-43
Grid editor, tile linkage

Possibilities:

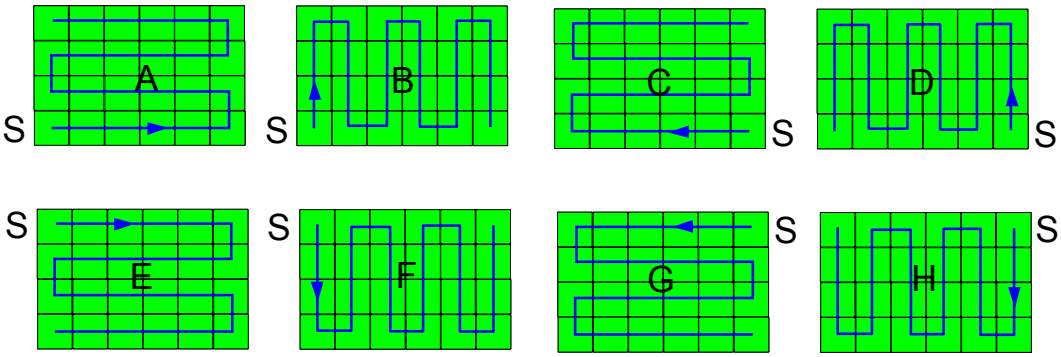


Image 14-44
Tile linkage and data start point

How to adapt ?

1. Click on the combo box next to *Directions* and select the direction.
   Possible selections :
   - Vertical
   - Horizontal
2. Click on the combo box next to *Start* and select the start position for the data link.
   Possible selection :
   - Bottom left
   - Bottom right
   - Top left
   - Top right

Attention

If there are e.g. two segments in a screen, it is possible that segment 1 is linked horizontally with start point bottom right and segment 2 is linked horizontally with start point bottom left.

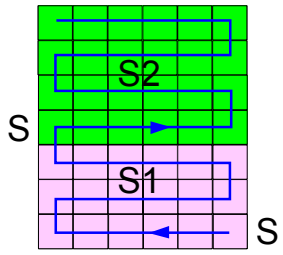


Image 14-45
Linkage - data point

S Start point data link
S1 Segment 1
S2 Segment 2

14.14 Manual positioning of tiles

Overview

- Start up
- Moving tile(s) by drag and drop
- Move tile(s) via the coordinates

14.14.1 Start up

How to start up ?

1. Click on the menu bar on *Positioning mode* . (image 14-46)

   The menu drops down.

2. Select *Manual positioning*.

Image 14-46
Manual positioning mode

14.14.2 Moving tile(s) by drag and drop

What is possible ?

In the manual positioning mode, each tile, of group of tiles, can be individually moved to a new location by simple drag and drop.

How to move ?

1. Click on the multiple selection icon (a). (image 14-47)
   Note: *Only necessary for multiple tile selection. For only one tile use the move icon (b).*
2. Click for multiple selection on a tile, hold down the mouse button and drag a square over the tile(s) to be moved. Release the mouse button (b).

   The outline of the selected tiles becomes white and for the others black.

3. Click on the Move icon (d). (image 14-48)
4. Move the cursor over the selected tiles (e).

   The cursor becomes a four arrow cursor.

5. Click, hold down the mouse button and drag the tile to the desired location.

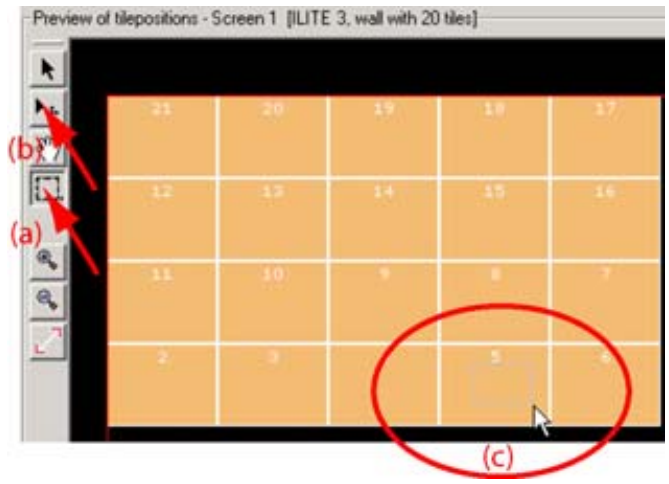


Image 14-47
Manual position, select tile

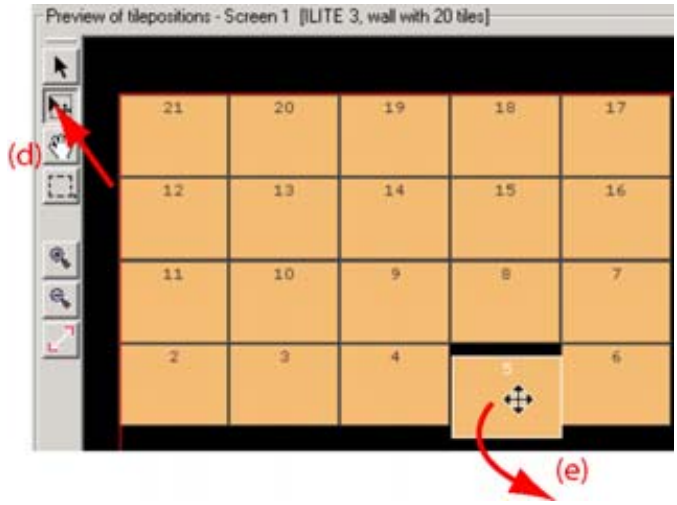


Image 14-48
Manual positioning, move tile

14.14.3 Move tile(s) via the coordinates

How to move ?

1. Click on the multiple selection icon to select a set of tiles. (image 14-49)
2. Click on a tile, hold down the mouse button and drag a square to select the tile(s). Release the mouse button.

   The outline of the selected tiles becomes white and for the others black.
3. Adjust the *X-pos* and *Y-pos* value in *Positioning params* by clicking on the up or down arrow key until the desired position is reached.
   Or,
   click in the input field and enter the value with the keyboard and finish by **Enter**.

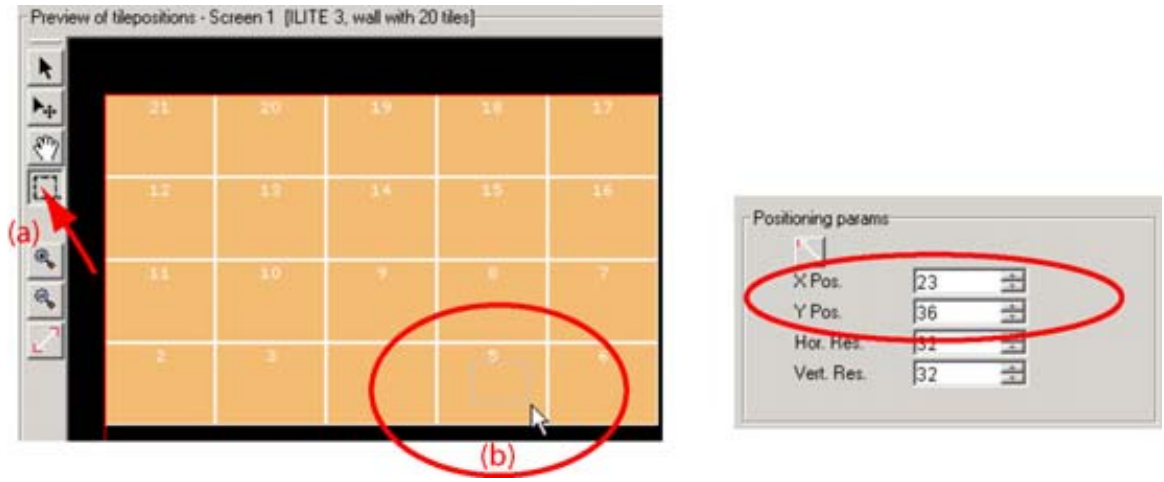


Image 14-49
Manual positioning, move tile(s) via coordinates

14.15 Apply settings

Auto apply

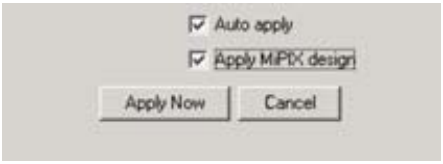


Image 14-50
Apply settings

When auto apply is checked, changes made in Tile positioning mode will be applied automatically each time a settings is changed. This can cause a delay as the software send the settings via a communication line (serial or Ethernet) to the LED wall.

Do not check this settings while working with a big wall.

If the function is not activated, use **Apply now** button to applies all settings at once.

Apply MiPIX design

Only for MiPIX walls

When checked, the designs associated with the controllers will be sent to the respective controllers.

15. OPERATIONS

Overview

- Introduction
- Operations window
- Display tab pages
- Display selection - Workspace - Apply panel
- Window settings
- Viewport settings
- Special settings
- Source settings
- Logo
- Display settings
- Preset control
- Stacking

15.1 Introduction

Overview

Operations gives an overview of the windows (= inputs) with its typical settings such as window settings, viewport settings, source settings, contrast, gamma, etc. on the display. It gives also an overview of the used screens and segments within a display.

Start up

To start the *Operations* module, just click on the icon on the tool bar or click on the menu bar on *Modules* and select *Operations*.

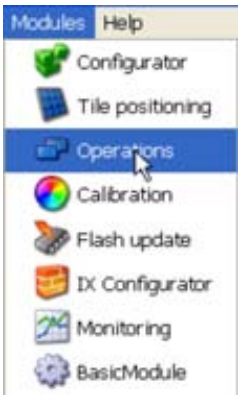


Image 15-1
Operations selected

15.2 Operations window

Overview

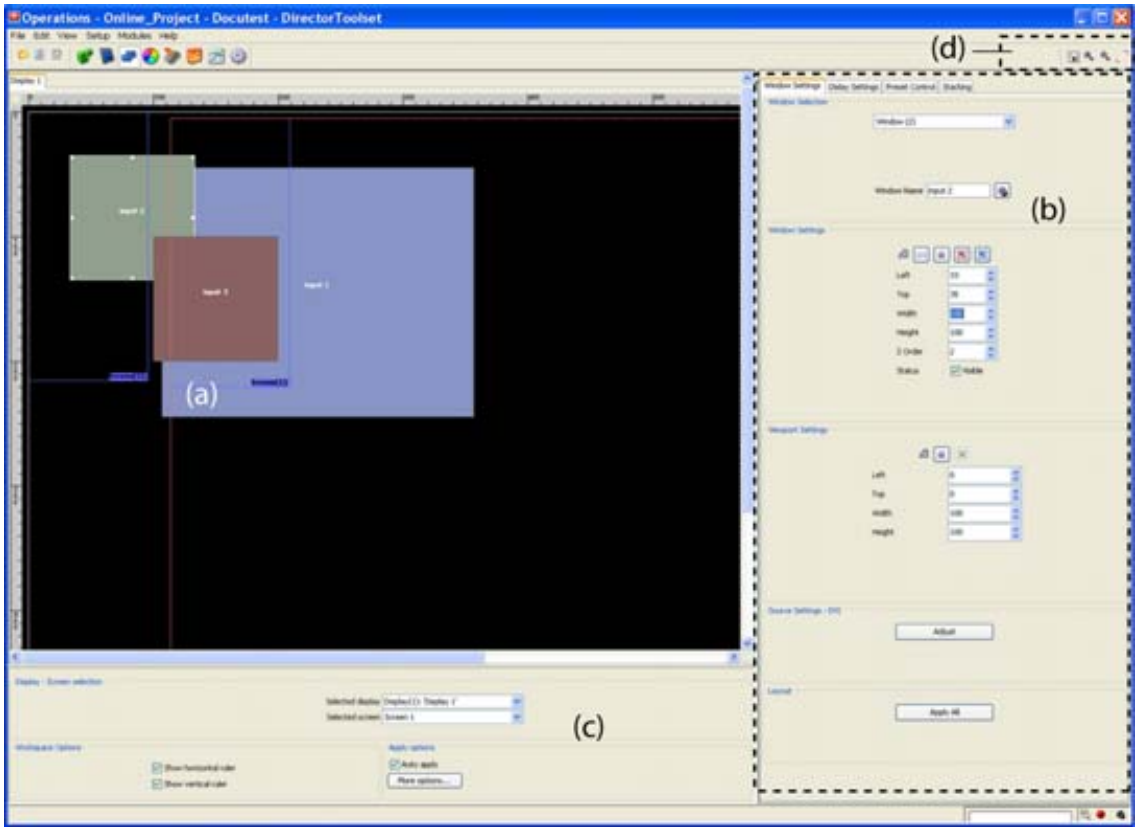


Image 15-2
Operations window

a Preview pane
b Settings pane
c Display selection/options pane
d Operations menu bar

The operations window contains at least 2 panes, the preview pane and the settings pane. A third pane, logging/options pane, can be hidden and activated when necessary just by clicking on the display selection/options switch button ( ) in the operations menu bar on the left upper corner.

About boxes in the preview.

Blue rectangular : the blue bordered rectangular box with no filling represents a screen in a display (non stacked configurations, screen = display). The screen number is indicated in the right lower corner.

Red rectangular : the red bordered rectangular indicates the timing window of the digitizer. Only the information within this rectangular will be displayed on the wall. This rectangle is also called active field. The word Active is indicated in the right lower corner, the digit between brackets indicates for which digitizer the timing window is displayed.

E.g. for a single wall and if you want to display all information on the wall, the blue rectangular (wall representation) must be equal to the red rectangular (active field).

Some examples :

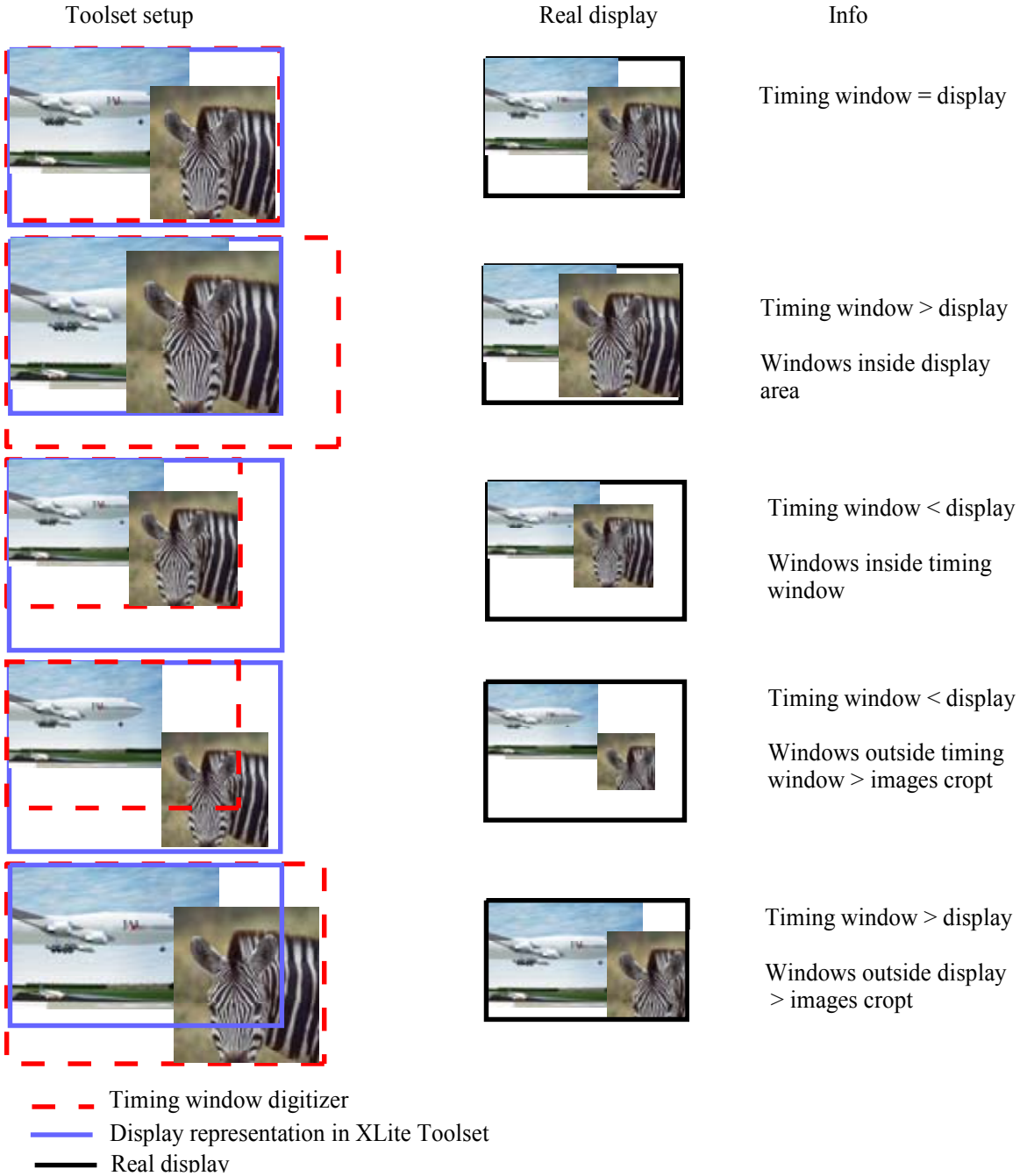


Image 15-3
Result of windowing

Colored boxes or **boxes with picture** represent input sources. The currently selected input has a white border while not selected sources have a black border. All input sources are identified by numbering.

Only Colored boxes overlapping the blue rectangular will be visible on the wall.

Yellow rectangular: the yellow bordered rectangles indicate the dimensions of the created segments in a screen. These rectangles can be moved within the active field. The dimensions of the screen (blue rectangular) will change in the same way. The segment number is indicated in the lower right corner next to the screen number.

White rectangular : the white bordered rectangular indicates the dimensions of a bank (only for DX-700). This white rectangular contains as many red rectangles as there are output in the bank.

Active field

Timing window of the digitizer. Only the information within the active field can be displayed on a wall.

Zoom buttons

The content of the preview pane can be enlarged (zoom in), reduced (zoom out) or scaled to best fit.

Zoom in, the digitizer active field will proportional enlarge with a fixed left top corner.

Zoom out, the digitizer active field will proportional reduce with a fixed left top corner.

The digitizer active field will be scaled to fit inside the preview pane. The windows (inputs) will be scaled in the same way.

Show-hide button panel

Show/hide bottom panel button ( ) on the operations tool bar, is a toggle button to display or hide the logging information and the options below the preview pane.

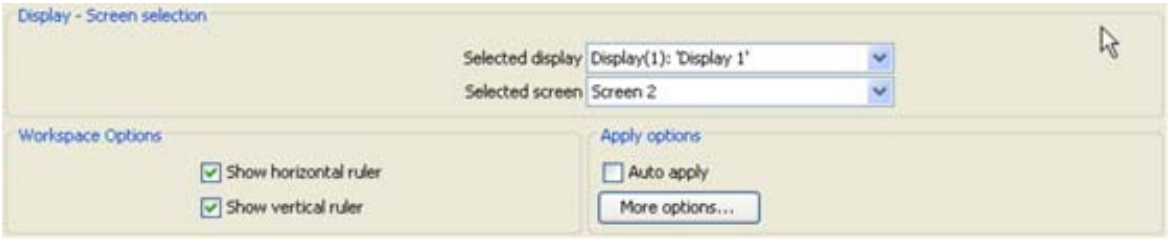


Image 15-4
Bottom panel, Logging and options

15.3 Display tab pages

Display selection

The content of the preview window can be changed by clicking on one of the display tab pages. Once click on a tab page, the preview shows all rectangles associated with all screens in that display.

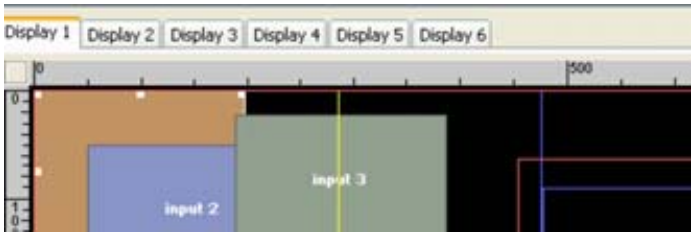


Image 15-5
Display selection via tab pages

15.4 Display selection - Workspace - Apply panel

Overview

- Access to the display selection - workspace - apply panel
- Display - Screen selection
- Workspace options
- Apply options

15.4.1 Access to the display selection - workspace - apply panel

How to get access ?

1. Press the **Show/hide** toggle button ( ) on the upper right side of the *Operations* window.

   The *Display selection - Workspace - Apply* pane will be displayed as overlay on the bottom of the *Operations* window. (image 15-6)

Image 15-6

15.4.2 Display - Screen selection

What are the possibilities ?

Image 15-7
Display - screen selection

A setup can contain different displays (stacking or grouping setup). Each display contains at least one screen.

A display can be selected as well as a screen on the display.

Adjustments done in the *Operations* module are typical for the selected display and screen.

A layout should be created for each display.

How to select ?

1. For a display, click on the combo box and select the desired display (only for stacked or grouped setup, otherwise display 1 is filled out by default).
2. For a screen, click on the combo box and select the desired screen for the selected display. At least one screen is created in a display.

15.4.3 Workspace options

Rulers

Horizontal and/of vertical rules can be switched on or off. The values on the rulers are expressed in pixels.

Image 15-8
Workspace options

15.4.4 Apply options

Overview

Auto apply can be switched on or off. When checked, all settings will be applied automatically.

For more options, click on **More options**. The *Apply options* window opens. For a detailed explanation, see "Apply options (F12)", page 37.

15.5 Window settings

Overview

- Start up
- Window selection
- Changing a window name
- Edit Window texture
- Window mode
- Viewport settings for stitched mode
- Locking a window
- 1 to 1 window
- Move window
- Re-size window
- Z-Order
- Aspect Ratio
- Status input window, visible - not visible
- Copy window settings
- Full size input window
- Scale output and viewport to display dimensions

15.5.1 Start up

How to start ?

1. Click on the **Window settings** tab. (image 15-9)

   The window settings open.

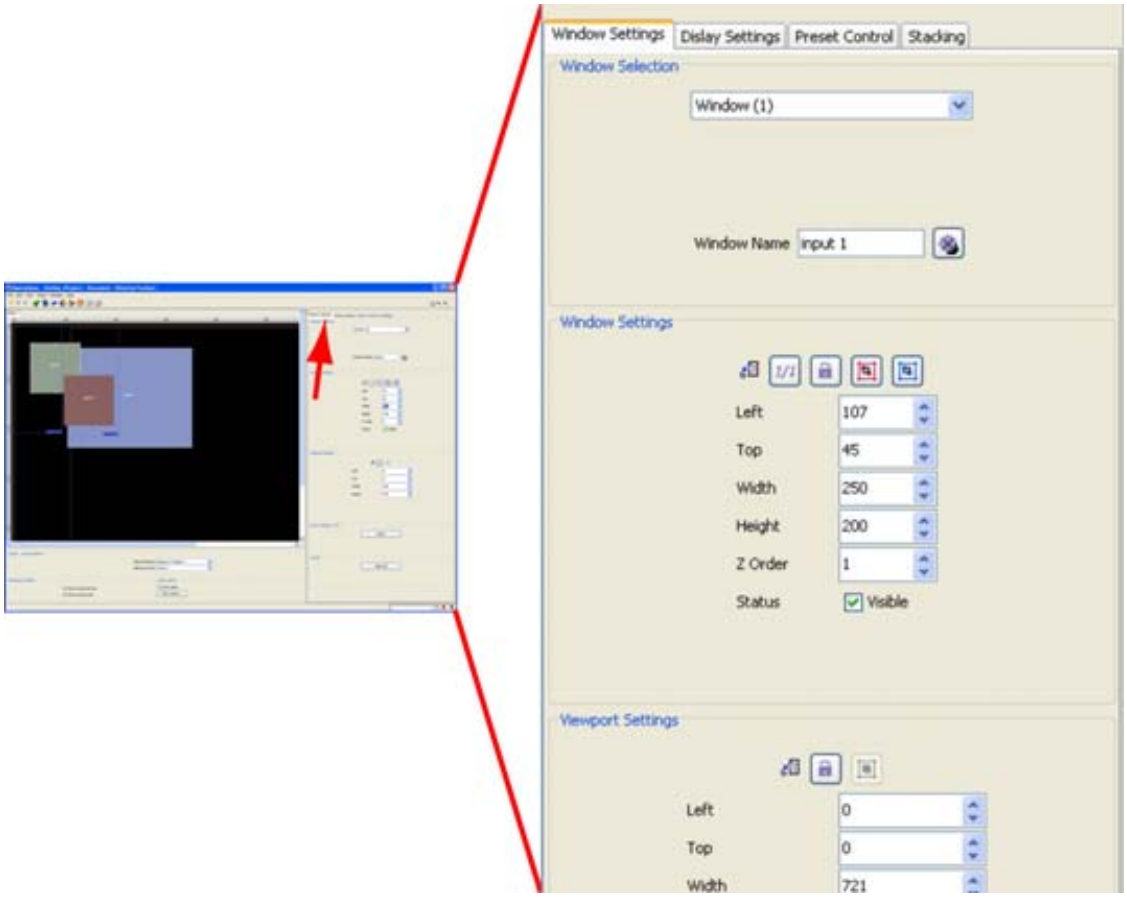


Image 15-9
Tab Window settings

15.5.2 Window selection

LED-Pro digitizer has only one window.

Select a window

There are two ways to select a window :

- Click on the combo box in *Window selection* to open the list of windows that can be selected. The windows are indicated by a nick name or by a default name.

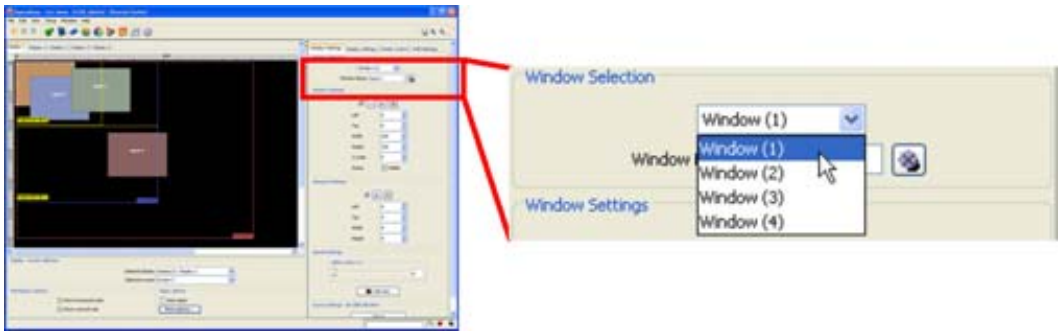


Image 15-10
Window selection via settings pane

- Click on a window in the preview pane, the parameters of the selected window will be updated in the settings pane.

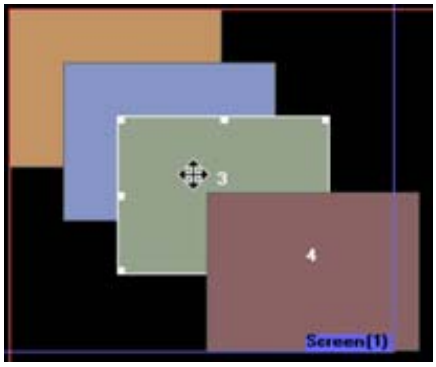


Image 15-11
Window selection via preview pane

15.5.3 Changing a window name

Overview

Each window can have a specific name (nick name). That name can be entered in the window settings and can be changed at any time.

How to change ?

1. Select first the window you want to change the name (a).
2. Click inside the input field of *Window Name* (b). (image 15-12)

   The default value is *default*.

   The background change to dark blue.
3. Enter a new name with the keyboard.
4. Press **Enter** to apply.

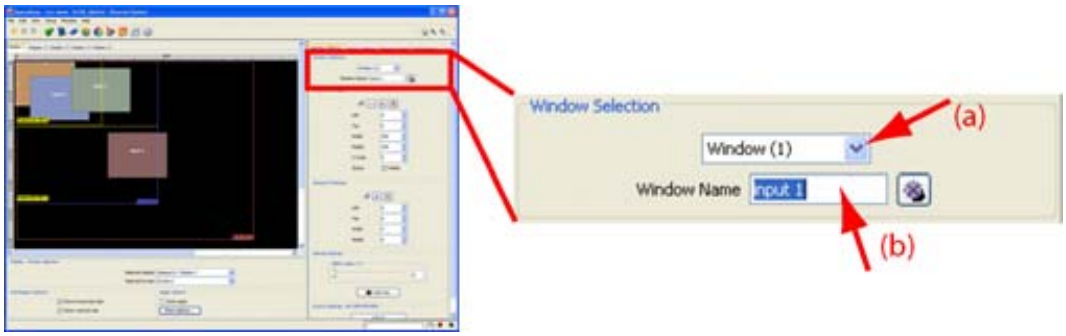


Image 15-12
Change window name

15.5.4 Edit Window texture

Window texture

Background of window representation in operations. The texture can be a color or a picture.

Overview

- Start up
- Color fill
- Picture

15.5.4.1 Start up

Introduction

The rectangular which represents the window in the preview pane can have a colored filling or a picture as filling. When using a picture as filling, the picture can be repeated to completely fill the window rectangular.

By giving other colors or pictures to the different windows a distinction between the sources can be made.

How to start up ?

1. Click on the texture icon next to the window name in the *Window selection* pane. (image 15-13)

   The *Edit window texture* dialog box opens. (image 15-14)

Image 15-13
Select window texture

Image 15-14

15.5.4.2 Color fill

Color fill or not

To apply a Color fill to a window, the window must be selected first.

To fill the rectangular with a color, check the check box in front off *Fill with color*.

Note: When Picture fill is displayed, click first on **Color fill** tab (image 15-14).

Select a color

1. Click on **Color** button (image 15-14).

   The color value window will be displayed (image 15-15.

2. 3 ways are now possible to select a color, represented by a tab in the *Color value* window.

Tab swatches = way 1	Via the swatches color window, step 3.
Tab HSB = way 2	Via the HSB color window, step 4.
Tab RGB = way 3	Via the RGB color window, step 5.

3. Select the desired color (via swatches = predefined color samples). (image 15-15)

   The first selected color will be indicated in *Recent*. When others are selected for a preview, the color indication will also be added in the *Recent* list as first one. Finally, the color selection can be done from the *Recent* list or out of the color pallet.

   Each time a color is clicked, a preview will be given in the preview pane. Continue with step 6.

4. Click on the **HSB** tab to display the color pallet (HSB = Hue - Saturation - Brightness). (image 15-16)
   A color can be selected in 2 ways:
   - Slide the slider next to the color gamut until the wanted color in the color pick field is reached, or fill out the HSB value until the desired color is reached in the pick up field.
   - Click in the color field to display the white circle. Drag that circle to the desired tint of the chosen color.

   A preview will be given in the preview pane. Continue with step 6.

5. Click on **RGB** tab to display the RGB selection sliders. (image 15-17)

Move the sliders until the desired color is reached, or fill out the RGB values in the input boxes.

A preview will be given in the preview pane. Continue with step 6.

6. Click on **OK** to apply the selected color.

Image 15-15
Color value via swatches

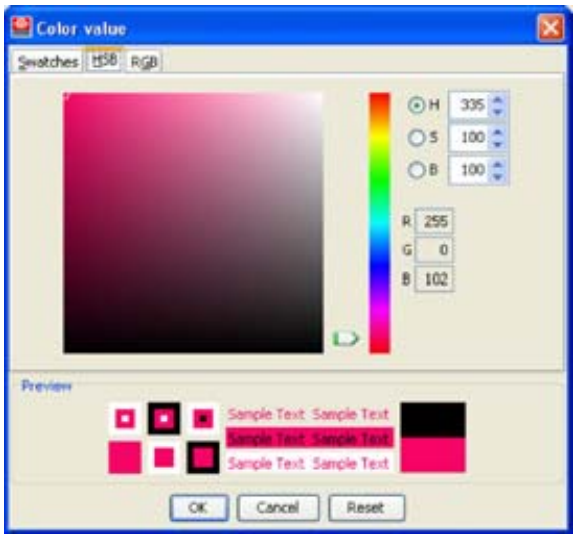


Image 15-16
Color value via HSB

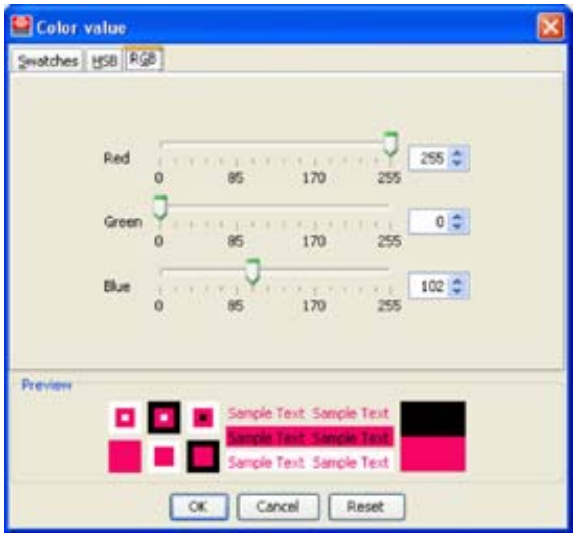


Image 15-17
Color value via RGB

15.5.4.3 Picture

To apply a picture to a window, a window must be selected first.

Insert a picture

1. Click on tab **Picture**.

   The picture selection window opens. (image 15-18)

2. Click on **Select picture...** (a).

   The browse window opens (b).

3. Browse to the desired image file and click **Open** (c).

   The selected picture will be displayed in the preview area (d).

4. Check the desired option (e).

Scale	the picture will be scaled so that the complete rectangular is filled.
Repeat	the picture will be repeated as many times as necessary to completely fill the rectangular.
no scale, no repeat	picture in native resolution will be inserted in the rectangular.

5. Click **OK** to insert the selected picture (f).

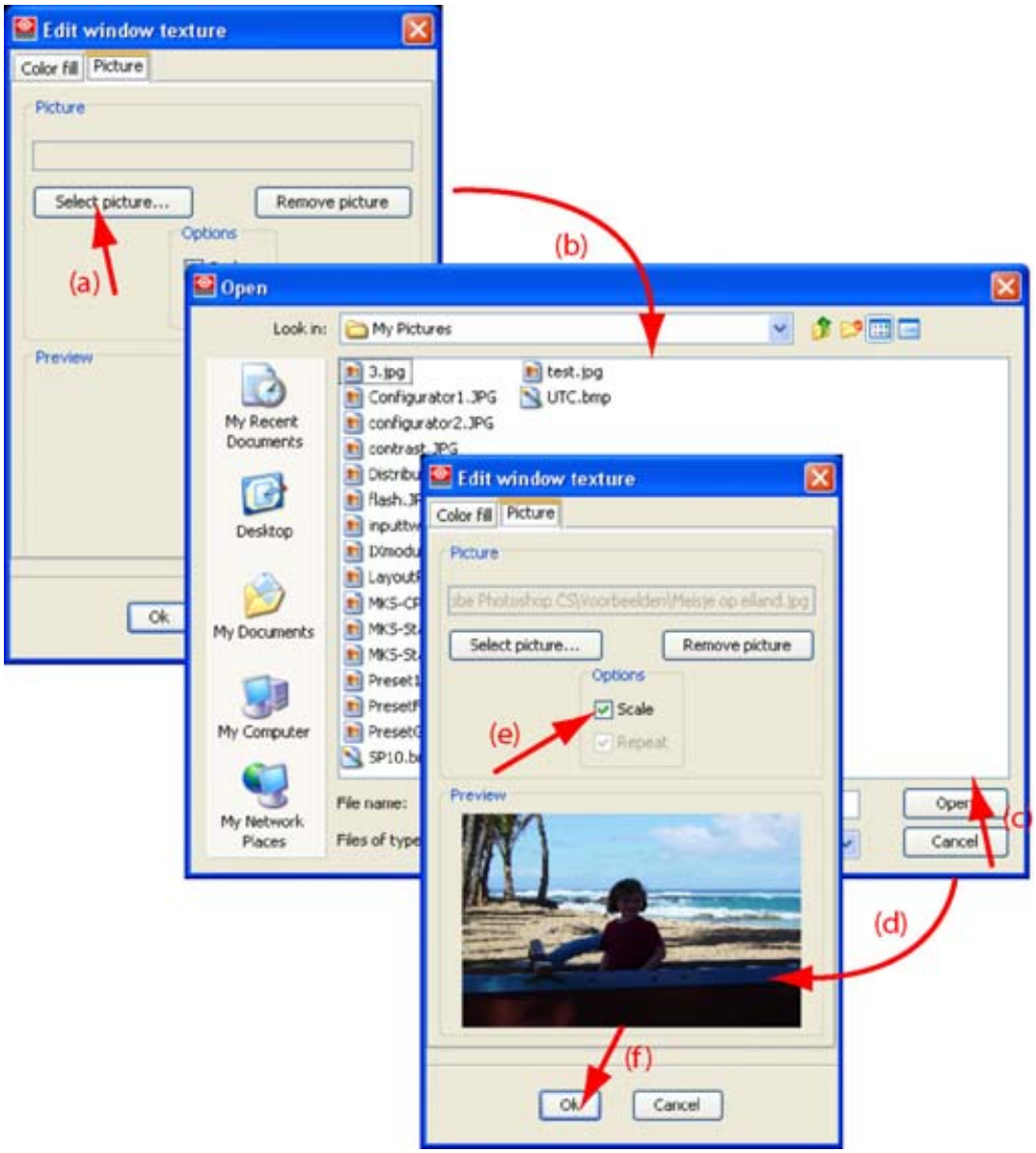


Image 15-18
Add picture to a window

Supported types

- bitmap (bmp)
- gif
- jpeg 2
- png

Removal of a picture

1. Click on **Remove picture**.

   The picture filling will be removed from the window.

2. Click **OK** to remove the inserted picture.

15.5.5 Window mode

What can be done ?

When the stitched mode is activated, the viewport of the selected input is set to the default value (= entire input). The same input in the other digitizers in the display are also forced in stitched mode. The stitched input is locked and cannot be moved, only a viewport change is possible to setup the image alignment.

How to select stitched

1. Select the input to stitch. (image 15-19)
2. Check the check box next to *Window mode*.

   The selected input is virtually scaled over all the active areas in the display to indicate the stitched mode. Each input in the stitched display must receive its own external content (e.g. coming from an Encore system).

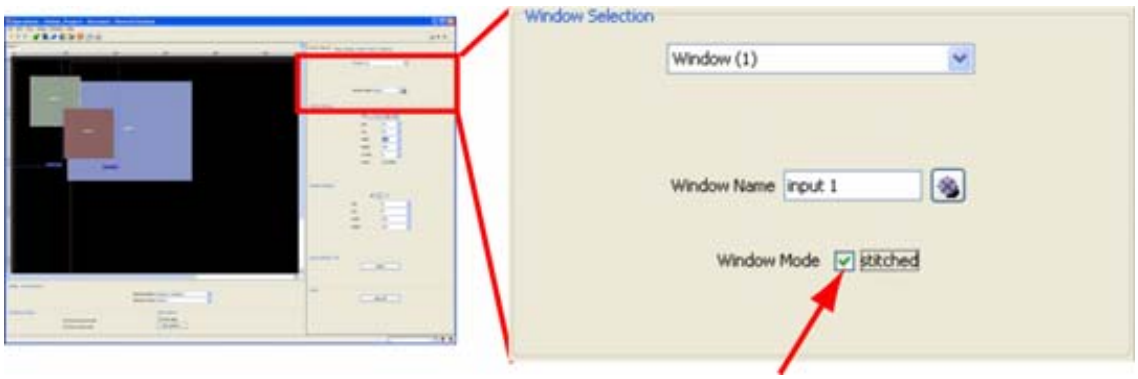


Image 15-19
Window mode

15.5.6 Viewport settings for stitched mode

What can be done ?

Within a stitched mode, the viewport on each input can be changed in dimensions or in start position to match with the other parts in the displayed image. That can be done for each bank individually or for all banks at the same time.

When opening the viewport settings, the default values of the source are filled out for each bank

How to change

1. When *Window mode* is set to *Stitched*, click on **Viewport Setup** to change the viewport settings (a). (image 15-20)

   The Viewport Setup dialog opens (b).
2. If you want to update all viewports at once, check the check box before *Update all viewports* (d).
   If you want to update the viewport bank per bank, uncheck the check box and click on the desired bank number button (c).
3. To change the viewport settings, click on the up down control of the spin box next to Left, Top, Width and Height until the desired value is obtained.

   Look to the display while adjusting the viewport

   Example: (image 15-21)

   Adjust the start position of the lower image to form one seamless image with the upper image.
4. Click **Close**.

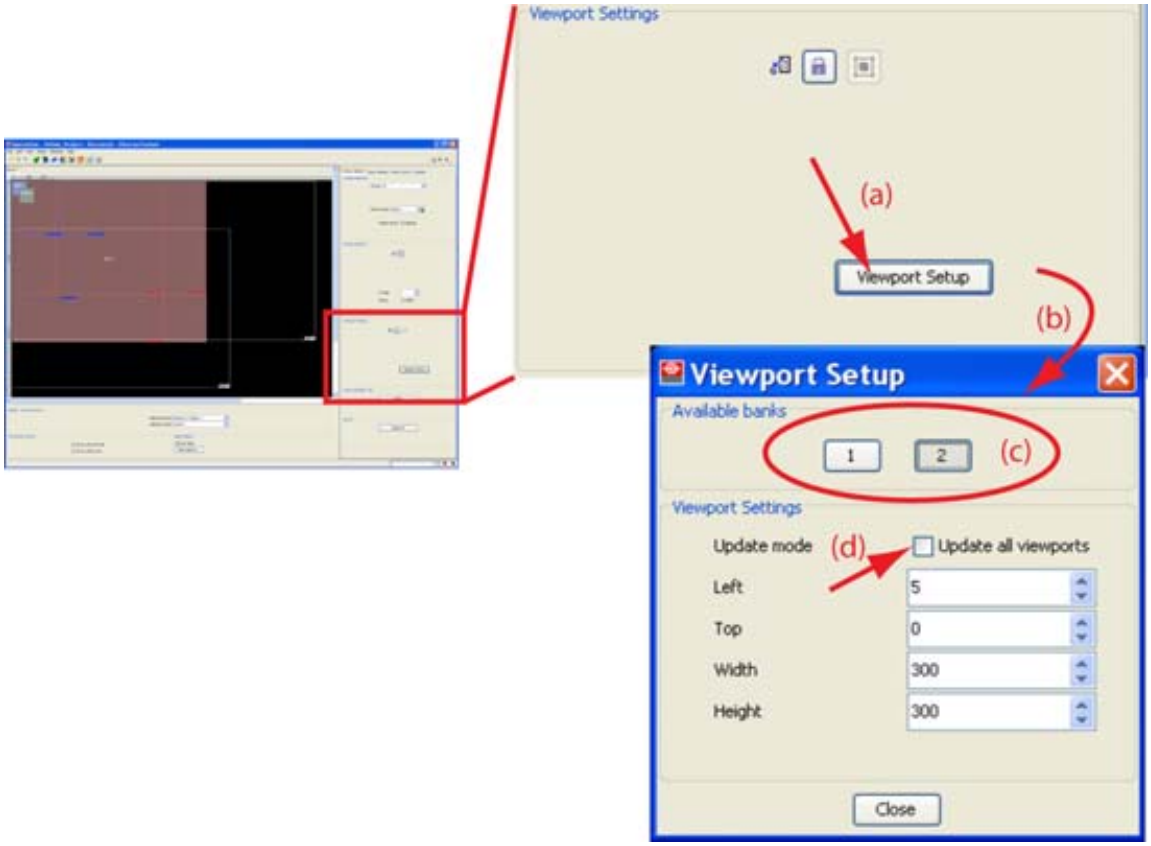


Image 15-20
Viewport settings, stitched setup

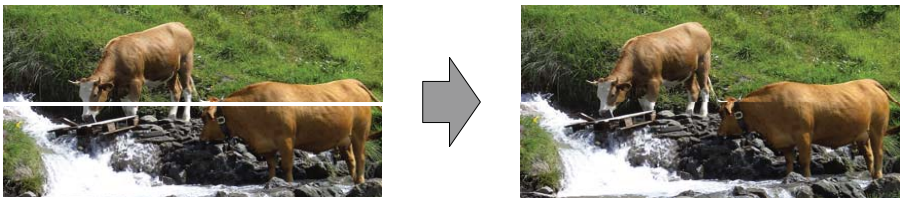


Image 15-21
Viewport alignment

15.5.7 Locking a window

Why ?

A window (input) can be locked so that no changes can be made to dimensions and the relative position in the display. Z-ordering is still possible.

How to lock ?

1. Select the window which must be locked (see "Window selection", page 355).
2. Click on the padlock icon. (image 15-22)

   The selected window will be locked on its actual position with its actual dimensions.

   When moving the mouse over the window, a padlock will be displayed as cursor.

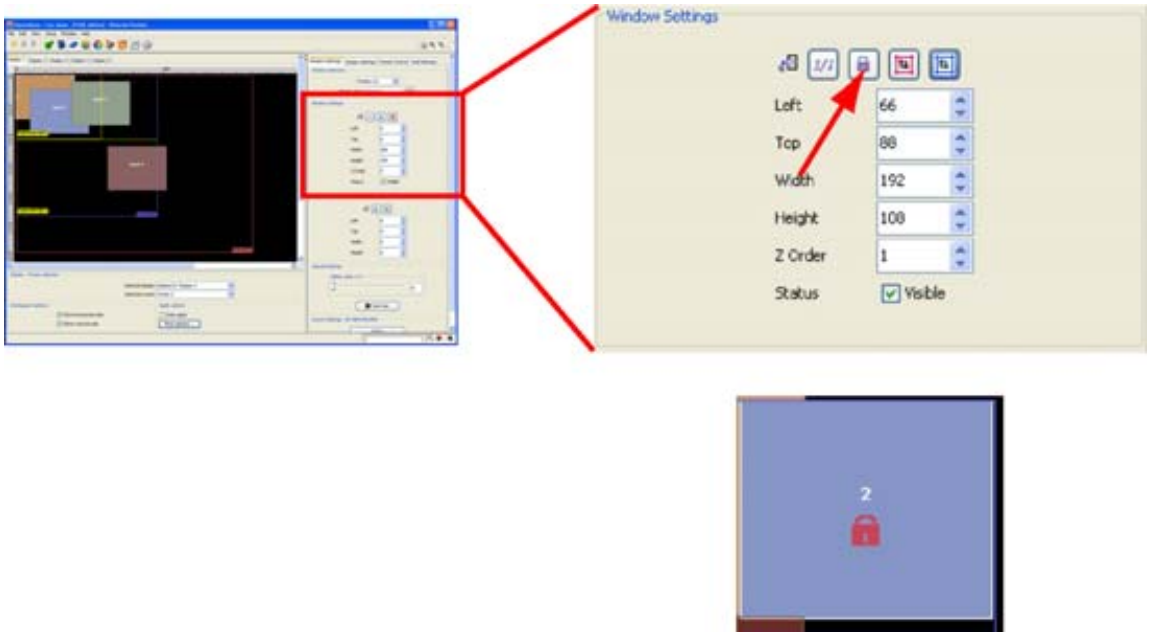


Image 15-22
Window lock

15.5.8 1 to 1 window

What is possible ?

The window size can be displayed as 1/1 content by resizing the window to the dimensions of the viewport. This means no scaling will be done. 1 pixel in viewport will be 1 pixel in window.

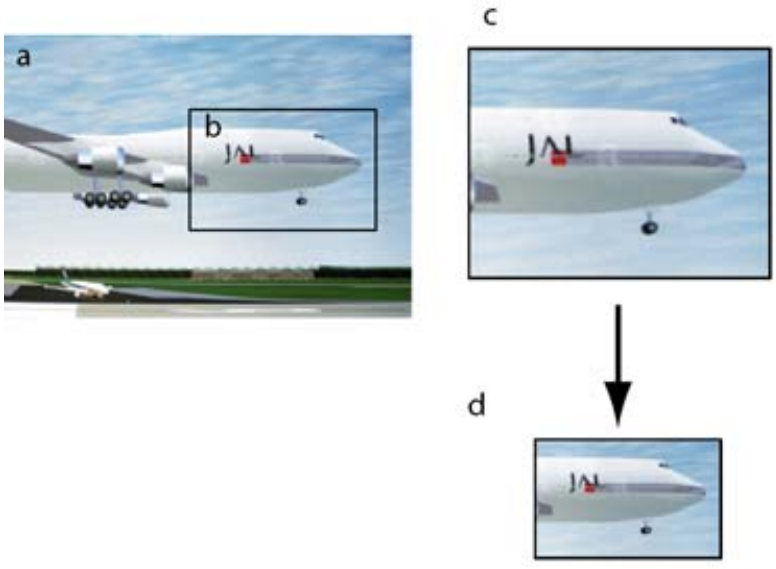


Image 15-23
Scale to 1/1

a source
b Viewport
c Window settings before scale
d Window settings after scale 1/1 pressed

How to set 1 to 1 ?

1. Select the window which has to be scaled.
2. Click on the 1/1 icon (a). (image 15-24)

   The window will be re-scaled to the viewport width and height (b & c).

Image 15-24
Scale to 1/1

15.5.9 Move window

Via the value settings

1. Select the window you want to move.
2. Change the *Left* and *Top* value indicating the start position of the window by clicking on the up or down keys (image 15-25)
   Or,
   click in the input field and enter a new value with the keyboard.

Image 15-25
Move window via settings

Via the preview window

1. Click on a window and hold down the mouse button to grab the selected window. (image 15-26)

   The cursor becomes a 4 arrow cursor.

2. Move the window to the desired location.

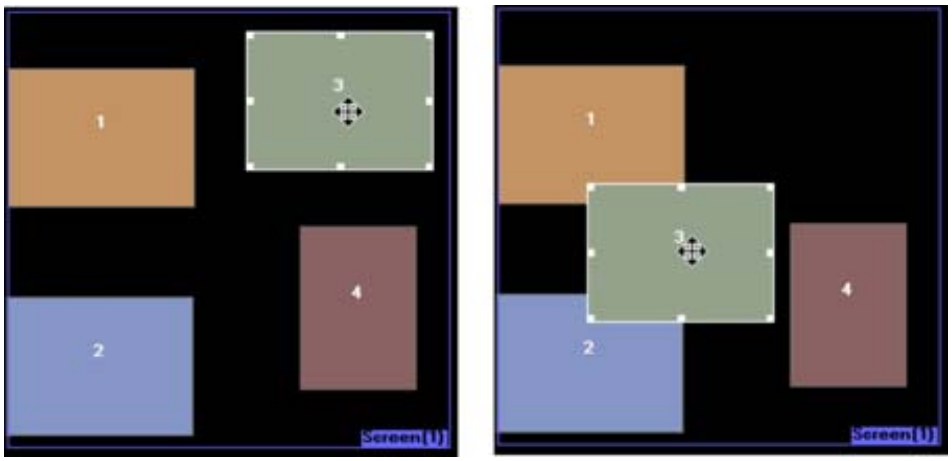


Image 15-26
Move window via preview

15.5.10 Re-size window

Via the preview window

1. Click the window which must be scaled.

   A bounding box with handles visualized the selected window.

   The cursor becomes a 4 arrow cursor.

2. Click a corner handle and hold down the mouse button. (image 15-27)
3. Move the mouse to either down-scale or upscale the selected source, as is required. The coordinates of the selected window will be automatically adjusted in the window settings, in relation to any re-sizing or moves.

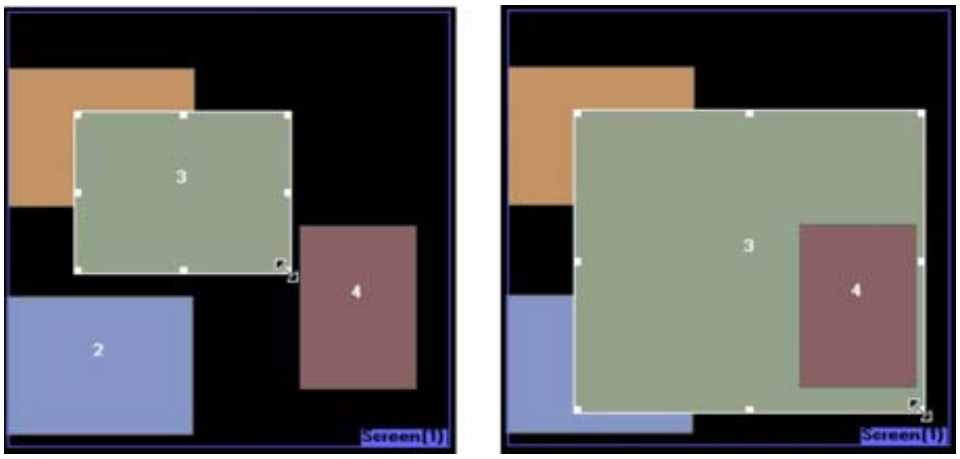


Image 15-27
Re-size via the preview

Via the value settings

1. Select the window you want to scale.
2. Change the *Width* and *Height* value indicating the dimensions of the window by clicking on the up or down keys (image 15-28)
   Or,
   click in the input field and enter a new value with the keyboard.

Image 15-28
Re-size via the settings

When a typical aspect ration is associated with the selected window, the height and width are linked to each other. When changing one of them, the other dimension will change accordingly. For more information about Aspect ratio, see "Aspect Ratio", page 369.

15.5.11 Z-Order

Z-order

The layer sequence in which windows will be displayed in relation to each other.

About Z-order

A Z-ordering number for a window defines which windows it overlaps and which windows overlap this one. The specific value for the z-ordering is not important. More important is the relation between the Z-values of two different windows. The higher the value, the more windows it can overlap. So, if on a display there

is no window overlapping another one, the z-ordering is not important. But when moving or re-sizing one of these windows, the z-ordering becomes important as some windows will overlap each other.

Image 15-29
Z-order adjustment

Via the value settings (absolute)

1. Select the window for which the Z-order number has to be changed. (image 15-30)
2. Click on the up or down arrow next to Z-order until the desired value is reached.

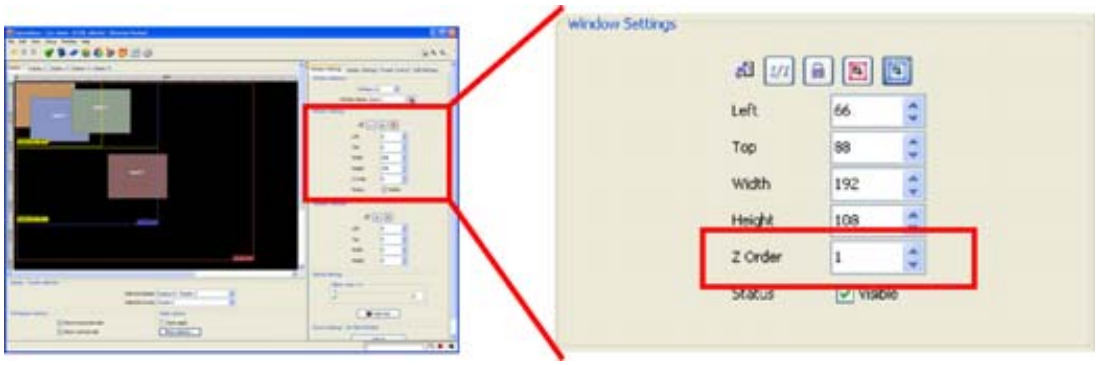


Image 15-30
Z-order setup via settings

Via the preview window (relative)

1. Right click on the window. (image 15-31)

   A pop-up menu appears.

2. Select from the four choices the order of the layering to be applied.
   Note: *When a selection is not possible, it will be grayed out.*

One up	moves the selected source one layer up
One down	moves the selected source one layer down
To front	moves the selected source to the top of the layers
To back	moves the selected source to the bottom of the layers

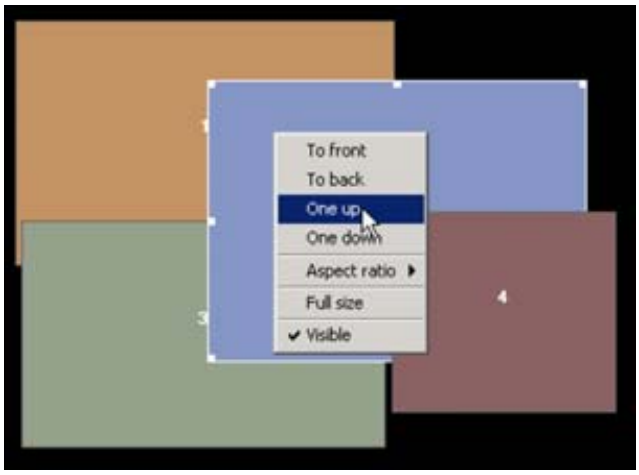


Image 15-31
Z-order via pop-up menu

15.5.12 Aspect Ratio

Aspect ratio

Relation between the horizontal & vertical dimension in which the window will be displayed, e.g. 4 by 3 or 16 by 9. Can also be expressed as a decimal number, such as 1.77. The larger the ratio or decimal, the wider are less square the image.

How to change

It is possible to adjust the aspect ratio of a (input) window:

1. Right click on a window.

   A pop-up menu reveals. (image 15-32)

2. Select Aspect ratio and move the mouse to the right.

   The menu will expand with the different aspect ratios.

3. Select the desired ratio.

   Note: *While selecting a typical aspect ratio, the width and height in the window settings are linked. Resizing the window will automatically adjust according to the selected ratio.*

Image 15-32
Aspect ratio

Available aspect ratios

Aspect ratio	Used for
3/2	35 mm film
4/3	standard television image
14/9	wide screen film format
16/9	HDTV or wide screen television
21/9	cinema
snap to	use the current dimensions as ratio (= width / height)

15.5.13 Status input window, visible - not visible

Set up via the menu ?

1. Select a window in the preview window or via *Window selection*.
2. Check the check box next to *Status* in the window settings.

When checked	Selected input window will be visible. The background color of the window will be visible in the preview window.
When not checked	Selected input window will not be visible. In the preview pane, the background color of the window disappears. The corresponding image on the LED wall will be disabled too.

See image 15-33.

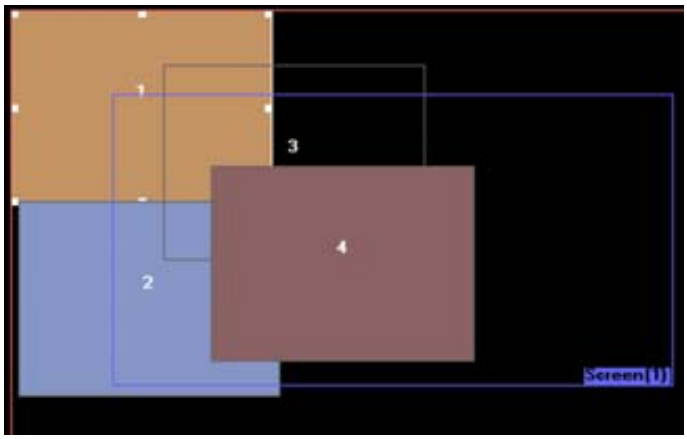


Image 15-33
Window status

1,2,4 window visible
3 window not visible

Set up via the right mouse button

1. Right click on the window. (image 15-34)

   A pop-up menu appears.
2. Make the window visible or not.

Visible checked	Selected input window will be visible. The background color of the window will be visible in the preview window.
Visible not checked	Selected input window will not be visible. In the preview pane, the background color of the window disappears. The corresponding image on the LED wall will be disabled too.

Image 15-34
Window status via right click

15.5.14 Copy window settings

What can be done ?

A complete set of window settings (except Z-order number) from one window can be copied to another window.

Example of use: color keying has to be applied on two sources, it is easy when both sources have the same dimension. Therefore with copy window settings the dimensions of window one can be copy on window two.

How to copy ?

1. Select a input source window, e.g. window 4. (image 15-35)
2. Click on the copy settings icon and hold down the mouse button.
3. Drag that icon into the preview window onto the input window to be copied to.
4. Release the mouse button.

   The window settings are copied in the target window, resulting in an overlapping of the input windows. The Z-order number of both windows will define which window will be visible.

   The settings of the window will change and the window preview of the target window will overlap the source window.

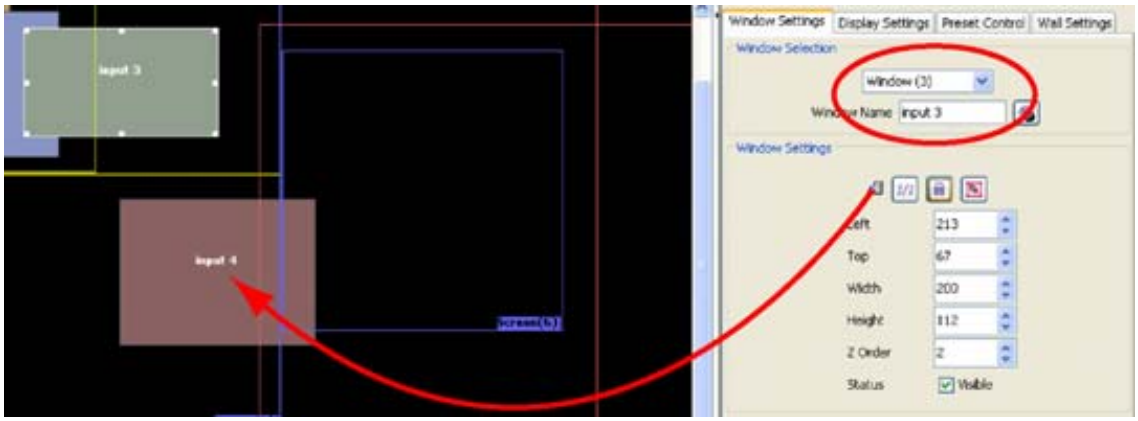


Image 15-35
Copy settings

15.5.15 Full size input window

What is possible ?

An input window can be scaled and moved to match the dimensions of the digitizer active field, just by a simple click.

Via the settings

1. Select the input window which must be scaled to the digitizer active field.
2. Click on the *scale to active field* icon. (image 15-36)

   The selected input window will be re-sized and moved to match the dimensions of the digitizer active field.

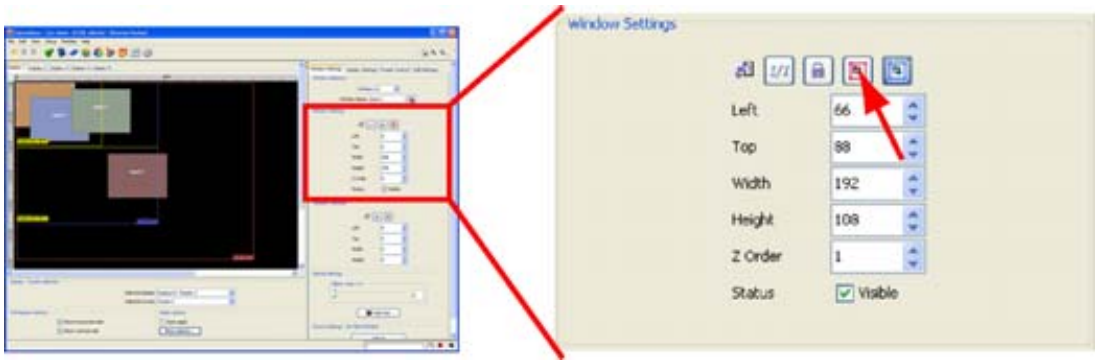


Image 15-36
Re-size to full size

Via the preview window

1. Right click on the input window which must be displayed in full size.

   A pop-up menu reveals. (image 15-37)

2. Select *Full size*.

   The selected input window will be re-sized and moved to match the dimensions of the digitizer active field.

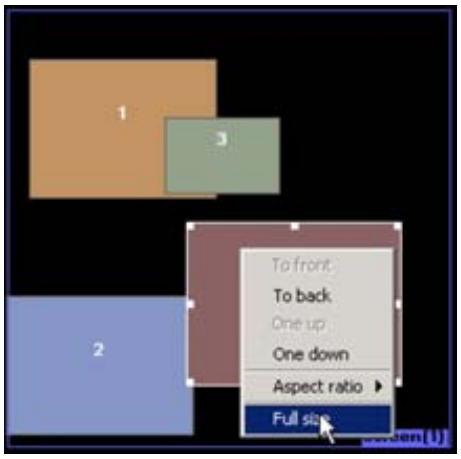


Image 15-37
Re-size to full size

15.5.16 Scale output and viewport to display dimensions

What is possible ?

An input window can be scaled and moved to match the dimensions of the display just by a simple click.

Via the settings

1. Select the input window which must be scaled to the display dimensions. (image 15-38)
2. Click on the *scale output and viewport to display* icon.

   The selected input window will be re-sized and moved to match the dimensions of the display.

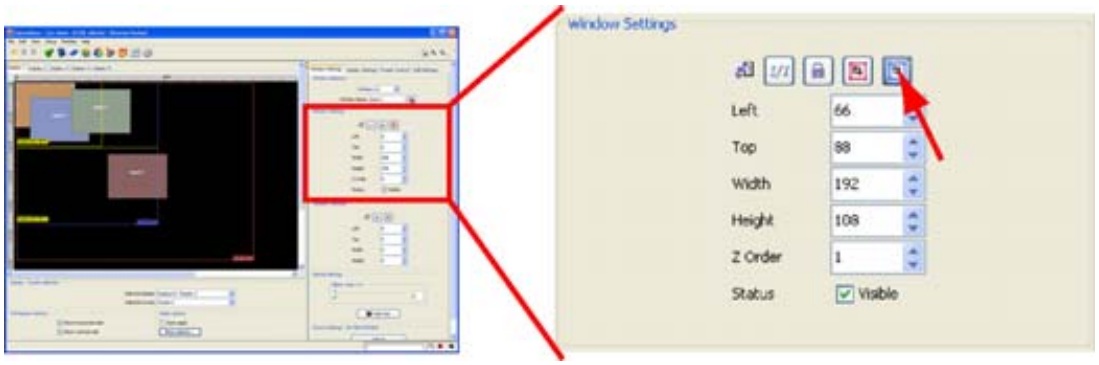


Image 15-38
Scale to display dimensions

15.6 Viewport settings

ViewPort

A part of the complete input signal (cut out of the complete signal) which will be displayed in a window.

Overview

- About Viewport
- Creating a viewport
- Lock a viewport
- Copy viewport settings
- Detect viewport

15.6.1 About Viewport

Overview

Viewport refers to a reference point on the input image (left and top coordinates). Related to that point, a horizontal and vertical size has to be defined. These four parameters define a viewport or cutout specific for that input source.

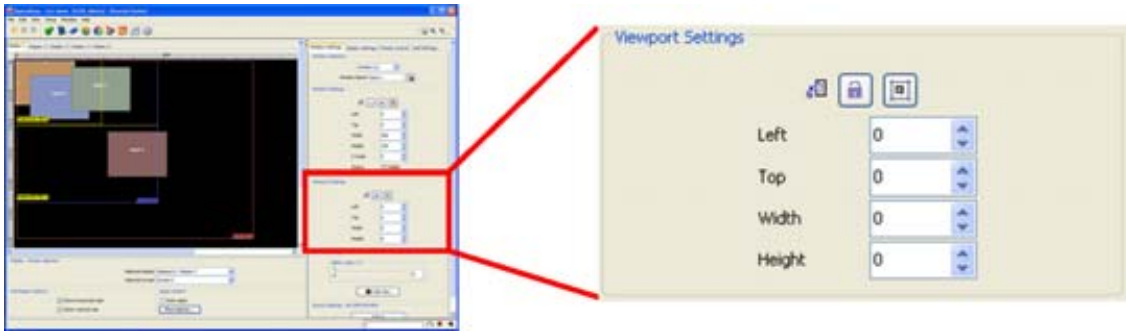


Image 15-39
Viewport settings

Left	Horizontal start position of viewport window in pixels with regard to the left image border.
Top	Vertical start position of viewport window in pixels with regard to the top image border.
Width	Horizontal size of viewport window in pixels (width)
Height	Vertical size of viewport window in pixels (height)

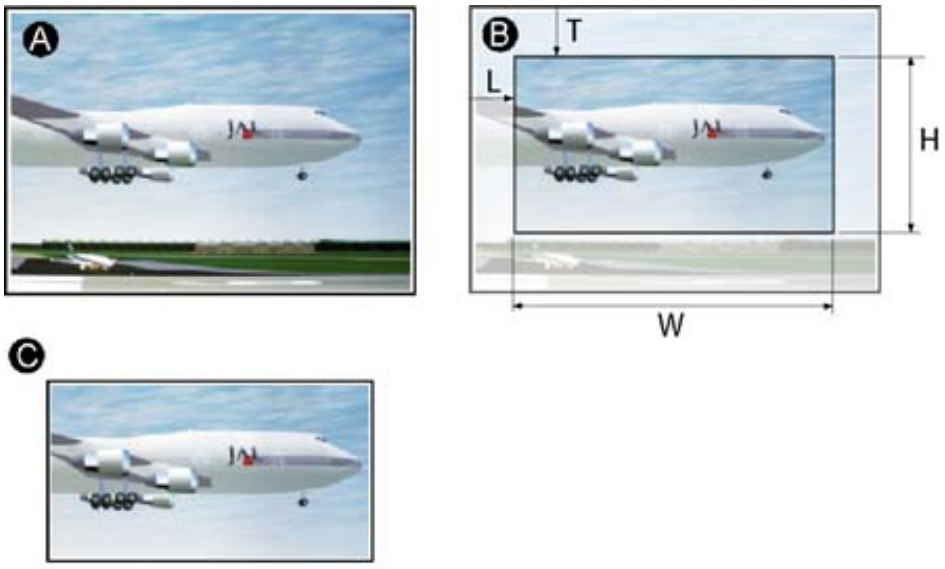


Image 15-40
Viewport

A Input signal

B Viewport creation
C Result signal to be displayed in the window
T Top start
L Left start
H Height of the viewport
W Width of the viewport

15.6.2 Creating a viewport

Create via coordinates

1. Select an input window for which a viewport must be created.
2. Click on the up or down arrow key next to *Left*, *Top*, *Width* and *Height* to create the desired viewport. (image 15-41)

   The result of the created viewport can only be checked on the wall itself.

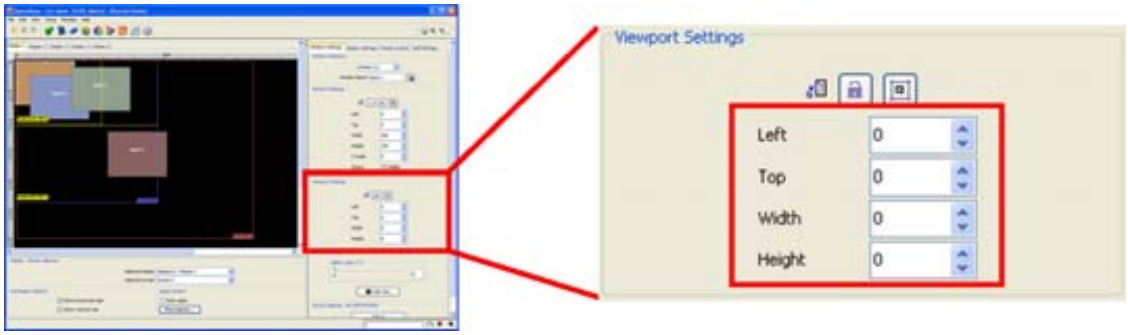


Image 15-41
Viewport settings

15.6.3 Lock a viewport

How to lock ?

1. Select an input window for which the viewport must be locked.

   The actual viewport settings will be filled out.
2. Click on the padlock icon. (image 15-42)

   The actual viewport settings will be grayed out. The viewport is locked.

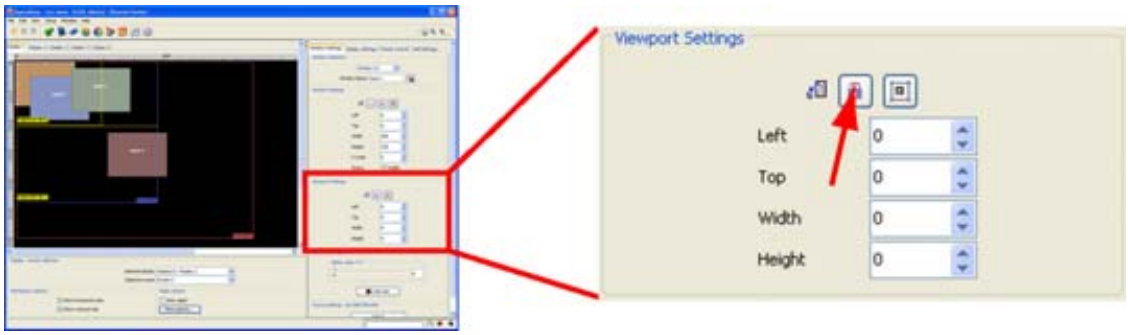


Image 15-42
Lock viewport

How to unlock ?

1. Select the window with the locked viewport.

   The viewport settings are grayed out.
2. Click on the padlock icon again.

The viewport is unlocked and can be changed again.

15.6.4 Copy viewport settings

What can be done ?

The viewport setting, left, top, width and height of one input source (master source) can be copied to another source (target source) just by clicking and dragging.

How to apply ?

1. Select the master source, source to copy from.
2. Click on the apply to icon and hold down the mouse button. (image 15-43)
3. Drag that icon into the preview pane and onto the target source.

   The viewport settings of the target source will be overwritten with those of the master source.

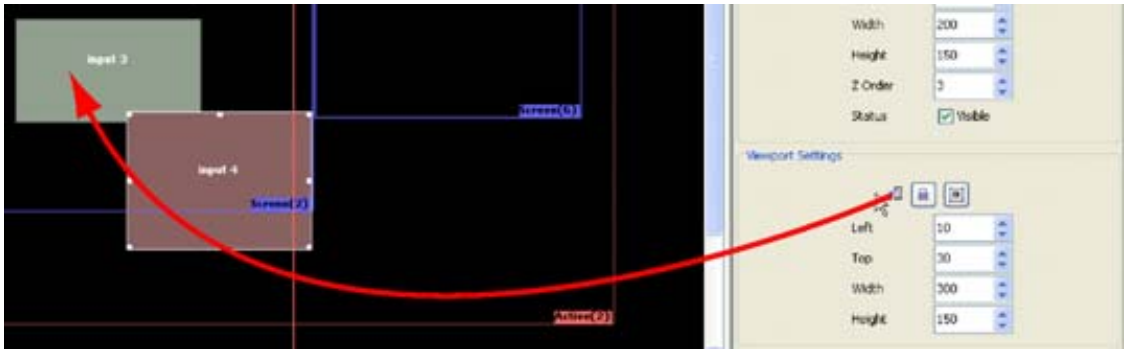


Image 15-43
Apply viewport settings to target source

15.6.5 Detect viewport

Detect viewport is only active with an online configuration.

A default viewport will be detected

When no source is available, a message 'No source available' will be displayed.

About default viewport detection?

The digitizer will scan the actual incoming signals, trying to determine what the real image (viewport) size is.

Image 15-44
Detected viewport

This means that the measurement is accurate and even non VESA-compliant resolutions are supported. But, because the actual data is used for the measurements, black borders (RGB value 0,0,0) around the image will not be scanned.

For instance, when using an UXGA-Source with black borders, the black borders will be excluded from the viewport.

Image 15-45
Detected Viewport for an image with black borders

To detect the complete source, make sure there is a non black border around the image.

How to detect ?

1. Select the window for which you want to detect the viewport.
2. Click on the detect viewport icon (a). (image 15-46)

   A question dialog box will be displayed with detected coordinates and dimensions (b).
3. Click **OK** to accept these values (c).

   The values will be filled out in the viewport settings (d).

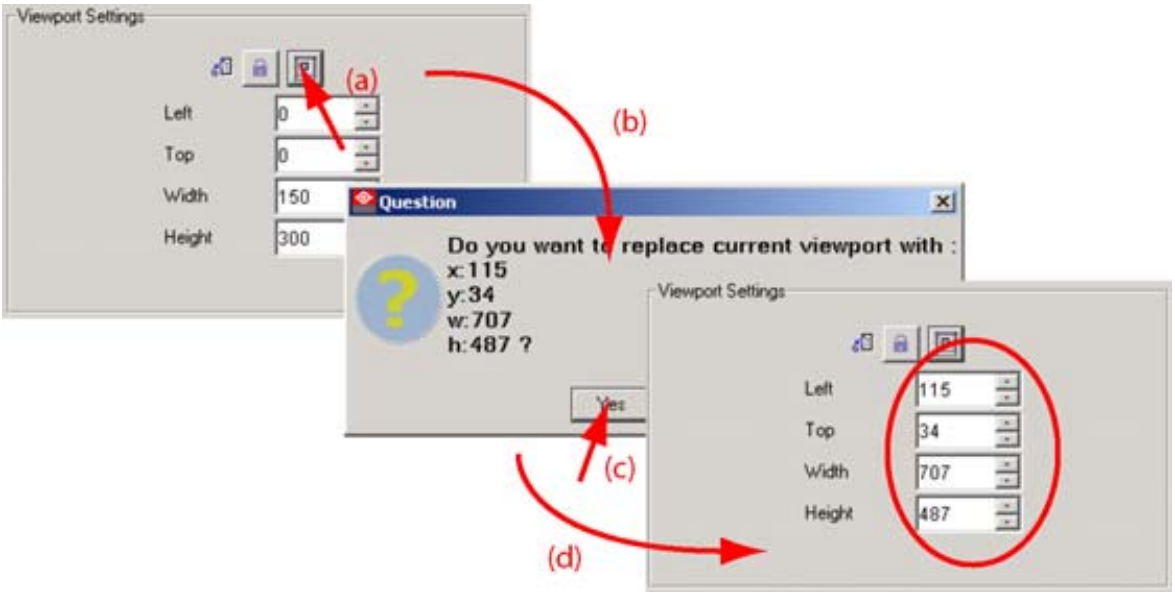


Image 15-46
Detect viewport

15.7 Special settings

No *Special settings* in *Operations* module for DX-700.

These settings are incorporated in the input module settings, tab video effects. For more info, see "Video effects", page 257

Overview

- Introduction
- Alpha Blending
- Color Key

15.7.1 Introduction

Overview

To perform Alpha blending or Color keying between two input windows, the following conditions must be available:

1. Minimum an overlap between 2 input windows.
2. Select input window on which Alpha blending or Color keying must be performed. The latter must have a Z-order number higher than the other window.
3. For color keying, the best is that both images matches each other (see "Copy window settings", page 371).

15.7.2 Alpha Blending

Alpha Blending

Alpha Blending enables the ability to add transparency to any selected source.

Overview

Alpha blending (also called opacity) can be executed on a graduation scale of 0 - 255. With 255 being transparent or invisible and 0 being solid.

Image 15-47

Image 15-48

Image 15-49

The window on which alpha blending will be applied must have a higher Z-order number than the second window.

How to adjust ?

1. Select the input window for which the alpha blending value must be changed.
2. Click on the slider and move the slider left or right till the desired alpha blending is obtained (a).
   Or,
   click in the input field and enter the desired value with the keyboard (b). (image 15-50)

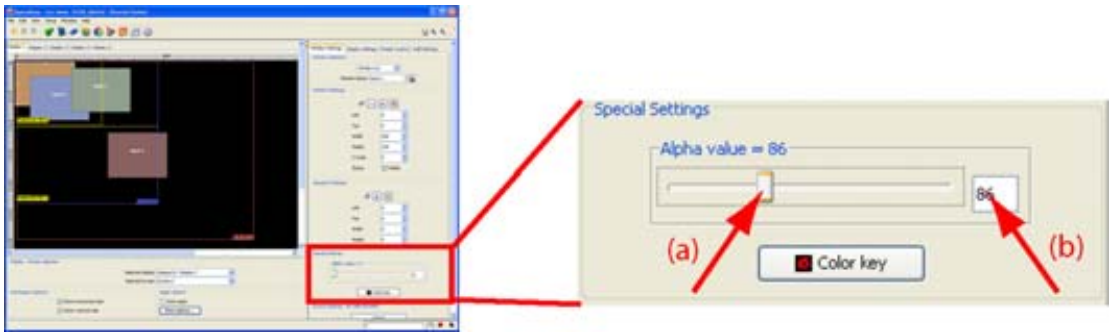


Image 15-50
Alpha blending setup

15.7.3 Color Key

Color key

Sometimes also called chroma key. This is a method of combining two video images. An example of chroma keying in action is the nightly news person standing in front of a weather map. In reality, the person is standing in front of a blue or green background and the camera image is mixed with a computer-generated weather map. This is how it works: a TV camera is pointed at the person and fed along with the image of the weather map into a box. Inside the box, a decision is made. Wherever it sees the blue or green background, it displays the weather map. Otherwise, it shows the person. So, whenever the person moves around, the box figures out where he is, and displays the appropriate image.

Example images of color keying

Take e.g. two image. One taken on a full color background and the other a normal image. The full color background will be replaced by the second image via the principle of color keying.

Image 15-51
Zebra on a single color

Image 15-52
Full color image

Image 15-53
Result image after color keying

The window on which color keying will be applied must have a higher Z-order number than the second window.

Start up

1. Click on the **Color key** button. (image 15-54)

   The color key dialog box will be displayed. (image 15-55)

Image 15-54
Color key startup

Image 15-55
Color key window

Status

Checked	color key is active
Not checked	color key is disabled

Color value

Click on the **Color value** button.

The color value window will be displayed.

3 ways are now possible to select a color:

way 1	Via the swatches color window (swatches = color samples).
way 2	Via the HSB color window (HSB = Hue - Saturation - Brightness).
way 3	Via the RGB color window.

Way 1 : Select the desired color (via swatches).

Image 15-56
Color value via swatches

The first selected color will be indicated in *Recent*. When others are selected for a preview, the color indication will also be added in the *Recent* list as first one. The final selection can then be done out of the *Recent* list or out of the color pallet.

Each time a color is clicked, a preview will be given in the preview pane. Select one of the colors and press **OK** to activate the selected color.

Way 2 : Click on the **HSB** tab to display the color pallet.

Image 15-57
Color value via HSB

A color can be selected in 2 ways:

- Slide the slider next to the color gamut until the desired color in the color pick field is reached, or fill out the HSB value until the desired color is reached in the pick up field.
- Click in the color field to display the white circle. Drag that circle to the desired tint of the chosen color.

A preview will be given in the preview pane. Press **OK** to activate the selected color.

Way 3 : Click on **RGB** tab to display the RGB selection sliders.

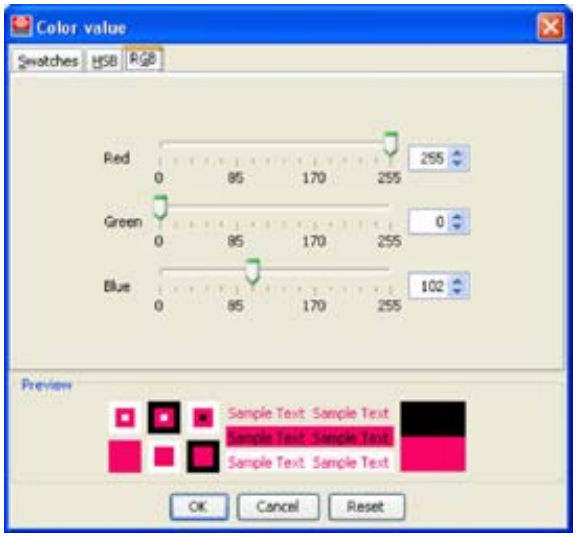


Image 15-58
Color value via RGB

Move the sliders until the desired color is reached. Or fill out the RGB values in the input boxes.

A preview will be given in the preview pane. Press **OK** to activate the selected color.

Range (= tolerance)

Definition of color key range. This range can be used to avoid color keying on one specific color value. In combination with the algorithm the color key values are defined.

Algorithm

Algorithm for the Video insertion. You can insert the video starting from the color value and every value higher than this color starting from the color value and every value lower than this color, inside the range or outside the range.

Possible selections:

higher	colors higher than the range will be inserted
lower	colors lower than the range will be inserted
equal	colors equals the color value will be inserted
inside range	colors inside the range will be inserted
outside range	colors outside the range will be inserted

Color Palette

Keying on Red, Green & Blue together

Keying on only Red or Green or Blue : this can be useful when there is some (white) noise on the image.

15.8 Source settings

How to start ?

1. Select the input window for which the source settings must be displayed.
2. Click on **Adjust** within *Source Settings*. (image 15-59)
   Note: *If no module in defined, a message dialog box to indicate that no module is available will be displayed.*

The *Source settings* menu will be displayed. The displayed dialog box depends on the source type.

For D320 based setups, more information about the available settings, see "Input modules for D320 based digitizer", page 413.

For DX-700 based setups, more information about the available settings, see "Setup Input Sources", page 251.

Image 15-59
Adjust source settings

15.9 Logo

Only available for LED-Pro.

Store logo

The current displayed image can be stored inside the digitizer as logo. This logo can then be used during image transitions and as selectable source.

While the desired image is displayed, press **Store logo** button to save the logo on the LED-Pro. An info message is displayed to announce the storage of the logo image.

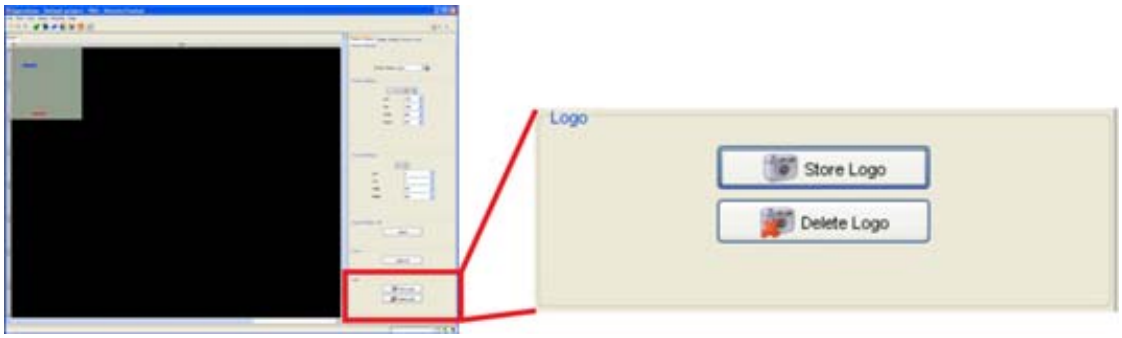


Image 15-60
Store - delete logo

Delete logo

Click on **Delete logo** to erase the logo in the memory of the LED-Pro.

15.10 Display settings

Overview

- Contrast adjustment for OLite
- Contrast adjustment for MiSTRIP and MiTRIX
- Contrast adjustment for ILite and IB-6
- Contrast adjustment for NX-4, T-20, TF-20, DB-x20, DLite, SLite, SP10, MiPIX and MiSPHERE
- Gamma adjustment
- Mode LED wall, internal-external
- Display size

15.10.1 Contrast adjustment for OLite

Boost mode only for OLite-510

General Contrast adjustment

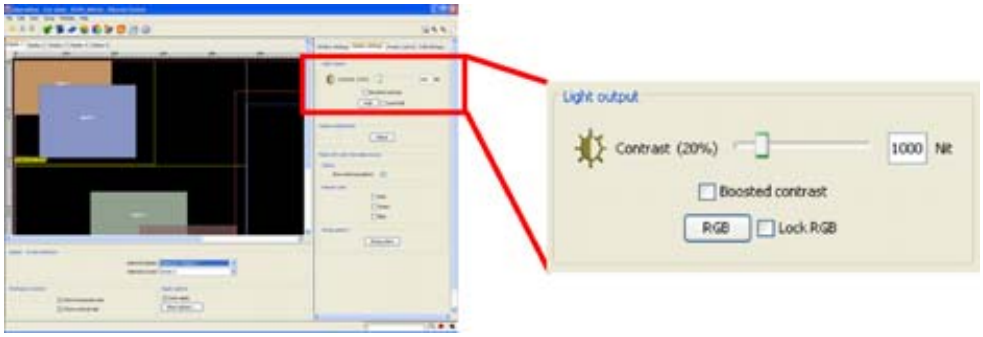


Image 15-61
General contrast adjustment OLite

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

Wall type	Contrast values
OLite-510	0 and 5000 Nit (7000 Nit in boosted mode)
OLite-612	0 and 6000 Nit (no boost mode)

When OLite-510 used in *Tile* mode, contrast boosting is possible. Therefore, check the checkbox in front of *Boosted contrast*.

When in **OLite tile mode**, a message box will be displayed.

Contrast boosting is only allowed for moving video images and the maximum ambient temperature may not exceed 30 °C.

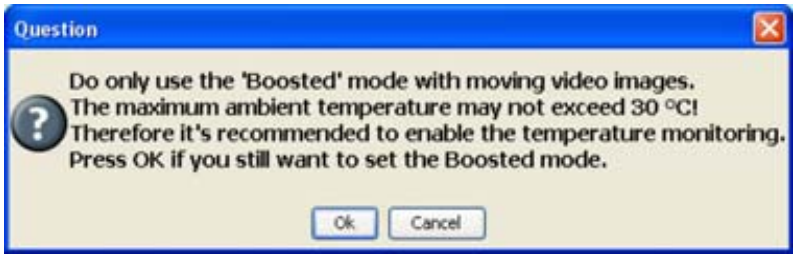


Image 15-62
OLite boosted mode question

When both condition are available, click **OK** to start the boosting.

When in **OLite customized mode**, and contrast boosting is checked, the following error will be displayed : “Boost mode is only allowed in ’Tile’ mode ! At least one controller has been set to ’Customized’ mode.”

Image 15-63
Contrast boosting error

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

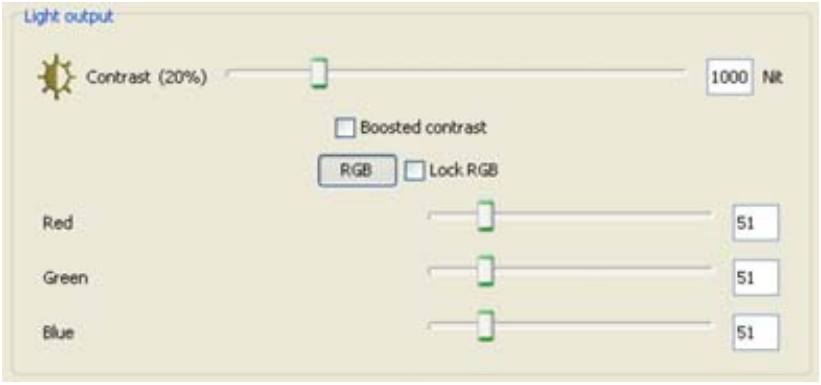


Image 15-64
Contrast adjustment on RGB

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

15.10.2 Contrast adjustment for MiSTRIP and MiTRIX

General Contrast adjustment

1. Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit. (image 15-65)

Wall type	Contrast values
MiSTRIP	0 and 5000 Nit
MiTRIX	0 and 3000 Nit

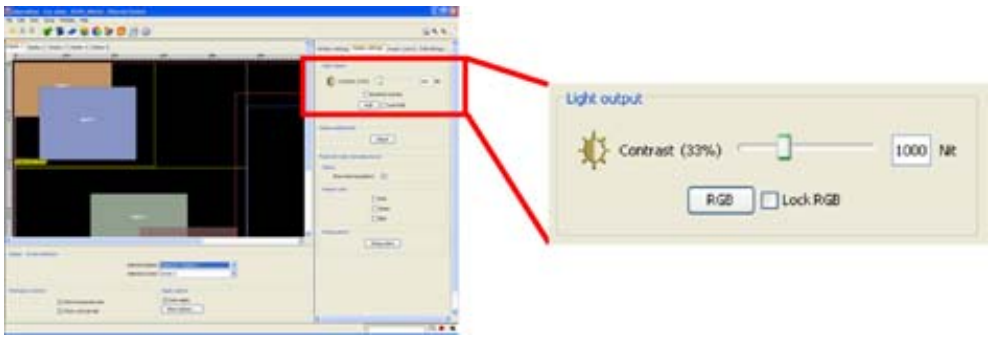


Image 15-65
General contrast adjustment

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

Image 15-66
Contrast adjustment on RGB

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

15.10.3 Contrast adjustment for ILite and IB-6

General Contrast adjustment

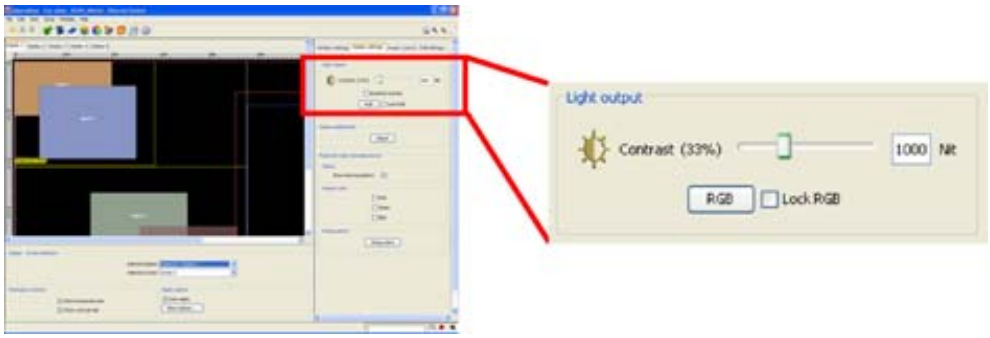


Image 15-67
General contrast adjustment

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

Wall type	Contrast values
ILite	0 and 2000 Nit
ILite MD	0 and 1500 Nit
IB-6	0 and 1500 Nit

Contrast adjustment on RGB

Click on **RGB** to expand the contrast setting. A slider for red, green and blue will be displayed.

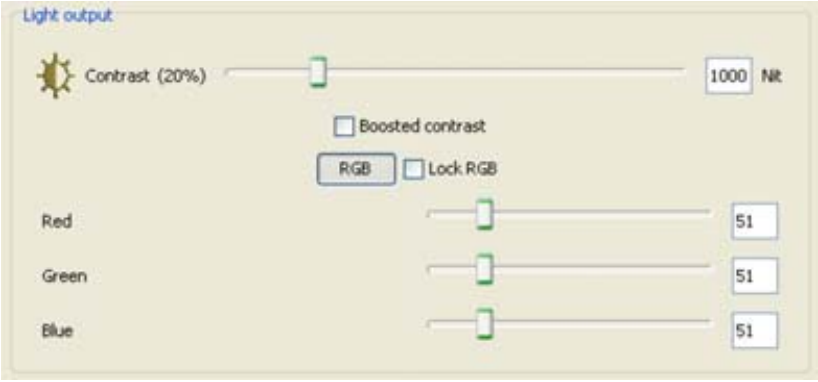


Image 15-68
Contrast on RGB separately

With the *Lock RGB* unchecked, adjust the contrast for the 3 colors separately.

When the *Lock RGB* is checked, the contrast for R, G and B is adjusted at the same time. The relative differences between the colors is respected during the adjustment.

When returning to the general contrast setting and adjusting this setting, this will overwrite the separate color contrast settings when RGB lock is unchecked.

15.10.4 Contrast adjustment for NX-4, T-20, TF-20, DB-x20, DLite, SLite, SP10, MiPIX and MiSPHERE

Contrast adjustment

Move the slider to the left or to the right to change the contrast setting, or click in the input field and enter the value with the keyboard. The value can be changed between 0 and maximum value for the corresponding LED wall. The value is expressed in Nit.

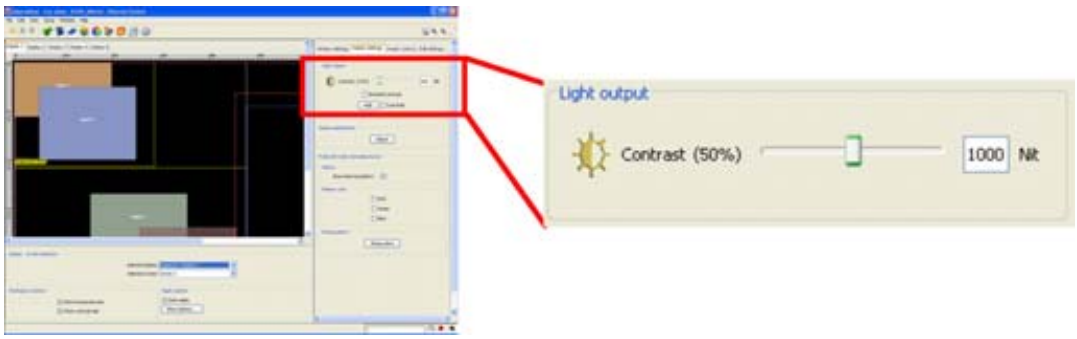


Image 15-69
Contrast adjustment DLite, SLite and MiPIX

Wall type	Contrast values
DLite	0 and 5000 Nit
SLite	0 and 5000 Nit
MiPIX wall	0 and 1300 Nit
MiSPHERE	0 and 300 Nit
SP10	0 and 5000 Nit
NX-4	0 and 2000 Nit
T-20, TF-20, DB-x20	0 and 6500 Nit

15.10.5 Gamma adjustment

How to start up ?

1. Press **Adjust** button. (image 15-70)

   The gamma dialog box will be displayed. The content of this dialog box depends on wall type. For some wall type gamma can be adjusted per color, for others all colors will be adjusted at the same time. (image 15-71)
   Possible actions :

   - adjust the gamma independently in six regions of the characteristic gamma curve.
   - select from one of the ten preset controls.

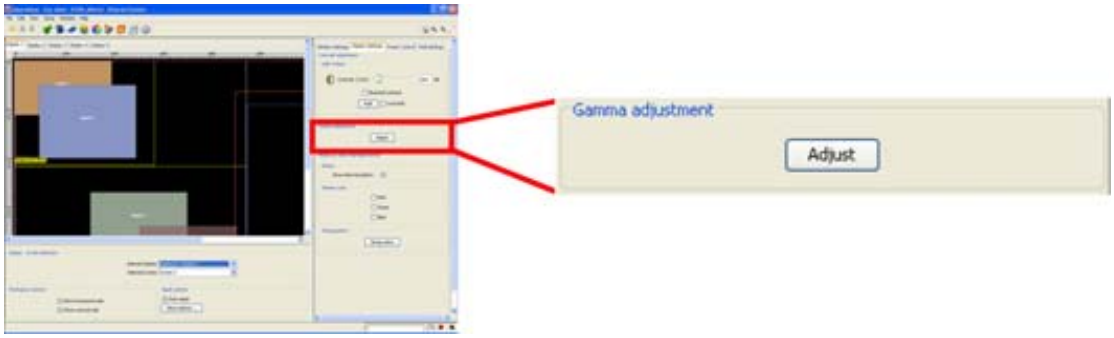


Image 15-70
Gamma adjustment start up

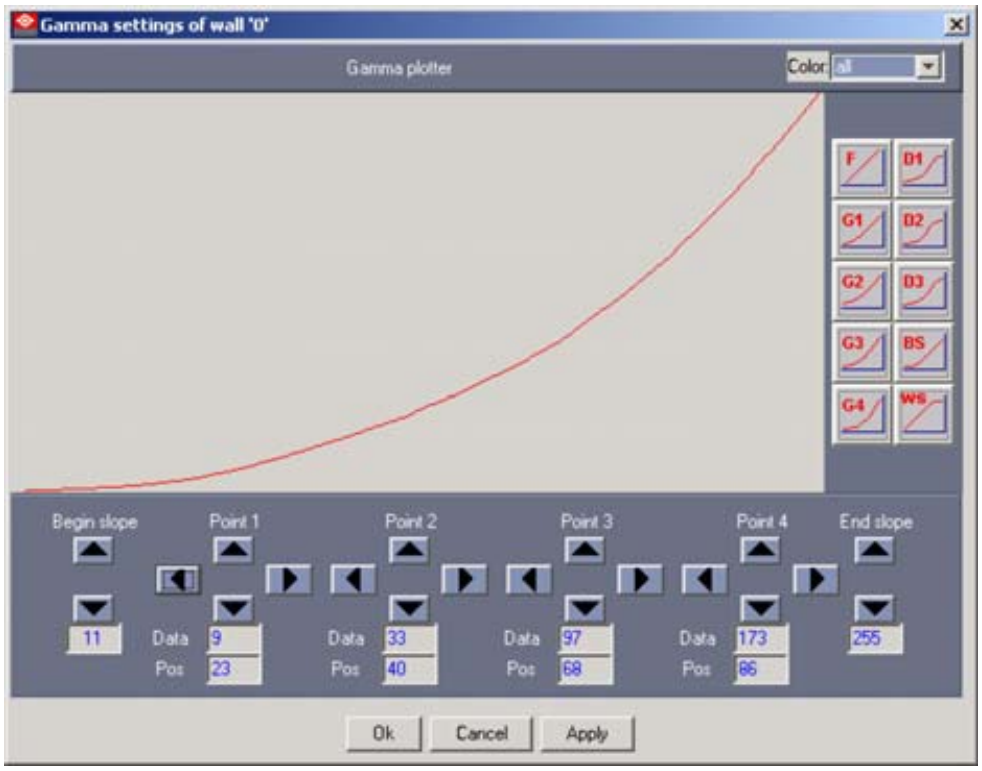


Image 15-71
Gamma dialog box

For the adjustment procedure, see "Gamma adjustment of a display", page 595.

15.10.6 Mode LED wall, internal-external

Show internal pattern

1. Check the check box next to *Show internal pattern*. (image 15-72)

Not Checked	external sources will be displayed
Checked	internal pattern will be displayed

When checked the *Pattern colors* becomes available.

2. Check a pattern color or multiple pattern colors.
   The following are possible:
   - Red
   - Green
   - Blue

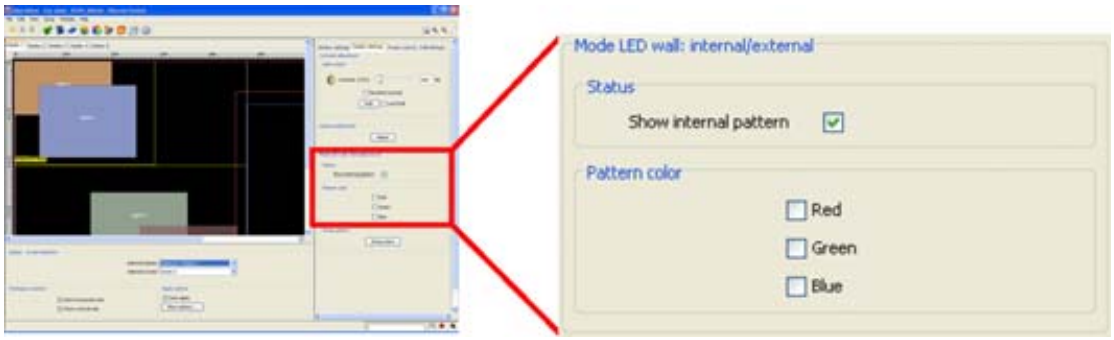


Image 15-72
Mode LED wall

String pattern

For creative tile (modules) only.

Image 15-73

String colors : to see how the MiPIX, OLite customized mode, MiSTRIP or MiTRIX units are connected, starting from the control unit till the end of the string. Each string has it is own color.

String no.	String color
1	will color red
2	will color green
3	will color blue
4	will color yellow
5	will color magenta (for OLite, MiSTRIP)
6	will color cyan (for OLite, MiSTRIP)

String direction : Only for **MiPIX**. The string (wiring direction), started by the control unit, can be visualized. Click on **String direction** to see a running light, running from the control unit to the end of the string, in the direction of the wiring.

15.10.7 Display size

Overview

The size of the complete display is shown as information. This is the real size of the display expressed in pixels.

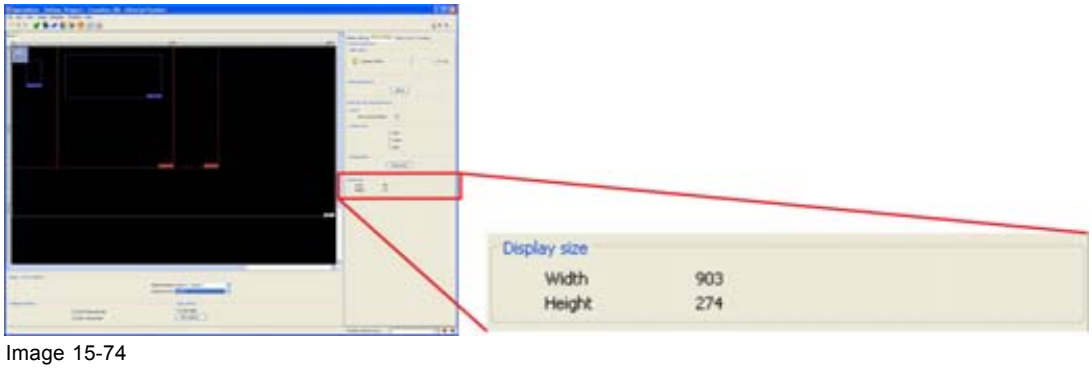


Image 15-74
Display size

15.11 Preset control

Overview

- Introduction
- Access to Preset Control
- Selecting a preset
- Create new preset
- Save setup on existing preset (overwrite preset)
- Copy a preset
- Delete a preset
- Delete all presets
- Assign shortcut to preset
- Remove shortcut(s) from preset(s)
- Apply a preset

15.11.1 Introduction

Overview

A typical setup (snap shot at that moment), such as window positioning, viewport, gamma, etc., can be stored in a preset for later use. To each preset it is possible to associate a shortcut which can be used through out Director Toolset.

When running the *Operations* module on a given setup for the first time, no presets are available.

Presets created via the *Project explorer* tree are also visible in the *Operation* module, *Presets overview* list, and can be overwritten via this way.

Presets created via the Basic module are also visible in the Operation module. These presets can be overwritten or edited.

15.11.2 Access to Preset Control

How to get access ?

1. Click on the tab **Preset Control**. (image 15-75)

   The preset control settings opens.

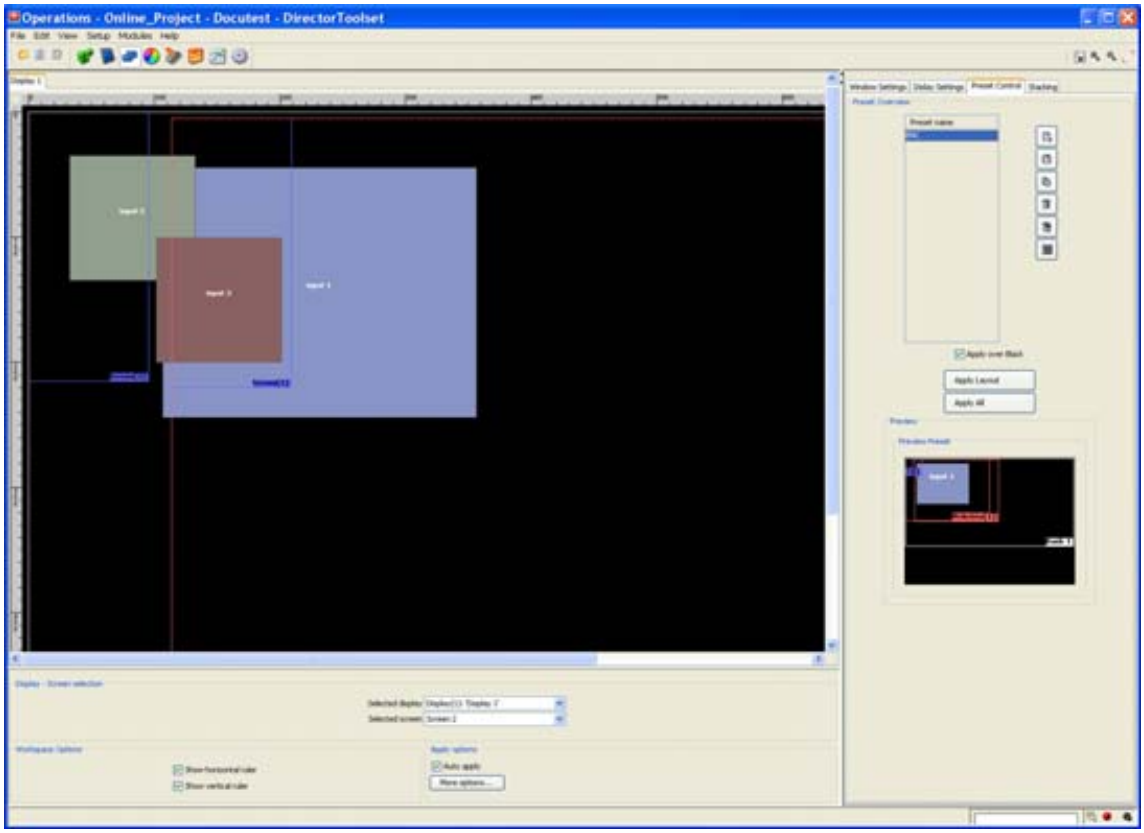


Image 15-75
Access to Preset controls

15.11.3 Selecting a preset

How to select

With a single click of the mouse on a preset name, the background of the selected layout preset becomes dark blue. A preview of the layout preset will be given in the preview pane.

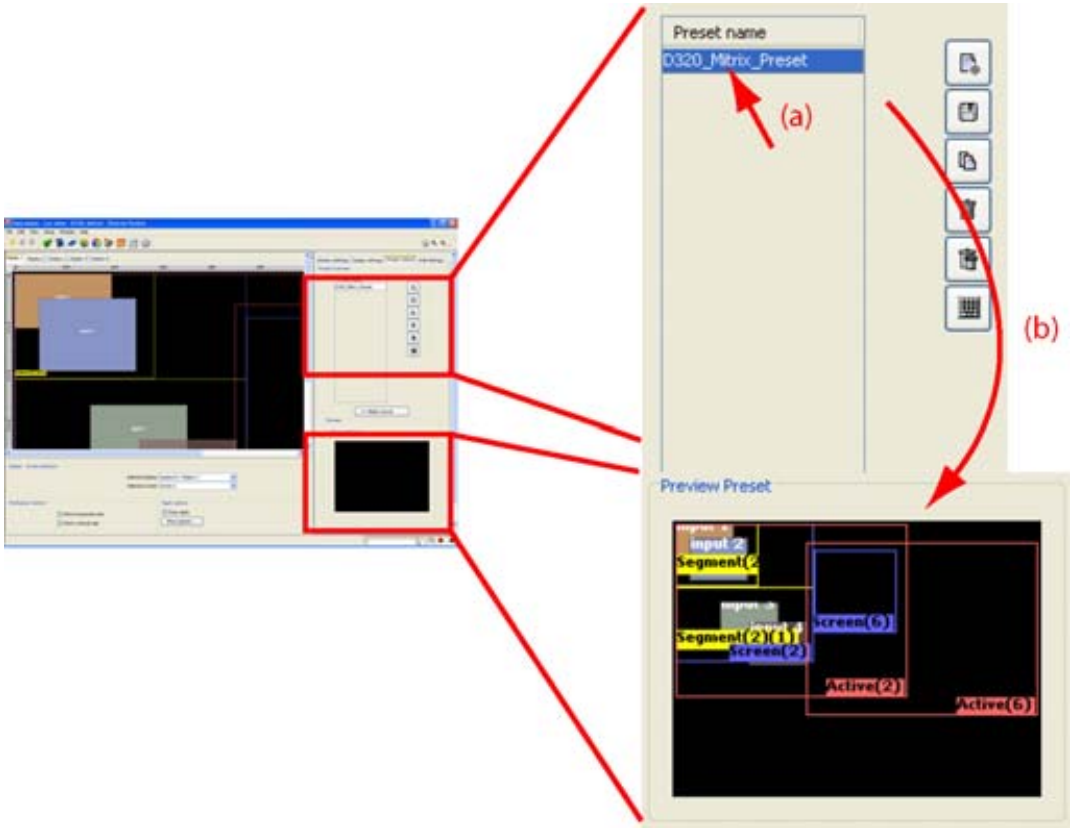


Image 15-76
Selecting a layout preset

With a double click of the mouse on the preset name, the preset is selected and the settings will be applied on the wall.

Preview pane

When a preset is selected, the preset preview is displayed in a preview pane.

15.11.4 Create new preset

How to create ?

1. Click on the **Create new preset** icon (a). (image 15-77)

   The *Edit preset info* dialog box appears (b).

2. Enter a new name for the new preset (c).

   A default name will be filled out (e.g. Preset 1).

3. Click in the *preset name* input field and fill out a name for the preset.

4. If desired, click in the *Author* field and enter the name of the author (d).

   This field will be shown in the preset preview.

5. If desired, click in the *Description* field and enter a description for the new preset (e).

   This field will be shown in the preset preview.

6. Click on **OK** (f).

   The new preset will be created and added to the list of available presets (g).

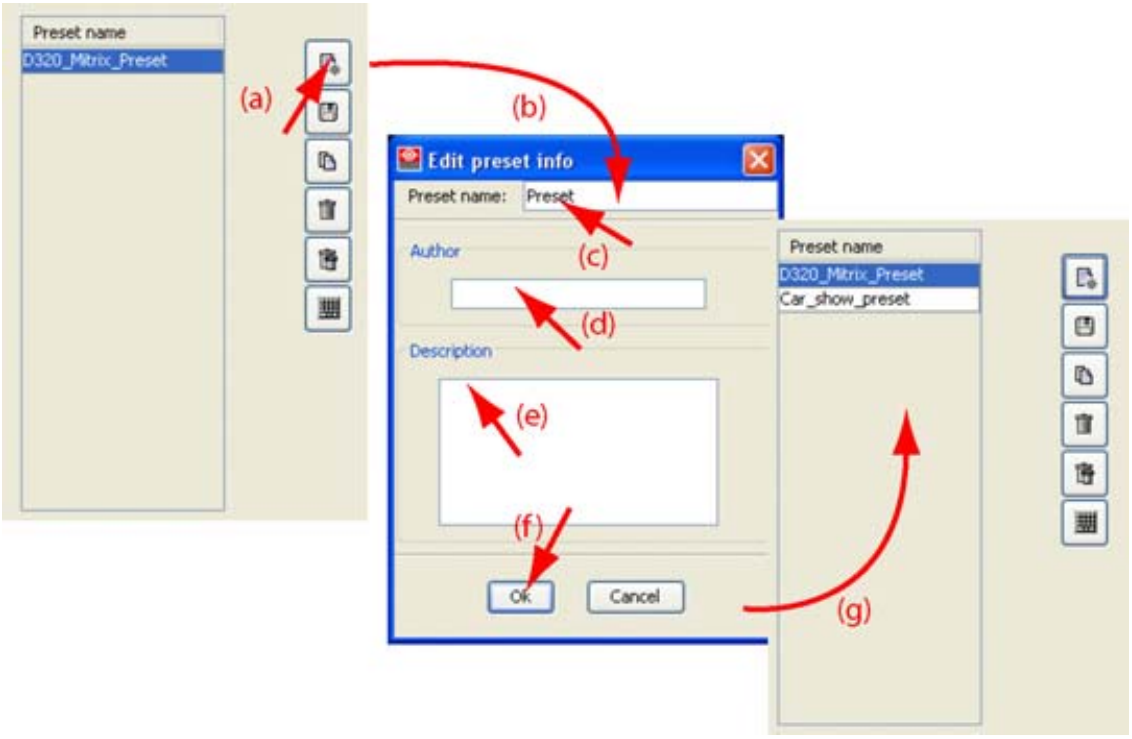


Image 15-77
Create new preset

15.11.5 Save setup on existing preset (overwrite preset)

What is possible

A typical setup at that moment can be stored on an existing preset. This preset can later on be used to recall the setup settings.

How to save ?

1. Adapt the setup as desired.
2. Select a preset out of the list (a). (image 15-78)

   A preview of the stored setup will be shown in the preview pane.
3. Click on the save icon (b).

   A confirmation question will be displayed (c).
4. Click **Yes** to overwrite (d).

   The actual setup will overwrite the stored setup.

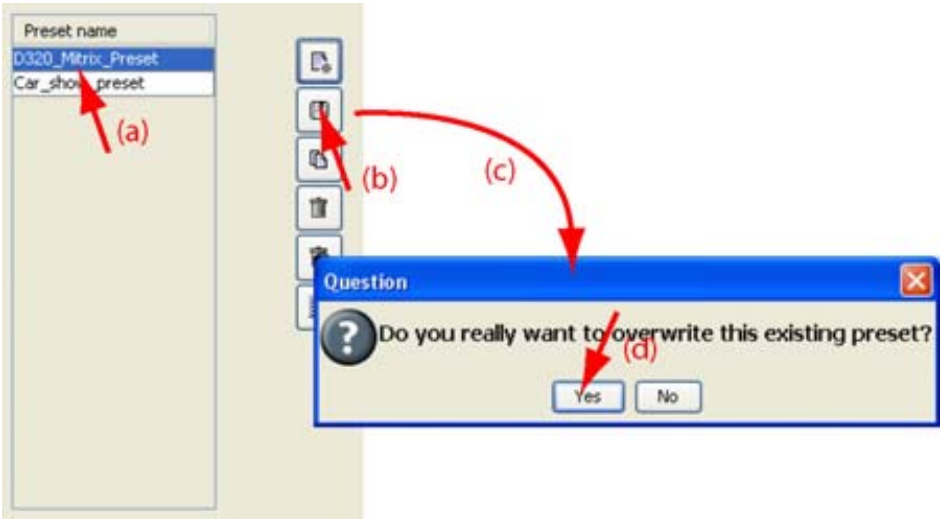


Image 15-78
Save configuration on existing preset

15.11.6 Copy a preset

How to copy ?

1. Select a preset out of the list (a). (image 15-79)
2. Click on the **Copy** icon (b).

   The Edit preset info dialog box opens (c). The selected preset name, followed by copy is already filled out.
3. Click in the name input field and enter the desired name (d).
4. Click in the author field and fill out the new author name if desired (e).

   The name will be displayed in the preview pane.
5. Click in the description field and fill out a description if desired (f).

   The description will be displayed in the preview pane.
6. Click on **OK** (g).

   The preset will be copied and added to the list (h).

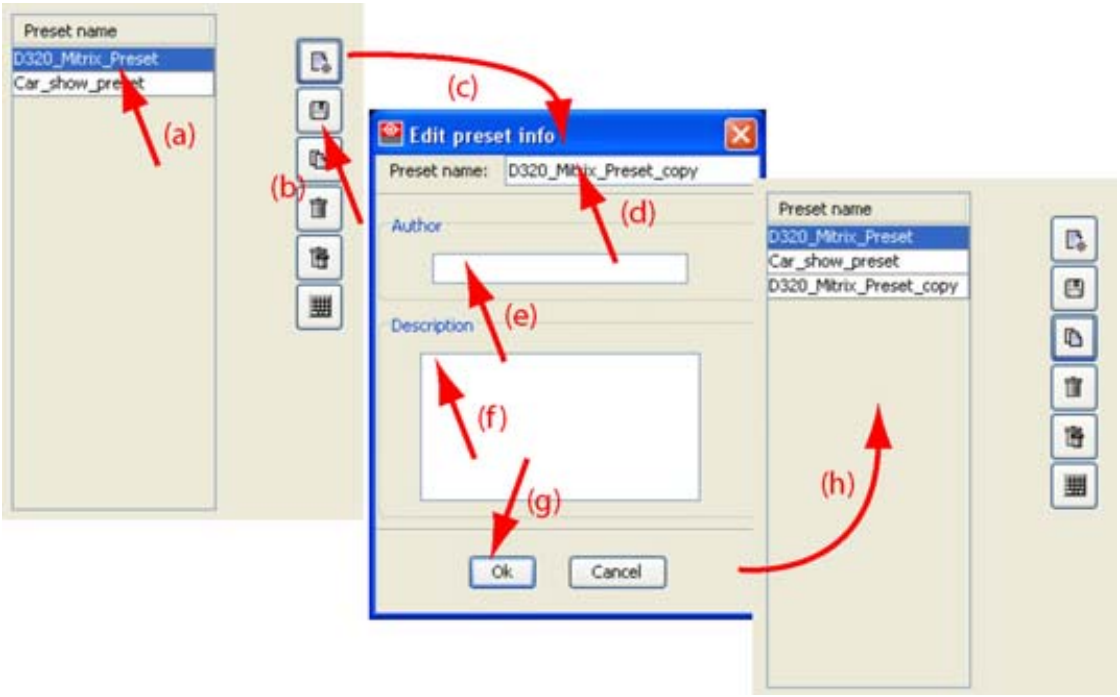


Image 15-79
Copy preset

15.11.7 Delete a preset

How to delete ?

1. Select the preset which must be deleted (a). (image 15-80)
2. Click on the **Delete** icon (b).

   The selected preset will be deleted.

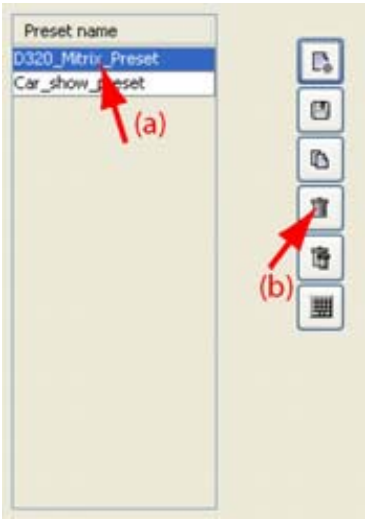


Image 15-80
Delete preset

15.11.8 Delete all presets

How to delete all ?

1. Click on the **delete all** icon to delete all presets. (image 15-81)

Image 15-81
Delete all presets

15.11.9 Assign shortcut to preset

What can be done ?

A keyboard shortcut can be assigned to each preset or preset group. This shortcut can then be used in any module of the Director Toolset to switch from layout.

How to assign ?

1. Click on the **Keyboard assignment** icon (a). (image 15-82)

   The *Shortcut keys for presets* dialog box opens (b). The preset names for the active setup are listed with the already assigned shortcut.

2. To show all presets used in the project, check the check box next to *Show all presets*. (image 15-83)
3. Click on a preset name.

   The background becomes blue.

4. Push the key on the keyboard which you want to assign to the preset.

   The keystroke will be entered next to the name of the preset .

   If the keystroke is already in use for other purposes, the key binding field will display a warning message, *key already in use, please choose another*.

5. Repeat from step 3 if other presets must have a shortcut.
6. Click on **OK** to activate the shortcuts.

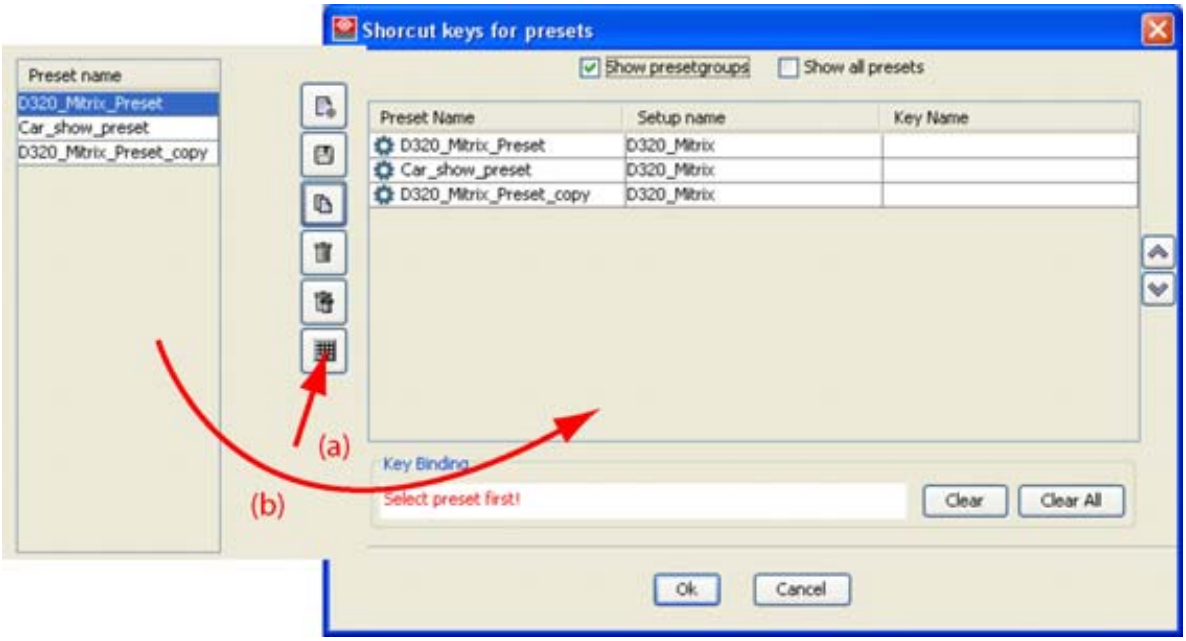


Image 15-82
Assign shortcut to preset

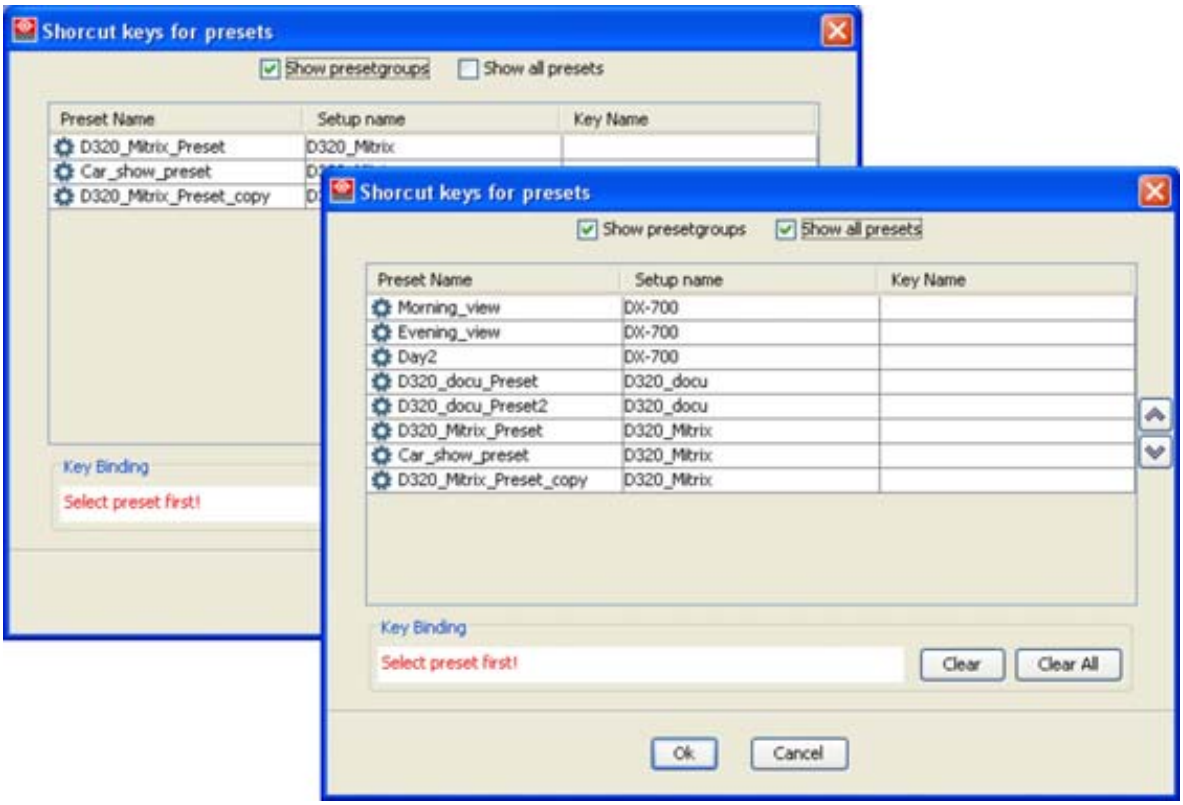


Image 15-83
Show all short cuts

15.11.10 Remove shortcut(s) from preset(s)

How to remove one shortcut ?

1. Click on the **Keyboard assignment** icon (a). (image 15-84)

   The *Shortcut keys for presets* dialog box opens (b).

2. Click on the preset for which the shortcut must be remove.
3. Click on **Clear**.

   The shortcut will be removed.
4. Click **OK** to save the new situation.

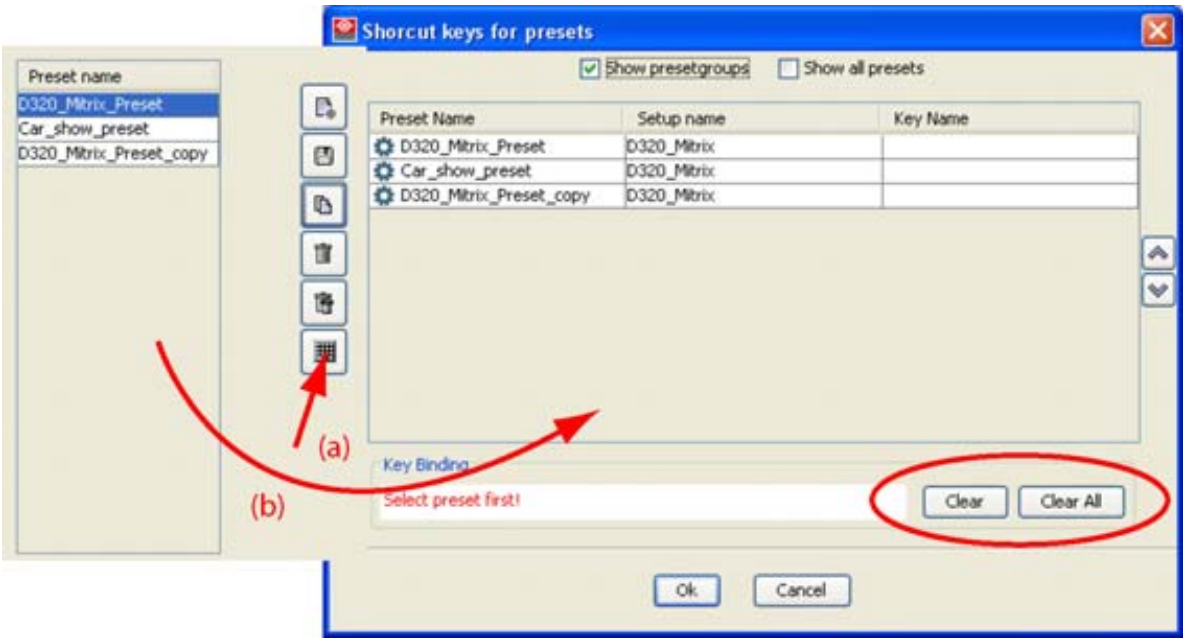


Image 15-84
Clear shortcut from preset

How to remove all shortcut ?

1. Click on the **Keyboard assignment** icon (a) (image 15-84).

   The *Shortcut keys for presets* dialog box opens (b).
2. Click on **Clear All**.

   The shortcuts will be removed.
3. Click **OK** to save the new situation.

15.11.11 Apply a preset

Apply over black

When applying a preset, it is possible first to remove the current image so that black is displayed and then to apply the new preset. This way of working is called *Apply over black*.

To apply over back, check the check box in front of *Apply over black* (b).

Apply layout

To apply only the layout of a preset, select the desired preset out of the list of presets (a) and click on **Apply Layout** (c).

The layout settings of the selected preset will be applied to all displays in the setup.

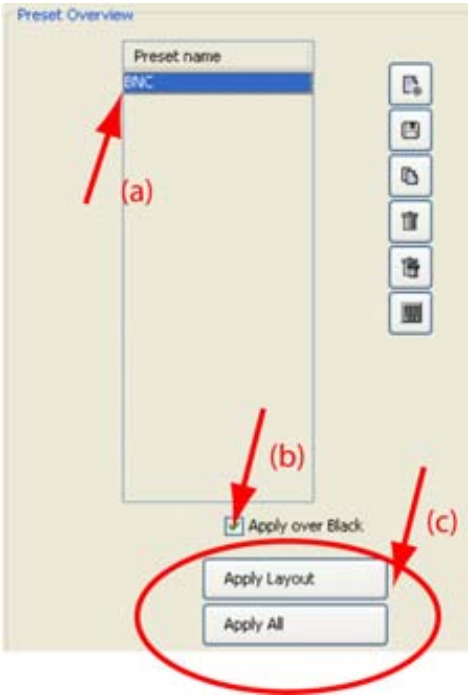


Image 15-85
Apply layout

Apply all

To apply all settings of a preset, select the desired preset out of the list of presets and click on **Apply All**.

All settings of the selected preset will be applied to all displays in the setup according the Apply levels..

When a preset is applied directly on the DX-700, then all information will be synchronized with Director Toolset independent the apply level settings.

15.12 Stacking

Stacking should be used to create a stacked or grouped setup.

Overview

- Start up
- Handling a stacked setup
- Screen settings, introduction
- Screen settings, move screen with coordinates
- Screen settings, move screen by drag and drop
- Lock a screen
- Align screens with the content menu
- Display settings, add display
- Display settings, remove display
- Display settings, add screen

- Automatic bank alignment
- Bank settings, move bank
- Apply all

15.12.1 Start up

How to start ?

1. Click on the **Stacking** tab. (image 15-86)

   The stacking settings open with 3 sections, screen settings, display settings and bank settings.

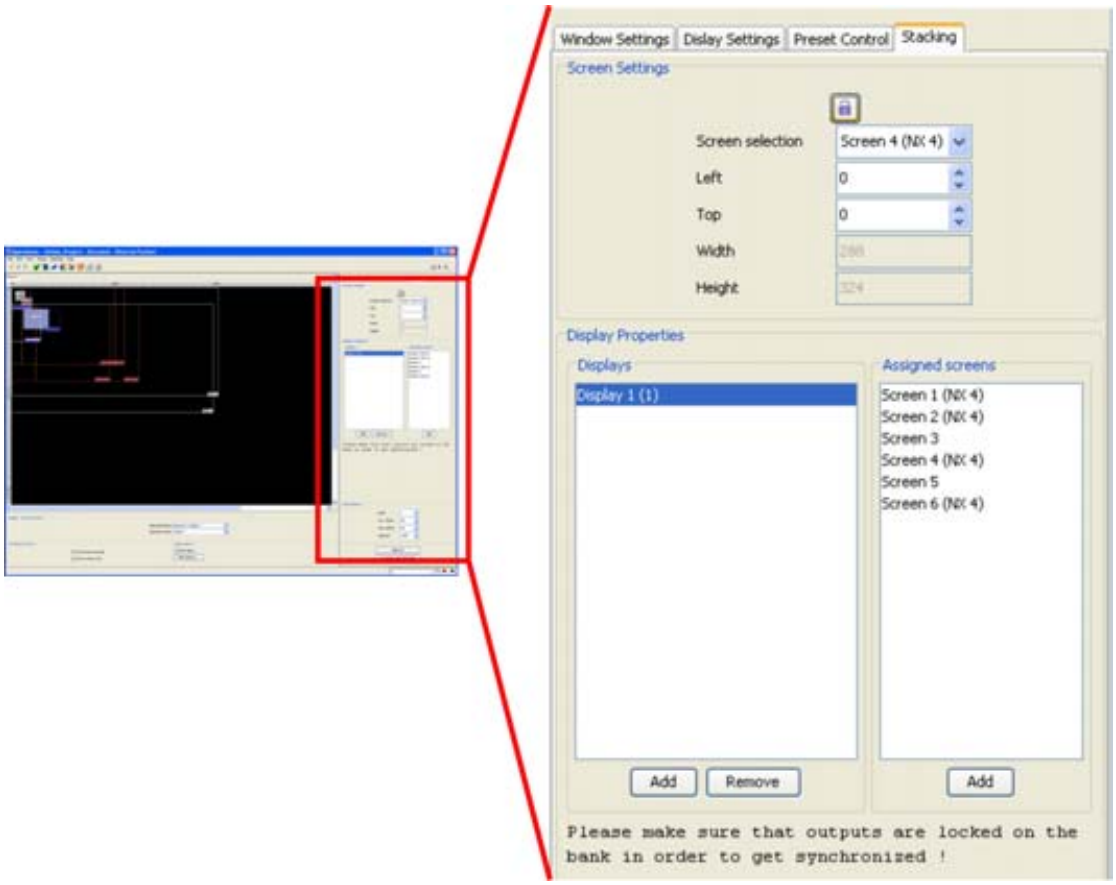


Image 15-86
Stacking settings

15.12.2 Handling a stacked setup

What should be done ?

When a multi bank setup is autodetected, all the bank sizes are located on each other. That makes it very difficult to position the different screens. Therefore, follow the steps below to create a full display in an easy way..

Execute the following steps

1. Autodetect the setup and execute the tile positioning for each screen.
2. As all bank size are on each other, execute an automatic bank align first. An offset will be introduced to align all bank sizes next to each other or above each other.
3. Within a bank, align the different screens as desired (next to each other or above each other). Use the content menu to align the screens. For more information, see "Align screens with the content menu", page 406.

4. Once all screens are aligned within a bank, align the screens from one bank with the screens of the next bank. Right click on the first screen in the bank and select the first screen of the previous bank. Use therefore the same content menu. The screen, the active area and the bank moves to the selected location.

15.12.3 Screen settings, introduction

Overview

With the screen settings, a screen within a display can be moved to any coordinate. This is handy to move two screens next to each other so that a stacked or grouped wall is created.

With the display settings, new displays can be created. Screens can be linked to other displays even when the screens are build up with different tile types.

A display can only be removed when no screens are assigned to that display.

15.12.4 Screen settings, move screen with coordinates

About screen settings in a stacked setup

The screen settings indicate the position of a screen with a bank. When moving the bank, the screen moves in the same direction.

How to move a screen

1. When multiple displays are available, select first the desired display with the Display tabs (a1) or with the Display selection pane (a2) or display settings (a3). (image 15-87)
2. When multiple screen are available in that display, select the screen to move. (image 15-88)
3. Click on the up down control of the spin box next to *Left* and *Top* until de desired start value for the screen is reached.

   The selected screen will move in the preview window to the new coordinates.

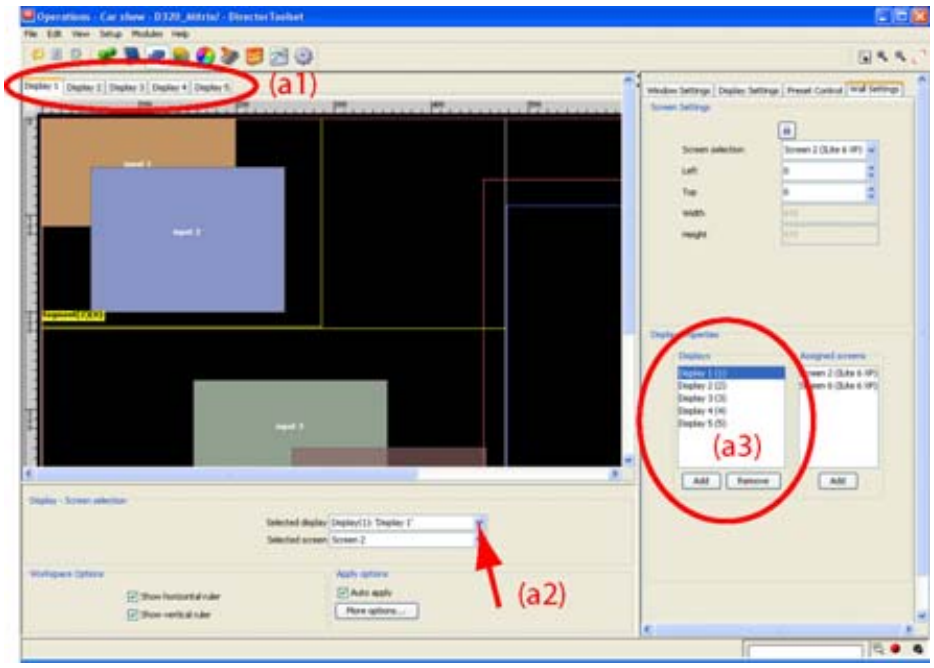


Image 15-87
Display selection

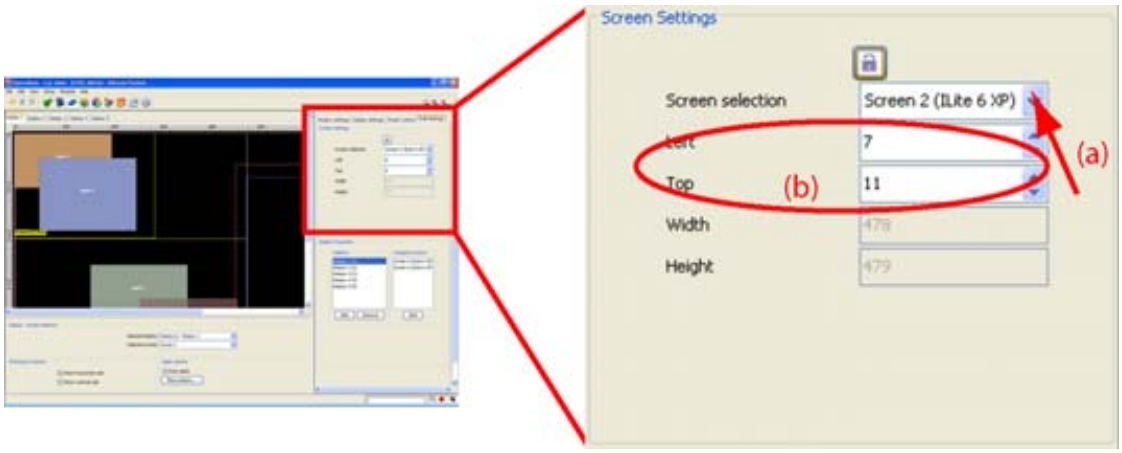


Image 15-88
Move screen with coordinates

The width and height of the screen are given as information.

15.12.5 Screen settings, move screen by drag and drop

How to move ?

1. When multiple displays are available, select first the desired display with the Display tabs (a1) or with the Display selection pane (a2) or display settings (a3). (image 15-89)
2. Click on a screen in the preview pane to select. (image 15-90)
3. Hold down the mouse button and drag the selected screen to the desired location.

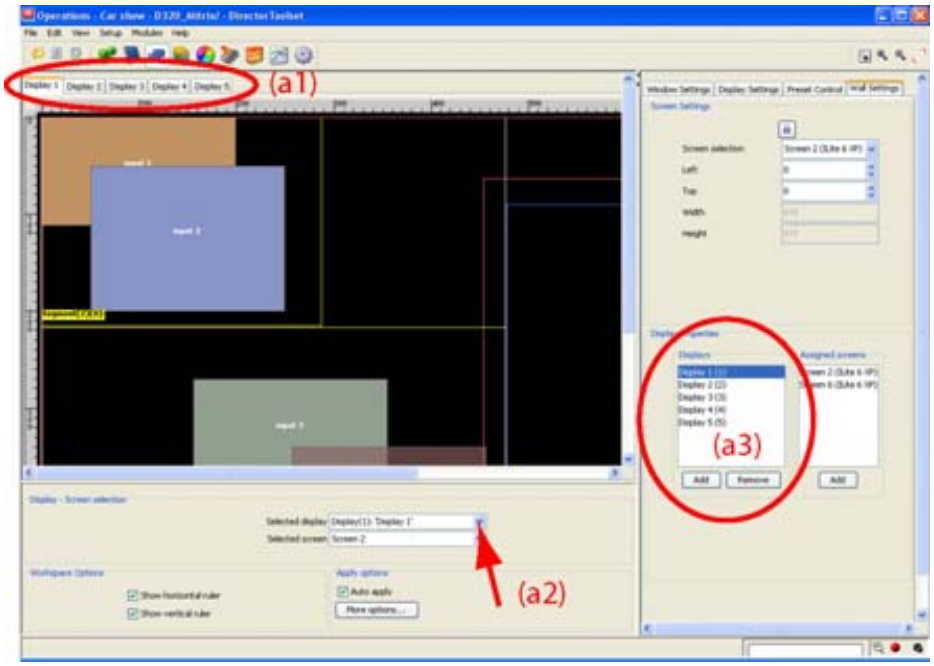


Image 15-89
Display selection

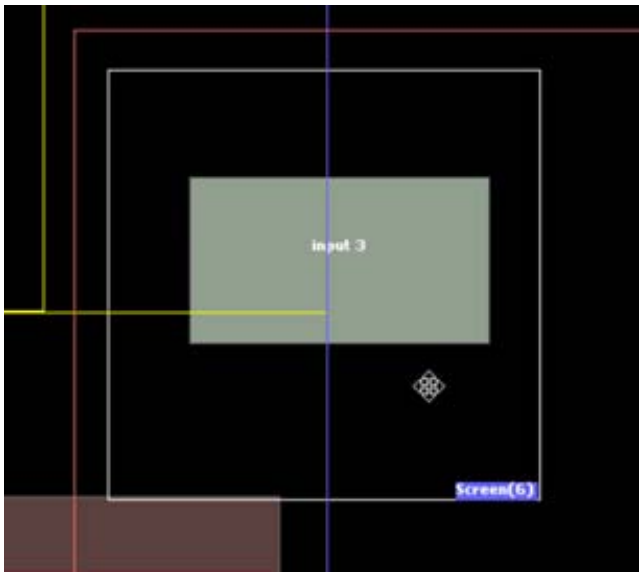


Image 15-90
Move screen via drag and drop

The relative position of the screen in the active field remains the same.

15.12.6 Lock a screen

What can be done?

The current position of a screen can be locked so that a move per accident is not possible.

How to lock a screen

1. When multiple displays are available, select first the desired display with the Display tabs (a1) or with the Display selection pane (a2) or display settings (a3). (image 15-89).
2. Select the screen to lock (b). (image 15-91)
3. Click on the padlock icon (c).

   The current location of the selected screen is locked. When moving the mouse pointer over that screen, a padlock icon will be shown.

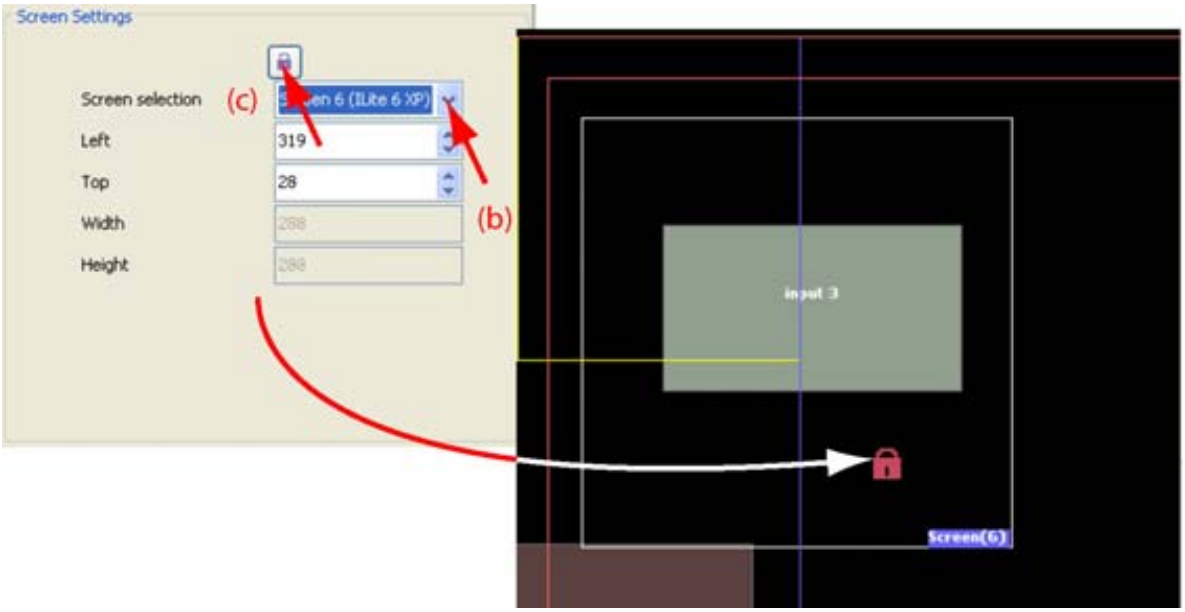


Image 15-91
Lock screen

15.12.7 Align screens with the content menu

What can be done ?

Two screens in the same display can be aligned exactly next to each other or on each other.

How to align screens

Right click on a screen in the preview pane but only in the areas with no overlap, otherwise it is possible that always the same screen is selected.

Image 15-92
Align 2 walls

Move the cursor to the right and select the screen to align with.

Possible alignments :

Command	Explanation	Image reference
Align with right top of	The left top corner of the initially selected screen will be aligned with the right top corner of the secondly selected screen.	(1)
Align with right bottom of	The left bottom corner of the initially selected screen will be aligned with the right top corner of the secondly selected screen.	(2)
Align with bottom left of	The left top corner of the initially selected screen will be aligned with the bottom left corner of the secondly selected screen.	(3)

Command	Explanation	Image reference
Align with bottom right of	The top right corner of the initially selected screen will be aligned with the bottom right corner of the secondly selected screen.	(4)
Use same position as	The start position of both wall will set together (top left corners).	(5)

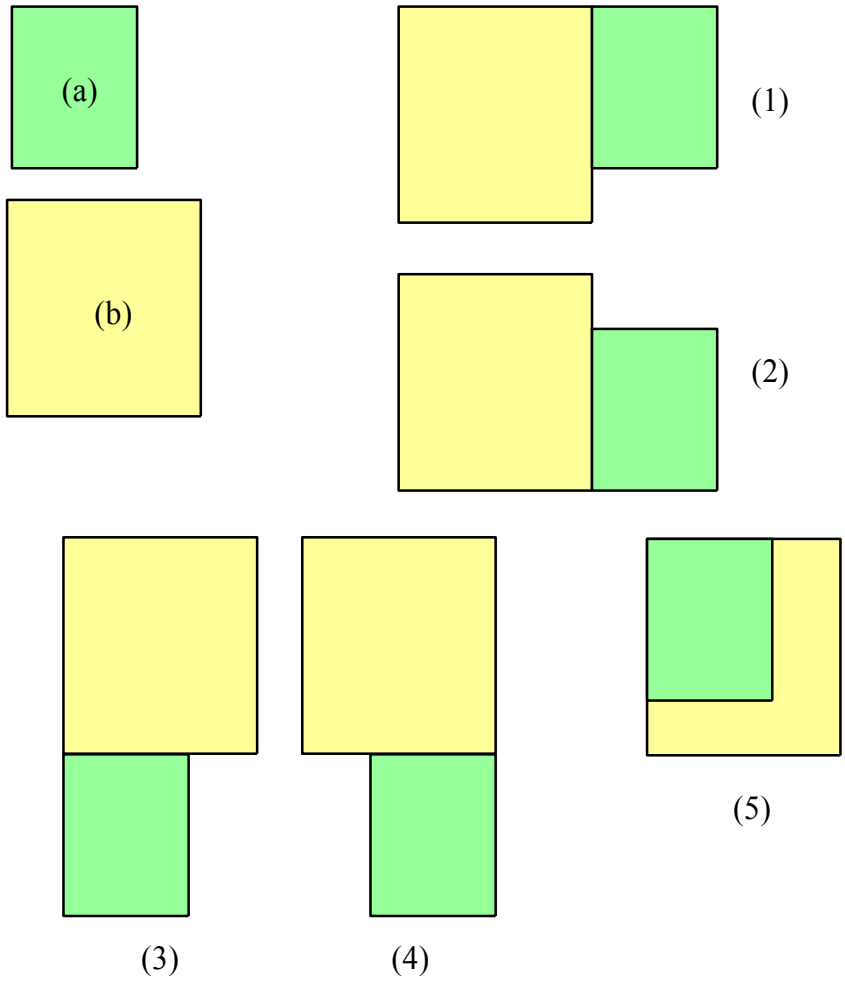


Image 15-93
Alignment examples

(a) Original selected screen
(b) Secondly selected screen

15.12.8 Display settings, add display

How to add

1. Click on **Add** (a). (image 15-94)

   The *Create new display* window opens. By default, the next free id is filled out (b).

2. If another id number is necessary, click on the drop down box next to *display id* and select another free id number (c).

3. Click **OK** (d).

   The new created display is added to the list (e) with no screens assigned.

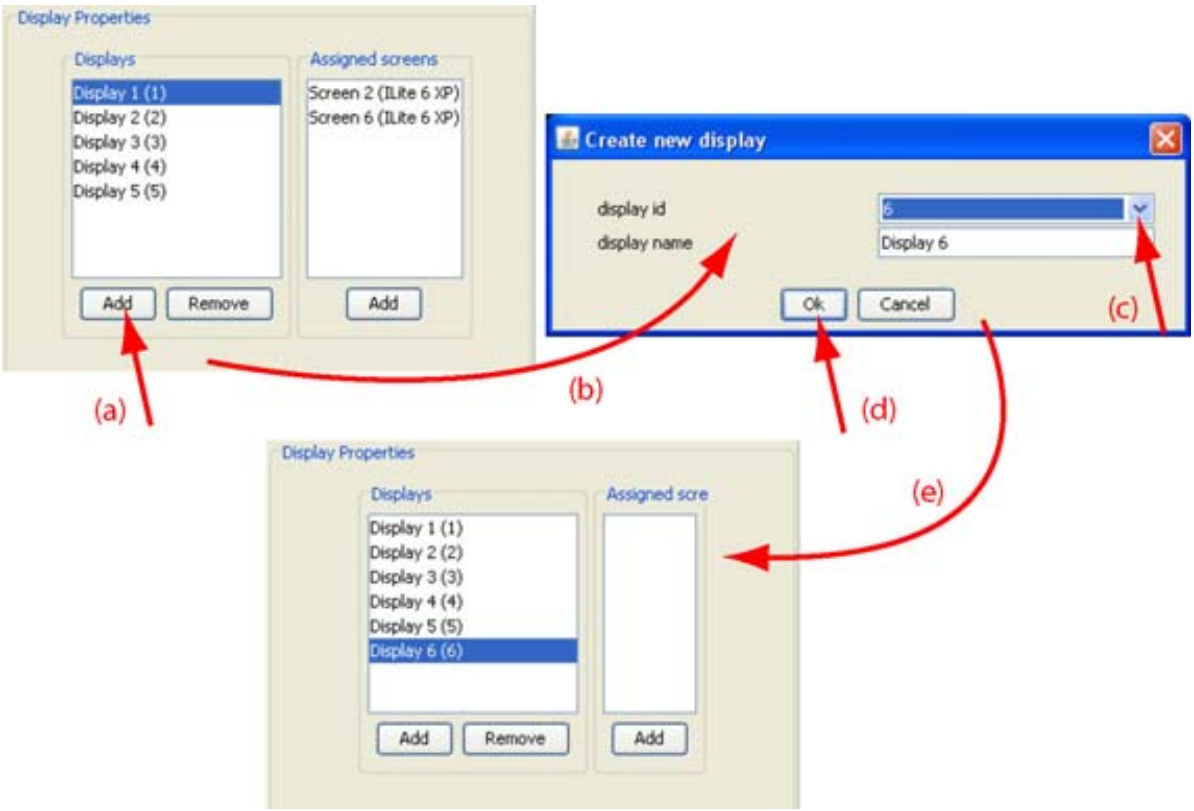


Image 15-94
Add display

Some remarks for DX-700

Splitting a display in 2 displays is not allowed in a stacked configuration when the new display starts with a new digitizer. You have to create two different setups.

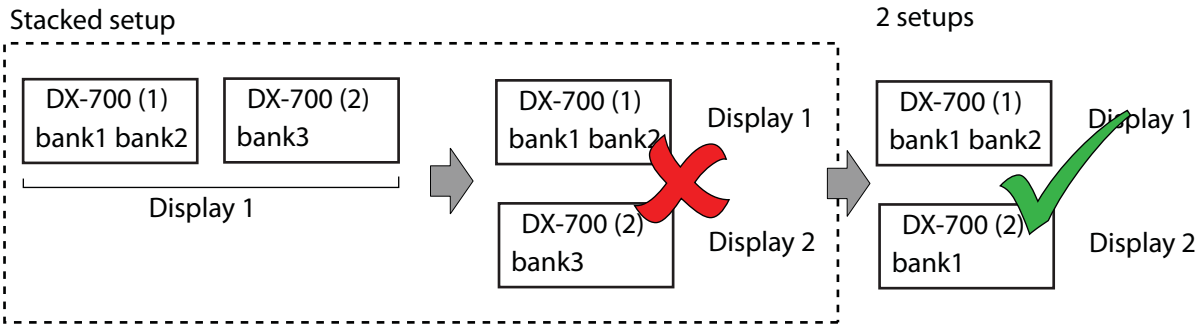


Image 15-95
Split of display with a DX-700

If there is already one bank of the last digitizer used in the stack, then a second display can be created with the left banks in the last digitizer.

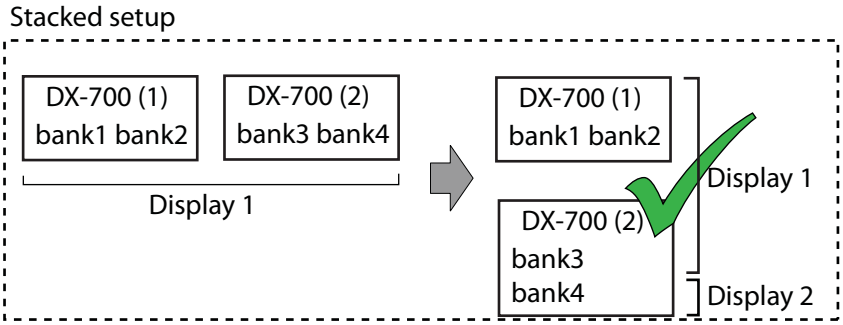


Image 15-96
Allowed split within stacked digitizers

15.12.9 Display settings, remove display

A display that contains screens cannot be removed.

How to remove

1. Click on the display to remove. (image 15-97)

   The display will only be removed when no screens are assigned to that display. If there are still screens assigned to that display, a warning will be display first.

   If you still want to remove that display, assign first the screens to another display.

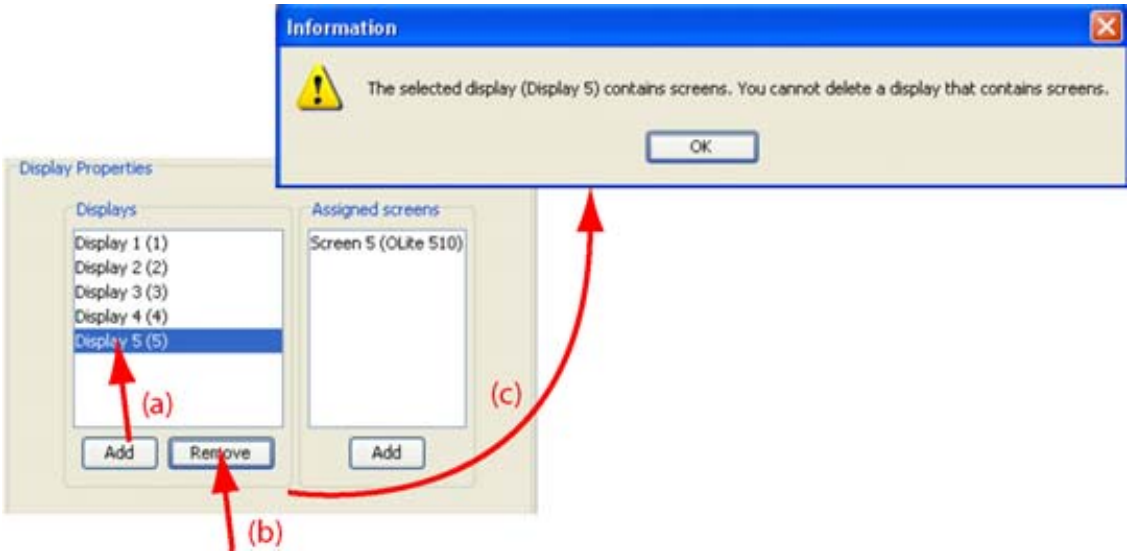


Image 15-97
Remove display

15.12.10 Display settings, add screen

What can be done ?

The association between a screen and a display can be made. A screen is added to the display. When there were previous association, these will be broken.

How to add

1. Select the display to add a screen (1). (image 15-98)

   The *Assigned screens* column shows the currently assigned screens.

2. Click **Add** just below the screens column (2).

   The assign screens dialog box opens (3).

3. Click on the drop down button of the combo box and select the desired screen (4).

   All screens in the setup not yet associated with the display are shown in the list.

4. Click **OK** to assign the selected screen to the display (5).

   When the screen was previously assigned to another display, this association will be broken.

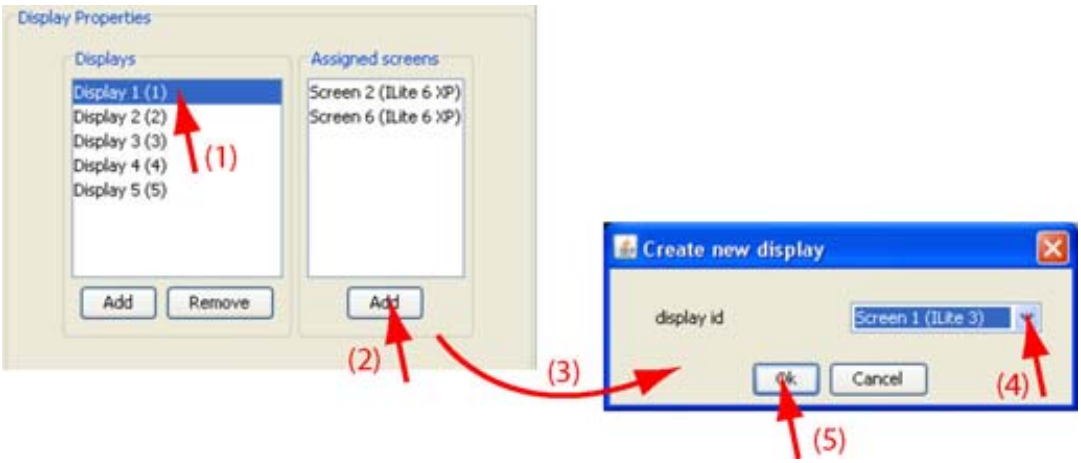


Image 15-98
Assign screen to display

15.12.11 Automatic bank alignment

Only available for DX-700 based setups.

What can be done ?

During the creation or an autodetection of a setup all bank canvas sizes are positioned in the upper left corner. To make an easy overview the canvas sizes can be position next to each other of below each other by a simple click on a button. An offset is automatically introduced. The corresponding screens are also moving in the same direction with the same offset.

How to align the banks

1. When multiple banks are available, click on Automatic bank alignment. (image 15-99)

   The *Automatic bank alignment* window opens.

2. Select the way to align the banks by clicking on the corresponding radio button.
   The following ways are possible:
   - Align banks horizontally
   - Align banks vertically

3. Click **Align**.

   All banks are aligned in the chosen way.

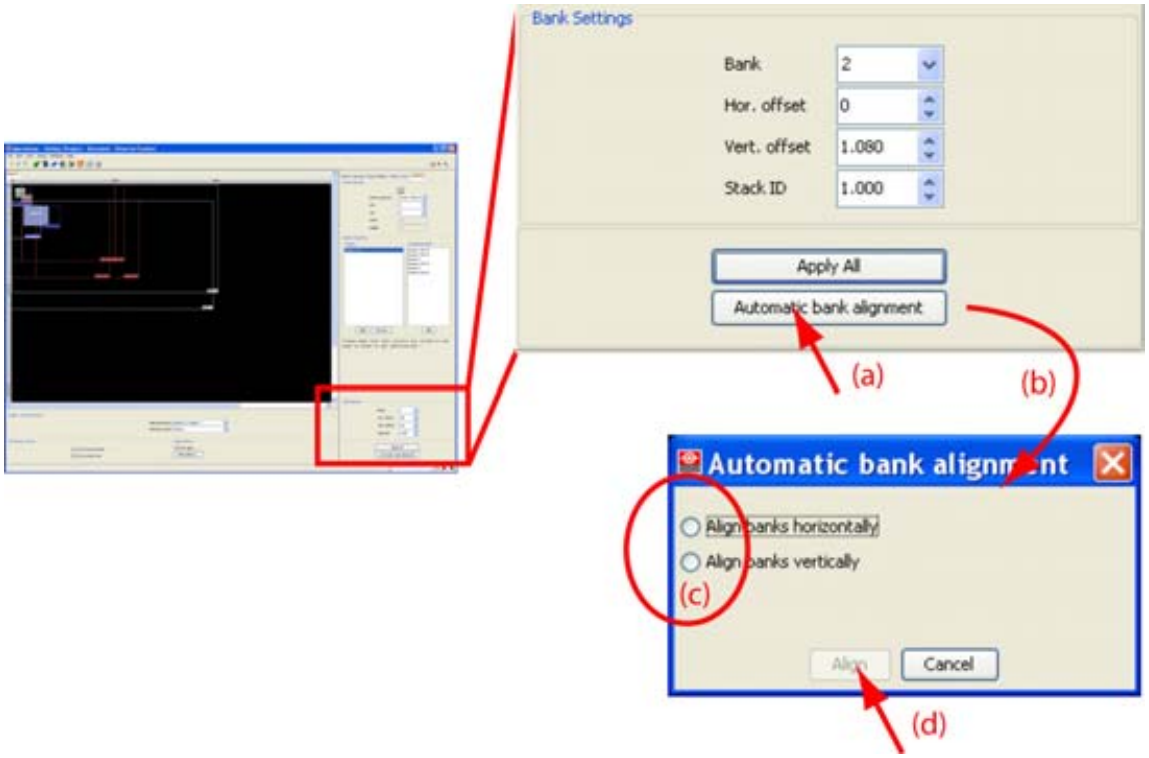


Image 15-99
Automatic bank alignment

15.12.12 Bank settings, move bank

What can be done ?

Each bank in a setup can be moved to any position by entering a horizontal and/or a vertical offset. The offset values can be positive or negative. While moving the bank, the associated screen and the active field moves in the same direction. Moving a bank next to another bank or in overlap with another bank is necessary to create stacked configurations and to position the screens seamless next to each other.

How to move

1. Select first the bank to move. Click on the drop down box next to *Bank* and select the desired bank. (image 15-100)
2. To enter a horizontal offset, click in the input box and enter the desired offset with the keyboard
   Or,
   click on the up down control of the spin box next to *Hor. offset* until the desired value is obtained.
3. To enter a vertical offset, click in the input box and enter the desired offset with the keyboard
   Or,
   click on the up down control of the spin box next to *Vert. offset* until the desired value is obtained.

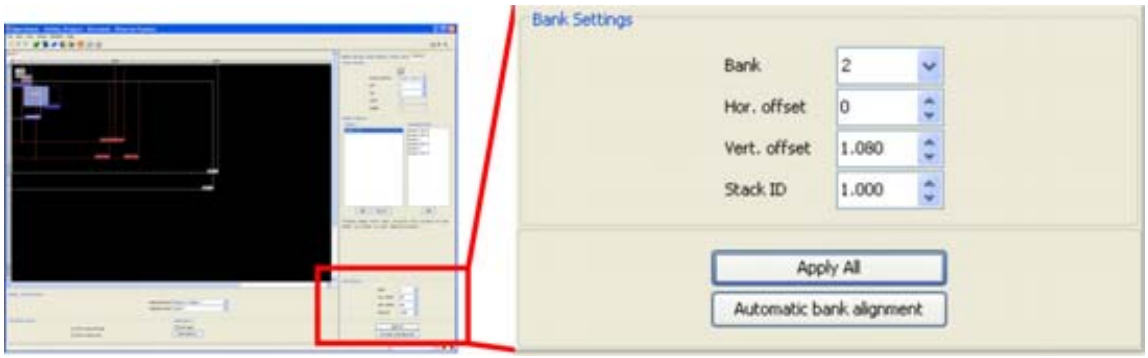


Image 15-100
Move a bank manually

StackID

Banks grouped in a stacked setup get the same stackID. This value is only given for information and can be useful for service purposes.

15.12.13 Apply all

What is done ?

Click on **Apply all** to send all new setting to the digitizer.

16. INPUT MODULES FOR D320 BASED DIGITIZER

Overview

- Input D320 DVI
- Input D320 SDI
- Input D320 HD-SDI
- Input D320 SDI/HD-SDI
- Input D320 RGB
- Input D320 RGB UXGA
- Input D320 RGB UXGA 2
- Input D320 CVBS
- Input D320 YUV

Important when using a stack configuration of D320 based digitizers.

Check the Apply options before starting any adjustment on the inputs. For more info about the Apply options, see "Apply options (F12)", page 37.

16.1 Input D320 DVI

DVI

Digital Visual Interface is a display interface developed in response to the proliferation of digital flat panel displays.

The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video. This standard uses TMDS (Transition Minimized Differential Signal) from Silicon Image and DDC (Display Data Channel) from VESA (Video Electronics Standards Association).

DVI can be single or dual link.

16.1.1 General settings

DDC

Display Data Channel form VESA.

DDC allows you to control through the software the settings of a graphical display (digitizer input card); with this standard the digitizer input card can directly communicate with the video card of the source. The graphical adapter gets from the digitizer input car all the information about its features and it makes consequently an automatic configuration for the best refresh values depending on the resolution you use

Resolution

The resolution allows to configure the DVI input according to a VESA standard or according to a custom created file. There are seven selectable resolution setup values that can be recognized by the graphic card of the source through DDC communication plus one custom setting.

The DDC setting can be switched off by selecting *No DDC*. When no DDC is selected, the graphical card of the source will boot up in its default mode.

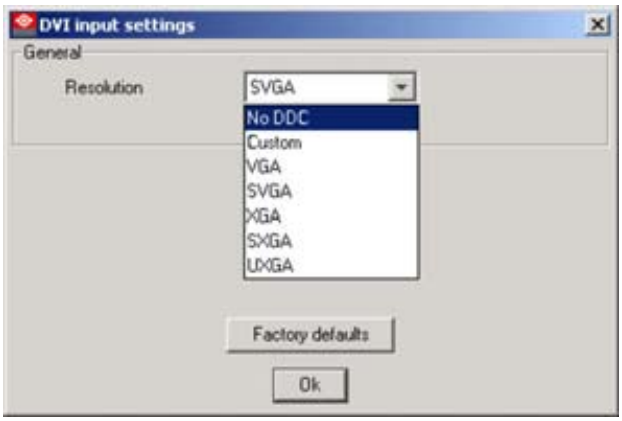


Image 16-1
DVI resolution setting

No DDC	No DDC communication between graphical card and the input module
Custom	Custom file will be used to force the graphic card into certain resolution
VGA	85Hz refresh rate (640 x 480)
SVGA	60Hz refresh rate (800 x 600)
XGA	60Hz refresh rate (1024 x 768)
SXGA	60Hz refresh rate (1280 x 1024)
SXGA	75Hz refresh rate (1280 x 1024)
SXGA	85Hz refresh rate (1280 x 1024)
UXGA	60Hz refresh rate (1600 x 1200)

The graphic card will boot up in the selected display mode as far as the selected display mode is within the card's capabilities.

Before selecting *Custom*, place the corresponding file into the following directory :

```
[install drive]:[install directory]\DDCfiles
```

The name of the file is standardized :

- for RGB analog module : D320rgban_custom.txt
- for DVI module : D320dvi_custom.txt

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.2 Input D320 SDI

SDI

Serial Digital Interface

16.2.1 Image Processing

Overview

Image 16-2
SDI input, image processing settings

Click on the slider, hold down the mouse button and move to the desired location or

click in the input field and enter the desired value with the keyboard.

Saturation

Adjustable from 0 to 15 with the corresponding slider.

Saturation is the intensity of the color, 0 will be black & white.

Brightness

Adjustable from 0 to 63 with the corresponding slider.

Brightness is the intensity of the displayed signal.

Luma Tracking

Adjustable from 0 to 15 with the corresponding slider.

Luma Tracking adjusts the level of green haze appearing in the low lights.

Clip to Subblack

Adjustable from 0 to 15 with the corresponding slider.

Clip To Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes, even after Dynamic Image Stabilization.

Interlacing Mode

Select between :

- SMDI (Smart Motion De-Interlacing) : is effective when the source signal has interlaced fields between frames.
- SMDI + Filmmode : is effective when the source signal has interlaced fields between frames and enables 2 to 2/3 to 2 pull down processing.
- Line Repetition : is effective for a non-interlace field sources (static images). The lines of the odd field will be doubled to obtain a complete image.
- Field Insertion : both fields of a interlaced image will be added together to form one de-interlaced image.

For normal video, *SMDI* should be selected.

Sharpness

Adjustment of the sharpness impression of the image in three frequency ranges (low, medium, high). Adjust sharpness completely conform own preferences or use predefined preset.

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.2.2 Dynamic Image Stabilizer (DIS)

Overview

Image 16-3
SDI input, dynamic image stabilizer

Click on the slider, hold down the mouse button and move to the desired location or

click in the input field and enter the desired value with the keyboard.

Value

between 0 and 14.

Image Quality

Selection possible between :

- Normal : if the input signal is normal signal, select normal
- Noisy : if the input signal contains noise, select noisy to improve the output signal.

16.3 Input D320 HD-SDI

16.3.1 Image Processing

Overview

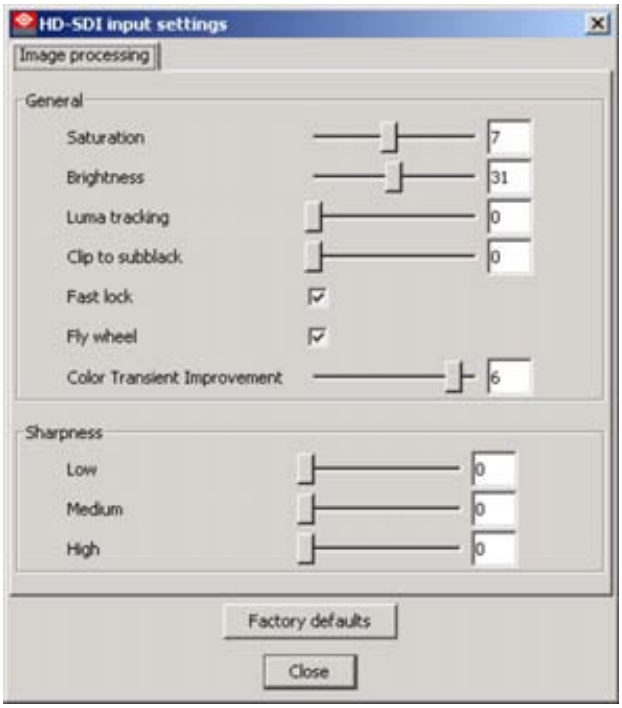


Image 16-4
HDSDI input, image processing

Click on the slider, hold down the mouse button and move to the desired location or click in the input field and enter the desired value with the keyboard.

Saturation

Adjustable from 0 to 15 with the corresponding slider.

Saturation is the intensity of the color, 0 will be black & white.

Brightness

Adjustable from 0 to 63 with the corresponding slider.

Brightness is the intensity of the displayed signal.

Luma Tracking

Adjustable from 0 to 15 with the corresponding slider.

Luma Tracking adjusts the level of green haze appearing in the low lights.

Clip to Subblack

Adjustable from 0 to 15 with the corresponding slider.

Clip To Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes, even after Dynamic Image Stabilization.

Interlacing mode

Select between :

- SMDI (Smart Motion De-Interlacing) : is effective when the source signal has interlaced fields between frames.
- SMDI + Filmmode : is effective when the source signal has interlaced fields between frames and enables 2 to 2/3 to 2 pull down processing.
- Line Repetition : is effective for a non-interlace field sources (static images). The lines of the odd field will be doubled to obtain a complete image.

Fast Lock

Way of locking of the PLL of the sync generator.

Default position : checked (ON)

When interference is visible on the image, un-check (switch to OFF). If the image is not yet improved, continue to Fly Wheel and un-check also (switch also to OFF).

Fly Wheel

To continue the locking of the PLL of the sync generator when a lock pulse is missing.

Default position : checked (ON)

When interference is still visible in the image after Fast Lock is un-checked (switched off), un-check (switch off) Fly Wheel too.

Color Transient Improvement

To improve the transition from one color to another.

Adjustable between 0 and 7. With 0 less improvement and 7 the highest improvement.

Sharpness

Adjustment of the sharpness impression of the image in three frequency ranges (low, medium, high). Adjust sharpness completely conform own preferences or use predefined preset.

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.4 Input D320 SDI/HD-SDI

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.4.1 Image Processing

Overview

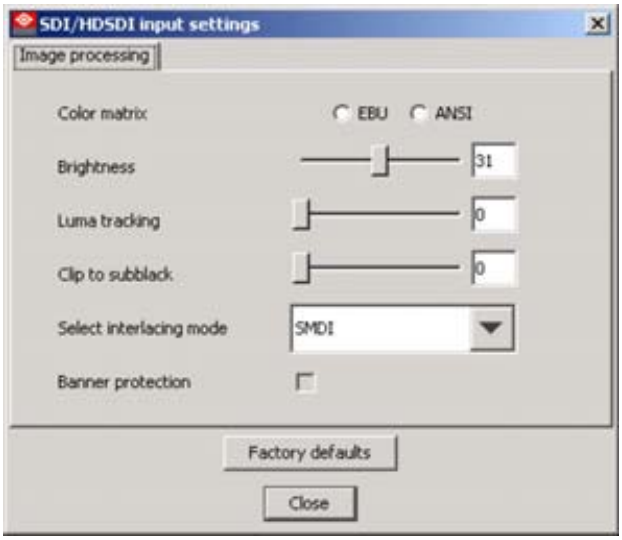


Image 16-5
SDI/HD-SDI input, Image processing

Click on the slider, hold down the mouse button and move to the desired location or

click in the input field and enter the desired value with the keyboard.

Color matrix

The color matrix used to reproduce the image can be selected.

The following choices are possible:

- EBU : European Broadcasting Union. This organization defines a European standard.
- ANSI : American standard

Brightness

Adjustable from 0 to 63 with the corresponding slider.

Brightness is the intensity of the displayed signal.

Luma Tracking

Adjustable from 0 to 15 with the corresponding slider.

Luma Tracking adjusts the level of green haze appearing in the low lights.

Clip to Subblack

Adjustable from 0 to 15 with the corresponding slider.

Clip To Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes, even after Dynamic Image Stabilization.

Interlacing mode

Select between :

- SMDI (Smart Motion De-Interlacing) : is effective when the source signal has interlaced fields between frames.
- SMDI + Filmmode : is effective when the source signal has interlaced fields between frames and enables 2 to 2/3 to 2 pull down processing.
- Line Repetition : is effective for a non-interlace field sources (static images). The lines of the odd field will be doubled to obtain a complete image.
- Field insertion : both fields of a interlaced image will be added together to form one de-interlaced image.
- Interpolation : interpolation between two fields will be done to form one de-interlaced image.

Banner Protect

Banner protect checked or not checked (ON or OFF). Is only effective when *SMDI + Filmmode* is selected in *Interlacing mode*.

With banner protect checked (ON), the bottom 1/4 of the lines will not be processed in Filmmode detection. It avoids scrolling banners or “ticker tapes” causing FILM mode errors.

16.5 Input D320 RGB

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.5.1 Image processing

Overview

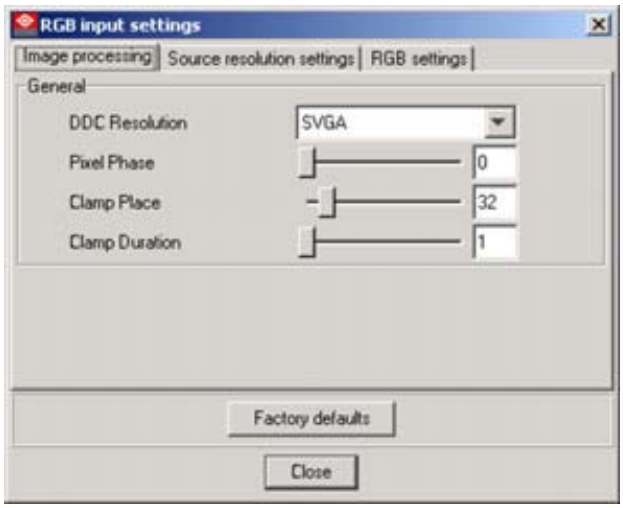


Image 16-6
RGB input, image processing

Resolution

The DDC resolution setting allows to configure the RGB input according a VESA standard. There are five selectable resolution setup values, plus a custom and a standard, that can be recognized by the graphical card through DDC communication.

Standard	The complete range of DDC resolutions are supported. The graphic card of the source will boot up in its last saved resolution.
Custom	The custom installed resolution will be used to boot up the graphical card of the source
VGA	85Hz refresh rate
SVGA	60Hz refresh rate
XGA	60Hz refresh rate
SXGA	60Hz refresh rate
SXGA	75Hz refresh rate

The graphical card will boot up in the selected display mode as far as the selected display mode is within the card's capabilities.

The best setting for resolution is '*standard*'. With standard, the complete range of resolutions can be connected.

Before selecting *Custom*, place the corresponding file into the following directory :

`[install drive]:[install directory]\DDCfiles`

The name of the file is standardized :

- for RGB analog module : D320rgban_custom.txt

When a DDC resolution is selected, the same resolution will be filled out in Source resolution by default.

Pixel Phase

Fine adjustment for the sampling clock signal.

Clamp Place

To properly digitize the incoming signal, the dc offset of the input must be adjusted to fit the range of the A/D converter. Most Graphic systems produce RGB signals with black at ground and white at +0.75V. With this setting you can program the number of pixel times that should pass after the trailing edge of HSYNC before clamping starts.

Range 0 -255

Clamp Duration

This sets the duration of the clamp. These both adjustments, providing considerable flexibility, to have a good image

Range 0 - 255

16.5.2 Resolution Settings

Overview

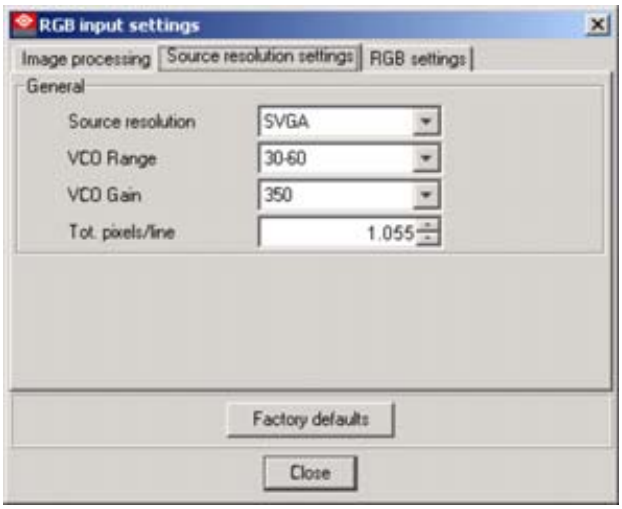


Image 16-7
RGB input, resolution setting

Source Resolution

Set the *Source resolution* according the resolution of the source. When your graphical card supports DDC communication, the resolution source setting should be the same as the *DDC resolution* setting in *Image resolution*. When standard is used as *DDC resolution* setting in *Image resolution* , it is possible to set any resolution for *Source resolution*.

The following settings are possible:

VGA (640 x 480)
SVGA (800 x 600)
XGA (1024 x 768)
SXGA 60Hz (1280 x 1024)
SXGA 75Hz (1280 x 1024)

VCO Range

This setting will automatically be set when the *Source Resolution* setting is entered.

Possible settings:

15 - 30 MHz

30 - 60 MHz

60 - 120 MHz

110 - 140 MHz

VCO Gain

Default value will be filled in. Change this value to a higher or lower value to improve the image.

Possible values:

50

100

150

250

350

500

750

1500

Total Pixels/Line

Default value. Fine adjustment of the image possible by changing the value up or down. Change by one digit up or down and look to the result before changing more.

Changing the Total Pixels/Line, changes the horizontal sync value.

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.5.3 RGB Setting

Overview

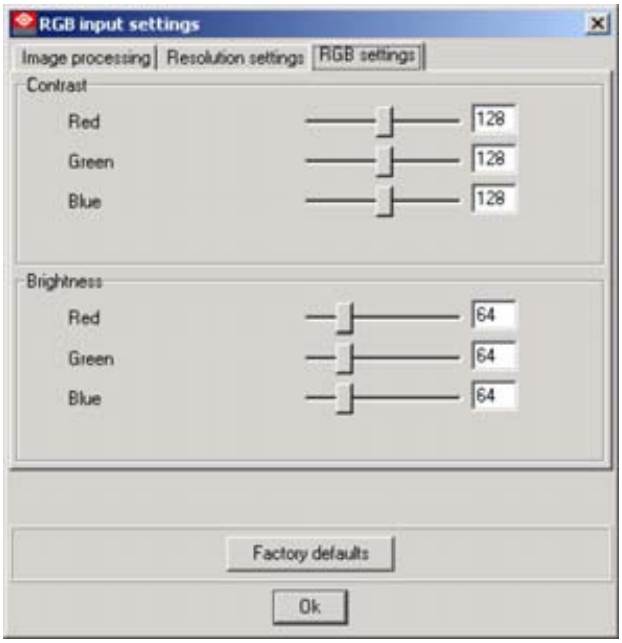


Image 16-8
RGB input, RGB settings

Contrast

Use the sliders to determine a good color balance between Red, Green & Blue . Each has a range between 0 and 255.

Or, click in the input field and enter the desired value with the keyboard.

Brightness

Use the sliders to determine a good brightness between Red, Green & Blue. Each has a range between 0 and 255.

Or, click in the input field and enter the desired value with the keyboard.

16.6 Input D320 RGB UXGA

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.6.1 Image processing

Overview

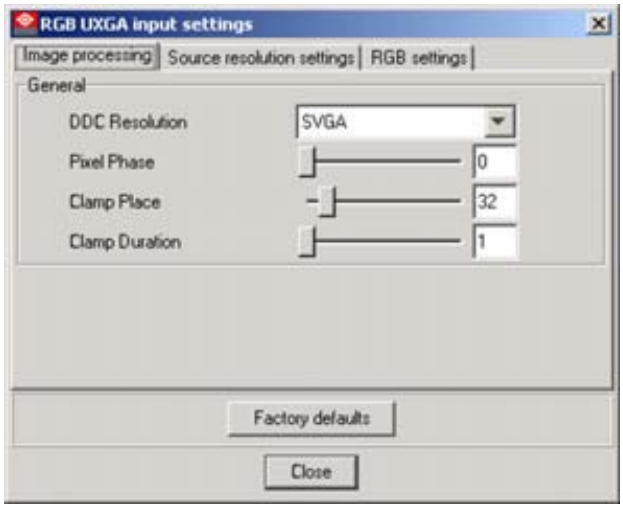


Image 16-9
RGB-UXGA input, image processing

Resolution

The resolution allows to configure the RGB input according a VESA standard or according a custom created file. There are seven selectable resolution setup values that can be recognized by the graphic card of the source through DDC communication plus one custom setting.

The DDC setting can be switched off by selecting *No DDC*. When no DDC is selected, the graphical card of the source will boot up in its default mode.

Standard	The complete range of DDC resolutions are supported. The graphic card will boot up in its last saved resolution.
Custom	Custom file will be used to force the graphic card into certain resolution
VGA	85Hz refresh rate
SVGA	60Hz refresh rate
XGA	60Hz refresh rate
SXGA	60Hz refresh rate
SXGA	75Hz refresh rate
SXGA	80Hz refresh rate
UXGA	60Hz refresh rate

The graphic card will boot up in the selected display mode as far as the selected display mode is within the card's capabilities.

The best setting for resolution is '*standard*'. With standard, the complete range of resolutions can be connected.

Before selecting *Custom*, place the corresponding file into the following directory :

```
[install drive]:[install directory]\DDCfiles
```

The name of the file is standardized :

- for RGB analog module : D320rgban_custom.txt

When a *DDC resolution* is selected in *Image resolution*, the same resolution will be filled out in *Source resolution* by default.

Pixel Phase

Fine adjustment for the sampling of the signal.

Clamp Place

To properly digitize the incoming signal, the dc offset of the input must be adjusted to fit the range of the A/D converter. Most Graphic systems produce RGB signals with black at ground and white at +0.75V. With this setting you can program the number of pixel times that should pass after the trailing edge of HSYNC before clamping starts.

Range 0 -255

Clamp Duration

This sets the duration of the clamp. These both adjustments, providing considerable flexibility, to have a good image

Range 0 - 255

16.6.2 Resolution Settings

Overview

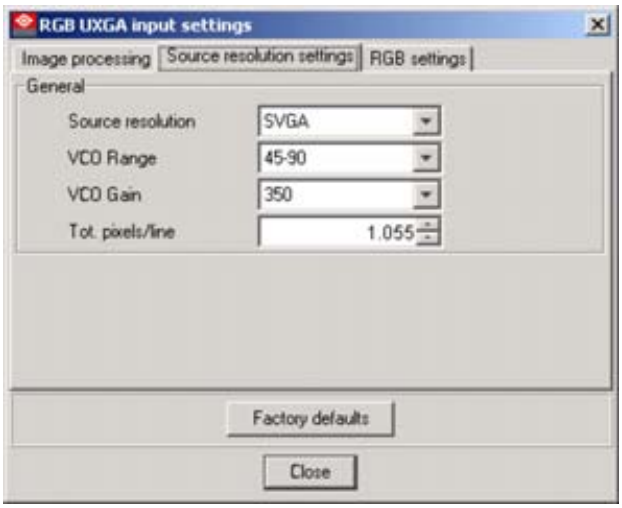


Image 16-10
RGB UXGA, resolution settings

Source Resolution

Set the source resolution according the resolution of the source. When your graphic card has DDC communication, the resolution source setting should be the same as DDC resolution. When standard is used, it is possible to set any resolution.

The following settings are possible:

VGA
SVGA
XGA
SXGA 60Hz
SXGA 75Hz
SXGA 80Hz
UXGA

VCO Range

This setting will automatically set when the 'Source Resolution' setting is entered.

Possible settings:

15 - 30 MHz
30 - 60 MHz
60 - 120 MHz
110 - 140 MHz

VCO Gain

Default value will be filled in. Change this value to a higher or lower value to improve the image.

Possible values:

50
100
150
250
350
500
750
1500

Total Pixels/Line

Default value. Fine adjustment of the image possible by changing the value up or down. Change by one digit up or down and look to the result before changing more.

Changing the Total Pixels/Line, changes the horizontal sync value.

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.6.3 RGB Contrast

Overview

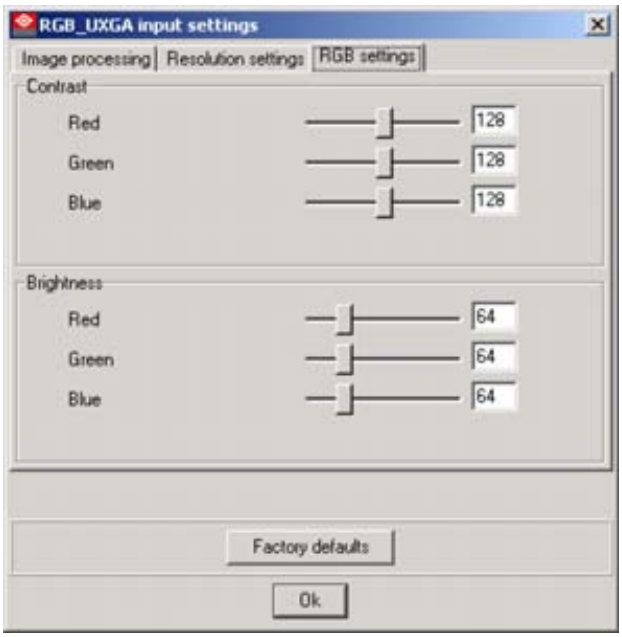


Image 16-11
RGB UXGA input, RGB settings

Contrast

Use the sliders to determine a good color balance between Red, Green & Blue . Each has a range between 0 and 255.

Or, click in the input field and enter the desired value with the keyboard.

Brightness

Use the sliders to determine a good brightness between Red, Green & Blue . Each has a range between 0 and 255.

Or, click in the input field and enter the desired value with the keyboard.

16.7 Input D320 RGB UXGA 2

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.7.1 Image processing

Overview

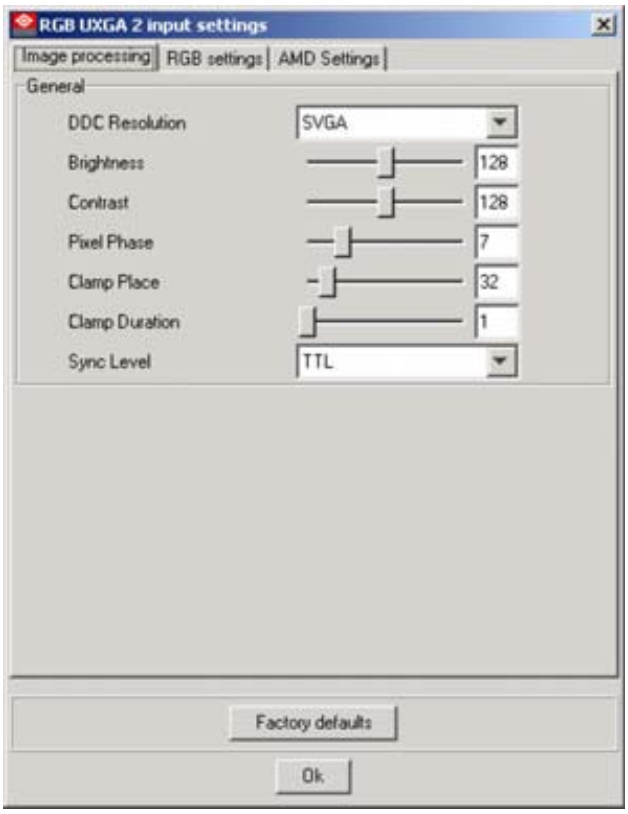


Image 16-12
RGB-UXGA input, image processing

Resolution

The resolution allows to configure the RGB input according a VESA standard or according a custom created file. There are seven selectable resolution setup values that can be recognized by the graphic card of the source through DDC communication plus one custom setting.

The DDC setting can be switched off by selecting *No DDC*. When no DDC is selected, the graphical card of the source will boot up in its default mode.

Standard	The complete range of DDC resolutions are supported. The graphical card will boot up in its last saved resolution.
Custom	Custom file will be used to force the graphic card into certain resolution
VGA	85Hz refresh rate
SVGA	60Hz refresh rate
XGA	60Hz refresh rate
SXGA	60Hz refresh rate
SXGA	75Hz refresh rate
SXGA	80Hz refresh rate
UXGA	60Hz refresh rate

The graphic card will boot up in the selected display mode as far as the selected display mode is within the card's capabilities.

The best setting for resolution is '*standard*'. With standard, the complete range of resolutions can be connected.

Before selecting *Custom*, place the corresponding file into the following directory :

`[install drive]:[install directory]\DDCfiles`

The name of the file is standardized :

- for RGB analog module : D320rgban_custom.txt

When a *DDC resolution* is selected in *Image resolution*, the same resolution will be filled out in *Source resolution* by default.

Pixel Phase

Fine adjustment for the sampling of the signal.

Clamp Place

To properly digitize the incoming signal, the dc offset of the input must be adjusted to fit the range of the A/D converter. Most Graphic systems produce RGB signals with black at ground and white at +0.75V. With this setting you can program the number of pixel times that should pass after the trailing edge of HSYNC before clamping starts.

Range 0 -255

Clamp Duration

This sets the duration of the clamp. These both adjustments, providing considerable flexibility, to have a good image

Range 0 - 255

16.7.2 RGB Settings

Overview

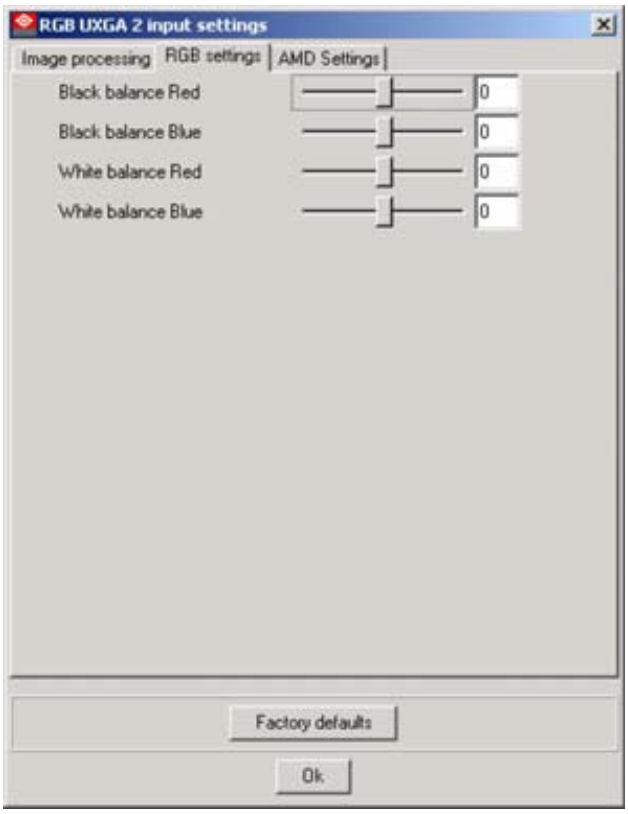


Image 16-13
RGB UXGA, resolution settings

Black balance Red and Blue

As the input balance is factory adjusted, the black balance can be used to correct mismatches of the input signal. Green will be taken as a reference. Adjust Red and Blue until the correct black balance is obtained (relative cut-off adjustment in comparison with green). Utilize the slider of each color or click in the input field and enter the desired value (range -127 to +127).

White balance Red and Blue

As the input balance is factory adjusted, the white balance can be used to correct mismatches of the input signal. Green will be taken as a reference. Adjust Red and Blue until the correct white balance is obtained (relative gain adjustment in comparison with green). Utilize the slider of each color or click in the input field and enter the desired value (range -127 to +127).

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.7.3 AMD settings

AMD setting

Automatic mode detection. The digitizer will search for the best fitting resolution and load the corresponding settings.

Overview

- Introduction
- Auto Measurement
- Manual file selection
- Add new item to list
- Remove item from list
- Remove all items from the list
- Best ADC setting
- Default list
- Total pixels per line

16.7.3.1 Introduction

Overview

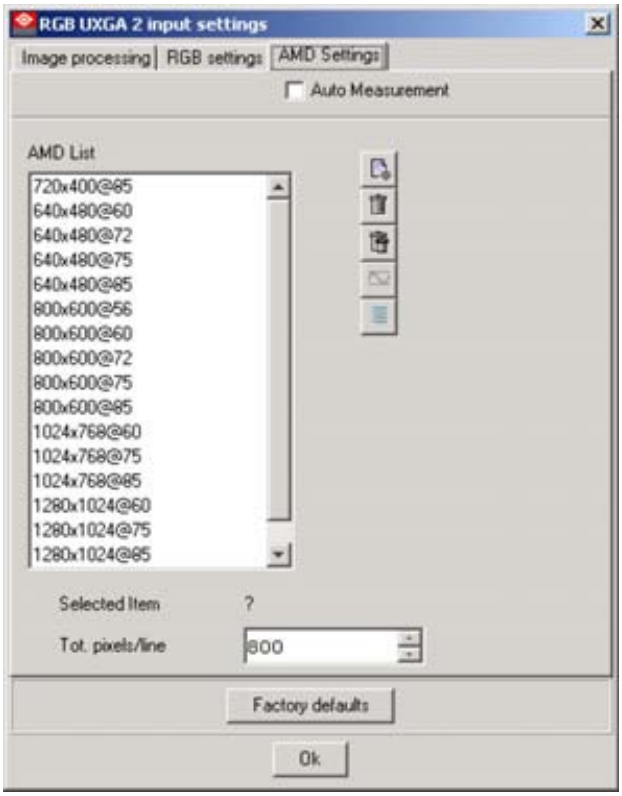


Image 16-14
RGB UXGA 2 input, AMD Settings

The digitizer can measure the input signal and interpret that signal. It can select the best fitting settings and load these settings.

16.7.3.2 Auto Measurement

What can be done ?

The system will search for the best fitting file (resolution and frame rate). This file will be loaded.

Setup

1. Check the checkbox next to Auto Measurement

Checked	Auto Measurement active
Not checked	Manual selection of file activated.

Keep in mind that the digitizer input will attempt to automatically adapt for any incoming data format that is within the bandwidth or frame rate of the system, these formats beyond those shown in image 16-15 may also be compatible.

16.7.3.3 Manual file selection

How to select ?

1. Double click on the desired file (a). (image 16-15)

   This file will be loaded. The name of the file will be displayed next to *Selected item* (b).

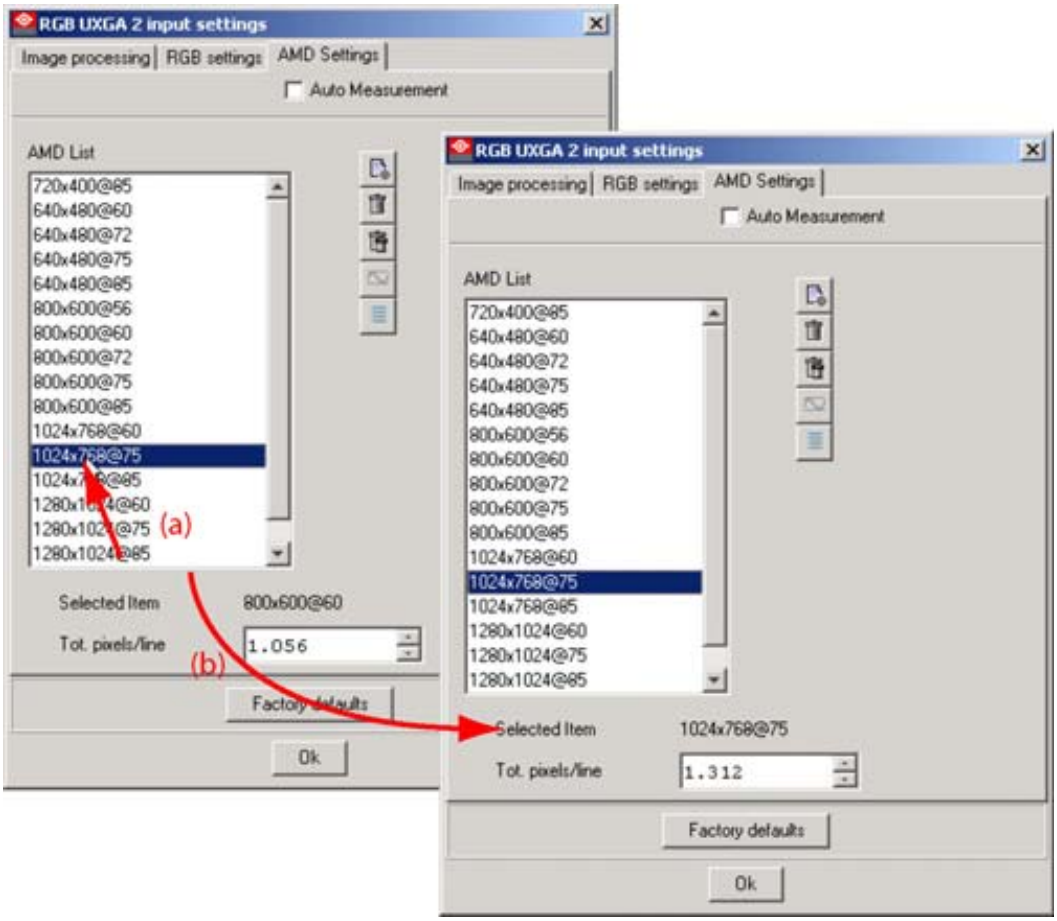


Image 16-15
Manual selection of a file

16.7.3.4 Add new item to list

What can be done ?

When the corresponding settings for the source are not available in the list, those settings can be added to the list as new item.

How to add ?

1. Perform first a Best fit AMD setting (see "Best ADC setting", page 435)

When the settings are in the list, the settings will be loaded.

When the settings are not in the list, the measured input value for Total pixels per line will be filled out in the input field Tot pixel/line. Corrections can be made with the up or down arrow keys.

To save this new setting, follow step 2.

2. Click on the *new item* icon (a). (image 16-16)

   The file input box displays *[enter a name]* (b).

3. Fill out a name for that new item (c).
4. Click on **OK** (d).

   The new file will be added to the list of files (e).

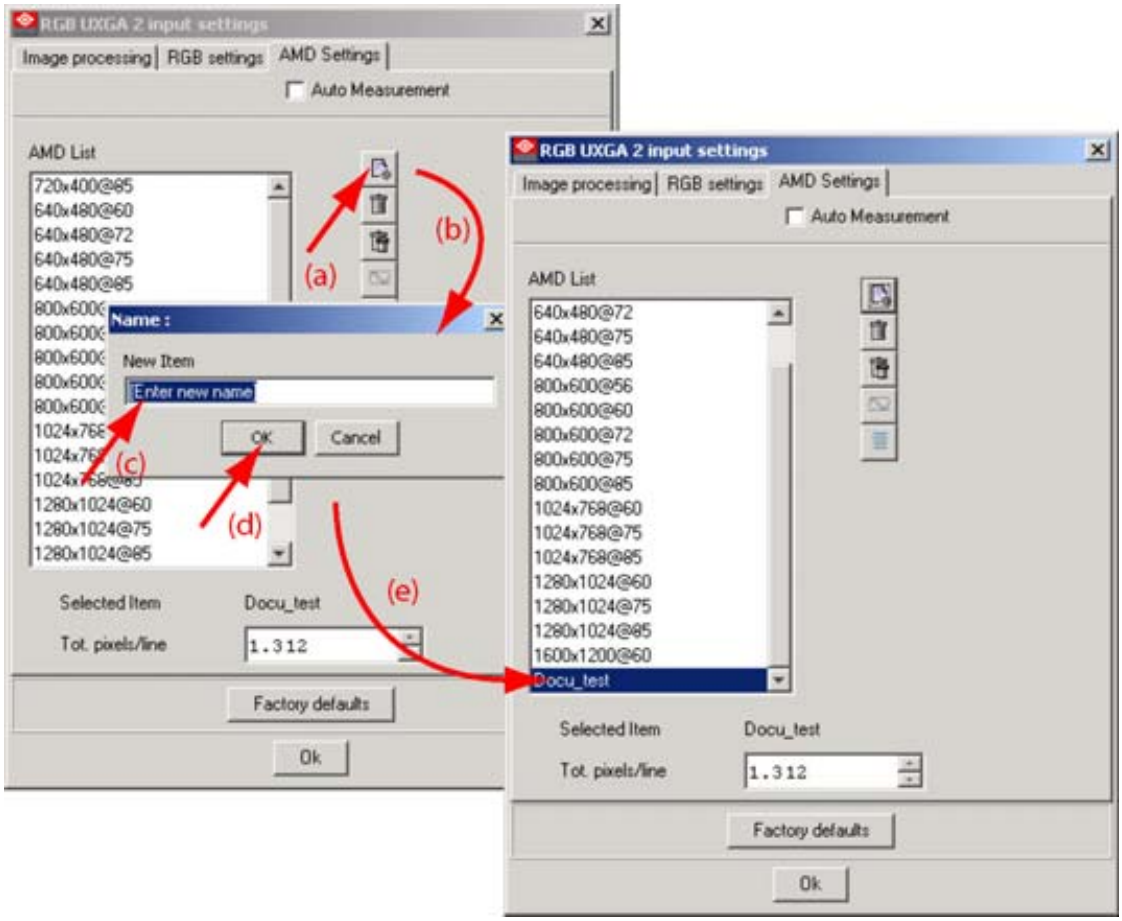


Image 16-16
Add new AMD item

16.7.3.5 Remove item from list

How to remove an item ?

1. Select an item out of the list (a). (image 16-17)

   The background of the selected item becomes dark blue.

2. Click on the *Remove from list* icon (b).

   A confirmation will be asked (c)

3. Click Yes to really delete the file.

   The item will be removed from the list (3).

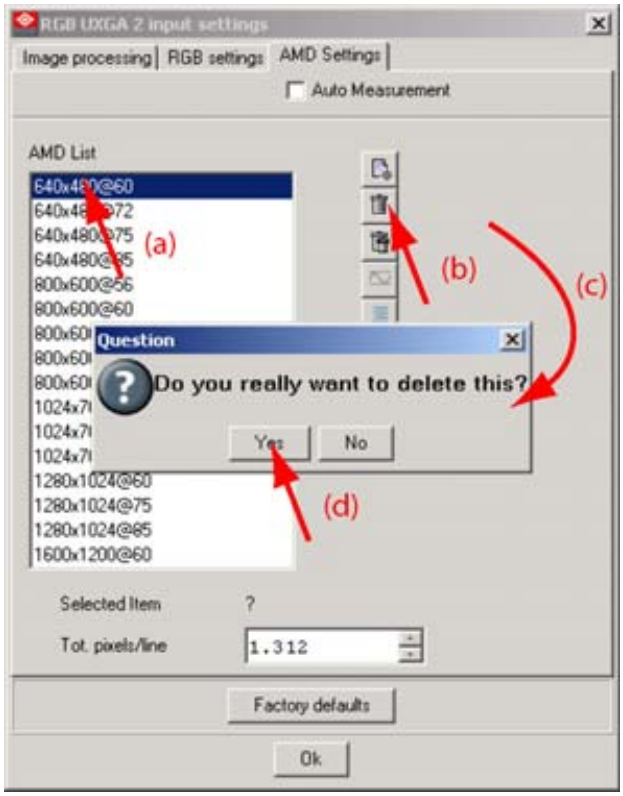


Image 16-17
Delete AMD file from list

16.7.3.6 Remove all items from the list

How to remove all ?

1. Click on the *Remove all items from list* icon (a). (image 16-18)

   A remove all confirmation message will be displayed (b).

2. Click **Yes** to remove all items (c).

   All files will be removed.

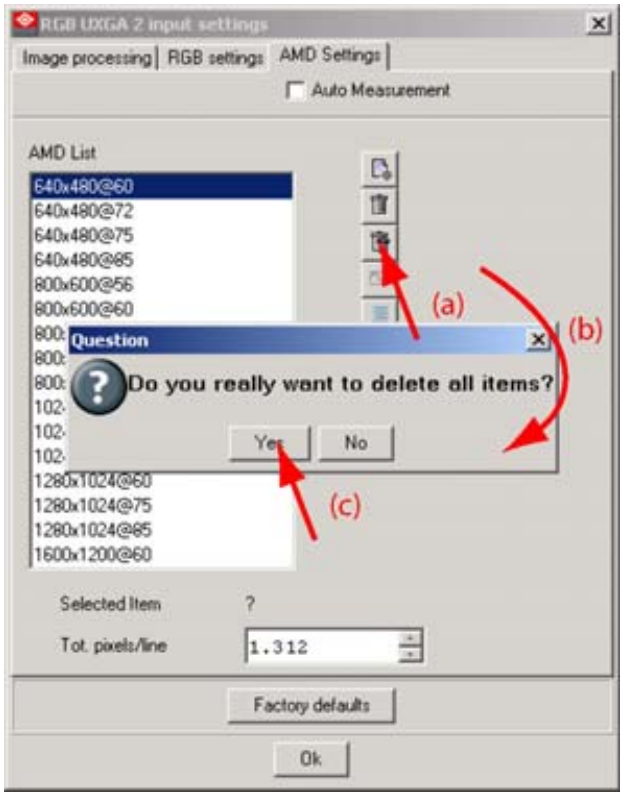


Image 16-18
Delete all AMD files

16.7.3.7 Best ADC setting

What can be done ?

When no file is selected or you do not know which one is the best. The system can measure the input source and select the best fitting file in the same way as when auto measurement was checked.

How to select ?

1. Click on *Suggest best ADC setting* icon (a). (image 16-19)

   The system will measure the input signal and suggest the best file (b).

2. If you are agree with the proposal, click on **Yes** (c).

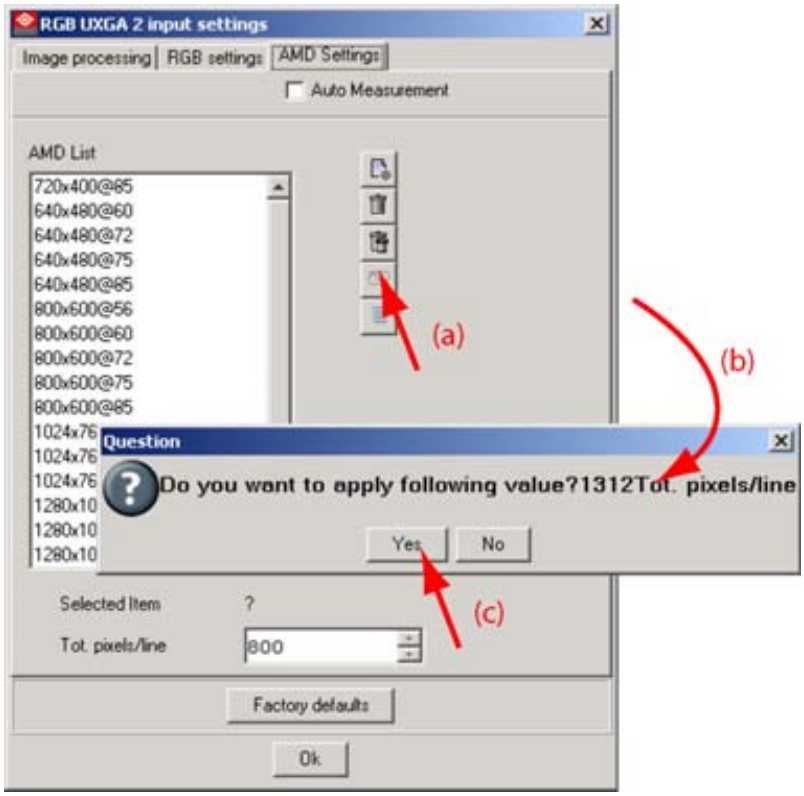


Image 16-19
Suggest the best fit file

16.7.3.8 Default list

How to return to the default list ?

1. Click on *Default list* icon (a). (image 16-20)

   A confirmation will be displayed to warn that all custom settings will be lost (b).

2. Click **OK** to return to the default list (c).

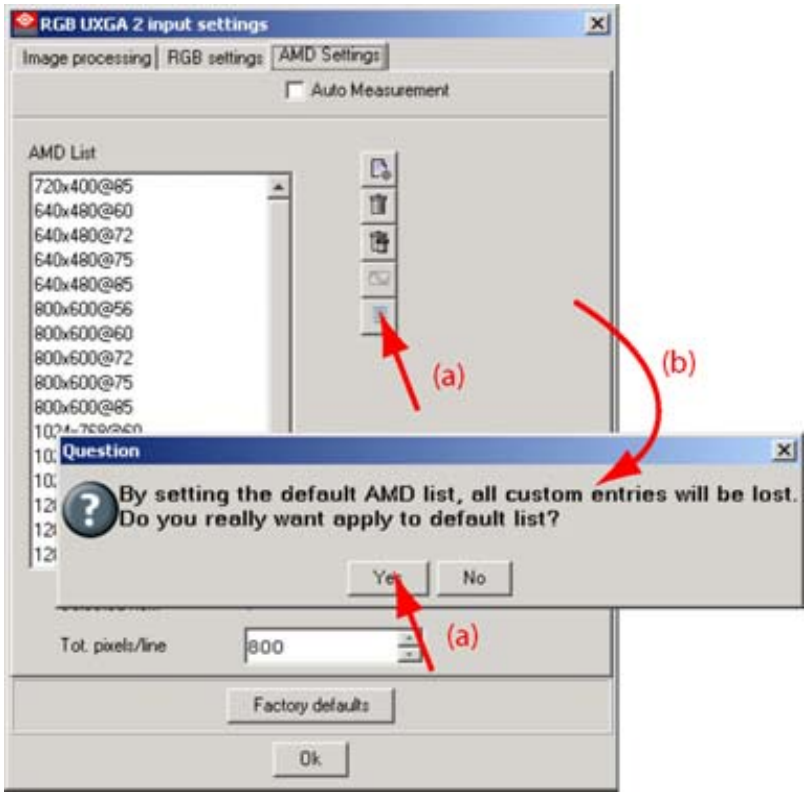


Image 16-20
Return to default AMD list

16.7.3.9 Total pixels per line

Overview

The total pixels per line are filled out by selecting a file but can be adapted when necessary by pressing on the **+** or **-** button next to *Total pixels/line*.

Image 16-21
Total pixels per line

When changing this setting, the current setting can be saved as a new file.

16.8 Input D320 CVBS

CVBS

Composite Video Broadcast System. For D320 CVBS module, also S-Video and Composite Video available.

16.8.1 Image Processing

Overview

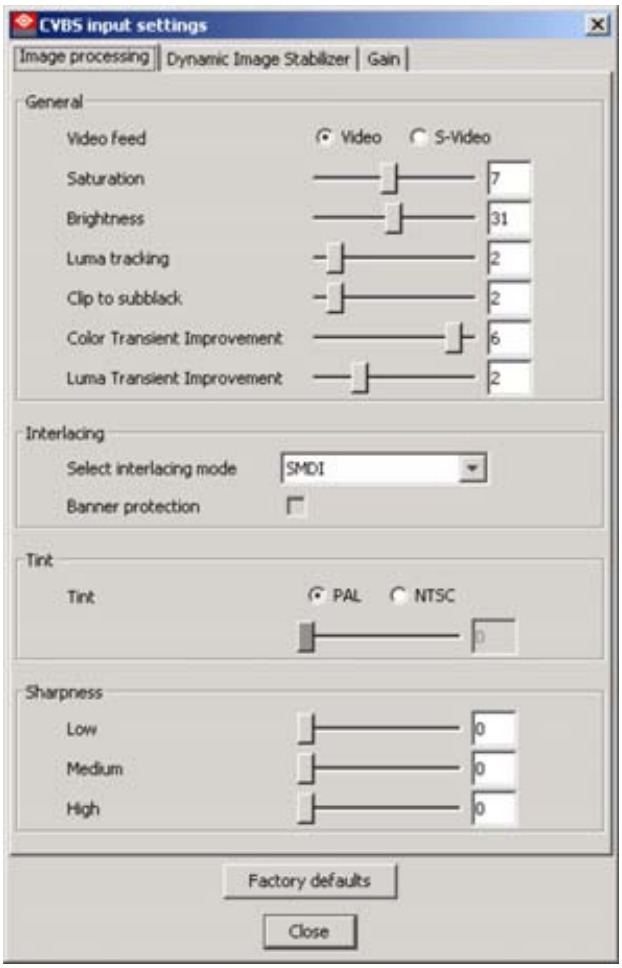


Image 16-22
CVBS input, image processing

Video Feed

Two possible choices:

- Video
- S-Video

Select the input type which has to be displayed.

Saturation

Adjustable from 0 to 15 with the corresponding slider.

Saturation is the intensity of the color, 0 will be black & white.

Brightness

Adjustable from 0 to 63 with the corresponding slider.

Brightness is the intensity of the displayed signal.

Brightness will add or subtract to the luminance part of the signal.

Luma Tracking

Adjustable from 0 to 15 with the corresponding slider.

Luma Tracking adjusts the level of green haze appearing in the low lights.

Clip to Subblack

Adjustable from 0 to 15 with the corresponding slider.

Clip To Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes, even after Dynamic Image Stabilization.

Color Transient Improvement (CTI)

CTI sharpen the transient between two next to each other projected colors. The degree of improvement can be adjusted with the slider bar.

When on 0, the image is displayed without CTI. 7 represents the sharpest CTI.

Luma Transient Improvement (LTI)

LTI accentuates the transient between two parts of the image with different intensity. The degree of improvement can be adjusted with the slider bar.

When on 0, the image is displayed without LTI. 7 represents the sharpest LTI.

Interlacing Mode

Select between :

- SMDI (Smart Motion De-Interlacing) : is effective when the source signal has interlaced fields between frames.
- SMDI + Filmmode : is effective when the source signal has interlaced fields between frames and enables 2 to 2/3 to 2 pull down processing.
- Line Repetition : is effective for a non-interlace field sources (static images). The lines of the odd field will be doubled to obtain a complete image.
- Field Insertion : both fields of a interlaced image will be added together to form one de-interlaced image.

For normal video, *SMDI* should be selected.

Banner Protect

Banner protect checked or not checked (ON or OFF). Is only effective when *SMDI + Filmmode* is selected in *Interlacing mode*.

With banner protect checked (ON), the bottom 1/4 of the lines will not be processed in Filmmode detection. It avoids scrolling banners or "ticker tapes" causing FILM mode errors.

Tint

If the input source is NTSC, check the radio button before *NTSC*. The tint slider bar becomes available.

If the input source is PAL or SECAM, check the radio button before *PAL*. The tint slider is grayed out.

For NTSC signals, the tint can be adjusted with the slider bar or by clicking in the input field and entering a value with the keyboard. Only for NTSC 4.43 or NTSC 3.58

Sharpness

Adjustment of the sharpness impression of the image in three frequency ranges (low, medium, high). Adjust sharpness completely conform own preferences or use predefined preset.

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.8.2 Dynamic Image Stabilizer (DIS)

Overview

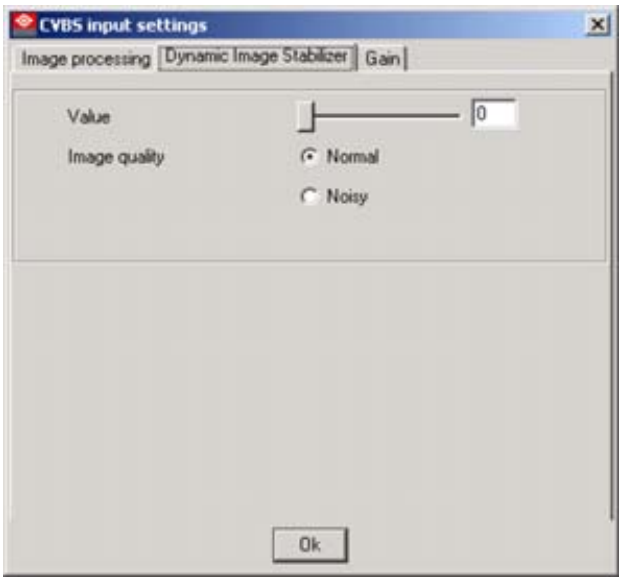


Image 16-23
CVBS input, dynamic image stabilizer

Value

between 0 and 14.

Image Quality

Selection possible between :

- Normal : if the input signal is normal signal, select normal
- Noisy : if the input signal contains noise, select noisy to approve the output signal.

16.8.3 Input Gain Equalizing

Overview

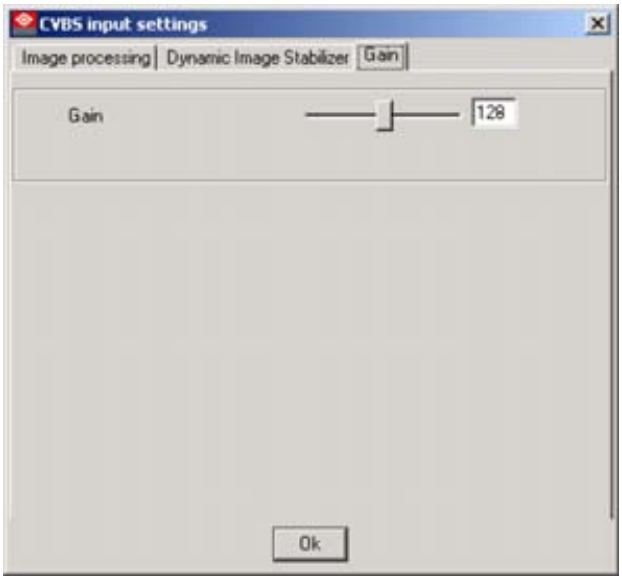


Image 16-24
CVBS input, Gain

The gain can be adjusted between 0 and 255.

Any value can be entered by

- clicking first in digit box and entering the desired value or
- sliding the slider to the desired value.

The following input gain adjustments are possible:

- For S-Video
  - Luma gain
- For Video
  - Gain

16.9 Input D320 YUV

Factory defaults

To return to the factory defaults, click on **Factory defaults**.

16.9.1 Image Processing

Overview

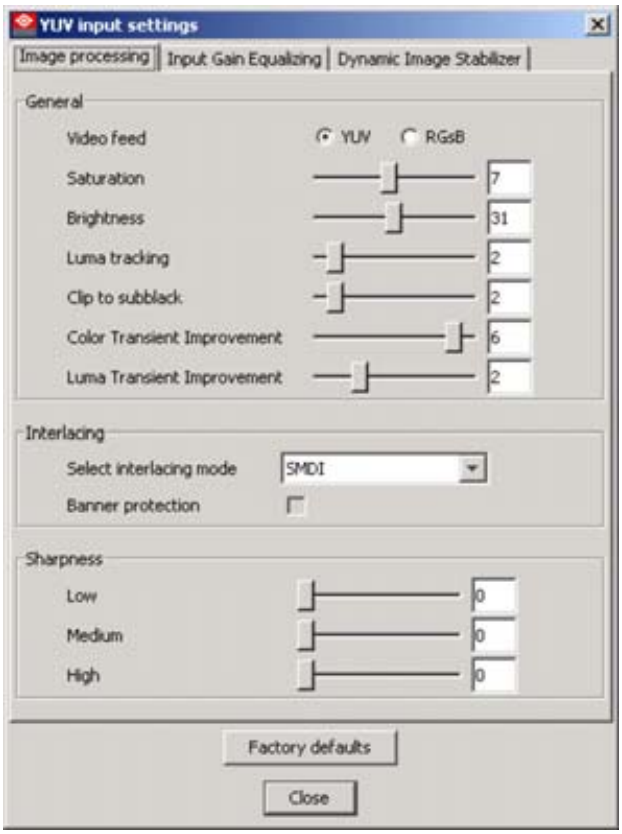


Image 16-25
YUV input, Image stabilizer

Video Feed

Two possible choices:

- YUV
- RGsB

Select the radio button in front of the input type which has to be displayed.

Saturation

Adjustable from 0 to 15 with the corresponding slider.

Saturation is the intensity of the color, 0 will be black & white.

Brightness

Adjustable from 0 to 63 with the corresponding slider.

Brightness is the intensity of the displayed signal.

Luma Tracking

Adjustable from 0 to 15 with the corresponding slider.

Luma Tracking adjusts the level of green haze appearing in the low lights.

Clip to Subblack

Adjustable from 0 to 15 with the corresponding slider.

Clip To Subblack will filter spurious LSB's in low lights under black-level, to prevent that spurious pixels appear in black planes, even after Dynamic Image Stabilization.

Color Transient Improvement (CTI)

CTI sharpen the transient between two next to each other projected colors. The degree of improvement can be adjusted with the slider bar.

When on 0, the image is displayed without CTI. 7 represents the sharpest CTI.

Luma Transient Improvement (LTI)

LTI accentuates the transient between two parts of the image with different intensity. The degree of improvement can be adjusted with the slider bar.

When on 0, the image is displayed without LTI. 7 represents the sharpest LTI.

Interlacing Mode

Select between :

- SMDI (Smart Motion De-Interlacing) : is effective when the source signal has interlaced fields between frames.
- SMDI + Filmmode : is effective when the source signal has interlaced fields between frames and enables 2 to 2/3 to 2 pull down processing.
- Line Repetition : is effective for a non-interlace field sources (static images). The lines of the odd field will be doubled to obtain a complete image.
- Field Insertion : both fields of a interlaced image will be added together to form one de-interlaced image.

For normal video, *SMDI* should be selected.

Banner Protect

Banner protect checked or not checked (ON or OFF). Is only effective when *SMDI + Filmmode* is selected in *De-interlacing mode*.

With banner protect checked (ON), the bottom 1/4 of the lines will not be processed in Filmmode detection. It avoids scrolling banners or "ticker tapes" causing FILM mode errors.

Sharpness

Adjustment of the sharpness impression of the image in three frequency ranges (low, medium, high). Adjust sharpness completely conform own preferences or use predefined preset.

16.9.2 Input Gain Equalizing

Overview

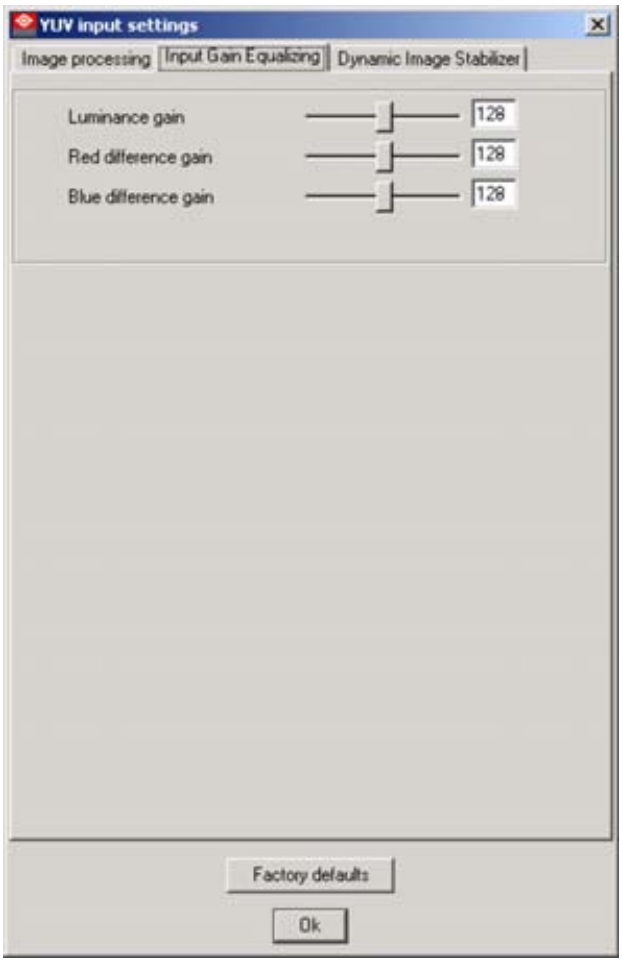


Image 16-26
YUV input, input gain equalizing

Each gain can be adjusted between 0 and 255.

Any value can be entered by

- clicking first in digit box and entering the desired value or
- sliding the corresponding slider to the desired value.

The following input gain adjustments are possible:

- Luminance Gain
- Red difference Gain
- Blue difference Gain

16.9.3 Dynamic Image Stabilizer (DIS)

Overview

Image 16-27
YUV input, dynamic image stabilizer

Value

between 0 and 14.

Image Quality

Selection possible between :

- Normal : if the input signal is normal signal, select normal
- Noisy : if the input signal contains noise, select noisy to approve the output signal.

17. CALIBRATION

Overview

- Introduction
- Config tree overview
- Start calibration
- Color calibration for DLite, SLite, MiPIX and ILite (embedded soft < 2.05) except ILite3 and ILite 6XP
- Color calibration for NX - ILite - OLite - SLite 10XP - SP10 - IB-6 - T-series, DB-series - MiSTRIP - MiTRIX
- LED wall mode

CAUTION: While a calibration is running, wait until it is finished before starting another function.

17.1 Introduction

Overview

The Calibration module allows the user the re-calibration of:

- the complete display
- a typical screen in the display
- a set of tiles
- a single tile

Normally all tiles are color calibrated when leaving the factory. Color re-calibration can be necessary when replacing a tile or if there are color mismatches in the display, e.g. when mixing tiles of two displays.

All tiles are equipped with the unique system color signature, which guarantees color uniformity over the whole wall and all the time.

Depending on the wall type or the firmware, the color calibration procedure can be performed by:

- selecting a color temperature.
- entering the x and y coordinates for red, blue, green and white.

Start up the calibration module

To start up the calibration module, just click on icon on the tool bar or

click on the menu bar on *Modules* and select *Calibration*.

Image 17-1
Calibration start up

The calibration window opens.

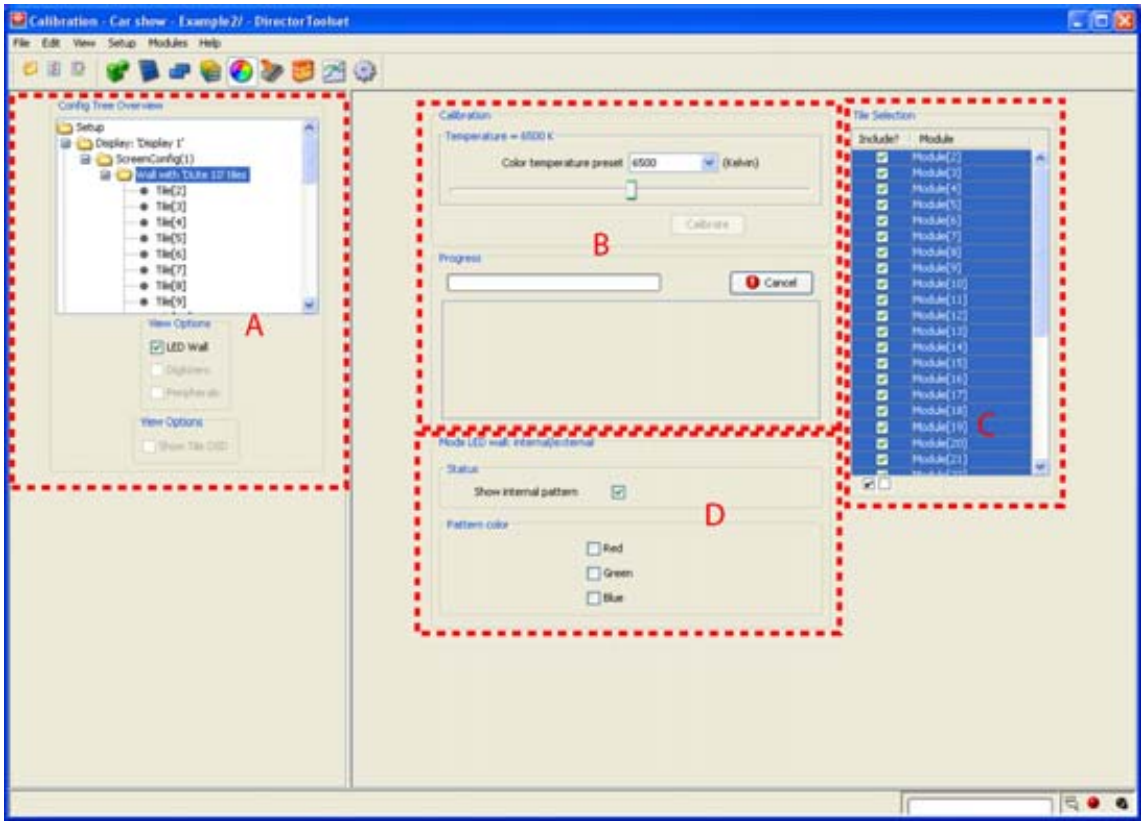


Image 17-2
Calibration window

A	Config tree overview pane
B	Calibration pane
C	Tile selection pane
D	LED wall mode pane

17.2 Config tree overview

What can be done ?

The configuration tree gives an overview of the used displays in the active setup. To expand the tree, click on the + button in front of the display name.

The tree can be expand till the tile level is reached.

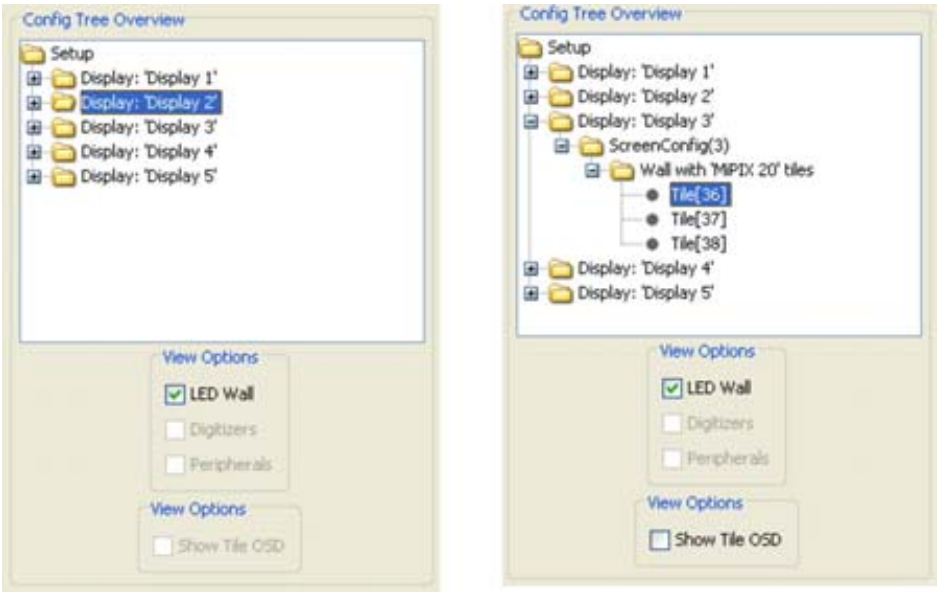


Image 17-3
Config tree

To show the OSD, check *Show the OSD*. The OSD will be shown with same settings as set in the *Configuration* module, *Tile properties settings*.

17.3 Start calibration

How to start ?

1. Expand the *config tree* until the desired level is reached.
2. Click on the display or screen to calibrate.

   The calibration pane will be filled up.

   The view depends on the tile type of the wall.

17.4 Color calibration for DLite, SLite, MiPIX and ILite (embedded soft < 2.05) except ILite3 and ILite 6XP

How to calibrate ?

1. Do you want to calibrate all tiles in the selection ?
   If yes, continue with step 2. (image 17-4)
   If no, uncheck the tiles which must be excluded.
2. Click on the combo box next to *color temperature preset* and select the desired value.

   If custom is selected, click on the slider and move till the desired value is reached (value is indicated next to pane name)

3. Click on **Calibrate**.

   The calibration will start.

   A progress bar will be visible. The progress will also be indicated in the logging by writing the tile number which is actual busy.

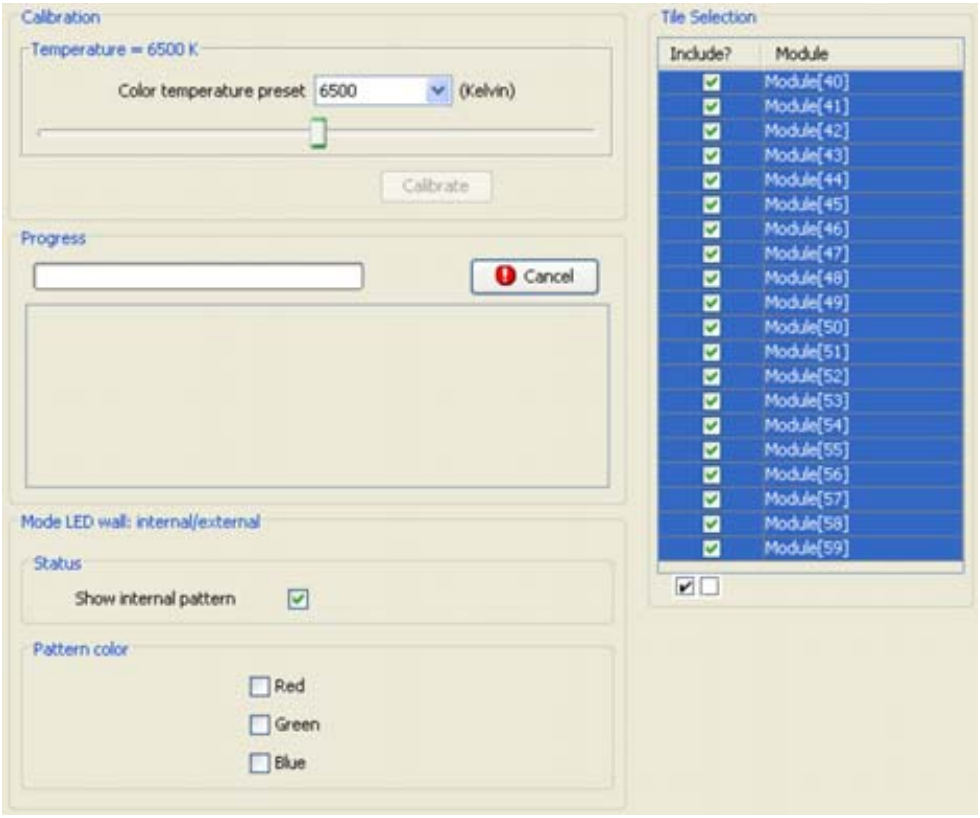


Image 17-4
Color calibration

For MiPIX and MiSPHERE, only color temperature adjustment will be executed.

17.5 Color calibration for NX - ILite - OLite - SLite 10XP - SP10 - IB-6 - T-series, DB-series - MiSTRIP - MiTRIX

Overview

- Read measurements
- Preview set up of the diagram
- Changing a color point
- Color temperature (white point)
- Loading the default Targets
- Color gamut reduction
- Calibration levels for ILite3 - ILite XP - OLite - IB-6 - MiSTRIP - MiTRIX - NX
- Calibration levels for SLite 10 XP - SP10 - T-series - DB-series
- Start up the calibration procedure

- Analog contrast tweaking for ILite 6XP

17.5.1 Read measurements

Start procedure

1. Do you want to calibrate all tiles in the selection ?
   If yes, continue with step 2.
   If no, uncheck the tiles which must be excluded.
2. Click on **Read Measurements**. (image 17-5)

   The measured target and the default target will be loaded in the calibration overview pane.
3. To start calibration, click on **Edit & Calibrate**.

   When calibration is password protected, an *Password* window opens. Enter your password and click **OK**. (image 17-6)

   The calibration chart will be displayed (image 17-7).

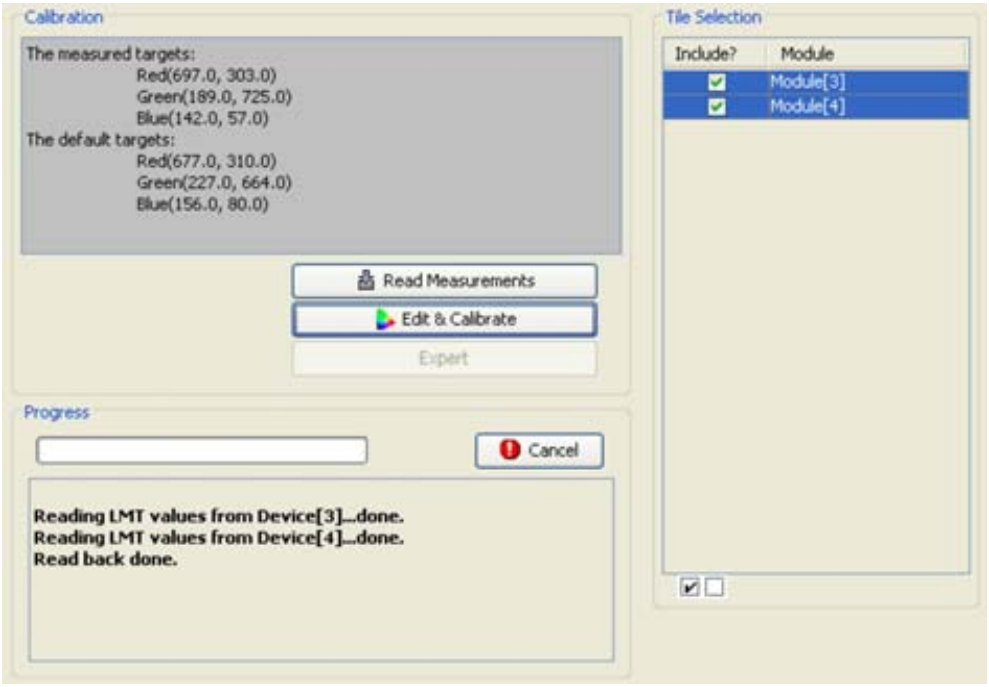


Image 17-5
Color calibration

Image 17-6

17.5.2 Preview set up of the diagram

How to set up

1. Click on the **View** tab.

The different selections become visible. (image 17-7)

Grid lines	Grid lines in the background inside the xy coordinate system.
CIE diagram	Representation of the colors within the xy coordinate system. Chromaticity diagram
Wavelength values	Wavelength values displayed or not around the chromaticity diagram.
Global region	Color gamut, maximum colors which can be reproduced by the wall.
Target region	Region in which a color end point can vary.

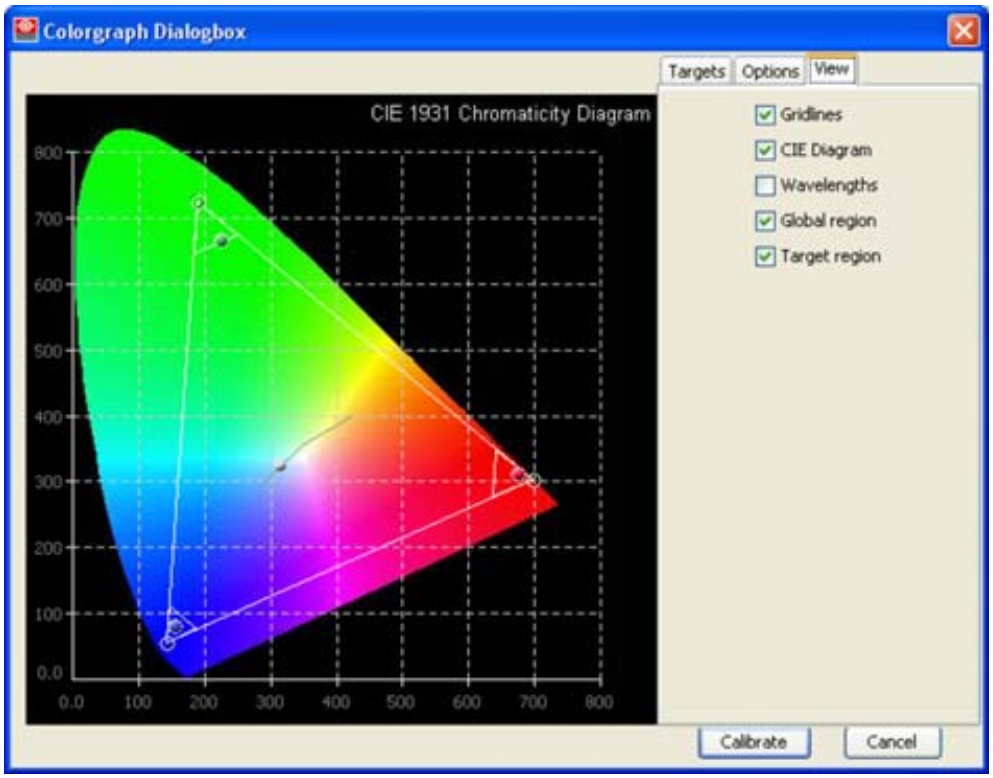


Image 17-7
Diagram preview

17.5.3 Changing a color point

Via drag and drop

1. Click on a color point and hold down the left mouse button.
2. Drag the color end point to the desired position. (image 17-8)

   Dragging is only possible within the drawn rectangular area.

   The values for x and y will change accordingly.

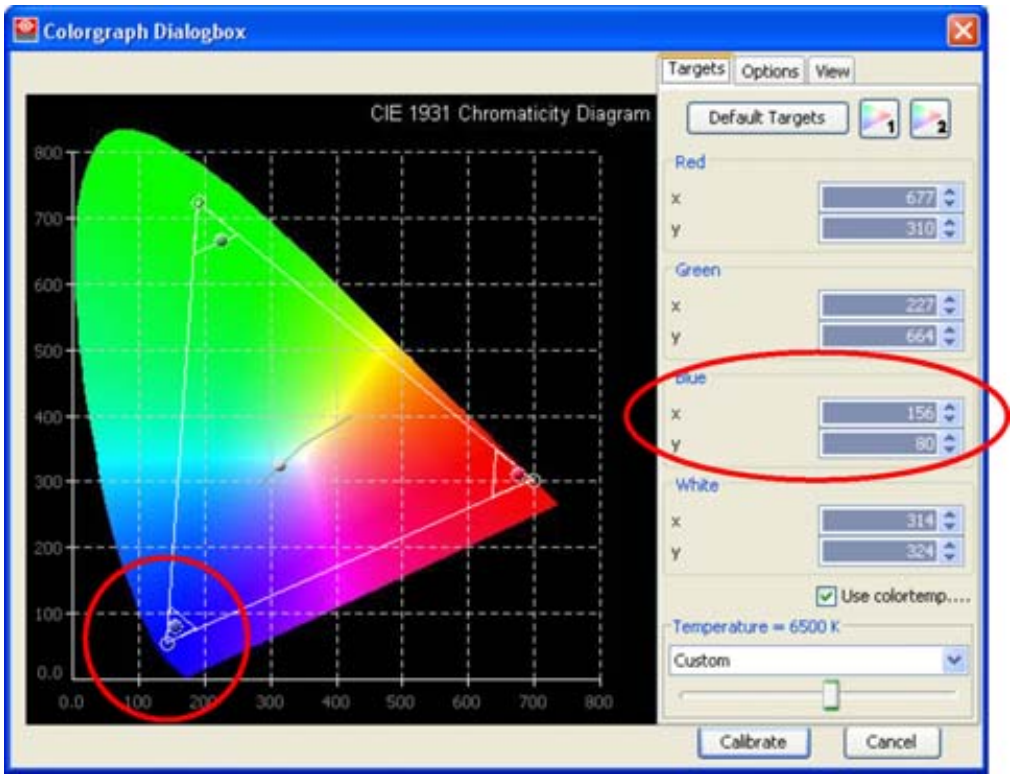


Image 17-8
Moving a color end point

Via the coordinates

1. Click on color point to select.
2. Click on the up down control of the spin box of x and y to change the value for x and y.
   Or,
   click on the input field and enter the desired value with your keyboard.

17.5.4 Color temperature (white point)

Color temperature via D-illuminance curve (color temperature traject)

1. Check off the check box in front of *Use colortemp. traject* (a). (image 17-9)
2. Click on the white point to select.
3. Hold down the left mouse button and move the point to the desired value along the D-illuminance curve (b).
   Or,
   click in the White coordinate field and change the coordinates by clicking on the up down control of the spin box next to x and y (c)
   Or,
   by clicking in the input fields and entering the desired value with the keyboard.
   Or,
   click on the slider button and move to the right or left until the white point is on the desired position (d)

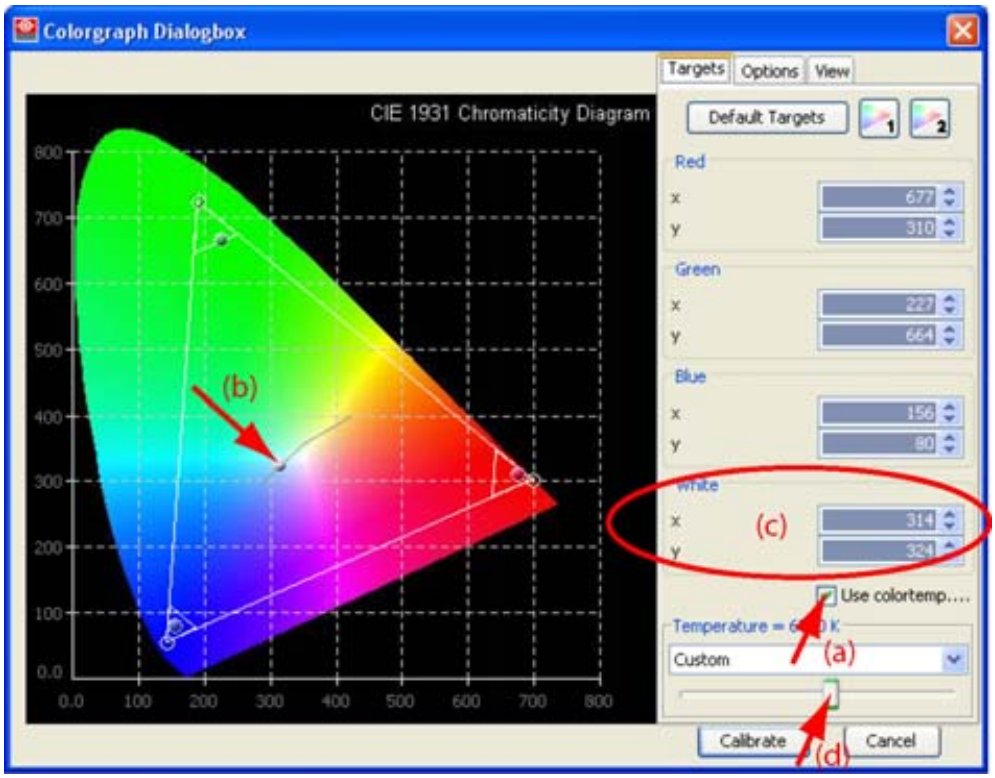


Image 17-9
White point adjustment via curve

Custom color temperature set up

1. Verify that the check box in front of *Use colortemp. traject* in not checked off (a) (image 17-10)
2. Click on the end point white to select.
3. Hold down the left mouse button and drag the white point to the desired coordinates (b).
   Note: *The white point cannot move out of the predefined rectangular.*

   Or,
   Click on the up down control of the spin box next to the x and y coordinate of white until the desired value is reached (c).
   Or,
   Click in the input field and enter the desired value with the keyboard (d).

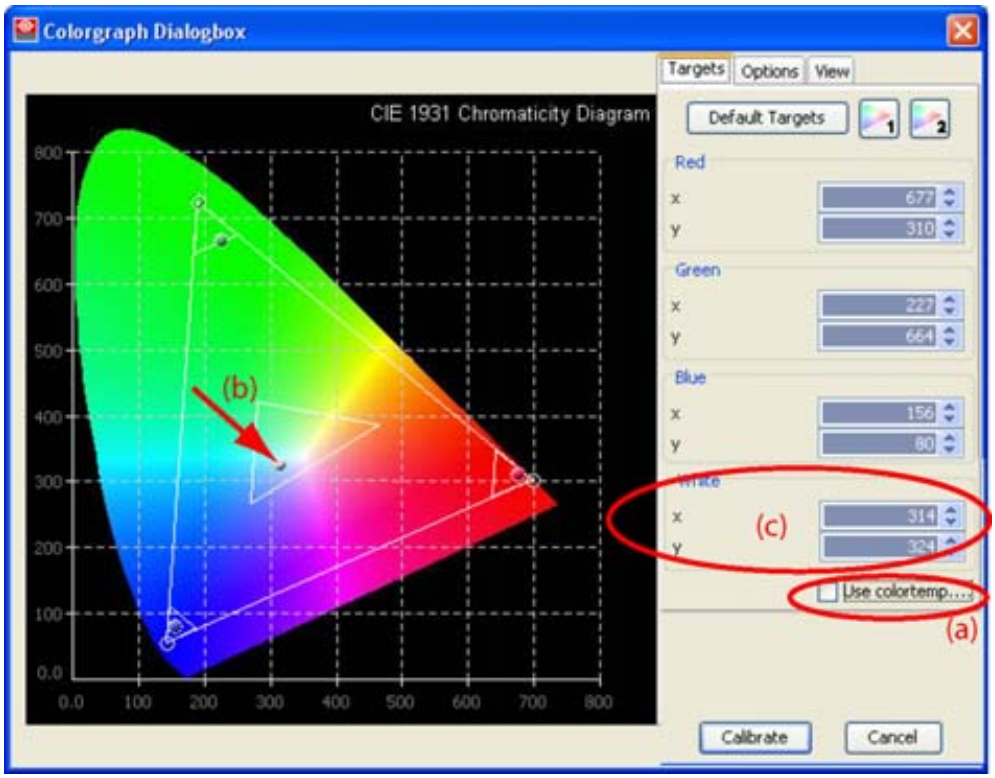


Image 17-10
White point adjustment

17.5.5 Loading the default Targets

How to load the default targets

1. Click on **Defaults Targets** button.

   The color end points jump to the calculated default targets.

17.5.6 Color gamut reduction

Use only when necessary.

Overview

During the calibration process, the software calculates the maximum possible color gamut for the complete wall. But sometimes due to production tolerances on the LED components and to the used content it is possible that to much jitter occurs. To reduce this jitter, the color gamut can be reduced but the color saturation will be less. It is to the customer to make a compromise between jitter and color saturation. When using this function start with the first reduction and evaluate the image. If there is no satisfaction, continue with reduction 2.

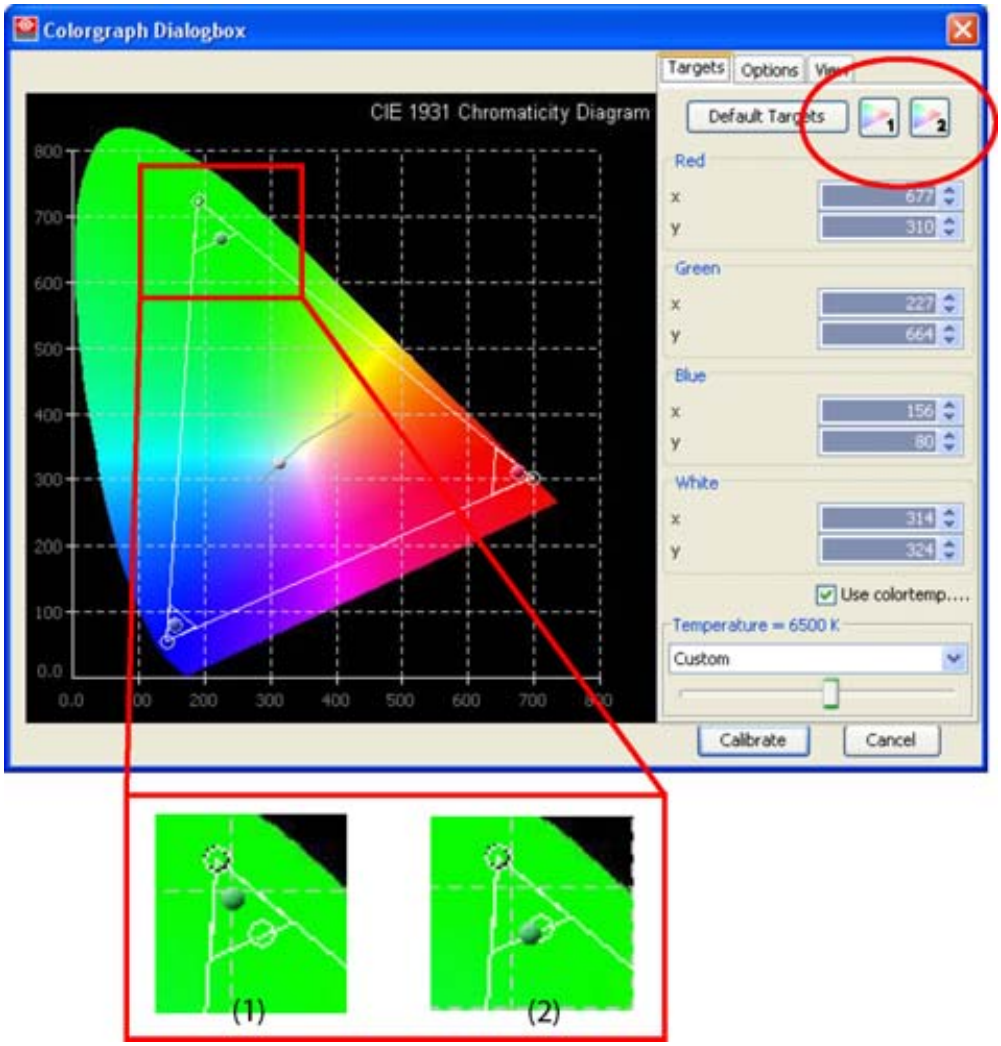


Image 17-11
Color gamut reduction, jitter improvement

Reduction 1 will move the color end points to the center of the triangle adjustment area (1).

Reduction 2 will move the color end points to the base line of the triangle adjustment area (2).

17.5.7 Calibration levels for ILite3 - ILite XP - OLite - IB-6 - MiSTRIP - MiTRIX - NX

About the different levels

Level 1 is a calibration via a LMT light meter.

Level 1.5 is a color calibration via LMT light meter and a brightness calibration via camera.

Level 2 is a calibration via camera. Individual calibration per LED.

For MiTRIX, only level 1 calibration is possible. Level 2 calibration is grayed out.

Level 1.5 calibration is only possible for NX tiles.

How to select

1. Click on the **Options** tab.

   The level selection window opens. A level can be set up for each color. (image 17-12)

2. Click on the drop down box and select the desired level.

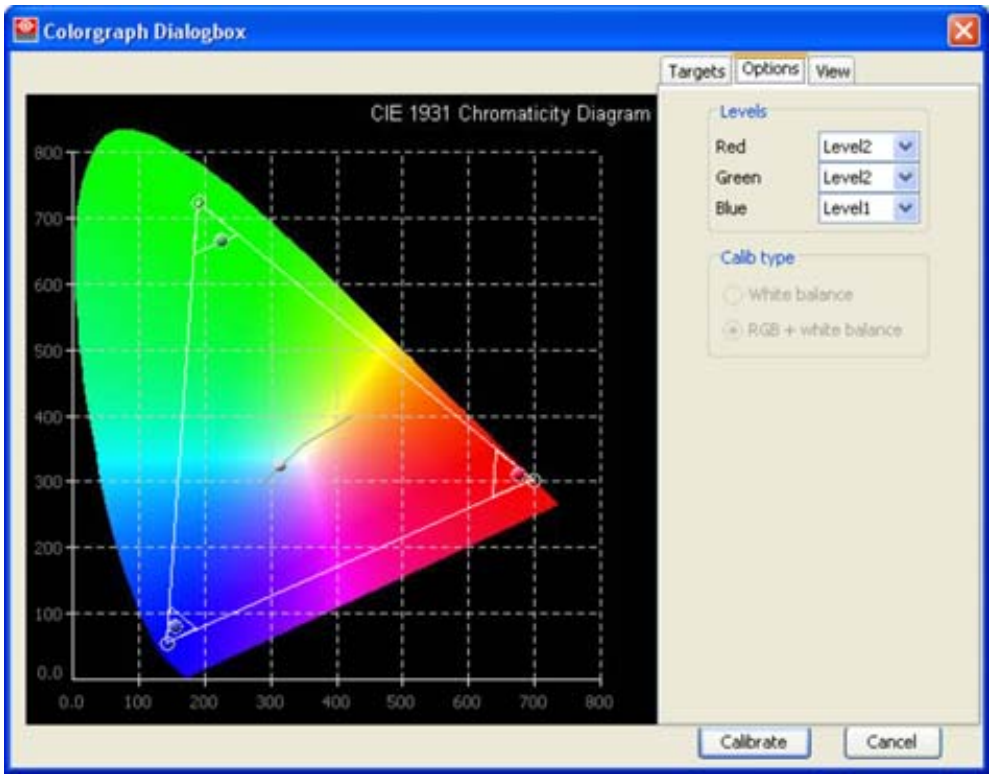


Image 17-12
Calibration level

Level 2 calibration for blue is only possible for ILite XP, ILite 3, OLite tiles and MiSTRIP units. For all other tiles, units, blue calibration is fixed on level 1.

17.5.8 Calibration levels for SLite 10 XP - SP10 - T-series - DB-series

About the different levels

Level 1 is a white balance calibration via a LMT light meter.

Level 2 is a white balance + RGB calibration via camera. Individual calibration per LED.

Extra compensation is built in to get pure saturation RGB color.

How to select

1. Click on the **Options** tab.

   The level selection window opens. (image 17-13)

2. Select the level by clicking on the corresponding radio button.

   Level 1 : White balance calibration : calibration on white will be done using the level 1 calibration method. Go to Start up the calibration procedure.

   Level 2 : RGB + white balance calibration : calibration on RGB and white will be done. Go to Start up the calibration procedure.

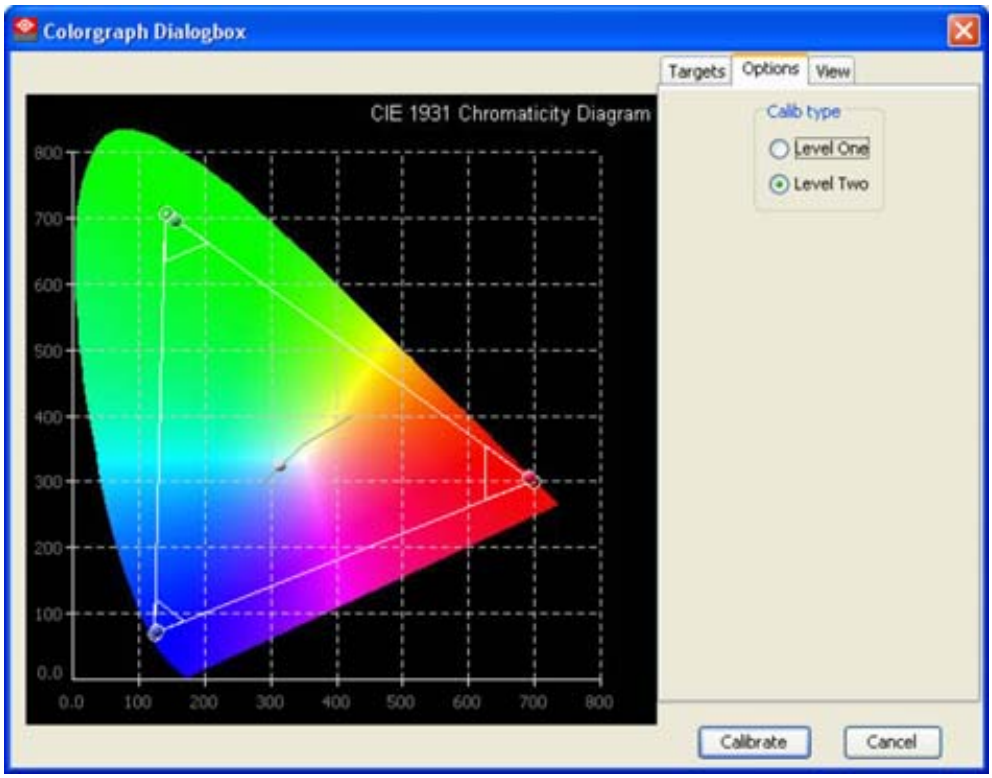


Image 17-13
Calibration level

17.5.9 Start up the calibration procedure

How to start

1. When all settings are set up, click on **Calibrate**.

   The calibration will be started.

Possible warning for ILite 6 XP tiles

When a wall is built up with tile batches containing software older than version 3.21 and software 3.21 and more recent versions, then a warning will be displayed when trying to calibrate this wall.

Image 17-14
Calibration warning

When calibrating this wall without a software update, than there will be a color difference visible. To solve that problem, update the older version with new software so that all tiles have the same recent version. Restart the calibration procedure.

17.5.10 Analog contrast tweaking for ILite 6XP

Read out first the measurements and calibrate the wall before tweaking the contrast.

Tweak settings will be lost when calibrating the wall afterwards.

CAUTION: Can only be used by experts !

What is the purpose?

After a wall is color calibrated, this wall should be uniform white. But it is still possible that a few tiles have an aberration. This aberration can be corrected by using the analog contrast tweaking.

Start by adjusting white and see if the problem becomes smaller. Finalize, if necessary, by tweaking the red, green or blue analog contrast.

Returning to the factory values is always possible.

How to tweak the contrast

1. Select the tile which must be tweaked.
2. Press **Expert**.

   The tweak panel becomes available. (image 17-15)
3. Click on the desired slider and drag the slider till the desired value is reached.
   Or,
   click in the desired input box and enter the desired value.
   Or,
   click on the left or right arrow keys until the desired value is reached.

   When changing one of the color analog contrasts, white will follow within a range being the minimum of the difference of the current value and the lower (higher) limit of the range of each color. White follows a 3:3:1 RGB ratio.
4. Use the **Back** button to finalize the contrast tweaking.
   Click **Restore Tile** to restore the factory settings for that specific tile.
   Click **Restore All Tiles** to restore the factory settings for all tiles.

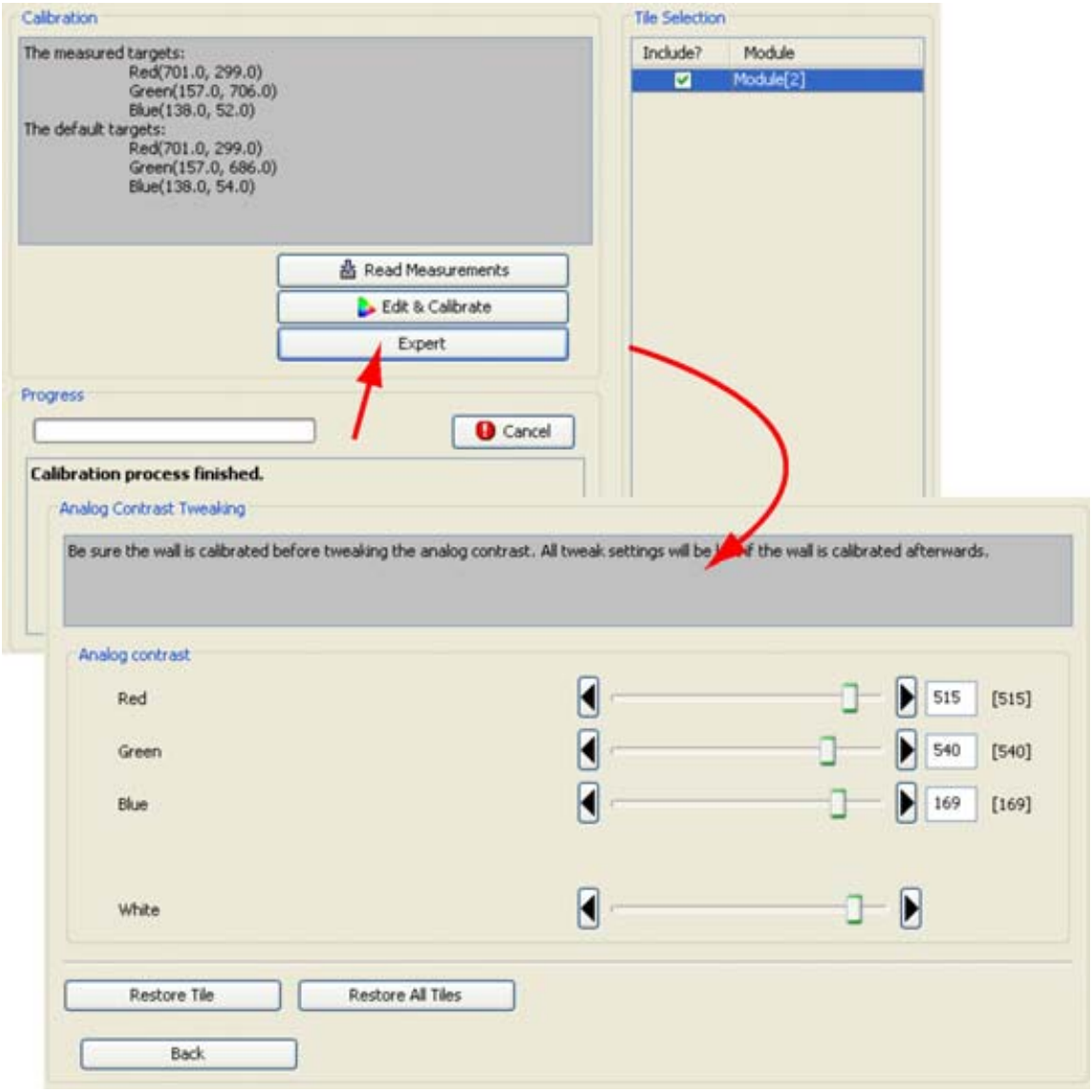


Image 17-15
Start up Analog contrast tweaking

17.6 LED wall mode

Overview

After calibration the LED wall can display an internal or external pattern. Depending on the tile type, the LED wall mode pane is different.

To show an internal pattern, check the check box after *Show internal pattern*.

To show a specific pattern color, check one or more colors For creative blocks, string colors and string direction can be selected..

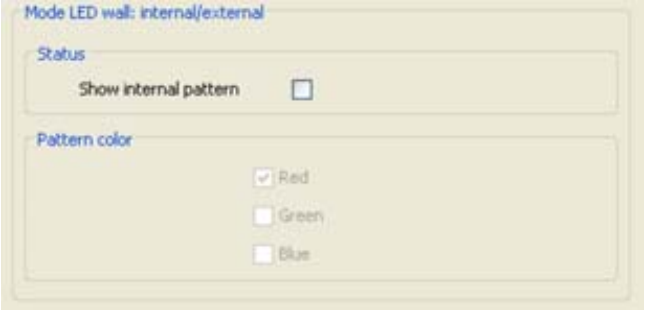


Image 17-16
LED wall mode setup

18. FLASH UPDATE

Overview

- Introduction
- Where to find the flash update files ?
- Where to store the flash update files ?
- Flash update of a screen
- Flash update of a tile
- FiberLink update
- Flash update of a digitizer

18.1 Introduction

Overview

Firmware updates (flash updates) can be executed for all connected devices, except for D320 digitizers.

D320 digitizers must be updated via the Version Control Management (VCM) software.

A flash update can be done on all tiles of a screen

A flash update can be done:

- on all tiles of a screen
- on a set of tiles
- on a single tile
- on a peripheral

Start up the Flash update module

To start up the flash update module, just click on icon on the tool bar or click on the menu bar on *Modules* and select *Flash Update*.

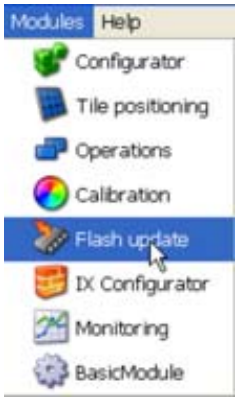


Image 18-1
Flash update selected

The Flash update window opens.

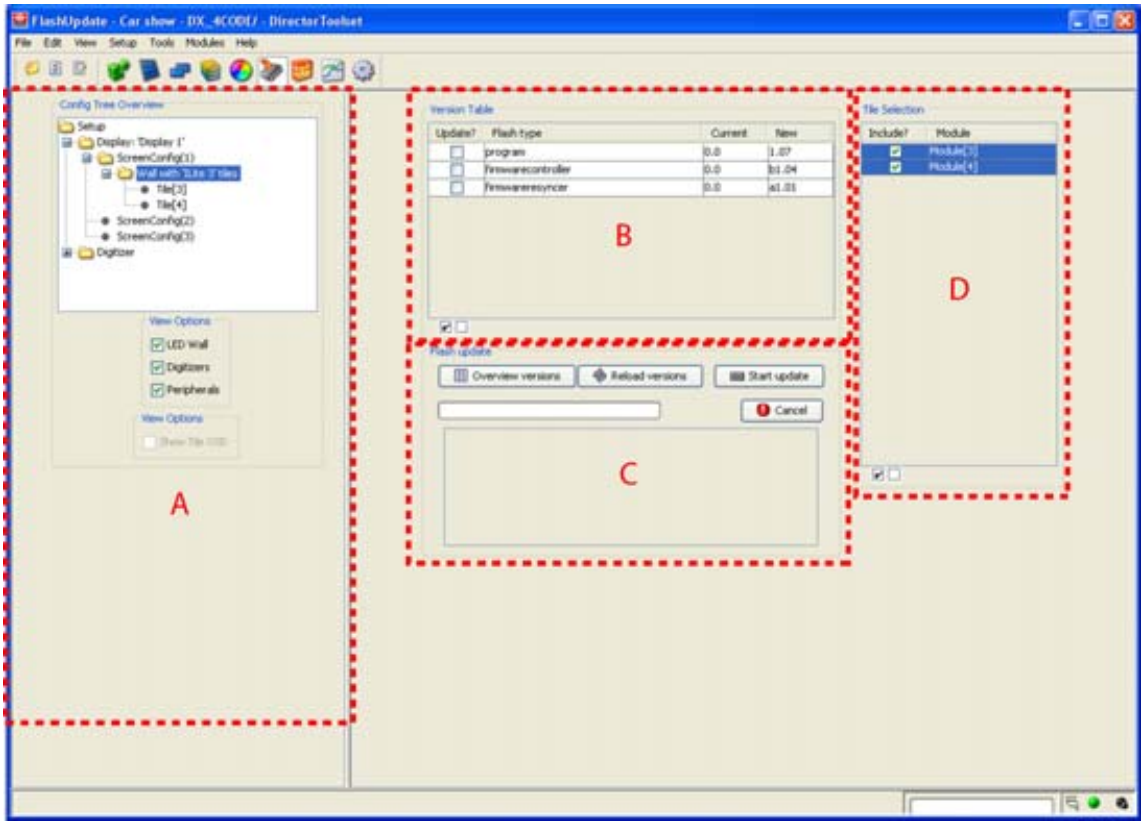


Image 18-2
Flash update window

A	Configuration tree overview
B	Version table
C	Flash update pane
D	Tile selection pane

18.2 Where to find the flash update files ?

Overview

New versions of Director Toolset contain also the latest flash update files which can be used to update tile, peripherals and DX-700 products.

If an intermediate release was made for specific product, this flash update file or package can be downloaded for free from Barco's Partnerzone (URL:www.partnerzone.events.barco.com). Registration is necessary.

If you are not yet registered, click on Partnerzone registration and follow the instructions. With the created login and password, it is possible to enter the partnerzone where you can download the necessary updates.

18.3 Where to store the flash update files ?

For tiles and peripherals, except DX-700

The update files must be downloaded, unzipped if necessary and stored in `<install directory>\Flashfiles` of Director Toolset.

For DX-700

Create a package folder as follow: `<install directory>\Flashfiles\DX700 package <version>`

With <version> : version of the package (= version of main code)

Example : DX700 package 0.01.f

Download all flash files and the script file *CustomerCompleteLoad_RevB_Boards.sld* and store everything in the created directory.

The Flashfiles folder may contain different package folders.

18.4 Flash update of a screen

How to update ?

1. Expand the *Config tree overview* until the wall with tile indication below the *screen* is visible (a). (image 18-3)
2. Click on the wall indication (a).

   The version table and tile selection window opens.
3. If all tiles in the selection must be updated, check all modules in the tile selection window (b) (all are selected by default, if not all are selected, use **Ctrl + A** to select all tiles).
   If only a set of tiles must be updated, check only those modules which must be updated.
   Note: *To check all tiles, click on the ☑ check box at the bottom of the pane.*

   To deselect all tiles, click on the ☐ check box at the bottom of the pane.

   The version table gives an overview of what can be updated. The content of this table depends on the tile type.
4. To get a complete overview of the software versions of the tiles, click on **Overview versions** (c).

   The Overview version table opens with an overview of all tiles.
5. In the Version table, check the software type which must be updated (d).
   Note: *Use ☑ to check all flash types. Use ☐ to deselect all flash types.*
6. Click on **Start update** to start the process (e).

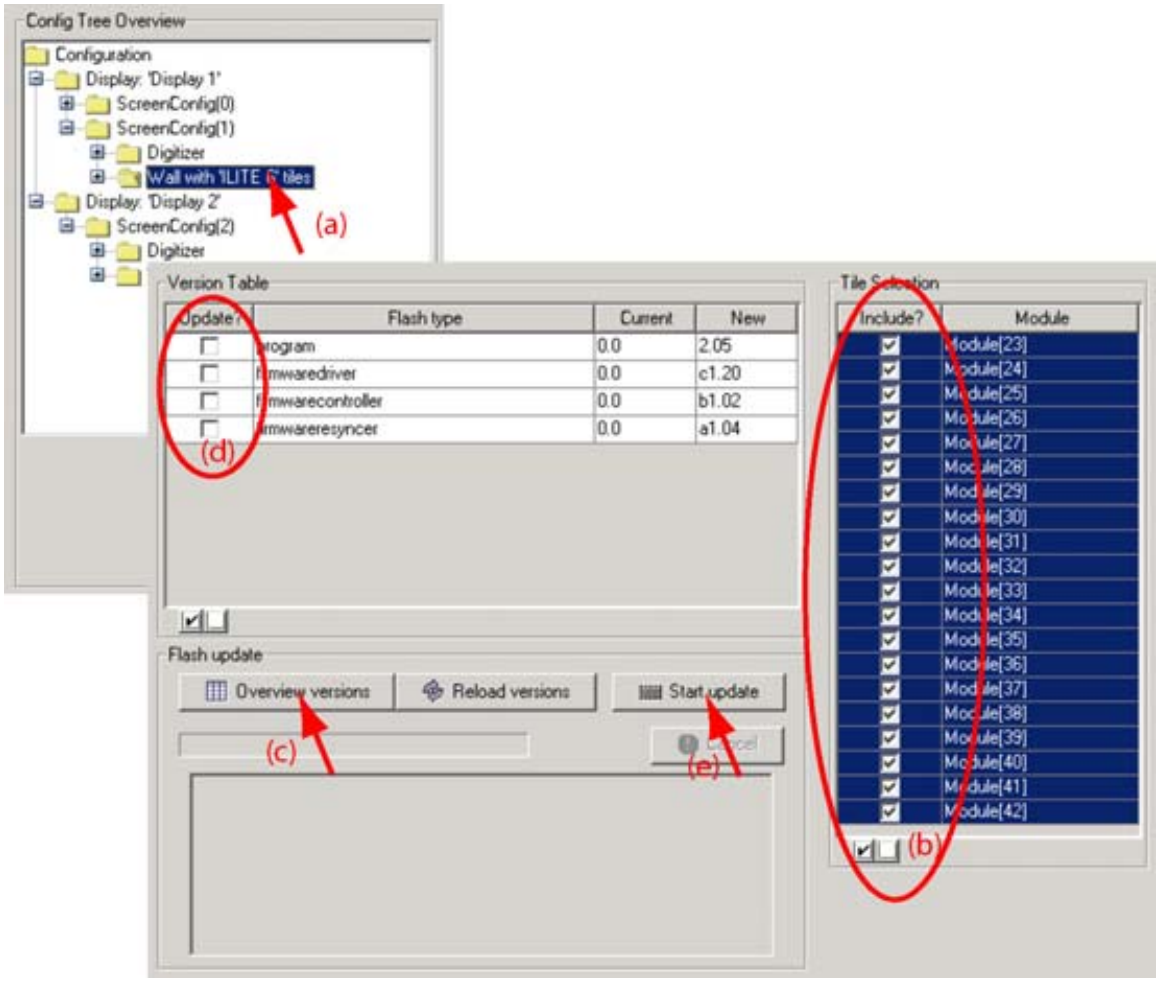


Image 18-3
Flash update screen

For OLite, ILite 10XP and SP-10 a common update is available. When checked, all tiles are updated at the same time.

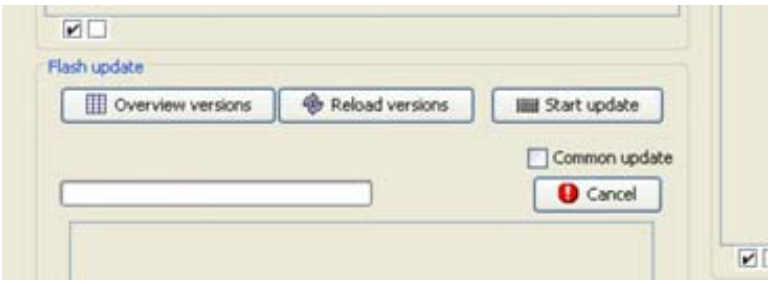


Image 18-4
Common update

18.5 Flash update of a tile

How to update ?

1. Expand the *Config tree overview* until the tile level is visible. (image 18-5)

2. Click on the desired tile (a).

   The version table opens. This table gives an overview of the flash types that can be updated. The content of this version table is related to the tile type (b).

3. In the Version table, check the flash type which must be updated (c).
   Note: *Use ☑ to check all flash types. Use ☐ to deselect all flash types.*

4. Click on **Start update** to start the update process (d).

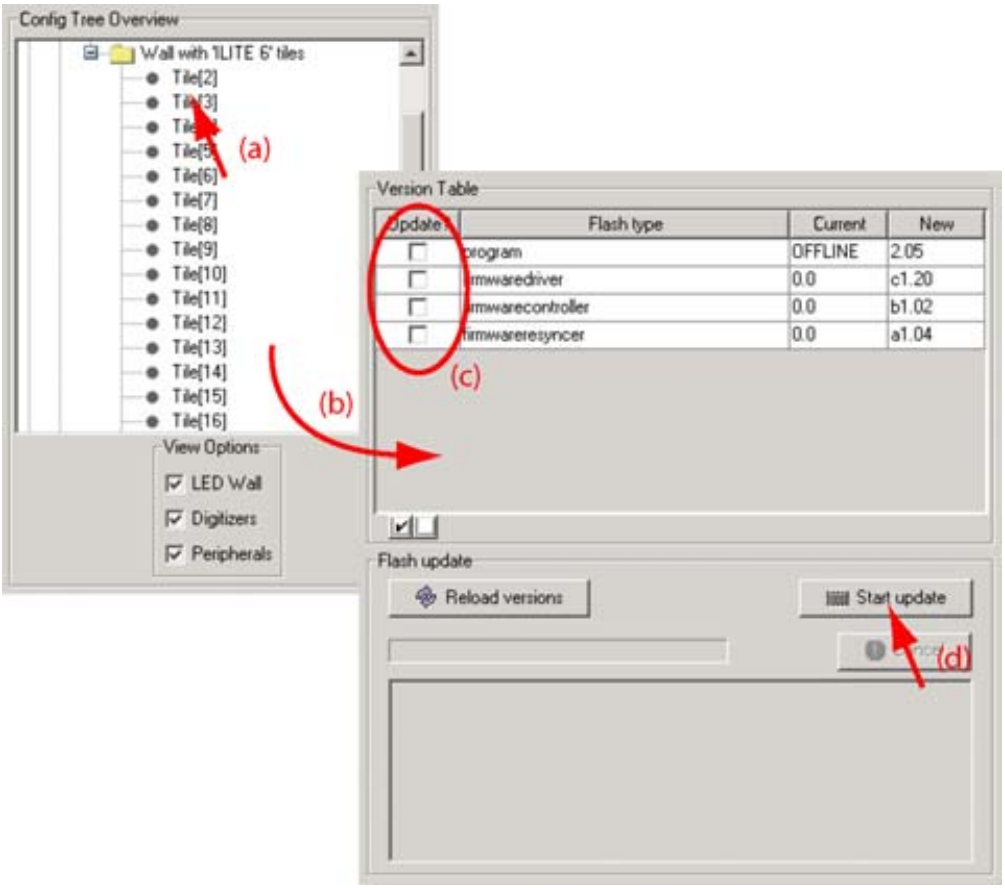


Image 18-5
Flash update, one tile

Click on Reload versions to display the lowest software version available in the wall.

18.6 FiberLink update

What can be updated ?

The following can be upgraded:

- The program/firmware of the transmitter
- The program/firmware of the receiver

How to update ?

1. Expand the *Config Tree Overview* until the desired FiberLink is visible. (image 18-6)
2. Expand this FiberLink and select Tx or Rx (a).

Tx Transmitter unit

Rx Receiver unit

The version table for the selected item will be displayed (b).

Use **Reload versions** to display the current version and the new version in the Version table.

3. Check the flash type that must be updated (c).
   Note: *Use ☑ to check all flash types. Use ☐ to deselect all flash types.*
4. Click on **Start update** (d).

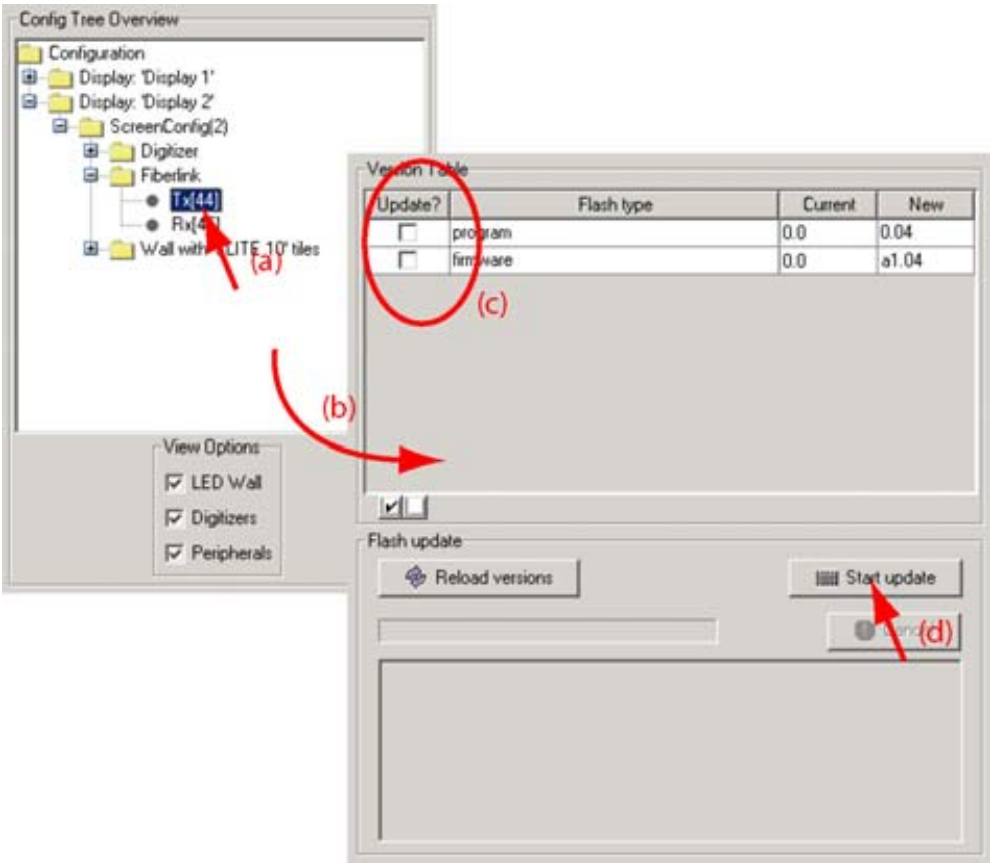


Image 18-6
Flash update, FiberLink

18.7 Flash update of a digitizer

Only for DX-700 and LED-Pro.

What can be done ?

A flash update is possible with a zip file which is on any location on your computer (hard disk, CD-ROM, etc. ..). The zip file has to be imported and Director Toolset put it on the correct place. Once that is done, the update can be started.

How to import a package

1. Click on the **Import package**. (image 18-7)

A browse window opens.

2. Browse to the location where the zip file is stored and select the file.
3. Click **Open**.

   The file will be unzipped and stored on the correct location within Director Toolset.

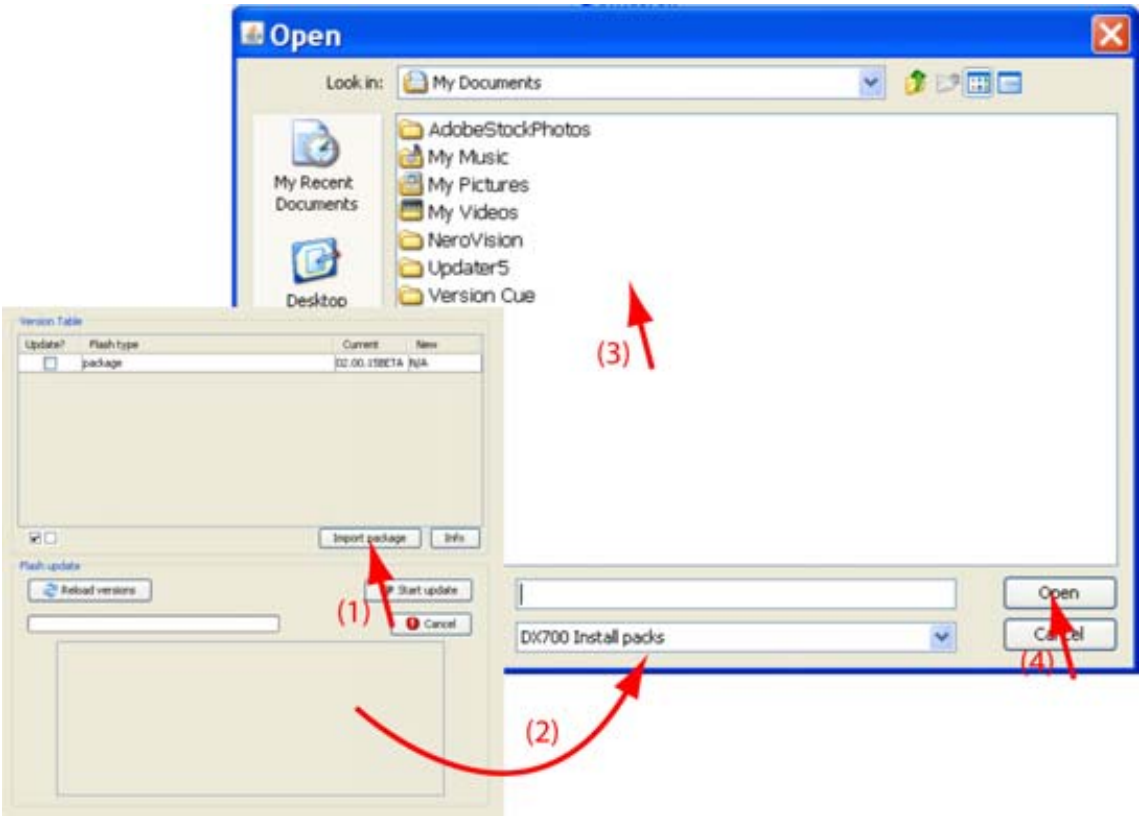


Image 18-7
Import flash file

How to update ?

1. Expand the *Config tree overview* till the digitizer (DX-700 or LED-Pro) is visible. (image 18-8)
2. Select the digitizer.

   The version table is filled out.

   Use **Reload versions** to display the current version and the new version in the *Version table*.
3. Check the flash type that must be updated.
4. Click on **Start update**.

   After the update is finished, a popup message is displayed to announced that internal programming is busy and the digitizer will be automatically restarted. Click **OK** to close the message. (image 18-9)

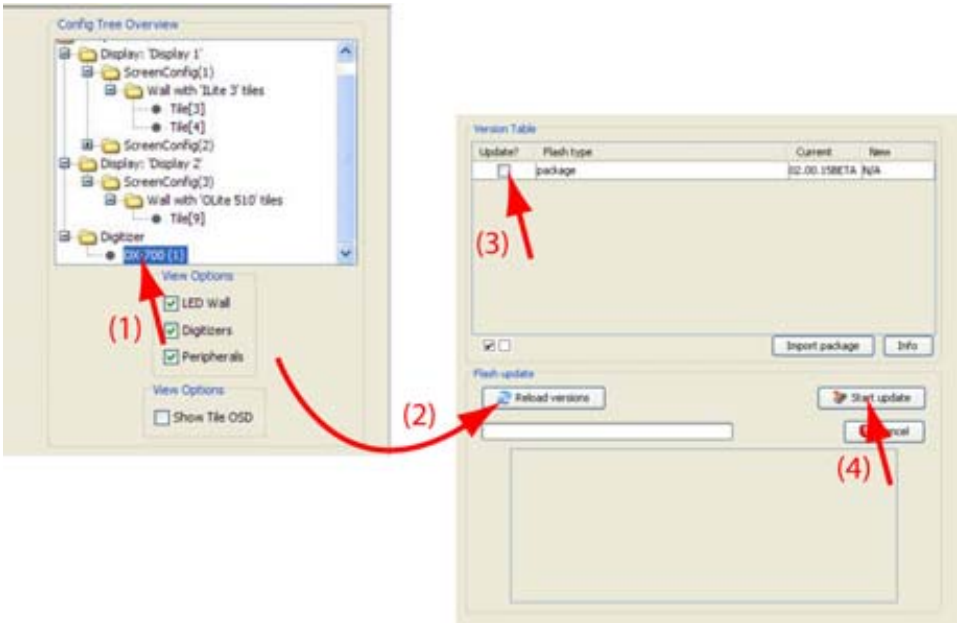


Image 18-8
Flash update digitizer

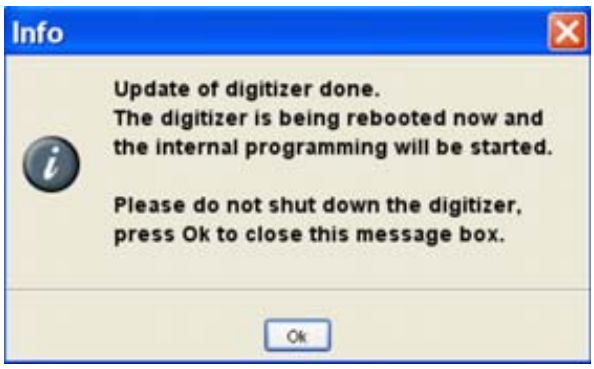


Image 18-9
Update message.

19. IX CONFIGURATION

Overview

- Introduction
- Create new design
- Controller configuration
- Printing designs
- Display - screen selection pane

19.1 Introduction

IX configurator

Environment to design creative layouts for MiPIX, MiSPHERE, MiSTRIP, MiTRIX, OLite or NX and to assign designs to the respective control units.

Objectives of the IX configurator

The IX configurator contains 2 parts, the designer part and the configuration part.

Within the designer part of the configurator, the user has the opportunity to place pixel blocks in a custom way in the workspace (hardware limits of the control unit) and to create in that way a design (template).

Therefore, to place the blocks, different ways can be used:

For MiPIX:

- the manual way : this way can place the blocks from a particular string on any place in the workspace.
- the auto fill way : the software calculates the best position of the blocks within a viewport on the workspace.

For OLite or NX in creative (customized) mode:

- the manual way: this way can place the blocks from a particular string on any place in the workspace.

For MiSPHERE:

- the manual way: this way can place the MiSPHERE units from a particular string on any place in the workspace.
- the auto fill way: the software calculates the best position of the MiSPHERE units within a viewport on the workspace. This auto fill can become handy for some typical designs.

For MiSTRIP

- the manual way: this way can place strips from a particular string on any place in the workspace.

For MiTRIX

- the manual way: this way can place the MiTRIX units from a particular string on any place in the workspace.

Once the blocks are placed, it is still possible:

- to reposition each block
- to rotate a block for easy physical mounting of that block or to comply with the physical mounting (only for MiPIX, MiSTRIP, MiTRIX, NX creative and OLite in creative mode).
- to delete blocks or to add extra blocks, but limited by the installed hardware.

Once the design (template) configuration is finished, it can be saved. This design can now be associated with one or more controller modules (devices) in the configuration part of the module. The controller modules can be positioned within the active field of the digitizer.

Start up

Click on the icon in the tool bar or

click on the menu bar on *Module* and select *IX configurator*.

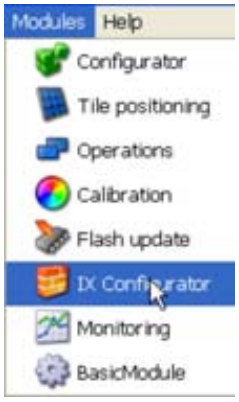


Image 19-1
IX configurator start up

The IX configuration window starts up

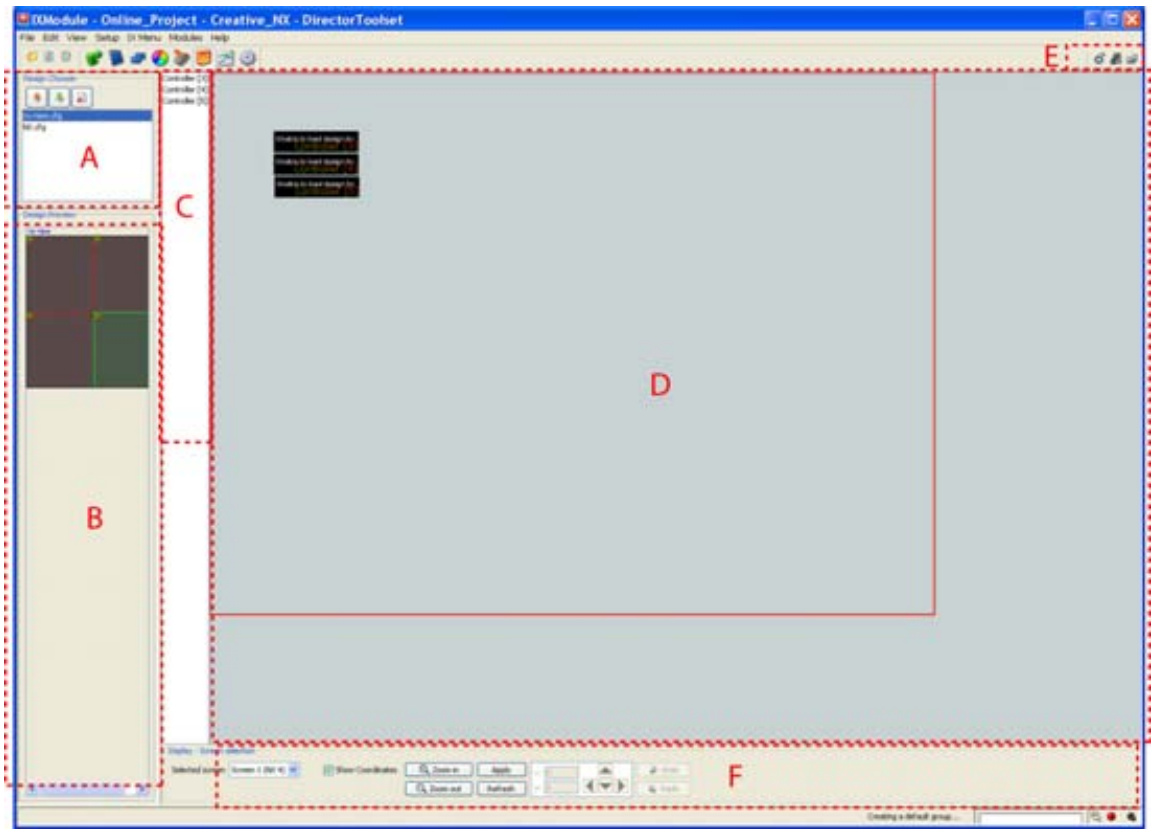


Image 19-2
IX configuration window

A	Design chooser, to make a choice out of the created designs.
B	Design preview, preview of a selected design in the design chooser
C	Control units overview
D	Tile positioning (modules) within the active field

E	Navigation buttons between configuration and design
F	Display - screen selection plus navigation buttons

19.2 Create new design

Overview

- Start up for OLite configuration in customized mode
- Start up for a NX setup
- Start up for a MiPIX configuration
- Start up for MiSPHERE configuration
- Start up for MiSTRIP configuration
- Start up for MiTRIX configuration
- The design window
- Add new blocks to a design
- Add new MiSTRIP units to a design
- Save a design
- About inconsistencies in a design
- Edit existing design
- Change the name of a design
- Block manipulations
- Background image
- Foreground - background color design window
- Zoom in - Zoom out
- Printing placement and cabling scheme
- Some examples of design

The designer part of the IX module works independently. That means that a new design can be created for MiPIX, MiSPHERE, MiSTRIP, MiTRIX or OLite in customized mode without having an active configuration loaded.

19.2.1 Start up for OLite configuration in customized mode

Overview

- New design for OLite 510 customized mode
- New design for OLite 612 customized mode

19.2.1.1 New design for OLite 510 customized mode

Overview

- Design restriction for OLite 510 customized mode
- Start up of a new design
- New control block configuration

19.2.1.1.1 Design restriction for OLite 510 customized mode

Overview

The complete controller used to drive the OLite 510 blocks can only control a maximum of 64 blocks. These 64 blocks can be connected to 6 available outputs of the controller. Each output can only control a maximum of 16 blocks.

E.g. if you connect 16 blocks to output 1 and 16 blocks to output 2 and 16 blocks to output 3 and 16 blocks to output 4, then you cannot connect any block to output 5 and 6 as the maximum allowed per controller is yet reached.

These restrictions are checked at runtime (see message status bar), and imposed during the saving process. When the design is not conform the rules, a message will be displayed to correct first your design before you can continue with the saving process.

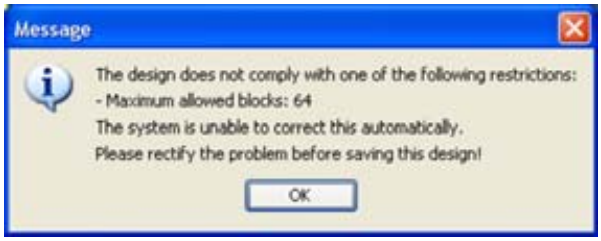


Image 19-3
Design restrictions message

19.2.1.1.2 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the IX module tool bar.
   Or,
   click on the menu bar on *IX menu* and select *New design*. (image 19-4)

   The *New control block configuration* window opens. (image 19-5)

Image 19-4
Create new design

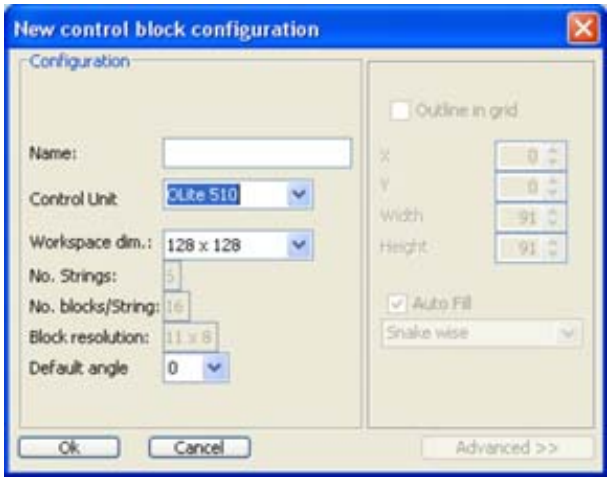


Image 19-5
New control block configuration window

19.2.1.1.3 New control block configuration

Overview

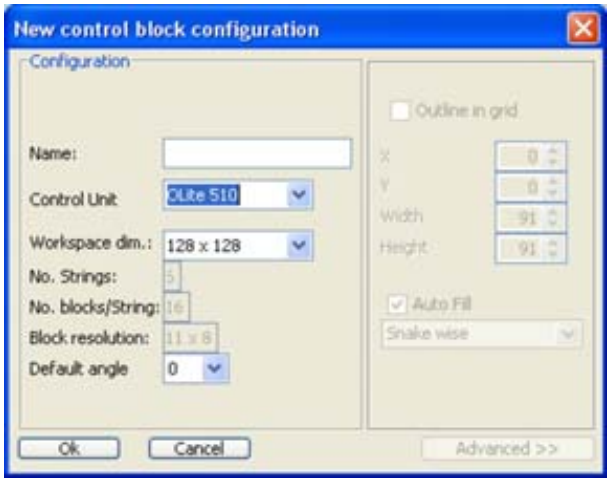


Image 19-6
New control block configuration window

Name

Enter a name for the new configuration.

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

A selection is possible by clicking on the combo box.

The workspace for the control unit is selectable and the following choices are possible :

- 128 x 128
- 64 x 256
- 256 x 64

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of blocks per string depends on the maximum number of pixels that can be driven by the used controller and by the number of pixels per block. Maximum 16 blocks per string are allowed.

E.g. for OLite 510 : (11x8) x 16 blocks/string = 1408 pixels/string

Maximum number of blocks per controller is limit to 64. That means that not all 6 strings can contain 16 blocks.

Block resolution (read only)

Block resolution is the number of pixels available in one block (e.g. 11 x 8 for OLite 510).

The block resolution influences the number of blocks per string.

Default angle

The value filled out in the default angle determines the rotation angle of the placed block in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.1.2 New design for OLite 612 customized mode

Overview

- Design restriction for OLite 612 customized mode
- Start up of a new design
- New control block configuration
- Outline in Grid
- Auto Fill of the outline in grid
- Advanced settings for auto fill
- Set up for manual fill
- Outline border On or Off

19.2.1.2.1 Design restriction for OLite 612 customized mode

Overview

The complete controller used to drive the OLite 612 blocks can only control a maximum of 48 blocks. These 48 blocks can be connected to 6 available outputs of the controller. Each output can only control a maximum of 12 blocks.

E.g. if you connect 12 blocks to output 1 and 12 blocks to output 2 and 12 blocks to output 3 and 12 blocks to output 4, then you cannot connect any block to output 5 and 6 as the maximum allowed per controller is yet reached.

These restrictions are checked at runtime (see message status bar), and imposed during the saving process. When the design is not conform the rules, a message will be displayed to correct first your design before you can continue with the saving process.

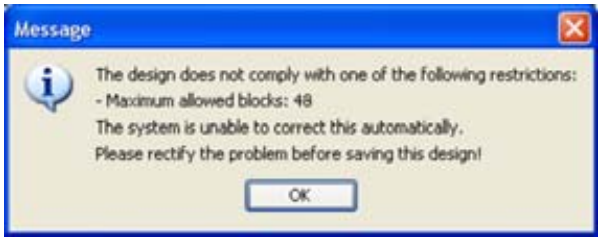


Image 19-7
Design restriction message

19.2.1.2.2 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the IX module tool bar.
   Or,
   click on the menu bar on *IX menu* and select *New design*. (image 19-8)

   The *New control block configuration* window opens. (image 19-9)

Image 19-8
Create new design

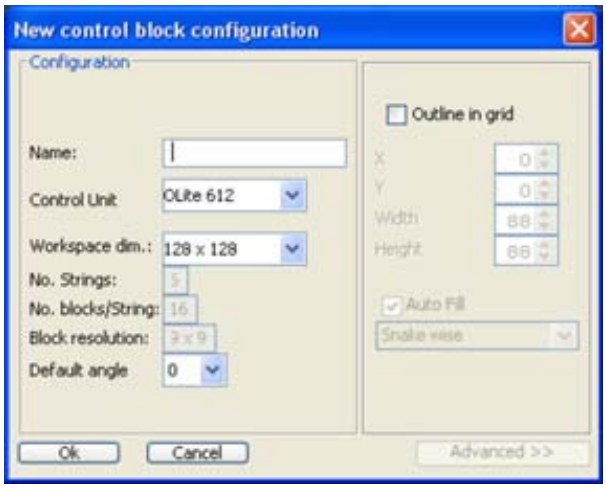


Image 19-9
New control block configuration window

19.2.1.2.3 New control block configuration

Name

Enter a name for the new configuration (image 19-9).

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

A selection is possible by clicking on the combo box.

The workspace for the control unit is selectable and the following choices are possible :

- 128 x 128
- 64 x 256
- 256 x 64

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of blocks per string depends on the maximum number of pixels that can be driven by the used controller and by the number of pixels per block. Maximum 16 blocks per string are allowed.

E.g. for OLite 612 : (9x9) x 16 blocks/string = 1296 pixels/string

Maximum number of blocks per controller is limit to 48. That means that not all 6 strings can contain 16 blocks.

Block resolution (read only)

Block resolution is the number of pixels available in one block.

The block resolution influences the number of blocks per string.

Default angle

The value filled out in the default angle determines the rotation angle of the placed block in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.1.2.4 Outline in Grid

Definition

Outline in grid is a well defined area within the workspace to facilitate the user with placing its bocks on the design or to allow an auto fill. The outline is indicated by a well defined border which can be switched off and on again.

Defining an Outline in Grid

The outline is defined by its start position, its width and height.

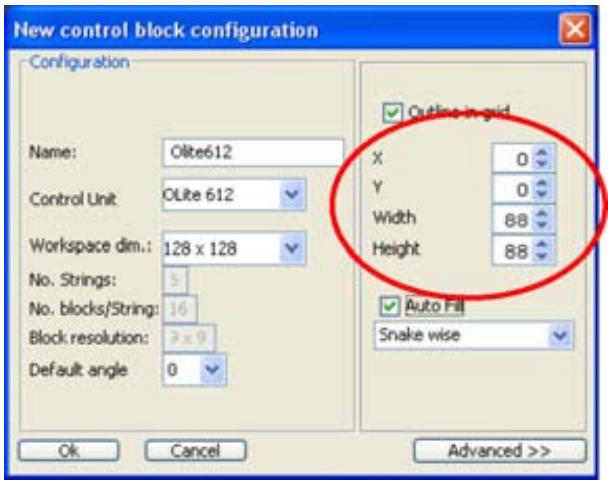


Image 19-10
Viewport in grid set up

Enter first the *X* and *Y* coordinate to define the start position. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Enter the desired *width* or *height* to define a viewport in grid. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Example:

X = 5; Y = 5; Width = 30; Height = 30

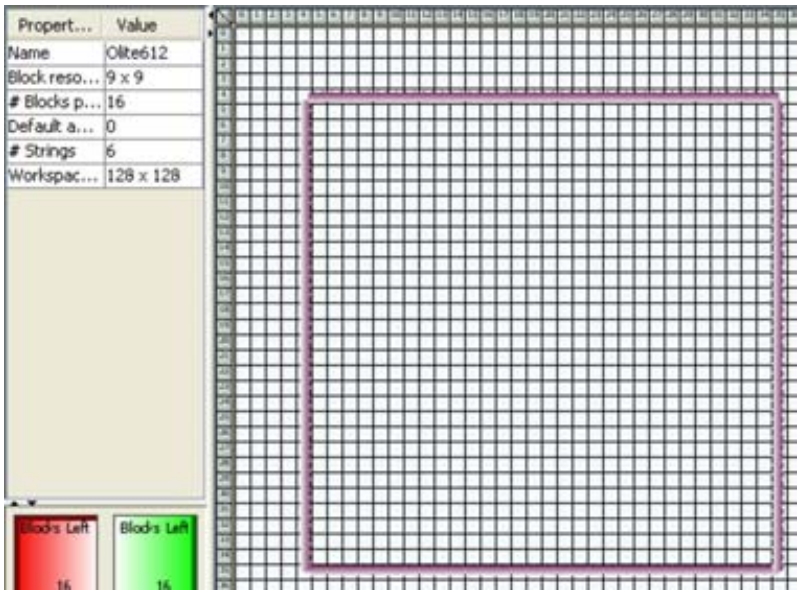


Image 19-11
Outline in grid

19.2.1.2.5 Auto Fill of the outline in grid

Auto fill can only be activated when the *Outline in Grid* is defined.

What is possible ?

With auto fill, the OLite 612 blocks will be placed within the outline in grid via a predefined path.

How to set up ?

1. Check the check box just before *Auto fill* (a). (image 19-12)

   The auto fill function is now activated.

2. Select the way auto fill should place the blocks. Click in the combo box (b) and select the desired fill up path (c).
   The following paths are possible:
   - **Snake wise**: the software starts by default in the upper left corner of the outline and fills up from left to right until boundaries of the outline are reached. Then it goes one down and continues from right to left. It starts always with the first string, continues with the second string, then the third string and ends with the fourth string. It interrupts the auto fill when the outline is filled up or when all blocks are placed. It does take care of the restrictions. The creator must clean up himself. (image 19-13)
   - **By quadrant** : the software will start at the joining corners of the quadrants of the viewport (outline in grid). Each quadrant will be filled up with another string and in most cases each string will contain the same amount of blocks. This depends on the width and height setting of the outline. (image 19-14) Whether or not the same amount of blocks for each string is used depends on the combination of width, height, horizontal gap, vertical gap and the dimension of the block.

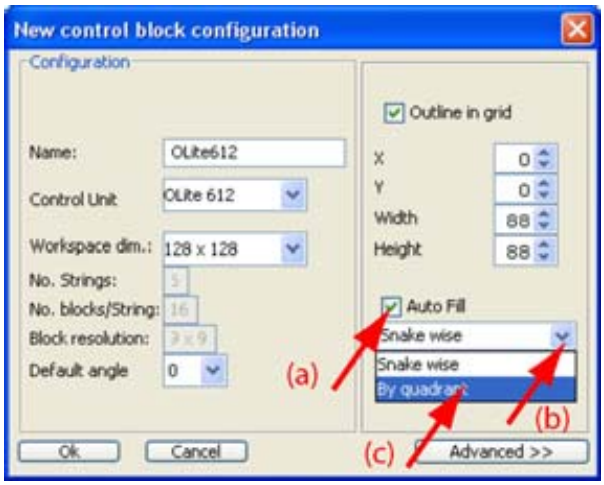


Image 19-12
Auto fill

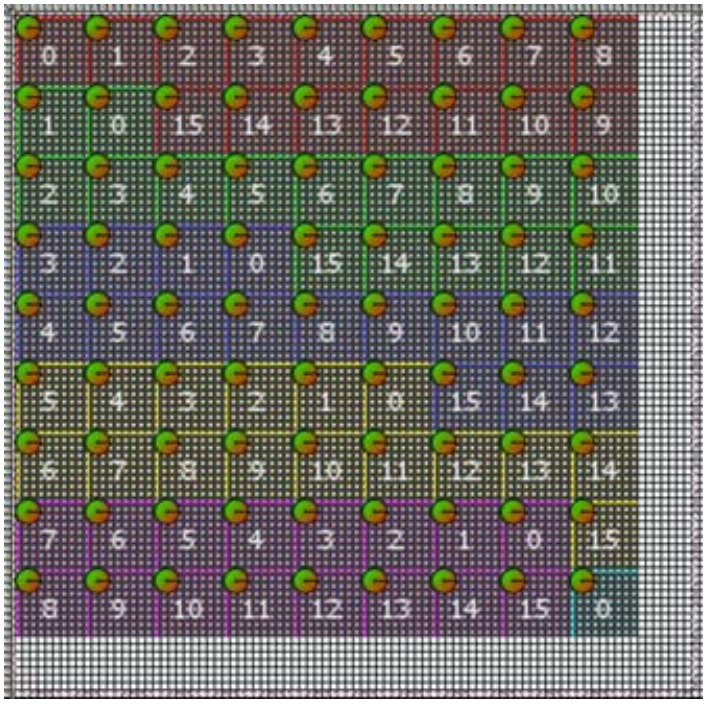


Image 19-13
Auto fill snake wise, viewport area 88 x 88

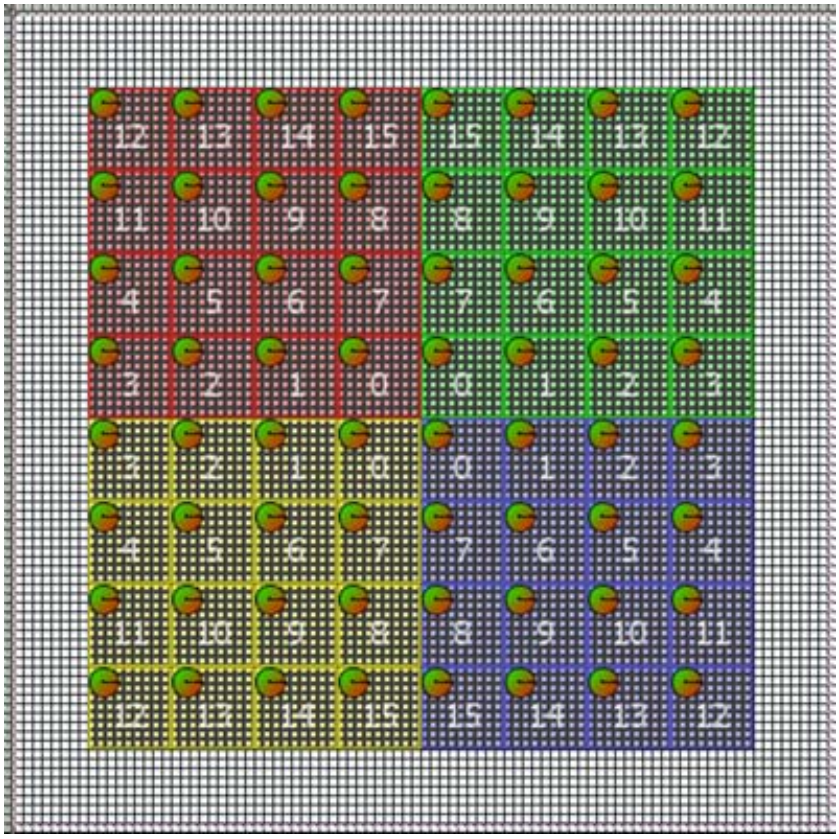


Image 19-14
Auto fill by quadrant, outline area 88 x 88

When auto fill is finished, it is still possible to place extra blocks manually in the design and that as long as there are blocks available in one of the block collectors, or to delete blocks from the design.

About the used symbol

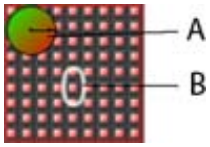


Image 19-15

A	Orientation indication
B	Sequence number within the string, string is indicated by a color

19.2.1.2.6 Advanced settings for auto fill

What is possible with the advanced settings ?

The following items can be defined :

- Horizontal and vertical pixel gap.
- String direction, horizontal or vertical
- Start position of the first string when using snake wise fill up.

By default :

- Horizontal and vertical gap = 0
- String direction = horizontal
- Start position = upper left

Start up the advanced settings

1. Click on the **Advanced >>** button (a). (image 19-16)
   Note: *Only active when Outline in Grid and Auto fill are checked.*

   The options window will be added (b).

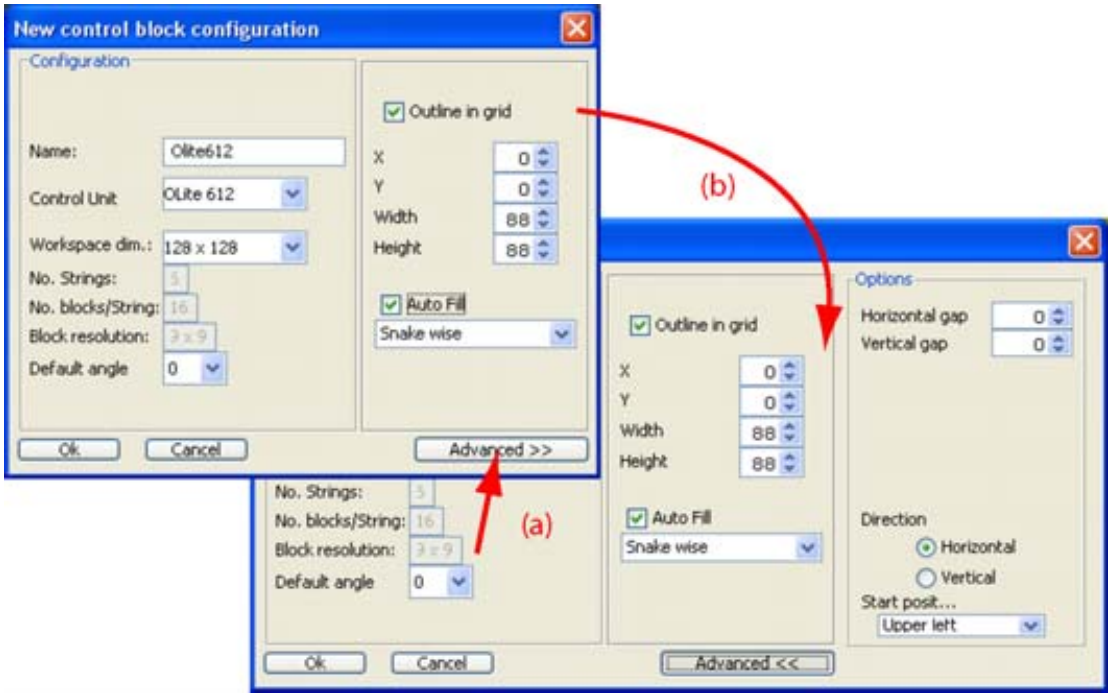


Image 19-16
Advanced auto fill options

Gap set up

1. If you want to set a *Horizontal gap*, click in the input field next to *Horizontal gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Horizontal gap* until the desired value is reached. (image 19-17)
2. If you want to set a *Vertical gap*, click in the input field next to *Vertical gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Vertical gap* until the desired value is reached.

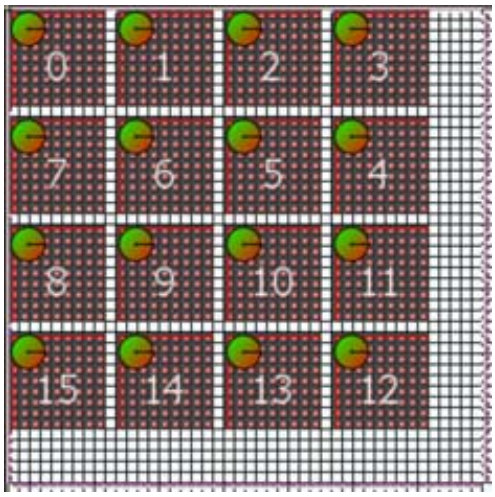


Image 19-17
Auto fill, outline 44 x 44, horizontal and vertical gap 1

String direction

1. Click on the desired radio button to set up the string direction.
   Note: *The block 0 is always connected with the controller.*

Horizontal	the bocks will be placed in a horizontal way. From left to right or from right to left.
Vertical	the bocks will be placed in a vertical way. From top to bottom or from bottom to top.

Start position

1. Click on the drop down box.

   The possible choices will be displayed.
   - Upper left
   - Upper right
   - Lower right
   - Lower left
2. Select the desired start position.

   This start position will only be used when snake wise auto fill is selected.

19.2.1.2.7 Set up for manual fill

When *Outline in Grid* is NOT selected, manual fill is automatically active.

How to set up ?

1. Uncheck *Outline in Grid* (image 19-18)
   Or,
   check *Outline in Grid* and uncheck *Auto fill*. (image 19-19)

   Now it is possible to manually place blocks on the workspace of the design window.

   To see how to place blocks, see "Add new blocks to a design", page 508.

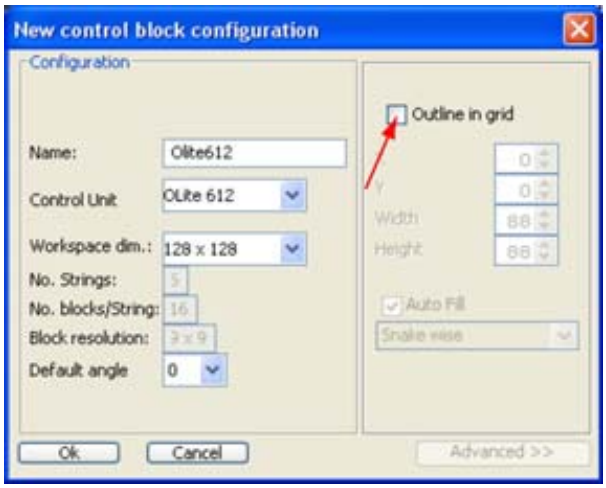


Image 19-18
No outline in grid selected

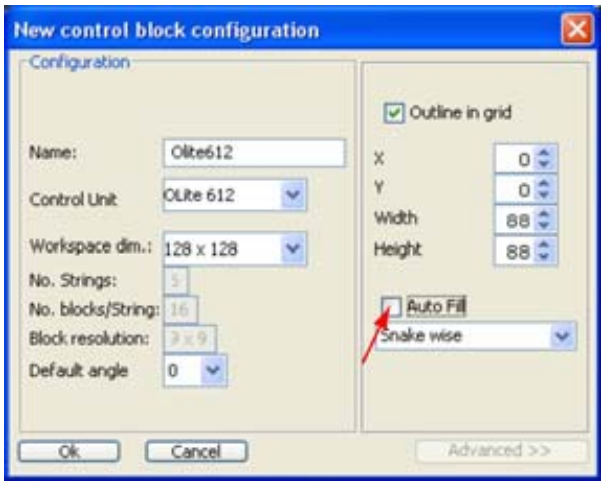


Image 19-19
No auto fill

19.2.1.2.8 Outline border On or Off

This function is only active when an outline is defined during the design configuration.

How to switch ?

1. Right click in the workspace.

   A popup window appears. (image 19-20)

2. Select *View* and move your mouse to the right.
3. Select *Show outline*.
   - When checked : the outline is shown with the dimensions as chosen in the configuration set up.
   - When not checked : the outline is not shown.

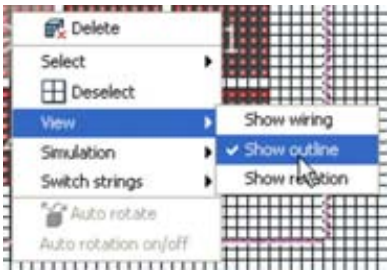


Image 19-20
Show outline border

19.2.2 Start up for a NX setup

Overview

- Start up of a new design
- New control block configuration
- Manual positioning of the blocks

19.2.2.1 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the IX module tool bar.
   Or,
   click on the menu bar on *IX menu* and select *New design*. (image 19-21)

   The *New control block configuration* window opens. (image 19-22)

Image 19-21
Create new design

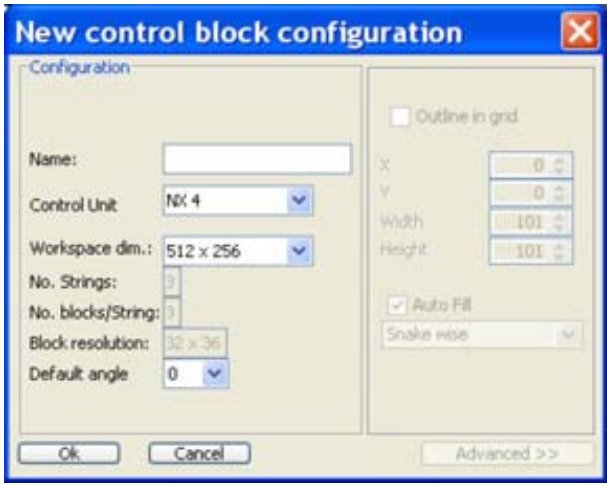


Image 19-22
New control block configuration window

19.2.2.2 New control block configuration

Overview

Name

Enter a name for the new configuration (image 19-22).

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

A selection is possible by clicking on the combo box.

The workspace for the control unit is selectable and the following choices are possible :

- 512 x 256
- 256 x 512
- 1024 x 768
- 768 x 1024

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

Maximum 3 blocks per string are allowed.

Maximum number of blocks per controller is 9.

Block resolution (read only)

Block resolution is the number of pixels available in one block (e.g. 32 x 36 for NX-4).

Default angle

The value filled out in the default angle determines the rotation angle of the placed block in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.2.3 Manual positioning of the blocks

About the blocks

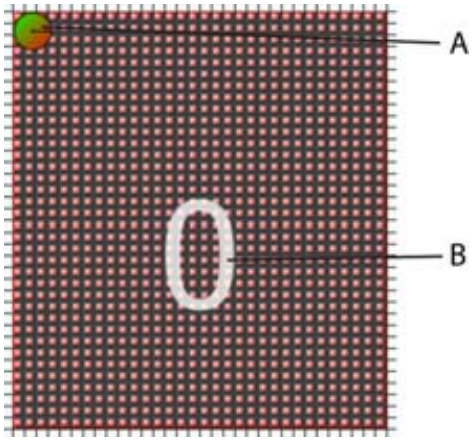


Image 19-23

A Orientation indication
B Sequence number within the string, string is indicated by a color

The blocks can only manually positioned in the work space. No auto fill is available. For more info about adding blocks to a design, see "Add new blocks to a design", page 508.

19.2.3 Start up for a MiPIX configuration

Overview

- Start up of a new design
- New control block configuration
- Outline in Grid
- Auto Fill of the outline in grid
- Advanced settings for auto fill
- Some typical examples where auto fill is very useful
- Set up for manual fill
- Outline border On or Off

19.2.3.1 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the function tool bar.
   Or,
   click on **IX menu** and select *New design*. (image 19-24)

   The *New control block configuration* window opens. (image 19-25)

Image 19-24
Create new design

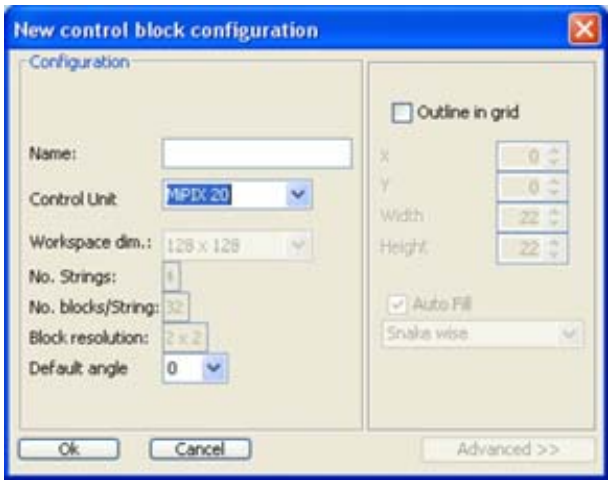


Image 19-25
New control block configuration window

19.2.3.2 New control block configuration

Name

Enter a name for the new configuration (image 19-25).

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions (read only)

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

The workspace dimensions are limited by the hardware of the controller unit.

Only 128 x 128 pixels are possible.

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of blocks per string depends on the maximum number of pixels that can be driven by the used controller and by the number of pixels per block.

E.g. when using a controller with a maximum output of 128 pixels per output port and MiPIX blocks of 4 pixels (2x2) , then only 128 divided by 4, 32 blocks can be connected in one string.

Block resolution (read only)

Block resolution is the number of pixels available in one block. For MiPIX-20 blocks : 2 x 2

The block resolution influences the number of blocks per string.

Default angle

The value filled out in the default angle determines the rotation angle of the placed block in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.3.3 Outline in Grid

Definition

Outline in grid is a well defined area within the workspace to facilitate the user with placing its bocks on the design or to allow an auto fill. The outline is indicated by a well defined border which can be switched off and on again.

Defining an Outline in Grid

The outline is defined by its start position, its width and height.

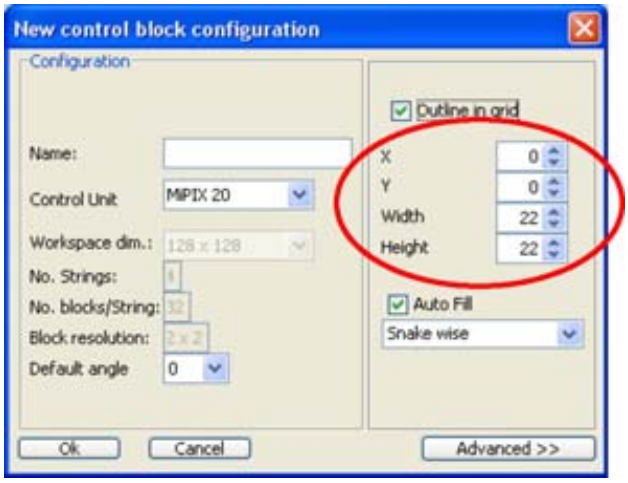


Image 19-26
Viewport in grid set up

Enter first the *X* and *Y* coordinate to define the start position. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Enter the desired *width* or *height* to define a viewport in grid. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Example:

X = 5; Y = 5; Width = 30; Height = 30

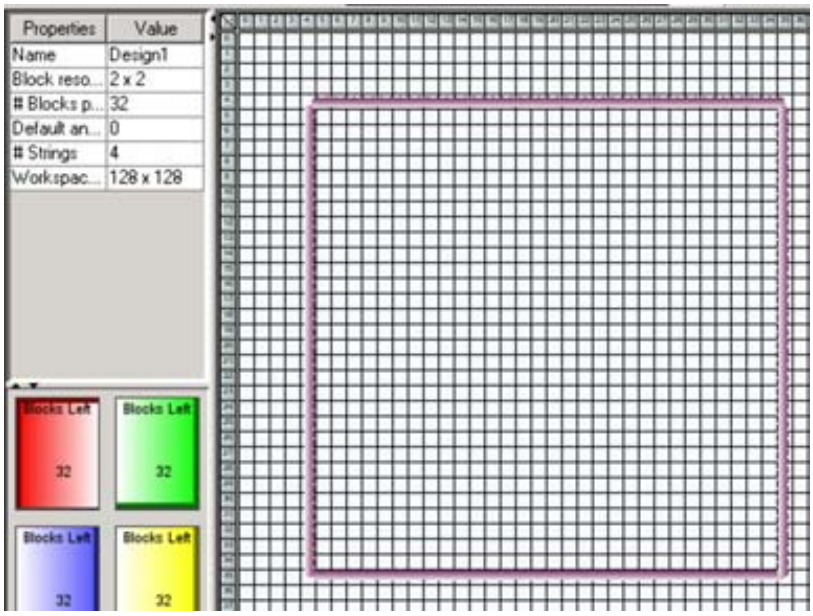


Image 19-27
Outline in grid

19.2.3.4 Auto Fill of the outline in grid

Auto fill can only be activated when the *Outline in Grid* is defined.

What is possible ?

With auto fill, the MiPIX blocks will be placed within the outline in grid via a predefined path. The rotation of the blocks will be adapted accordingly so that the cabling of the block can be done in an easy way.

How to set up ?

1. Check the check box just before *Auto fill* (a). (image 19-28)

   The auto fill function is now activated.

2. Select the way auto fill should place the blocks. Click in the combo box (b) and select the desired fill up path (c).

The following paths are possible:

- **Snake wise**: the software starts by default in the upper left corner of the outline and fills up from left to right until boundaries of the outline are reached. Then it goes one down and continues from right to left. It starts always with the first string, continues with the second string, then the third string and ends with the fourth string. It interrupts the auto fill when the outline is filled up or when all blocks (4 x 32) are placed. (image 19-29)
  There are some special cases where snake wise fill up always starts for the 4 strings at the same side. E.g. when outline set up matches exactly the number of pixels blocks, such as 64 with no gap. The rows or columns will be filled up starting at the same side so that the connection with the controller is more easier.
- **By quadrant** : the software will start at the joining corners of the quadrants of the viewport (outline in grid). Each quadrant will be filled up with another string and in most cases each string will contain the same amount of blocks. This depends on the width and height setting of the outline. E.g. width = 5 and height = 7 all string will contain the same amount of blocks. (image 19-30)
  Whether or not the same amount of blocks for each string is used depends on the combination of width, height, horizontal gap, vertical gap and the dimension of the block. E.g. for outline and auto fill with width = 27, height = 35, horizontal gap = 1 and vertical gap = 1 and a MiPIX block (2x2), this method will not fill the area with the same amount of blocks for each string.

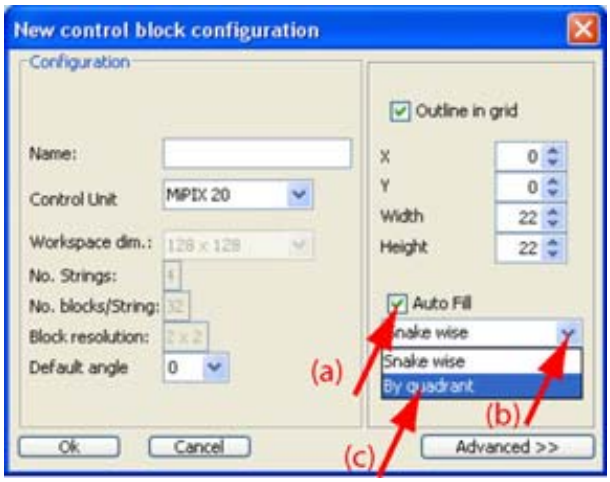


Image 19-28
Auto fill

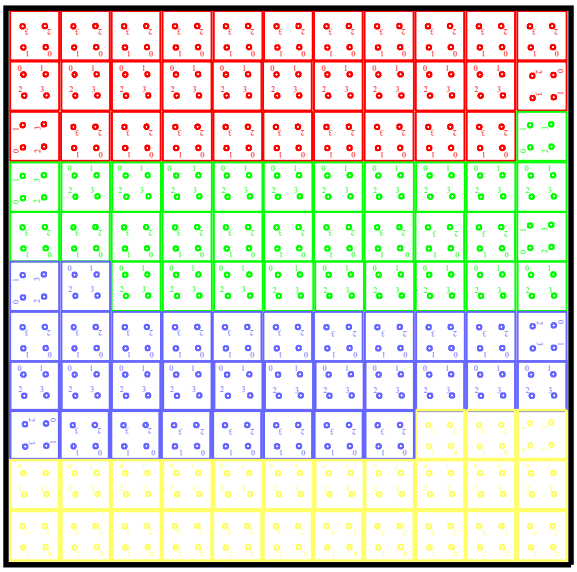


Image 19-29
Auto fill snake wise, viewport area 22 x 22

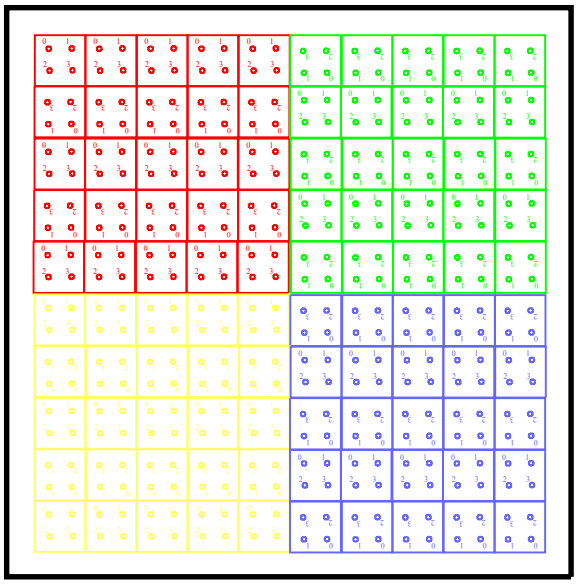


Image 19-30
Auto fill by quadrant, outline area 22 x 22

Remarks

Auto fill will search for the best rotation of the blocks. Those block where the software cannot calculate the best rotation are indicated by a light blue background. These blocks should be manually rotated till the correct position is obtained. For more information about manually rotating blocks, see "Rotate selected blocks (units)", page 527.

When auto fill is finished, it is still possible to place extra blocks manually in the design and that as long as there are blocks available in one of the block collectors.

About the used symbol

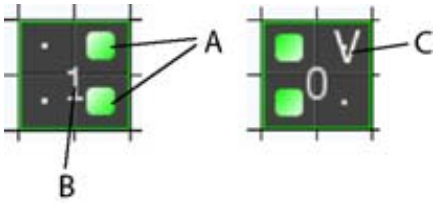


Image 19-31

A	Two LEDs indicating the Input side of the MiPIX block when *Show rotation* is activated.
B	String number to which the block belongs
C	Sequence number within the string

19.2.3.5 Advanced settings for auto fill

What is possible with the advanced settings ?

The following items can be defined :

- Horizontal and vertical pixel gap.
- String direction, horizontal or vertical
- Start position of the first string when using snake wise fill up.

By default :

- Horizontal and vertical gap = 0
- String direction = horizontal
- Start position = upper left

Start up the advanced settings

1. Click on the **Advanced >>** button (a). (image 19-32)
   Note: *Only active when Viewport in Grid and Auto fill are checked.*

   The options window will be added (b).

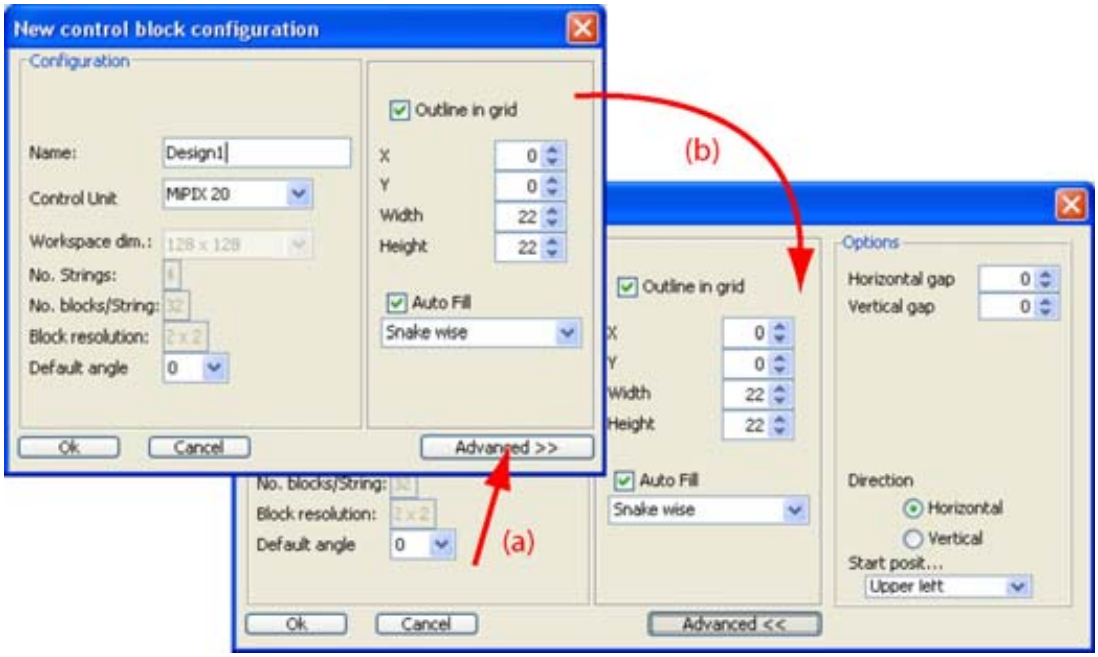


Image 19-32
Advanced auto fill options

Gap set up

1. If you want to set a *Horizontal gap*, click in the input field next to *Horizontal gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Horizontal gap* until the desired value is reached. (image 19-33)
2. If you want to set a *Vertical gap*, click in the input field next to *Vertical gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Vertical gap* until the desired value is reached.

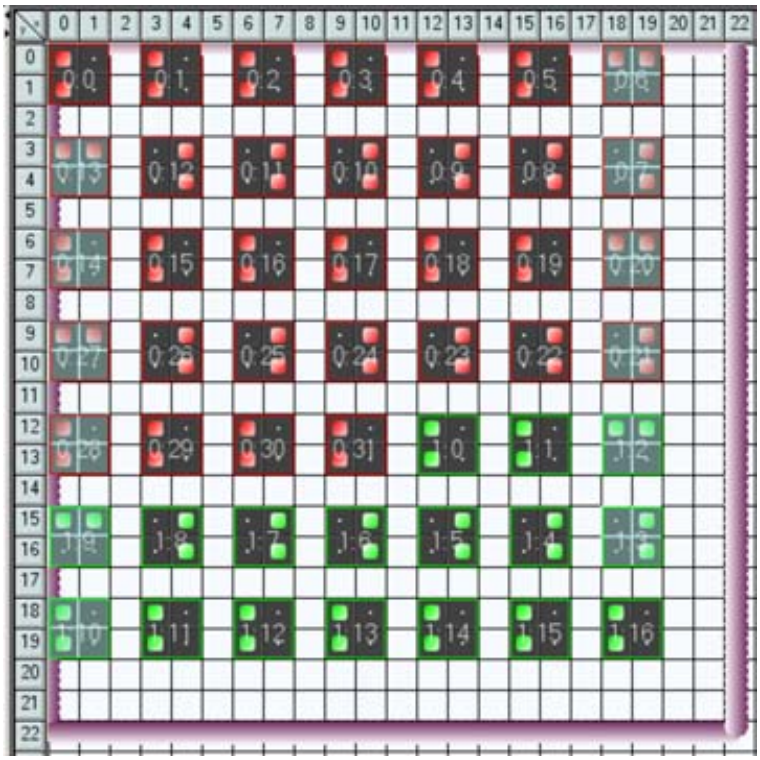


Image 19-33
Auto fill, viewport 22 x 22, horizontal and vertical gap 1

String direction

1. Click on the desired radio button to set up the string direction.
   Note: *The block connected with the controller has a shaded background.*

Horizontal	the bocks will be placed in a horizontal way. From left to right or from right to left.
Vertical	the bocks will be placed in a vertical way. From top to bottom or from bottom to top.

See image 19-34, image 19-35.

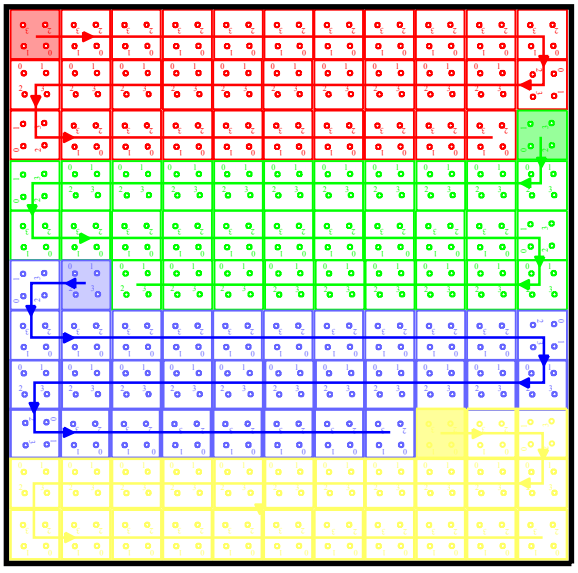


Image 19-34
Auto fill, viewport 22 x 22, horizontal string direction

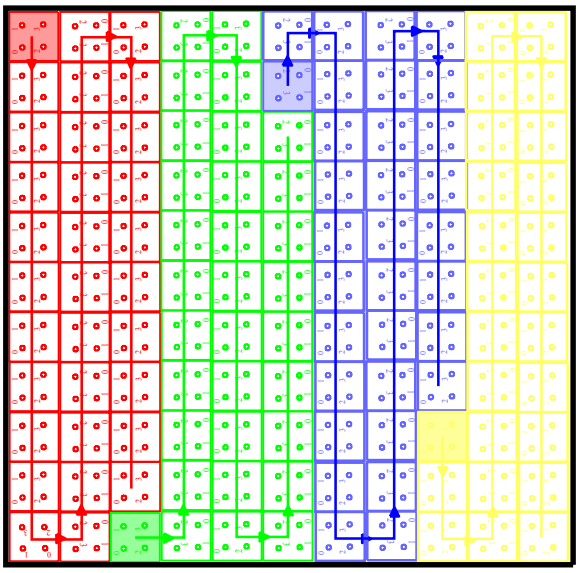


Image 19-35
Auto fill, viewport 22 x 22, horizontal string direction

Start position

1. Click on the drop down box.

   The possible choices will be displayed.

   - Upper left
   - Upper right
   - Lower right
   - Lower left

2. Select the desired start position.

   This start position will only be used when snake wise auto fill is selected.

19.2.3.6 Some typical examples where auto fill is very useful

For horizontal string directions

When the width matches exactly the number of blocks to be placed, the height does not matter:

e.g. width = 64 with no gap : each row will be filled up with one string.

e.g. width = 32 with no gap : the first string will be divided over the first 2 rows. The second string will start on the third row, etc.

e.g. width = 95 with gap = 1 : each row will be filled up with one string. Between each block there is one pixel gap.

e.g. width = 126 or 127 or 128 with gap = 2 : each row will be filled up with one string. Between each block there are two pixel gaps.

For vertical string directions

When the height matches exactly the number of blocks to be placed, the width does not matter:

e.g. height = 64 with no gap : each column will be filled up with one string.

e.g. height = 32 with no gap : the first string will be divided over the first 2 columns. The second string will start on the third column, etc.

e.g. height = 95 with gap = 1 : each column will be filled up with one string. Between each column there is gap of one pixel.

e.g. height = 126 or 127 or 128 with gap = 2 : each column will be filled up with one string. Between each column there is gap of two pixels.

19.2.3.7 Set up for manual fill

When *Outline in Grid* is NOT selected, manual fill is automatically active.

How to set up ?

1. Uncheck *Outline in Grid* (image 19-36)
   Or,
   check *Outline in Grid* and uncheck *Auto fill*. (image 19-37)

   Now it is possible to manually place blocks on the workspace of the design window.

   To see how to place blocks, see "Add new blocks to a design", page 508.

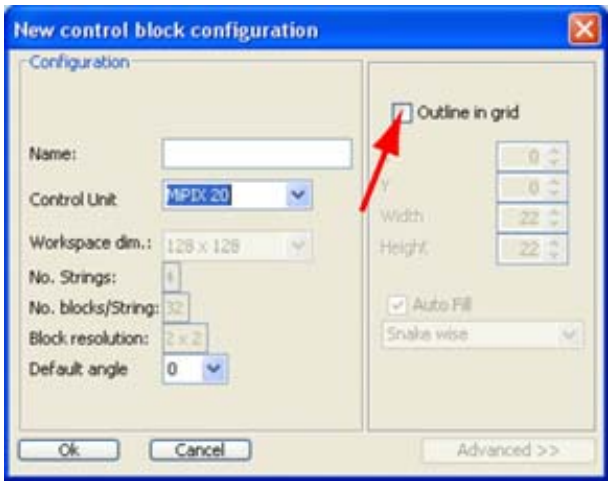


Image 19-36
No outline in grid selected

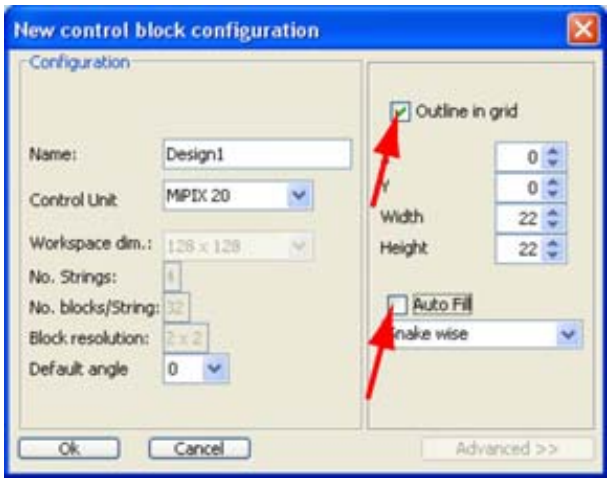


Image 19-37
No auto fill

19.2.3.8 Outline border On or Off

This function is only active when an outline is defined during the design configuration.

How to switch ?

1. Right click in the workspace.

   A popup window appears. (image 19-38)

2. Select *View* and move your mouse to the right.
3. Select *Show outline*.
   - When checked : the outline is shown with the dimensions as chosen in the configuration set up.
   - When not checked : the outline is not shown.

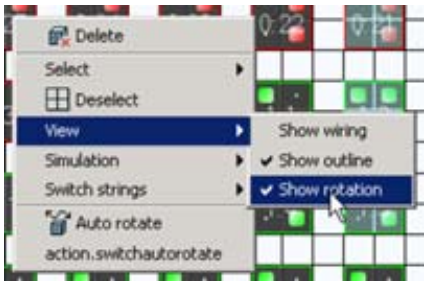


Image 19-38
Outline on-off

19.2.4 Start up for MiSPHERE configuration

Overview

- Start up of a new design
- New control block configuration
- Outline in Grid
- Auto Fill of the outline in grid
- Advanced settings for auto fill
- Set up for manual fill
- Outline border On or Off

19.2.4.1 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the function tool bar.
   Or,
   click on **IX menu** and select *New design*. (image 19-39)

   The *New control block configuration* window opens. (image 19-40)

Image 19-39
Create new design

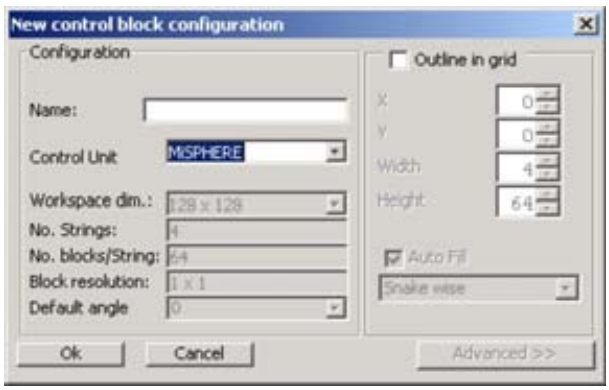


Image 19-40
New control block configuration window

19.2.4.2 New control block configuration

Name

Enter a name for the new configuration (image 19-40).

Control unit

Click on the combo box and select the control unit type (MiSPHERE). This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions (read only)

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

The workspace dimensions are limited by the hardware of the controller unit.

Only 128 x 128 pixels are possible.

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of blocks per string depends on the maximum number of pixels that can be driven by the used controller and by the number of pixels per block.

Block resolution (read only)

Block resolution is the number of pixels available in one block. For MiSPHERE unit: 1 x 1

The block resolution influences the number of blocks per string.

Default angle (read only)

The value filled out in the default angle determines the rotation angle of the placed block in the workspace. Only 0° is available.

19.2.4.3 Outline in Grid

Definition

Outline in grid is a well defined area within the workspace to facilitate the user with placing its units on the design or to allow an auto fill. The outline is indicated by a well defined border which can be switched off and on again.

Outline in grid in combination with the *Auto Fill* is only valuable for specific layouts such as e.g. 4 x 64.

Defining an Outline in Grid

The outline is defined by its start position, its width and height.

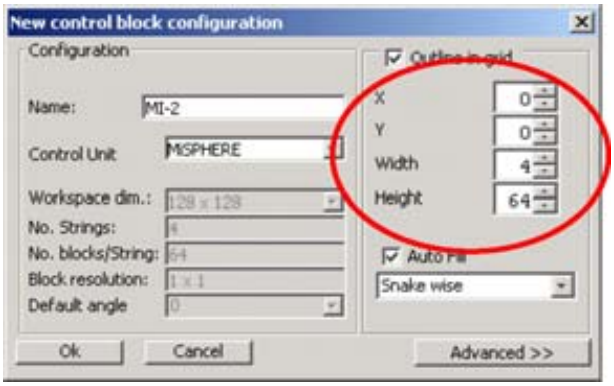


Image 19-41
Viewport in grid set up

Enter first the *X* and *Y* coordinate to define the start position. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Enter the desired *width* or *height* to define a viewport in grid. Therefore, click in the input field and enter the desired value or click on the up or down arrows next to the coordinate value until the desired value is reached.

Example:

X = 0; Y = 0; Width = 4; Height = 64

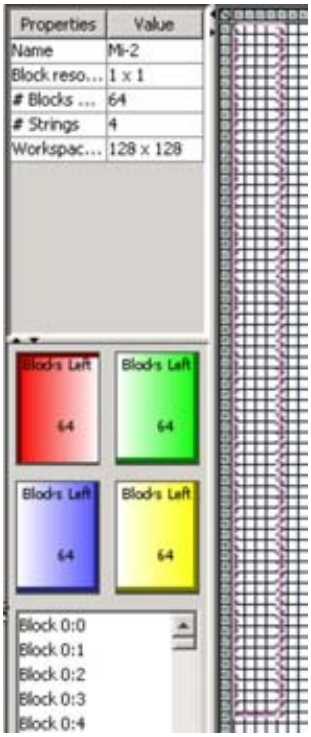


Image 19-42
Outline in grid

19.2.4.4 Auto Fill of the outline in grid

Auto fill can only be activated when the *Outline in Grid* is defined.

What is possible ?

With auto fill, the MiSPHERE units will be placed within the outline in grid via a predefined path.

The default auto fill option for MiSPHERE is 4/64 (width/height).

How to set up ?

1. Check the check box just before *Auto fill* (a). (image 19-43)

   The auto fill function is now activated.

2. Select the way auto fill should place the blocks. Click in the combo box (b) and select the desired fill up path (c).

The following paths are possible:

- **Snake wise**: the software starts by default in the upper left corner of the outline and fills up from left to right until boundaries of the outline are reached. Then it goes one down and continues from right to left. It starts always with the first string, continues with the second string, then the third string and ends with the fourth string. It interrupts the auto fill when the outline is filled up or when all units are placed.
  There are some special cases where snake wise fill up always starts for the 4 strings at the same side. E.g. when outline set up matches exactly the number of pixels units, such as 64 with no gap. The rows or columns will be filled up starting at the same side so that the connection with the controller is more easier.
- **By quadrant** : the software will start at the joining corners of the quadrants of the viewport (outline in grid). Each quadrant will be filled up with another string and in most cases each string will contain the same amount of blocks. This depends on the width and height setting of the outline. E.g. width = 5 and height = 7 all string will contain the same amount of units.
  Whether or not the same amount of blocks for each string is used depends on the combination of width, height, horizontal gap and vertical gap. E.g. for outline and auto fill with width = 27, height = 35, horizontal gap = 1 and vertical gap = 1 and a MiSPHERE unit (1x1), this method will not fill the area with the same amount of blocks for each string.

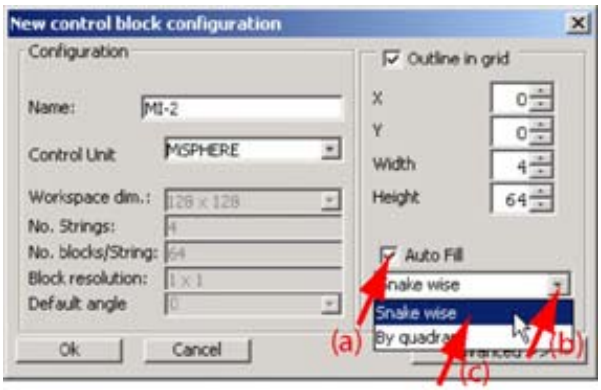


Image 19-43
Auto fill

When auto fill is finished, it is still possible to place extra units manually in the design and that as long as there are units available in one of the collectors.

About the used symbol

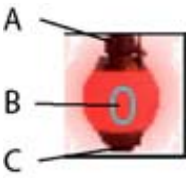


Image 19-44

A	Input side
B	Sequence number within the string
C	Output side

19.2.4.5 Advanced settings for auto fill

What is possible with the advanced settings ?

The following items can be defined :

- Horizontal and vertical pixel gap.
- String direction, horizontal or vertical
- Start position of the first string when using snake wise fill up.

By default :

- Horizontal and vertical gap = 0
- String direction = horizontal
- Start position = upper left

Start up the advanced settings

1. Click on the **Advanced >>** button (a). (image 19-45)
   Note: *Only active when Viewport in Grid and Auto fill are checked.*

   The options window will be added (b).

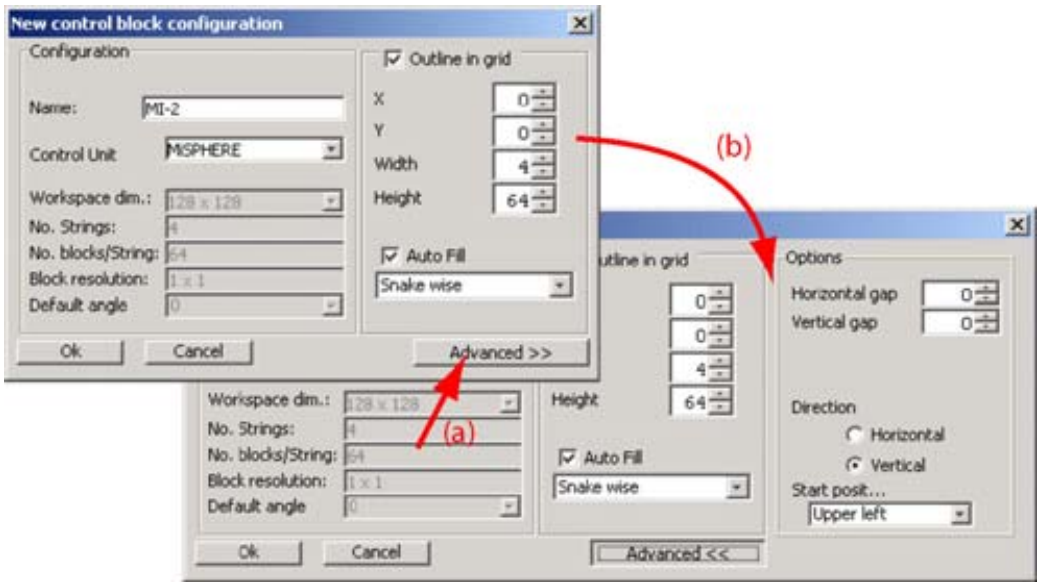


Image 19-45
Advanced auto fill options MiSPHERE

Gap set up

1. If you want to set a *Horizontal gap*, click in the input field next to *Horizontal gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Horizontal gap* until the desired value is reached.
2. If you want to set a *Vertical gap*, click in the input field next to *Vertical gap* and enter the pixel gap you want to use.
   Or,
   click on the up or down arrow next to *Vertical gap* until the desired value is reached.

String direction

1. Click on the desired radio button to set up the string direction.
   Note: *The block connected with the controller has a shaded background.*

   Tip: *The normal setting for MiSPHERE is Vertical.*

Horizontal	the bocks will be placed in a horizontal way. From left to right or from right to left.
Vertical	the bocks will be placed in a vertical way. From top to bottom or from bottom to top.

Start position

1. Click on the drop down box.

   The possible choices will be displayed.
   - Upper left
   - Upper right
   - Lower right
   - Lower left
2. Select the desired start position.

   This start position will only be used when snake wise auto fill is selected.

19.2.4.6 Set up for manual fill

When *Outline in Grid* is NOT selected, manual fill is automatically active.

How to set up ?

1. Uncheck *Outline in Grid* (image 19-46)
   Or,
   check *Outline in Grid* and uncheck *Auto fill*. (image 19-47)

   Now it is possible to manually place blocks on the workspace of the design window.

   To see how to place blocks, see "Add new blocks to a design", page 508.

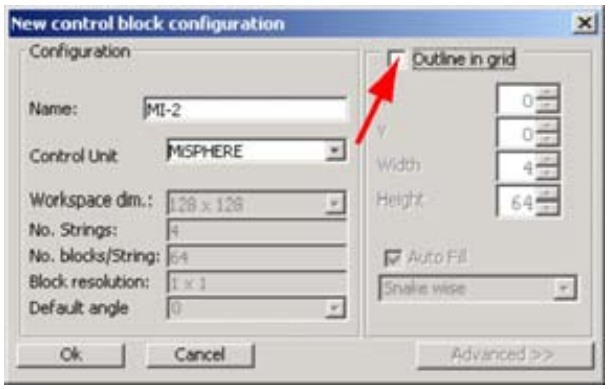


Image 19-46
No outline in grid selected

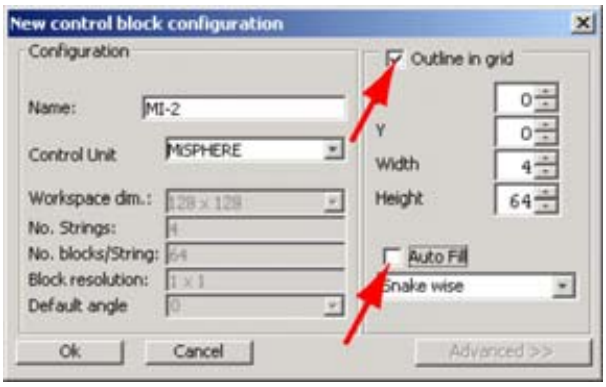


Image 19-47
No auto fill

19.2.4.7 Outline border On or Off

This function is only active when an outline is defined during the design configuration.

How to switch ?

1. Right click in the workspace.

   A popup window appears. (image 19-48)

2. Select *View* and move your mouse to the right.
3. Select *Show outline*.
   - When checked : the outline is shown with the dimensions as chosen in the configuration set up.
   - When not checked : the outline is not shown.

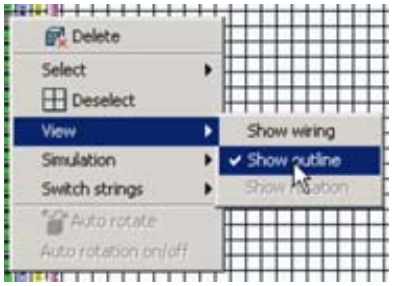


Image 19-48
Show outline

19.2.5 Start up for MiSTRIP configuration

Overview

- Design restrictions for MiSTRIP
- Start up of a new design
- New control block configuration

19.2.5.1 Design restrictions for MiSTRIP

Overview

Basic restrictions for MiSTRIP 613:

- An output port of a control box can only support maximum 24 MiSTRIP 613-380 units or 12 MiSTRIP 613-750 units or 6 MiSTRIP 613-1500 units.
- One output port of a control box can drive maximum 672 LEDs.
- All output ports together, of a control box can only support maximum 96 MiSTRIP 613-380 units or 48 MiSTRIP 613-750 units or 24 MiSTRIP 613-1500 units.
- All ports together can drive maximum 2688 LEDs.

See also see "About inconsistencies in a design", page 514

E.g. using MiSTRIP 613-1500 units (112 x 1), will reduce the maximum number of boards which can be connected to one controller to 24 with a maximum of 6 units to one output.

For a full list of combinations, see "Allowed combinations for MiSTRIP", page 601.

19.2.5.2 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the IX module tool bar.
   Or,
   click on the menu bar on *IX menu* and select *New design*. (image 19-49)

   The *New control block configuration* window opens. (image 19-50)

Image 19-49
Create new design

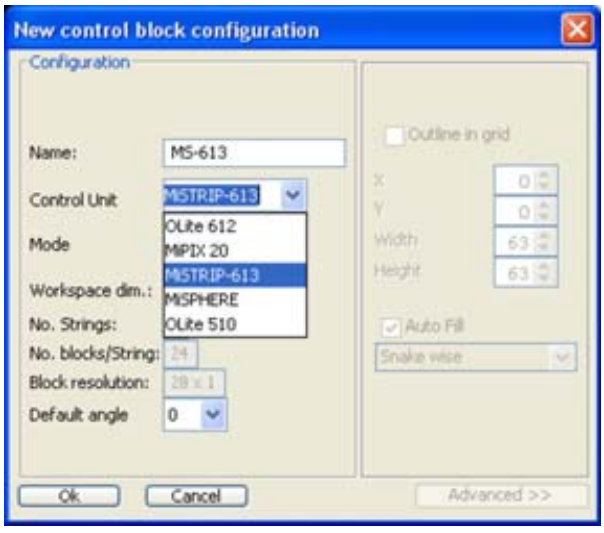


Image 19-50
New control block for MiSTRIP

19.2.5.3 New control block configuration

Overview

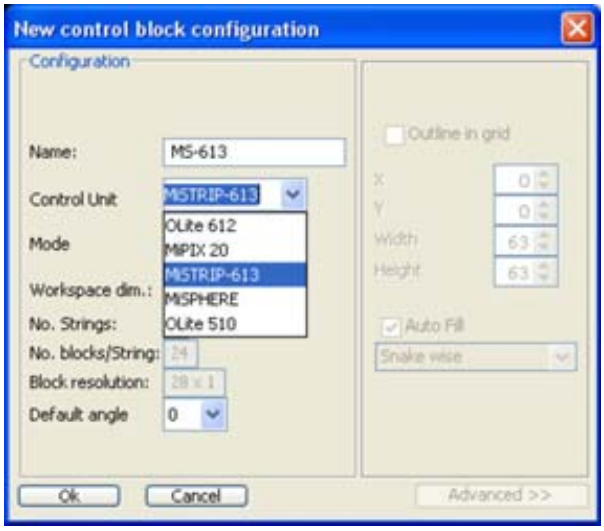


Image 19-51
New control block for MiSTRIP

Name

Enter a name for the new configuration.

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Mode

Mode selection of the MISTRIP unit. The mode digit equals the number of LEDs used to make one pixel.

Mode 1	Each physical LED corresponds with 1 pixel
Mode 2	2 physical LEDs correspond with 1 pixel
Mode 4	4 physical LEDs correspond with 1 pixel

Changing the mode does not change the limits of connecting units to the control box or an output port. It influences only the resolution of the display.

Workspace dimensions

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

A selection is possible by clicking on the combo box.

The workspace for the control unit is selectable and the following choices are possible :

- 128 x 128
- 64 x 256
- 256 x 64
- 112 x 146
- 146 x 112
- 224 x 73
- 73 x 224

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of blocks (units) per string depends on the maximum number of LEDs that can be driven by the used controller and by the number of LEDs per unit. Maximum 24 units per string are allowed when using the MiSTRIP 613-380 units. See see "Design restrictions for MiSTRIP", page 501.

E.g. 28 LEDs x 24 units/string = 672 LEDs/string maximum.

Maximum number of units per controller is limit to 96 MiSTRIP 613-380 boards. That means that not all 6 strings can contain 24 units.

Block resolution (read only)

Block resolution or unit resolution is the number of LEDs available in one unit.

The unit resolution influences the number of units per string.

The following resolution are available:

- MiSTRIP 613-380: 28 x 1
- MiSTRIP 613-750 : 56 x 1
- MiSTRIP 613-1500 : 112 x 1

Default angle

The value filled out in the default angle determines the rotation angle of the placed units in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.6 Start up for MiTRIX configuration

Overview

- Design restrictions for MiTRIX
- Start up of a new design
- New control block configuration

19.2.6.1 Design restrictions for MiTRIX

Overview

Basic restrictions for MiTRIX 424:

- One controller can only support maximum 24 MiTRIX 424 units.
- When using 2-1 spiders to connect the units to the controller, a maximum 12 units may be connected to one spider.
- One output port can only supply power to maximum 6 units (due to power limitations).

When using a 4-1 spider to connect the MiTRIX units to the controller, the data for the maximum 24 blocks comes from the same port, e.g. port 1. But the power for the units is coming from the 4 ports together.

When using a 2-1 spiders to connect the MiTRIX units to the controller, the data for the first 12 units is coming e.g. from port 1 and for the second 12 units from e.g. port 3.

To connect 24 units to one controller, any combination of 4-1 spider + 2-1 spider or 3 2-1 spiders are possible as long as the maximum of 24 units is not exceeded.

See also see "About inconsistencies in a design", page 514.

19.2.6.2 Start up of a new design

How to start up ?

1. Click on *Create a new design* icon ( ) on the IX module tool bar.
   Or,
   click on the menu bar on *IX menu* and select *New design*. (image 19-52)

   The *New control block configuration* window opens. (image 19-53)

Image 19-52
Create new design

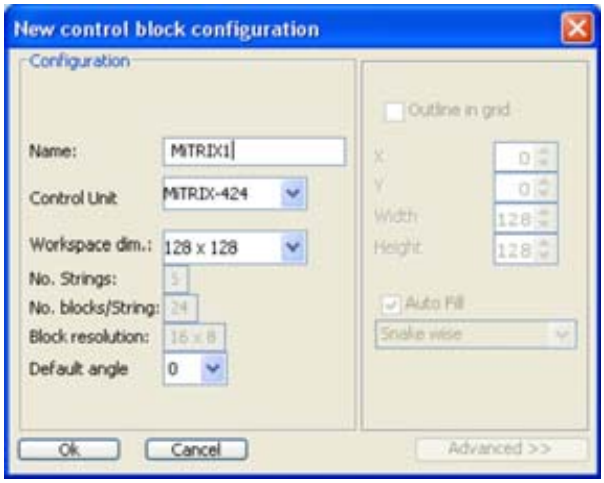


Image 19-53
New control block configuration window

19.2.6.3 New control block configuration

Overview

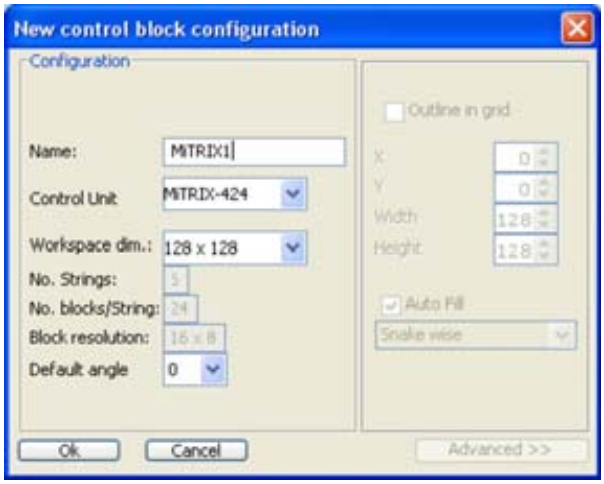


Image 19-54
New control block configuration window

Name

Enter a name for the new configuration.

Control unit

Click on the combo box and select the control unit type. This selection will determine the read only values in the next items, which are the specifications of the control unit and the used blocks.

Workspace dimensions

The workspace is the area in which a design (template) can be created and driven by 1 control unit.

A selection is possible by clicking on the combo box.

The workspace for the control unit is selectable and the following choices are possible :

- 128 x 128
- 64 x 256
- 256 x 64

Number of Strings (read only)

The number of strings are limited by the used controller. As many strings can be connected to the controller as the number of output ports mounted on this control.

Number of blocks per string (read only)

The number of units per string depends on the maximum number of LEDs that can be driven by the used controller and by the number of LEDs per unit. Units connect to the same spider are taken from the same string. Only the power is split over the different strings. See see "Design restrictions for MiSTRIP", page 501.

Maximum number of units per controller is limited to 24 MiTRIX units. How these units get their data depends on the used spider connector.

Block resolution (read only)

Block resolution or unit resolution is the number of LEDs available in one unit. For MiTRIX 16 x 8

The unit resolution influences the number of units per string.

Default angle

The value filled out in the default angle determines the rotation angle of the placed units in the workspace. The available angles are 0°, 90°, 180° and 270° and are selectable in a combo box.

19.2.7 The design window

Design window

Grid sheet to create a creative design the creative units of Barco. As long as blocks (units) are available, those blocks (units) can be placed on a creative way on the designer window.

Overview

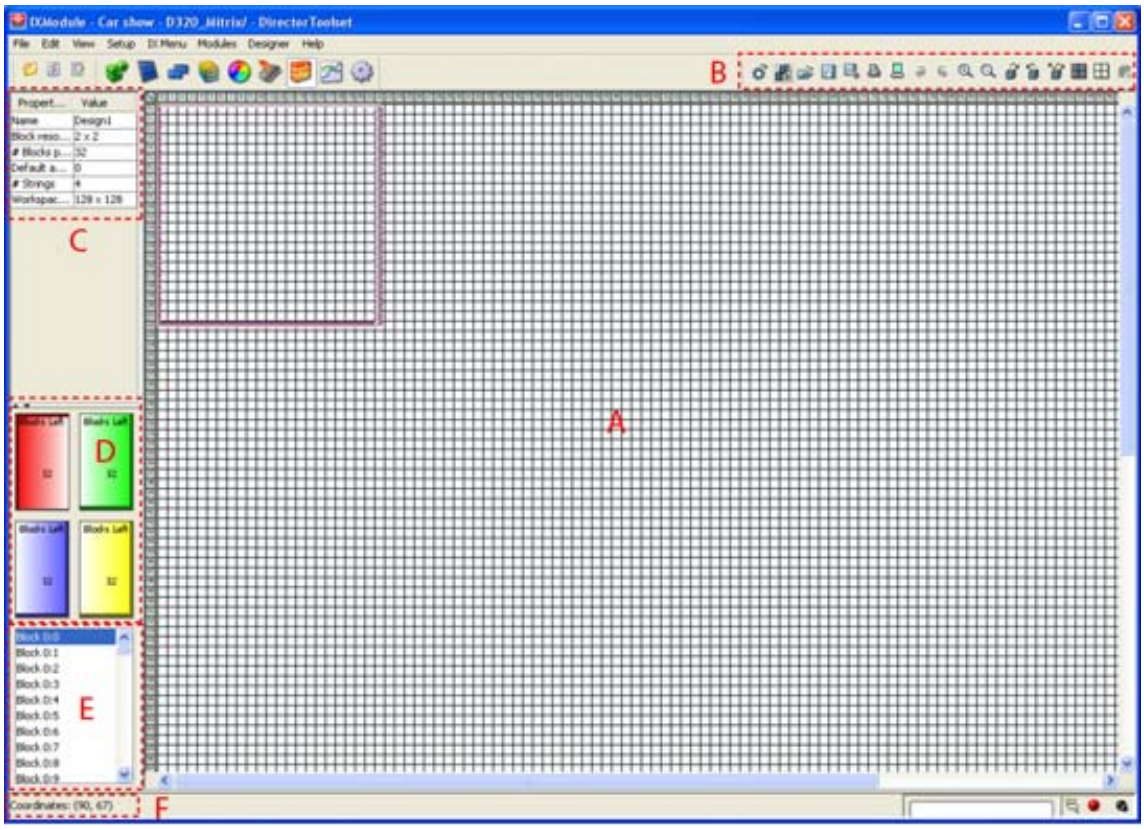


Image 19-55
Configuration Design window

The following items can be detected:

A	Grid sheet to create the design.
B	IX module, function tool bar.
C	Properties of the design. Name and default angle can be edited.
D	Block collectors. Indicates the available blocks per string Each string is represented by a block collector which is colored according the string. The more background color visible on the block collector depiction, the more blocks are available to be placed. The value inside the block collector depiction gives the quantity of blocks which are not placed on the preview. The number of collectors depends on the selected block (unit) type.

E	List representation of the available blocks per string. • 0.x represents blocks of the first string (red one) • 1.x represents blocks of the second string (green one) • 2.x represents blocks of the third string (blue one) • 3.x represents blocks of the fourth string (yellow one) 4.x represents blocks of the fifth string (magenta one) 5.x represents blocks of the sixth string (cyan one)
F	Coordinate indication

What is possible ?

- Available blocks can be placed in the design.
- Blocks can be moved within the preview pane.
- Blocks can be rotated.
- Blocks can be removed.
- When moving the mouse over a block, the block number, the orientation angle and the coordinate of the block will pop up as a tool tip.

About the function tool bar

	Activate configurator
	Create new design
	Edit a design
	Save a design
	Save the design with a new name (save as)
	Print a layout of the design
	Print the wiring scheme of the design
	Undo last action
	Redo last action
	Zoom in
	Zoom out
	Rotate 90 degree to the right
	Rotate 90 degree to the left
	Auto-rotate blocks
	Select all blocks

	Deselect all blocks
	Delete all selected blocks

Shortcut keys used in the design window

Keyboard shortcut	Action
Ctrl + N	Create new design
Ctrl + O	Open a saved design
Ctrl + S	Save a design
Ctrl + A	Select all blocks
Ctrl + R	Rotate all blocks to the right
Ctrl + T	Rotate all blocks to the left
Ctrl + Z	Undo last action
Ctrl + Y	Redo last action
del	Delete selected blocks
+	Zoom in
-	Zoom out

19.2.8 Add new blocks to a design

What is possible ?

Available blocks in the respective block collectors can be placed on any free place in the workspace.

About the used symbol

For MiPIX:

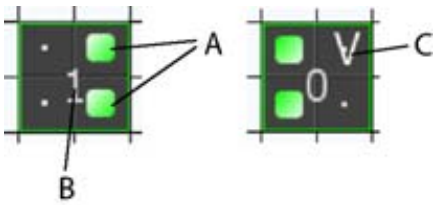


Image 19-56

A	Two LEDs indicate the Input side of the MiPIX block when *Show rotation* is activated.
B	Sequence number within the string
C	Manual rotation indication, only visible during editing a design

For MiSPHERE:

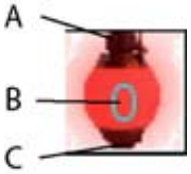


Image 19-57

A	Input of the unit
B	Sequence number within the string. Background color indicates the string
C	Output of the unit

For MiTRIX:

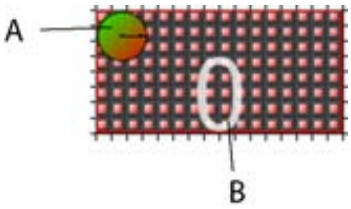


Image 19-58

A	Orientation indication when *Show rotation* is activated
B	Sequence number within the string

About block orientation for MiTRIX:

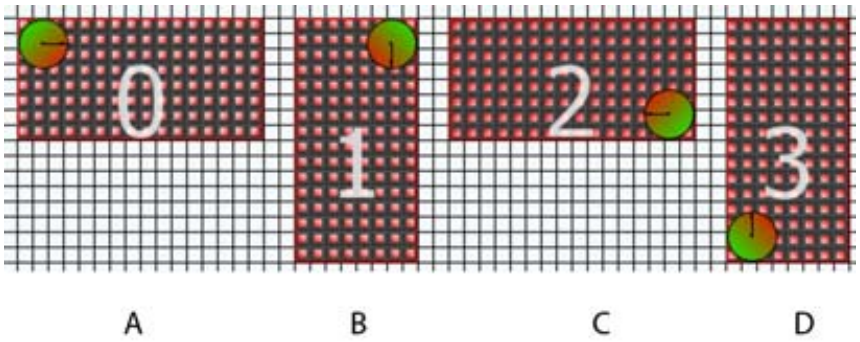


Image 19-59

A	0 degree
B	90 degree to the right
C	180 degree
D	270 degree

For OLite in customized mode:

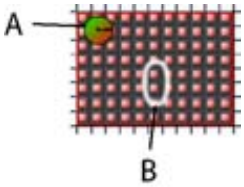


Image 19-60
OLite 510

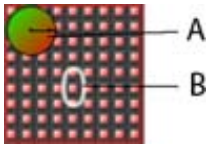


Image 19-61
OLite 612

A	Orientation indication of OLite block when *Show rotation* is activated
B	Sequence number within the string

About block orientation for OLite in customized mode:

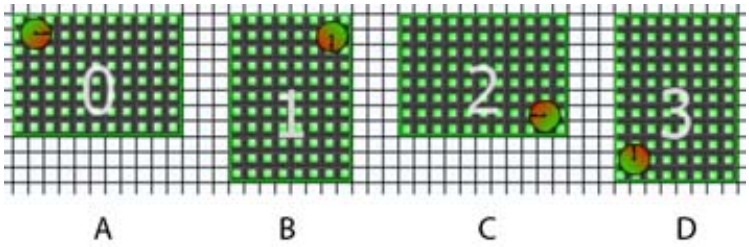


Image 19-62
For OLite 510

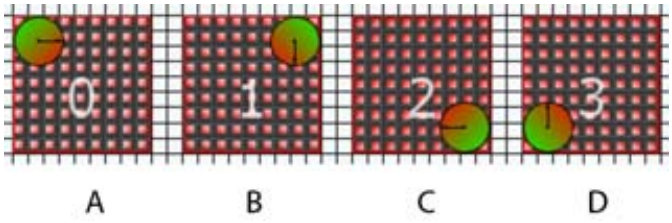


Image 19-63
For OLite 612

A	0 degree
B	90 degree to the right
C	180 degree
D	270 degree

About block orientation for NX creative mode:

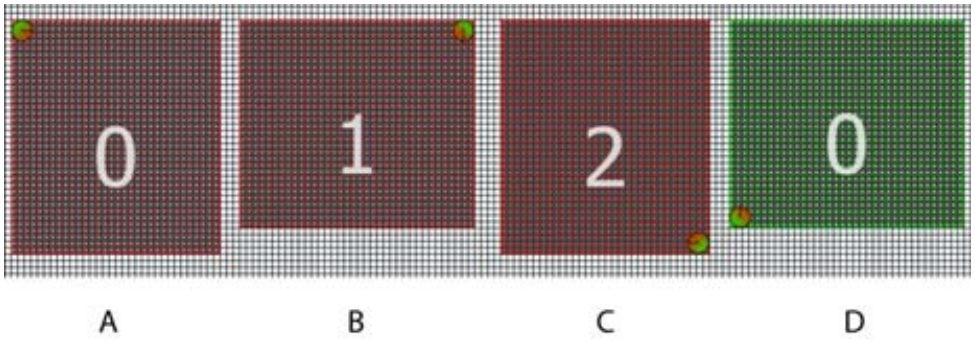


Image 19-64
For NX creative

A	0 degree
B	90 degree to the right
C	180 degree
D	270 degree

How to place block by block ?

1. Click on a block collector to select a string. (image 19-65)
   Note: *Only the block collectors with a background color and value higher than 0 are possible.*

   The first free block (lowest number) of the selected string will be selected.
   Or,
   click in the list below the block collectors for a specific block.

2. Hold down the **CTRL** button while clicking with the left mouse button on the center or near the center of a grid where the block has to be placed. The reference to place the block is the upper left corner.

The first free block (lowest number) of the selected string will be placed on the selected position (see blue outline on image 19-66) or the selected block will be placed on the selected position.

If the block cannot be placed on that center, the software will search for the next free position.

E.g. when clicking on the indicated place (image 19-66), the software should place the block on the place of the red outline, but due to the blue block it is not possible. Now the software will search for the first possible free place (red shaded area).

When a block is placed on the grid, moving the block is still possible.

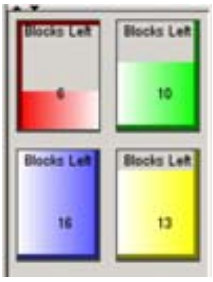


Image 19-65
String selection

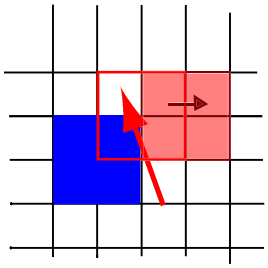


Image 19-66
First free place

If the rotation of the next block(s) should be changed, click first in the design properties field *Default angle* and select the desired angle.

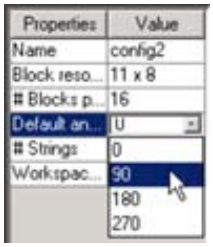


Image 19-67
Change default angle

How to place multiple blocks at once ?

1. Click on a block collector to select a string (image 19-65).
2. Hold down the **Ctrl** button.
3. Click in the grid to define the start position, hold down the mouse button and drag to the end position.
   Note: *The dragged area by the mouse pointer is shown by a dotted line.*
4. Release the mouse button and **Ctrl** button.

   The possible positions within the selected area will be filled up with blocks, using the snake wise pattern. All block will have the same position angle (= default angle as set in the properties). How the snake runs through the selected area is determined by the position of your start point and end point. (image 19-68)

Example for blocks with 0° rotation.

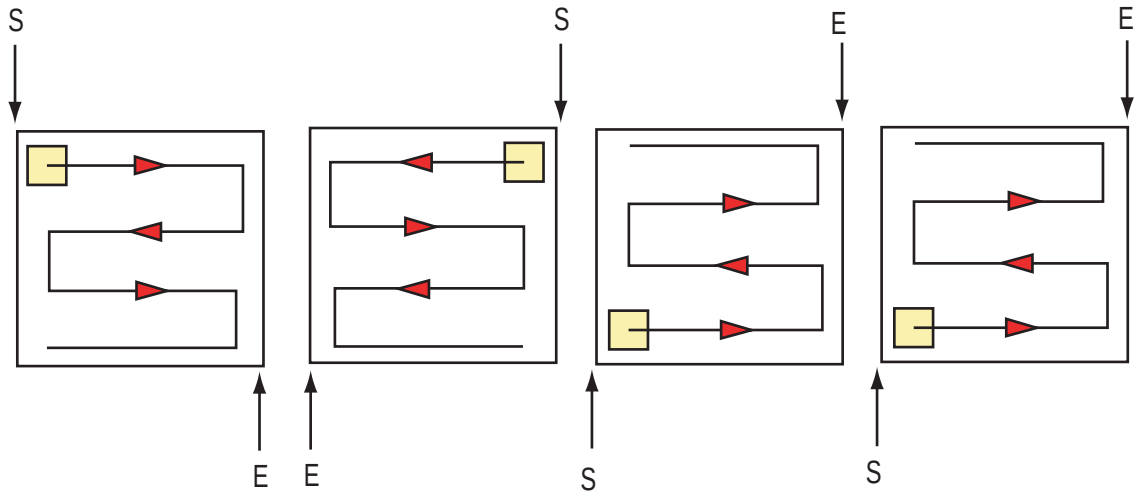


Image 19-68
Block placement, example 0° rotation

19.2.9 Add new MiSTRIP units to a design

What is possible ?

Available MiSTRIP units in the respective block collectors can be placed on any free place in the workspace.

About the used symbol

For MiSTRIP:

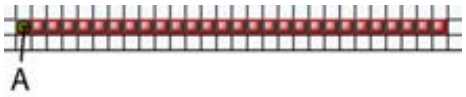


Image 19-69
A Orientation indication

How to place block by block ?

1. Click on a unit (block) collector to select a string.
   Note: *Only the unit collectors with a background color and value higher than 0 are possible.*

   The first free unit (lowest number) of the selected string will be selected.
   Or,
   click in the list below the unit collectors for a specific unit.

2. Hold down the **CTRL** button while clicking with the left mouse button on the center or near the center of a grid where the unit has to be placed. The reference to place the unit is the most left pixel when default angle is 0 (zero).

   The first free unit (lowest number) of the selected string will be placed on the selected position or the selected unit will be placed on the selected position.

   When a unit is placed on the grid, moving the unit is still possible.

If the rotation of the next unit(s) should be changed, click first in the design properties field *Default angle* and select the desired angle.

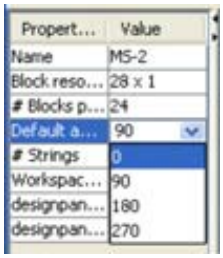


Image 19-70
Change default angle

It the unit type should be changed, click first in the design properties field Unit type and select the desired unit type.

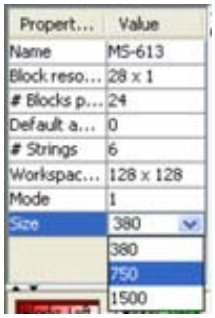


Image 19-71
Change unit type

How to place multiple blocks at once ?

1. Click on a unit collector to select a string.
2. Hold down the **Ctrl** button.
3. Click in the grid to define the start position, hold down the mouse button and drag to the end position.
   Note: *The dragged area by the mouse pointer is shown by a dotted line.*
4. Release the mouse button and **Ctrl** button.

   The possible positions within the selected area will be filled up with units. All units will have the same position angle (= default angle as set in the properties).

19.2.10 Save a design

Where are designs saved?

When in a typical Setup while creating a design, that design will be saved within this setup directory.

For each setup a subdirectory *IX design* will be created. The new designs created for that setup will be saved under this subdirectory.

Example:

```
Barco
        Light_street
                IX designs
                        Design1.cfg
```

```
                                    Design2.cfg
```

Where

Barco	Project name
Light_street	Setup name
IX designs	Creative design directory
Design1.cfg	Design file
Design2.cfg	

How to save ?

1. Click on the Save icon ( ) on the IX module tool bar.
   Note: *The software checks if there are no inconsistencies in the design.*

   If the design already has a name, and there are no inconsistencies, the design will be saved on that name.

   Otherwise, a pop up window will appear. (image 19-72)
2. Enter a name for the design.
   Note: *The following characters are not allowed in a name: &, >, >, ', ", ?*

   The design will be saved by default in the IX design subdirectory of the Setup directory. If it should be saved on another location, browse first to that location before continuing.
3. Click on **Save**.

   The design will be saved.

Image 19-72
Save design

19.2.11 About inconsistencies in a design

About inconsistencies in a design which can be automatically corrected

When Director Toolset detects an inconsistent design which can be automatically corrected, it pops up a message.

Image 19-73
Inconsistent design

An inconsistent design is a design where the block sequence numbers are not consecutive. That means that one or more numbers are missing.

The software can automatically correct these inconsistency. The software searches for the lowest number in the string and readdress it to ’0’. The second lowest to ’1’, etc.

To start the automatic correction, click **Yes**.

When the automatic correction is finished, the save process continues.

About inconsistencies in a design which must be corrected manually

When Director Toolset detects an inconsistent design which cannot be automatically corrected, it pops up a message.

The designer has to solve the problem by himself.

Image 19-74
Inconsistency message

Constrain rules:

Basic constrain rules for OLite 510:

- One controller can only support 64 OLite 510 blocks.
- One output can only support 16 OLite 510 blocks.

Both restrictions together have to be taken into account.

Basic constrain rules for OLite 612:

- One controller can only support 48 OLite 612 blocks.
- One output can only support 12 OLite 612 blocks.

Both restrictions together have to be taken into account.

Basic constrain rules for MiSTRIP 613:

- An output port of a control box can only support maximum 24 ’MiSTRIP 613-380 units or 12 MiSTRIP 613-750 units or 6 MiSTRIP 613-1500 units.
- One output port of a control box can drive maximum 672 LEDs.
- All output ports together, of a control box can only support maximum 96 MiSTRIP 613-380 units or 48 MiSTRIP 613-750 units or 24 MiSTRIP 613-1500 units.
- All ports together can drive maximum 2688 LEDs.

The table below gives an overview of the number of strips which may be connected to a port.

Port number	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6
MiSTRIP						
MiSTRIP 613-1500 units	6	6	6	6	-	-

Port number	Port 1	Port 2	Port 3	Port 4	Port 5	Port 6
MiSTRIP						
	4	4	4	4	4	4
MiSTRIP 613-750 units	12	12	12	12	-	-
	8	8	8	8	8	8
MiSTRIP 613-380 units	24	24	24	24	-	-
	16	16	16	16	16	16

Or any combination with respect to the limits given in the basic constrain rules

When making a mix of Small, Medium or Large units to one output port, then the maximum LED capacity for that port must be taken in account.

Example 1

Connecting 3 MiSTRIP 613-1500 units, 6 MiSTRIP 613-750 units and 2 MiSTRIP 613-380 units. That is 9 units but 728 LEDs which is higher than the allowed number of the second rule.

Example 2

When making the following combination:

- Port 1: 3 MiSTRIP 613-1500 units + 6 MiSTRIP 613-750 units
- Port 2: 3 MiSTRIP 613-1500 units + 6 MiSTRIP 613-750 units
- Port 3: 3 MiSTRIP 613-1500 units + 12 MiSTRIP 613-380 units
- Port 4: 3 MiSTRIP 613-1500 units + 12 MiSTRIP 613-380 units
- Port 5: 12 MiSTRIP 613-380 units
- Port 6: –

This combination will fail due to the total number of LEDs which is higher than the maximum allowed. Port 1 (672 LEDs) + Port 2 (672 LEDs) + Port 3 (672 LEDs) + Port 4 (672 LEDs) + Port 5 (336 LEDs) = 3024 LEDs.

How to solve a problem

1. Count the number of units connected to each port.
   - When using the same units on a port and if it exceed the limitation, then correct that first. Repeat for all ports.
   - otherwise, when a mix units is used on the same port and there is no exceeding of any limitation, go to step 2.
2. Count the number of LEDs for each port.
   - If the number of LEDs is higher then 672, then delete some units to bring the design within the limits.
3. Count the total number of units connected to the control box.
   - When using the same units and If the number exceeds the limits, then correct that first.
   - When using a mix of unit types and the number does not exceed the limits, go to step 4.
4. Count the total number of LEDs connected to the control box.
   - If the number of LEDs is higher then 2688, then delete some units to bring the design within the limits.

For an overview of the possible combination for one output port of the control unit, see "Allowed combinations for MiSTRIP", page 601.

About inconsistencies in a design which must be corrected manually, MiTRIX 424 units

Basic restrictions for MiTRIX 424:

- One controller can only support maximum 24 MiTRIX-424 units.
- When using 2-1 spiders to connect the units to the controller, a maximum 12 units may be connected to one spider.
- One output port can only supply power to maximum 6 units (due to power limitations).

When using a 4-1 spider to connect the MiTRIX units to the controller, the data for the maximum 24 blocks comes from the same port, e.g. port 1. But the power for the units is coming from the 4 ports together.

When using a 2-1 spiders to connect the MiTRIX units to the controller, the data for the first 12 units is coming e.g. from port 1 and for the second 12 units from e.g. port 3.

To connect 24 units to one controller, any combination of 4-1 spider + 2-1 spider or 3 x 2-1 spiders are possible as long as the maximum of 24 units is not exceeded.

19.2.12 Edit existing design

19.2.12.1 Edit a design

First method

1. Click on the *Open design* icon ( ) on the IX module tool bar.

   The *Open design* window opens. The file type `cfg` is filled out. (image 19-75)

2. Browse to the desired design.
3. Click **Open**.

   The selected design will be loaded in the designer window.

   All block manipulations are now possible on that design.

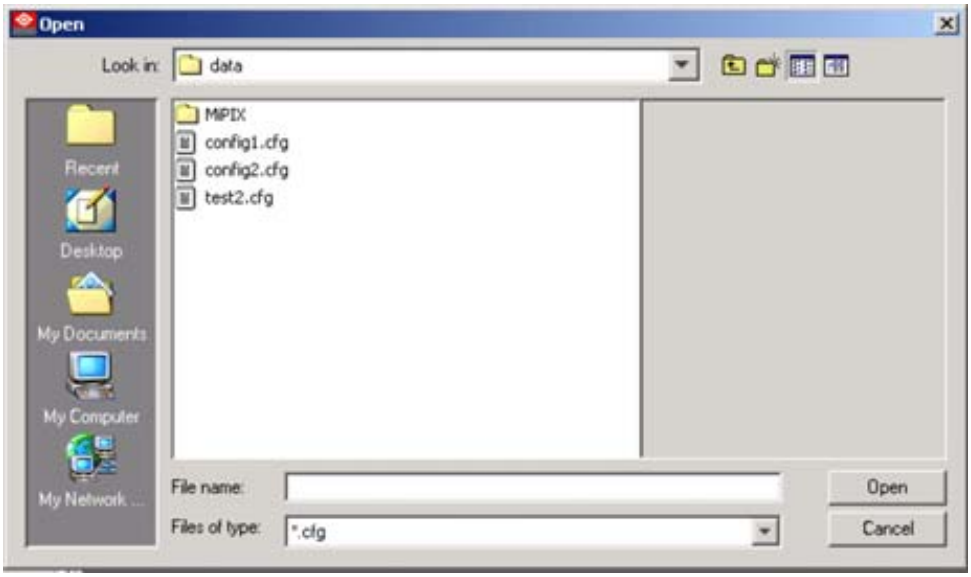


Image 19-75
Open design window

Second method

1. When in the Designer part of the IX module, click on the *Activate configurator* icon ( ) to go to the Configurator part of the module.

2. Browse in the *Design Chooser* pane for the desired design.
3. Right click on that design. (image 19-76)

   A selection window pops up.
4. Select *Edit design*.

   The selected design will be loaded in the designer window.

Image 19-76
Edit design

Third method

1. Click on *IX menu* on the menu bar (a). (image 19-77)

   A drop down menu opens.
2. Select *Load design*.

   The *Open design* window opens (b). The file type cfg is already filled out.
3. Browse to the desired design (c).
4. Click **Open** (d).

   The selected design will be loaded in the designer window.

   All block manipulations are now possible on that design.

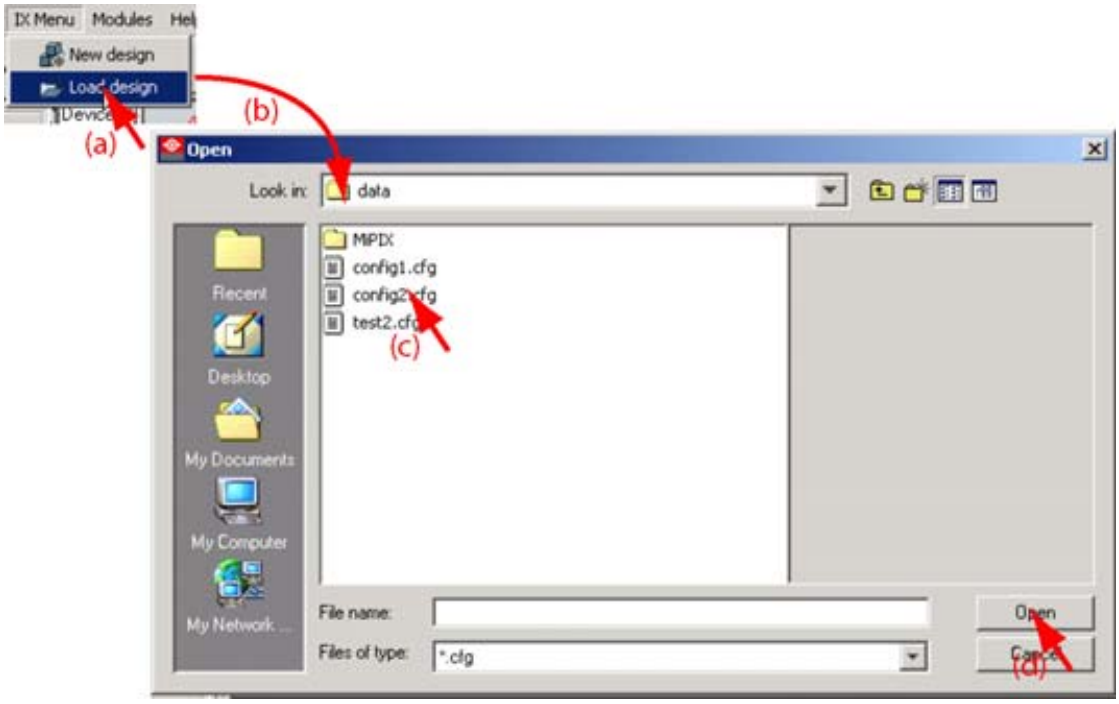


Image 19-77
Edit design

19.2.12.2 Save current version of the design

How to save the current design ?

1. Click on the *Save* icon ( ) on the IX module tool bar

   The current design will be saved with the same name.

Constrain checks are done during a save operation. For more information about constrains, see "About inconsistencies in a design", page 514.

19.2.12.3 Save current design under a new name

How to save with a new name ?

1. Click on the *Save as* icon ( ) on the IX toolbar.

   The Save window opens. (image 19-78)

2. Enter a name for the design.
3. Click on **Save**.

   The design will be saved with the new name.

Image 19-78
Save a created design as

19.2.13 Change the name of a design

How to change the name ?

1. Open a design in Edit mode (see "Edit existing design", page 517).
2. Double click on the design name in the properties pane. (image 19-79)

   The actual name will be selected.

3. Enter a new name with the keyboard.
   Note: *The following characters are not allowed in a name: &, >, >, ', ", ?*

Image 19-79
Change design name

19.2.14 Block manipulations

Overview

- Selecting one block
- Selecting multiple blocks
- Select all blocks
- Selecting a complete string
- Deselect all blocks
- Moving a block (unit) or multiple blocks (units)
- Delete selected blocks
- Swap two strings
- Rotate selected blocks (units)
- Auto rotation
- Auto rotation ON-OFF
- View wire direction of a string
- View rotation of a block
- Simulate wire direction
- Change unit size of MiSTRIP units

19.2.14.1 Selecting one block

How to select ?

1. Click on a block.

   The background color of that block will change to light grey. (image 19-80, image 19-81, image 19-82, image 19-83)

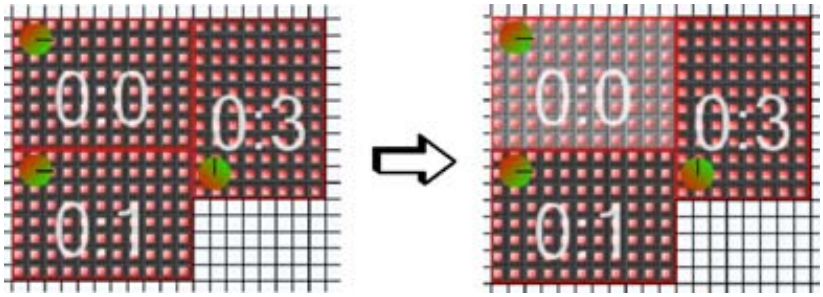


Image 19-80
Select a single block, OLite example (is equal for MiTRIX and NX)

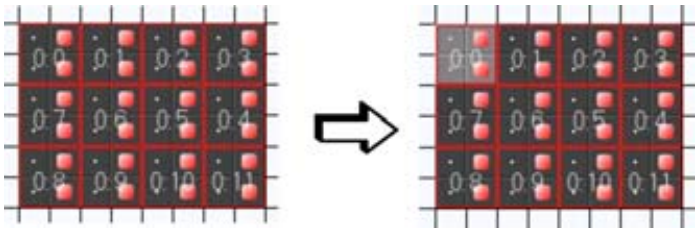


Image 19-81
Select a single block, MiPIX example

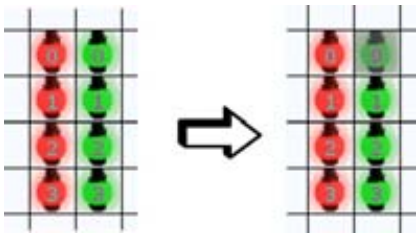


Image 19-82
Select a single block, MiSPHERE example

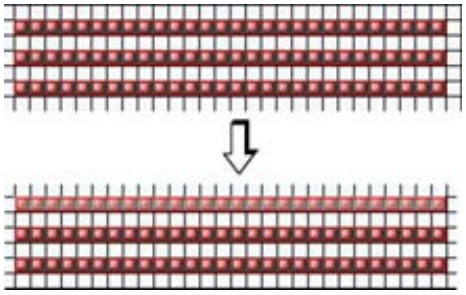


Image 19-83
Select a single unit, MiSTRIP example

19.2.14.2 Selecting multiple blocks

First method

1. Click first on a block to select.

   The background color will change to light grey.

2. Press **Ctrl** button and hold it down. Click on the blocks you want to select.

   The background color will change too.

Second method

1. Click outside the blocks (units) and hold down the mouse button. (image 19-84, image 19-85, image 19-86, image 19-87)
2. Drag the mouse pointer over the blocks (units) you want to select.
   Note: *The selection will be indicated by a dotted square.*

   The background of the blocks in the selection will change to light grey.

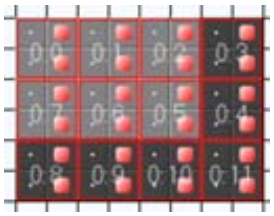


Image 19-84
Select multiple blocks, MiPIX

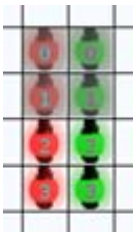


Image 19-85
Select multiple units, MiSPHERE

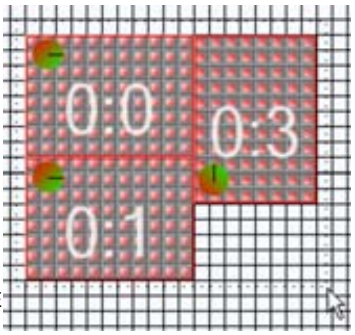


Image 19-86
Select multiple blocks, OLite (same for NX)

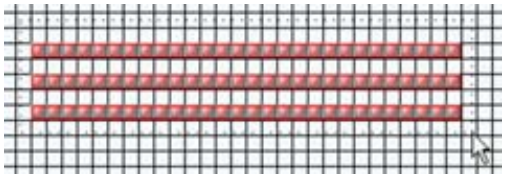


Image 19-87
Select multiple units, MiSTRIP

19.2.14.3 Select all blocks

First method

1. Click on the *Select all bocks* icon ( ) on the IX module tool bar.

   All blocks will be selected.

Second method

1. Right click in the preview window.

   A popup selection menu appears. (image 19-88, image 19-89)

2. Select *Select* and move your mouse to the right.
3. Select *Select all*.

   All blocks will be selected.

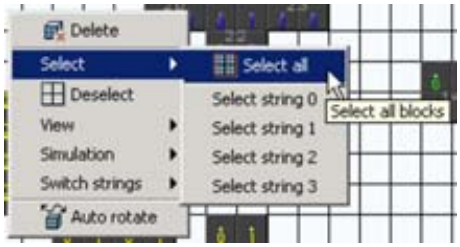


Image 19-88
Select all via right click, MiPIX

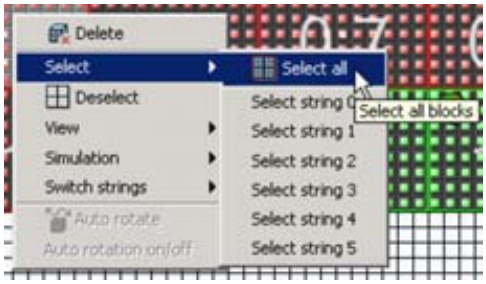


Image 19-89
Select all via right click, OLite, NX

19.2.14.4 Selecting a complete string

How to select ?

1. Right click in the designer grid window.

   A popup selection menu appears. (image 19-90, image 19-91, image 19-92)

2. Select *Select* and move your mouse pointer to the right.
3. Select the desired string description.
   The following strings are possible :
   - Select string 0 (red string)
   - Select string 1 (green string)
   - Select string 2 (blue string)
   - Select string 3 (yellow string) (not for NX creative)
   - Select string 4 (magenta string) (only for OLite customized)
   - Select string 5 (cyan string) (only for OLite customized)

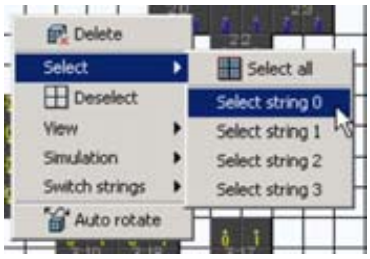


Image 19-90
Select a string, MiPIX

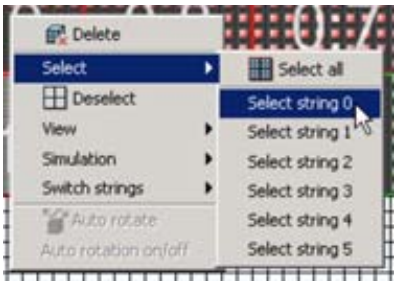


Image 19-91
Select a string, OLite

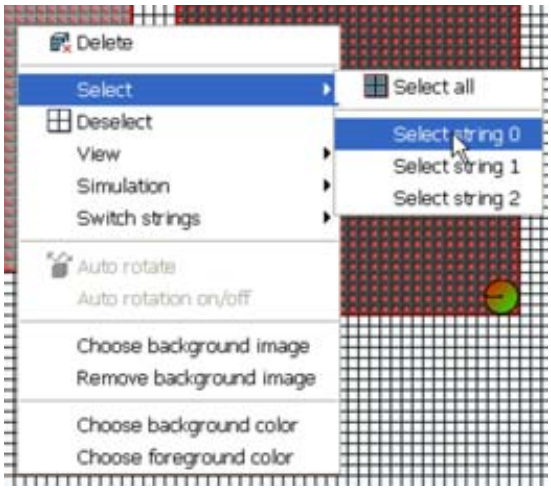


Image 19-92
Select a string, NX creative

19.2.14.5 Deselect all blocks

First method

1. Click on the *Deselect all blocks* icon ( ) on the IX module tool bar.

Second method

1. Right click in the designer grid window.

   A popup selection menu appears. (image 19-93, image 19-94)

2. Select *Deselect all*.

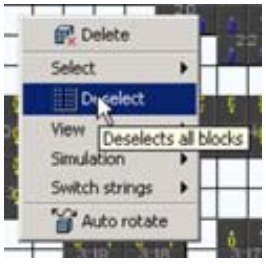


Image 19-93
Deselect all blocks, MiPIX

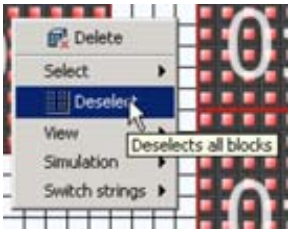


Image 19-94
Deselect all blocks, OLite, NX

Third method

1. Left click in the grid.

   All blocks will be deselected.

19.2.14.6 Moving a block (unit) or multiple blocks (units)

How to move

1. Select first the block (unit) or the blocks (units) which must be moved (A). See "Selecting one block", page 520 or "Selecting multiple blocks", page 521. (image 19-95, image 19-96, image 19-97, image 19-98)
2. Drag the mouse pointer on to the selected block (unit) or blocks (units) and the cursor changes to a 4 arrow cursor.
3. Hold down the mouse button.
4. Drag to the desired place in the grid (B) and release the mouse button (C).
   Note: *You can only drag to possible locations.*

   Tip: *Keep in mind that moving blocks must comply with the hardware.*

   The selected block (unit) or blocks (units) are moved to the new place.

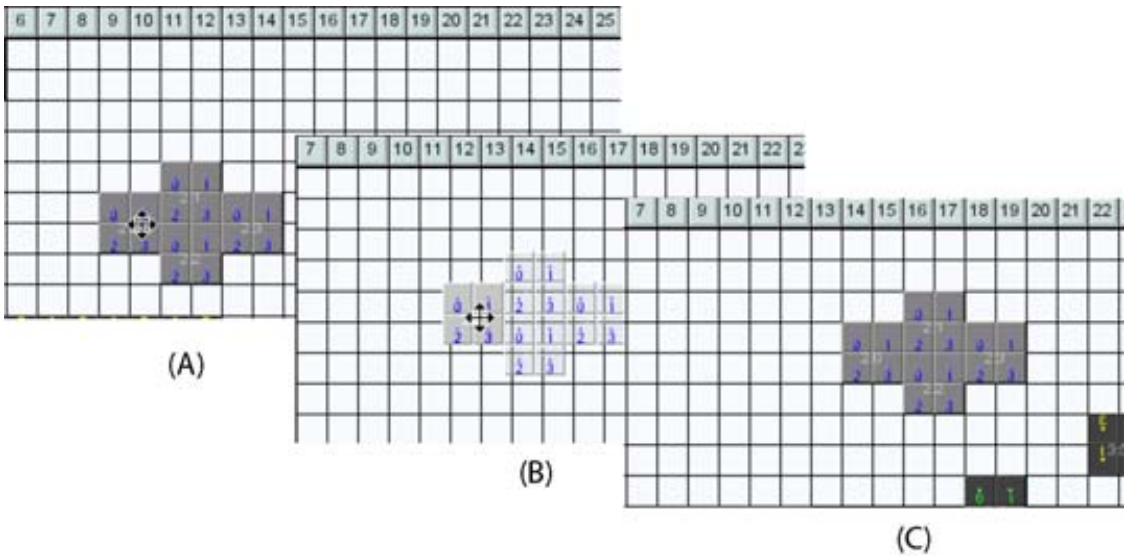


Image 19-95
Move blocks to new location, MiPIX

A Select blocks
B Drag blocks

C Release on new location

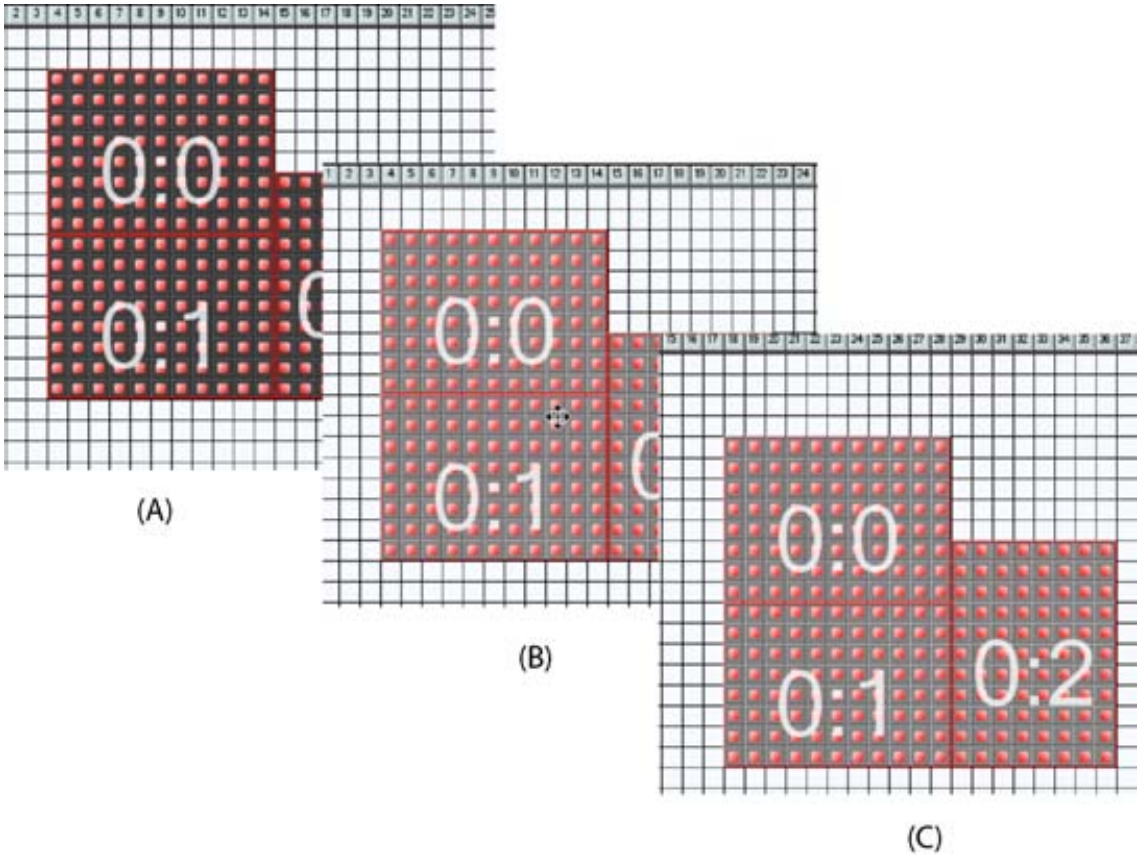


Image 19-96
Move blocks to new location, OLite, MiTRIX, NX

A Select blocks
B Drag blocks
C Release on new location

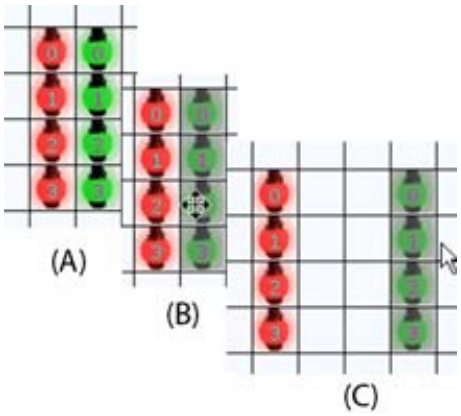


Image 19-97
Move blocks to new location, MiSPHERE

A Select units
B Drag units
C Release on new location

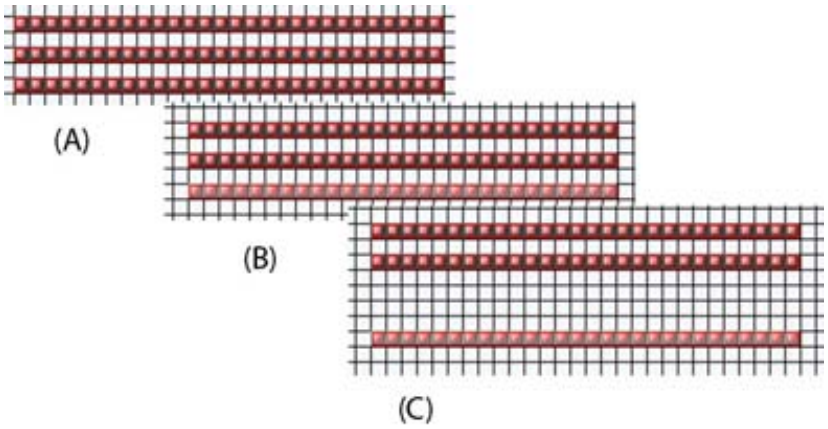


Image 19-98
Move units to new location, MiSTRIP

A Select units
B Drag units
C Release on new location

19.2.14.7 Delete selected blocks

First method

1. Select the blocks which must be deleted. See "Selecting one block", page 520 or "Selecting multiple blocks", page 521.
2. Click on the *Delete all selected blocks* icon ( ).

   The selected blocks will be removed from the workspace.

Second method

1. Select the blocks which must be deleted. See "Selecting one block", page 520 or "Selecting multiple blocks", page 521.
2. Right click in the workspace.

   A popup window appears. (image 19-99, image 19-100)
3. Select *Delete*.

   The selected blocks will be removed from the workspace.

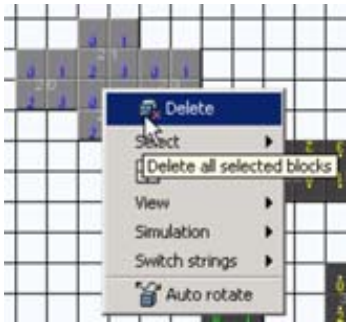


Image 19-99
Delete all selected blocks

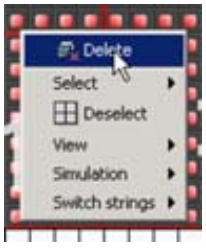


Image 19-100
Delete all selected blocks

19.2.14.8 Swap two strings

What is possible ?

Sometimes it becomes handy to replace e.g. the red string by the yellow string. With this switch string function, the operation can be done by a single mouse click.

E.g. all red blocks will be replaced by yellow ones and the yellow blocks will be replaced by the red ones.

How to swap strings ?

1. Right click in the designer grid.

   A popup window appears. (image 19-101, image 19-102, image 19-103)

2. Select *Switch strings* and move your mouse pointer to the right.

3. Select the desired switch function.

   The strings of the selected combination will be swapped. Even when no blocks of a certain string are used in the design, the swap will be executed.

   E.g. if string 0 (red string) contains more blocks than string 2 (blue string), the blue string takes the place of the red string and extra blocks will be taken automatically out of the blue block collector. The surplus of blocks for the red string will be dropped in the red block collector.

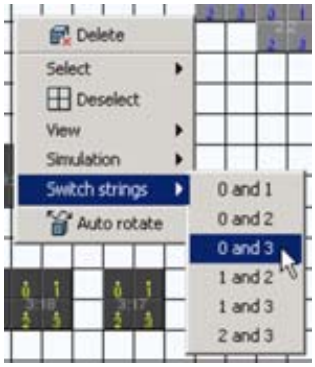


Image 19-101
Switch strings MiPIX

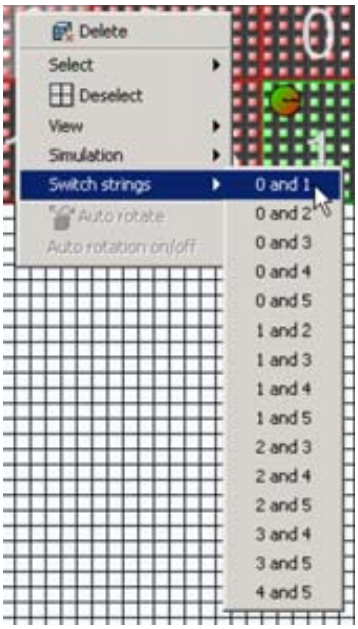


Image 19-102
Switch strings OLite

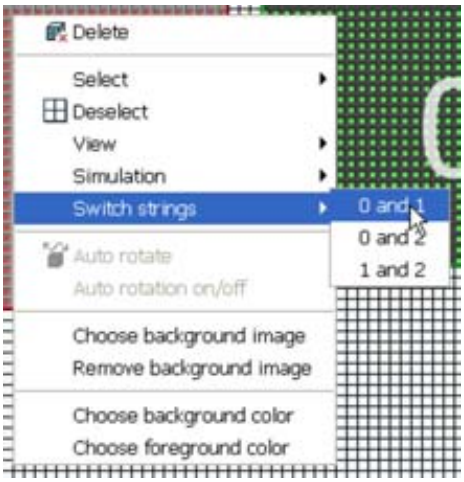


Image 19-103
Switch strings, NX creative

19.2.14.9 Rotate selected blocks (units)

No rotation available for MiSPHERE units.

Why rotating blocks (units)?

For creativity purposes and/or cabling facilities, it is possible to rotate the blocks or a parts of a string to the left or to the right over 90° or 180°.

How to rotate, first method

1. Select the blocks (units) which must be rotated (multiple selection possible) (1). See "Selecting one block", page 520 or "Selecting multiple blocks", page 521. (image 19-104, image 19-105, image 19-106)
2. Click on the rotate left ( ) on the IX tool bar or rotate right ( ) button on the IX tool bar.

   The selected blocks (units) will be rotated over 90° to the left or to the right (only when there is sufficient space to rotate).

   For MiPIX blocks, a V sign appears on the rotated block. This V sign means that manual rotation has taken place and that the block is excluded for auto rotation. This auto rotation lock can be remove via auto rotation on-off, see "Auto rotation ON-OFF", page 531.

   A second rotation, for the same blocks (units), is still possible.

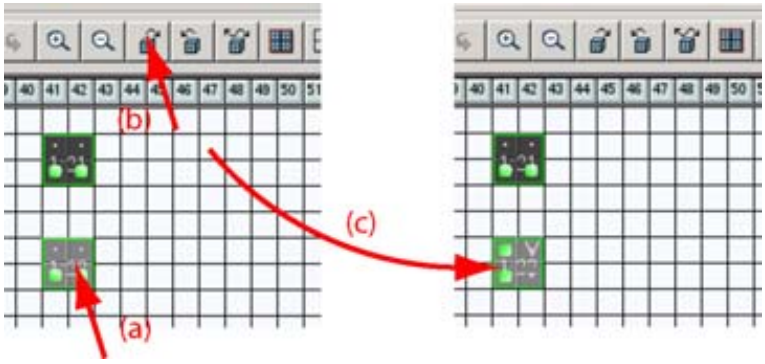


Image 19-104
Rotation of a block, MiPIX

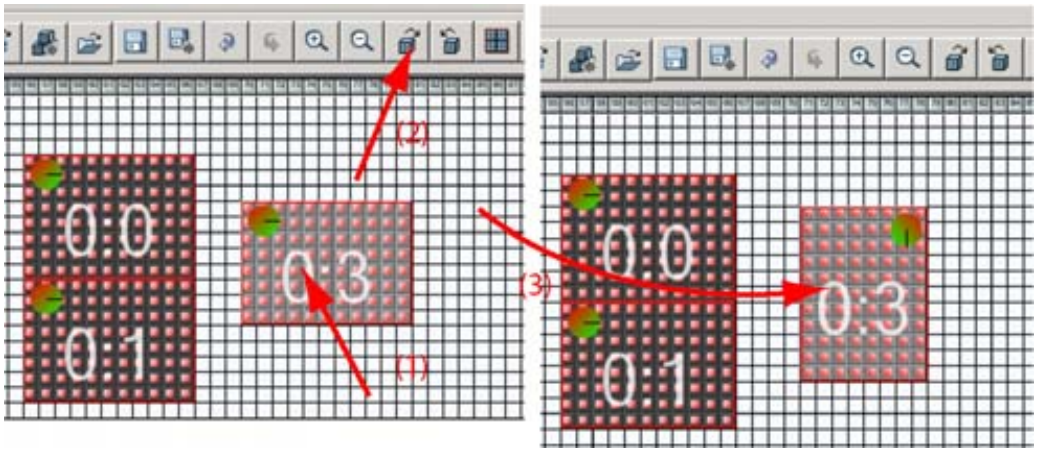


Image 19-105
Rotation of a block, OLite, NX

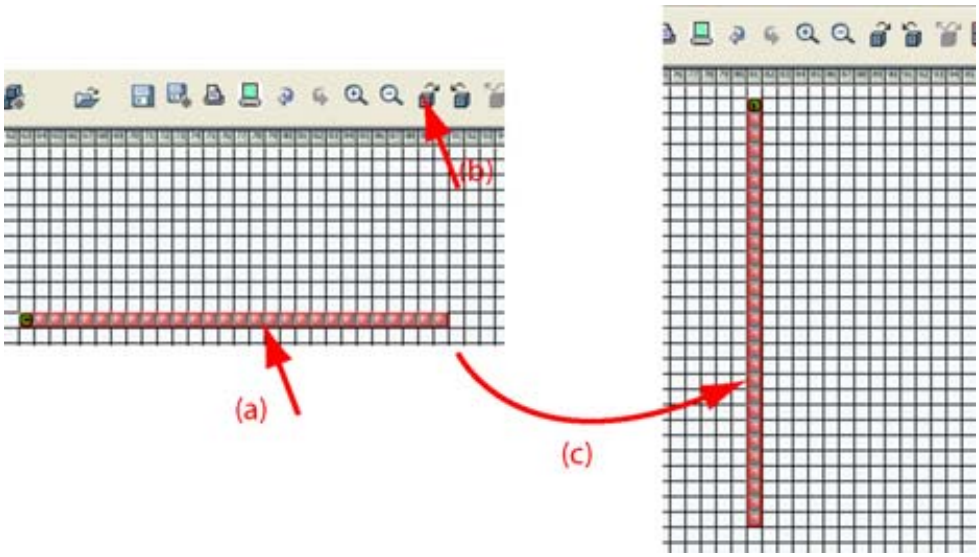


Image 19-106
Rotation of a unit, MiSTRIP

How to rotate, alternative method

This method can only be used when your computer is equipped with a mouse with mouse wheel.

1. Select the blocks (units) which must be rotated (multiple selection possible) (1). See "Selecting one block", page 520 or "Selecting multiple blocks", page 521.
2. Press and hold the Shift key, turn your mouse wheel up or down to rotate the block(s) (units) to the left or to the right.
   Note: *For MiPIX blocks, a V sign appears on the rotated block. This V sign means that manual rotation has taken place and that the block is excluded for auto rotation. This auto rotation lock can be remove via auto rotation on-off, see "Auto rotation ON-OFF", page 531.*

Visibility of a block rotation for OLite, NX

A bullet in the corner of the block indicates the rotation of the block.

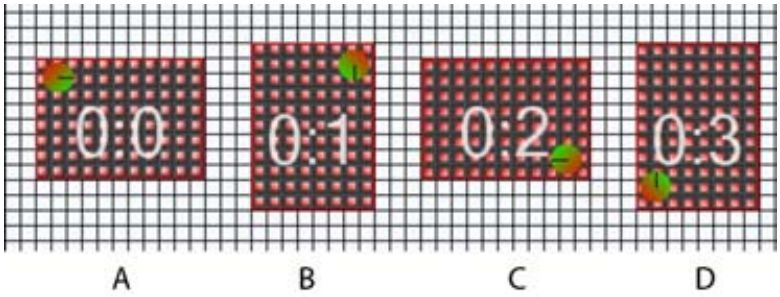


Image 19-107
Rotation indication

Bullet on the

- upper left corner, 0° rotation (A).
- upper right corner, 90° rotation (B)
- lower right corner, 180° rotation (C)
- lower left corner, 270° rotation (D)

Visibility of a block rotation for MiPIX

The two colored dots, indicating the input side of the block, will rotate in the same direction of the rotation.

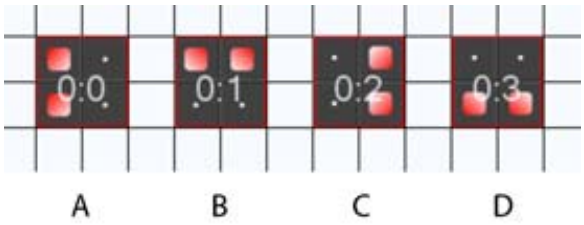


Image 19-108
Rotation indication

- A: 0° rotation
- B: 90° rotation
- C: 180°
- D: 270° rotation

Visibility of a unit rotation for MiSTRIP

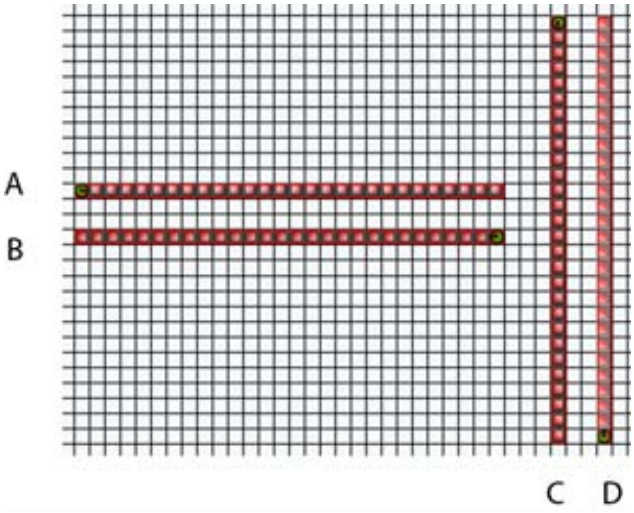


Image 19-109
Rotation indication

- A: 0° rotation
- B: 180° rotation
- C: 90° rotation
- D: 270° rotation

19.2.14.10 Auto rotation

Auto rotation is only for MiPIX blocks.

What is possible ?

Once the blocks are placed in a design, the software can make for each block a proposal how it should be rotated in a string. Those blocks where the software cannot find a good solution are indicated with a light blue background. Those blocks must be checked and manually rotated if necessary.

The blocks will be placed in the proposed position. An undo is still possible.

Block position can be locked so that these blocks are excluded of during the auto rotation process.

First method

1. Click on the Auto rotate icon ( ).

   All blocks will be automatically rotated according the wiring. Those blocks for which the software finds more than one favorable solution, are indicated with a light blue background. Manual rotation of those blocks is still possible. (image 19-110)

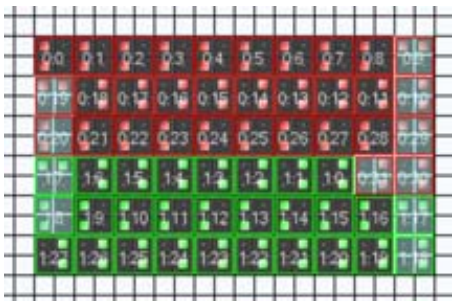


Image 19-110
Auto rotate result

Second method

1. Right click in the workspace.

   A popup window appears. (image 19-111)

2. Select *Auto rotate*.

   The software will rotate the blocks for the best rotation. The blocks having more than one equally favorable rotation, will have a light blue background. Manual rotation is now possible.

Image 19-111
Auto rotate

19.2.14.11 Auto rotation ON-OFF

Auto rotation on - off is only for MiPIX.

What can be done ?

With auto rotate on - off (toggle function) , it is possible to exclude blocks during the auto rotation process. The excluded blocks will be marked with a “V” on the upper right corner and the background changes to light gray. Manual rotation of these blocks is still possible. The same function is used to remove the “exclusion”.

How to toggle?

1. Select one or multiple blocks (see "Selecting one block", page 520 or see "Selecting multiple blocks", page 521).

2. Right click on the selected block or blocks.

   A pop up menu appears. (image 19-112)

3. Select *Auto rotate on-off*.

   The selected blocks which are not locked, will be locked. A V-sign appears on these blocks and the background changes to light gray. (image 19-113)

   The selected blocks which are locked, will be unlocked. The V-sign disappears.

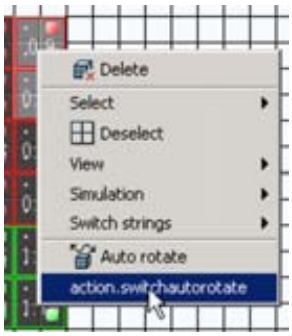


Image 19-112
Auto rotate on-off

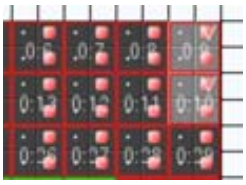


Image 19-113
Auto rotate on-off result

19.2.14.12 View wire direction of a string

How to display ?

1. Right click in the designer grid.

   A popup window appears. (image 19-114, image 19-115)

2. Select *View* and move the mouse pointer to the right.

3. Select *Show wiring*.

   When checked, the blocks will be connected with a line in the same way as the blocks should be hardware connected. The start block, block connected with the controller unit, has a colored background. (image 19-116, image 19-117)

   As this function is a toggle function, the show wiring stays active until it is switched off again.

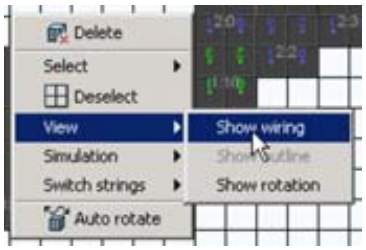


Image 19-114
Show wiring

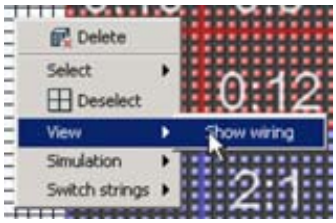


Image 19-115
Show wiring

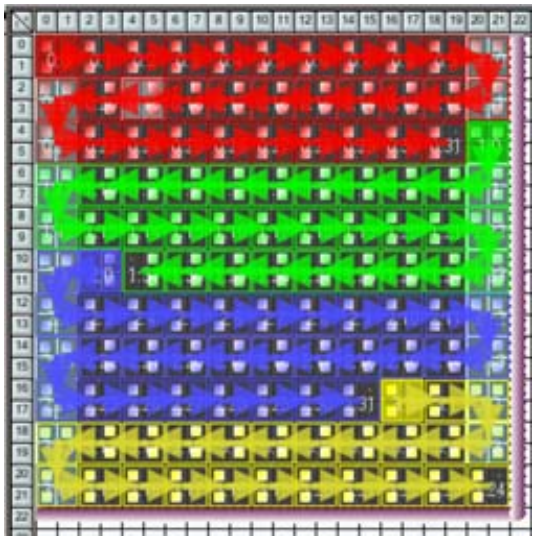


Image 19-116
Show wiring direction for MiPIX blocks

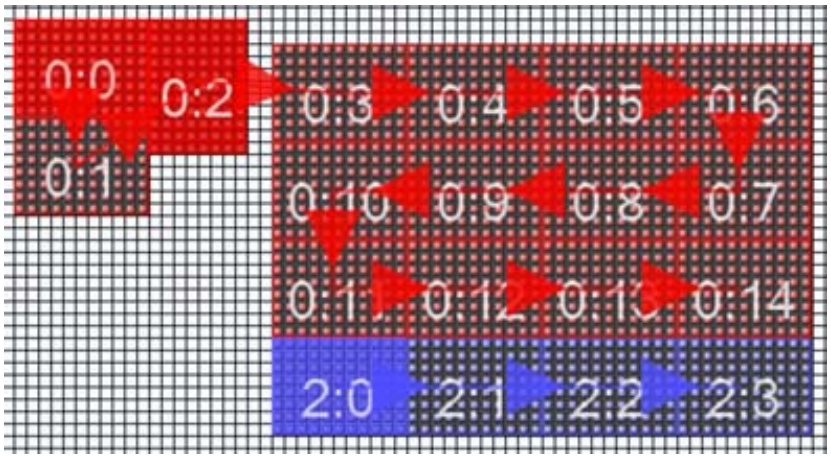


Image 19-117
Show wire direction for OLite, result

19.2.14.13 View rotation of a block

For MiSPHERE, no View Rotation available as these units cannot be rotated.

What can be done ?

The rotation of block can be made visible by activating the show rotation function. This function acts as a toggle function. The rotation indication can be switched on or off. The actual status remains active during the complete design process until it is toggled.

Show rotation is activate by default when starting a new design.

How to toggle show rotation ?

1. Right click in the designer grid.

   A pop-up window appears. (image 19-118, image 19-119)

2. Select *View* and move the mouse pointer to the right.

3. Select *Show rotation*.

   When the rotation indicators are not visible, those indicators become visible.

   When the rotation indicators are visible, those indicators will be remove.

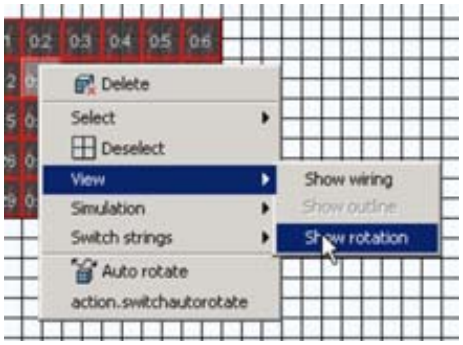


Image 19-118
Show rotation MiPIX

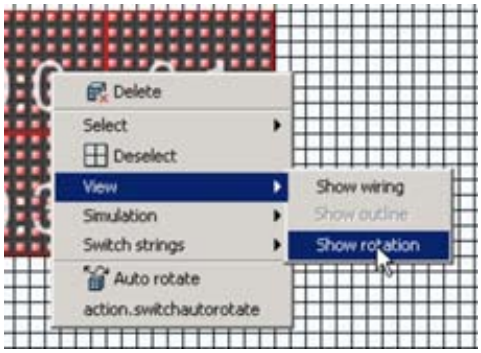


Image 19-119
Show rotation OLite

19.2.14.14 Simulate wire direction

What is possible ?

The wire direction for each string can be simulated by a running light started by the first block connected with the controller and running through the string in the direction of the wiring of the string. For MiPIX, the pixels 1 and 3 of each block, input side of block, will light up one after each other during the simulation. For OLite, NX , MiSTRIP and MiTRIX, the complete block (unit) lights up one after each other. For MiPIX, this running light simulation should be exactly the same as the function internal pattern, string direction which is executed on the wall itself. With this simulation it is possible to set up the correct rotation of the blocks.

Once this function is activated, it stays active until it is switched off.

How to simulate ?

1. Right click in the designer grid.

   A popup window appears. (image 19-120, image 19-121, image 19-122)

2. Select *Simulation* and move your mouse to the right.

3. Check *Simulate string direction*.

   When checked, the running light will start. (image 19-123, image 19-124)

   Once this function is activated, it stays active until it is switched off.

Image 19-120
Simulate string direction for MiPIX

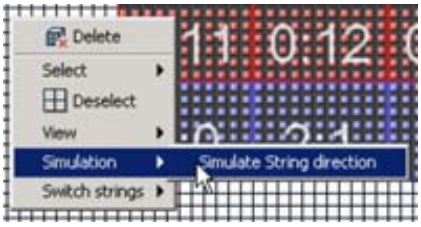


Image 19-121
Simulate string direction for OLite, NX

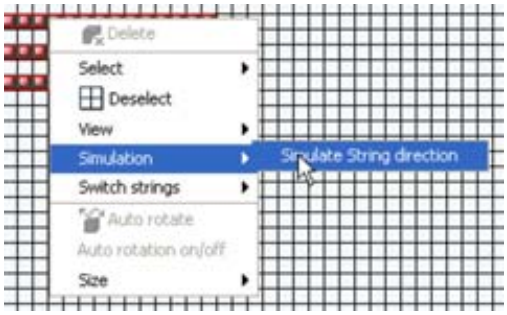


Image 19-122
Simulate string direction for MiSTRIP

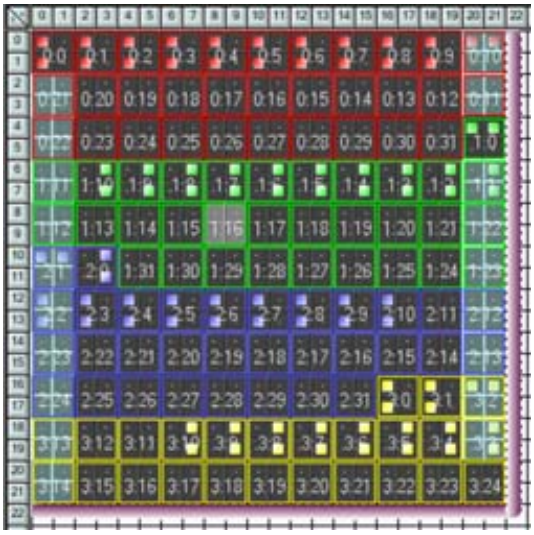


Image 19-123
Simulate string direction for MiPIX, result

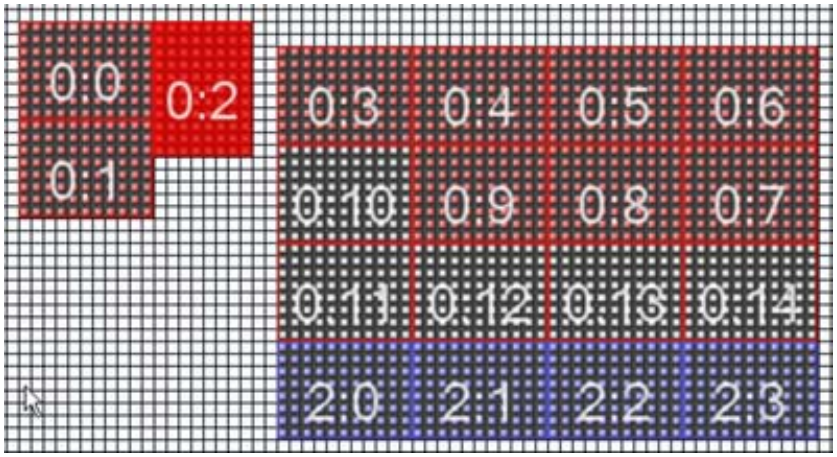


Image 19-124
Simulate string direction for OLite, NX, result

19.2.14.15 Change unit size of MiSTRIP units

What is possible?

A placed unit can be changed from a Large one into a smaller one or from a smaller one into a larger one if there is enough space to enlarge the unit in the design space.

How to change a unit

1. Select one or multiple units.
2. Right click on the selected unit or units.

   A pop up menu appears. (image 19-125)
3. Select *Size* and move the mouse pointer to the right.
4. Select the desired size.

   When the substitution is possible, software will substitute the old unit with the new selected one.

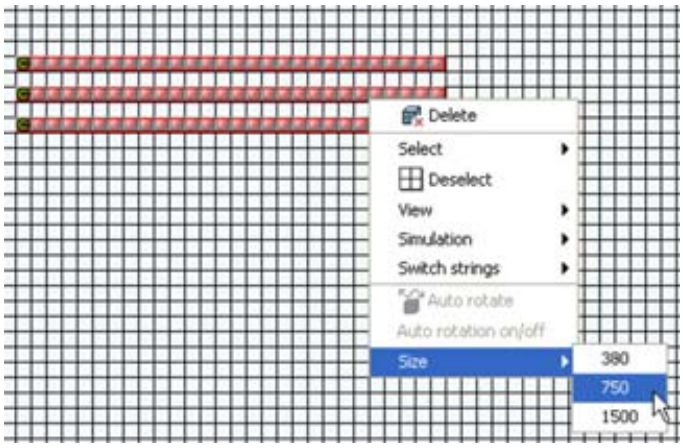


Image 19-125
Change size of a unit

19.2.15 Background image

What can be done ?

An image with the shape of the wall can be inserted as background image in the design grid to facilitate the placement of the creative units (blocks). This image can be any image.

When this image is imported, it is automatically scaled to biggest dimensions of the grid.

How to insert

1. Right click in the design window.

   A content menu opens.
2. Select *Choose background image*. (image 19-126)

   The browser window opens. (image 19-127)
3. Browse to the desired image and click open.

   The file format of the image should be jpg, gif or png.

   The image is automatically scaled to the dimensions of the design grid. (image 19-128)

Image 19-126
Choose background image

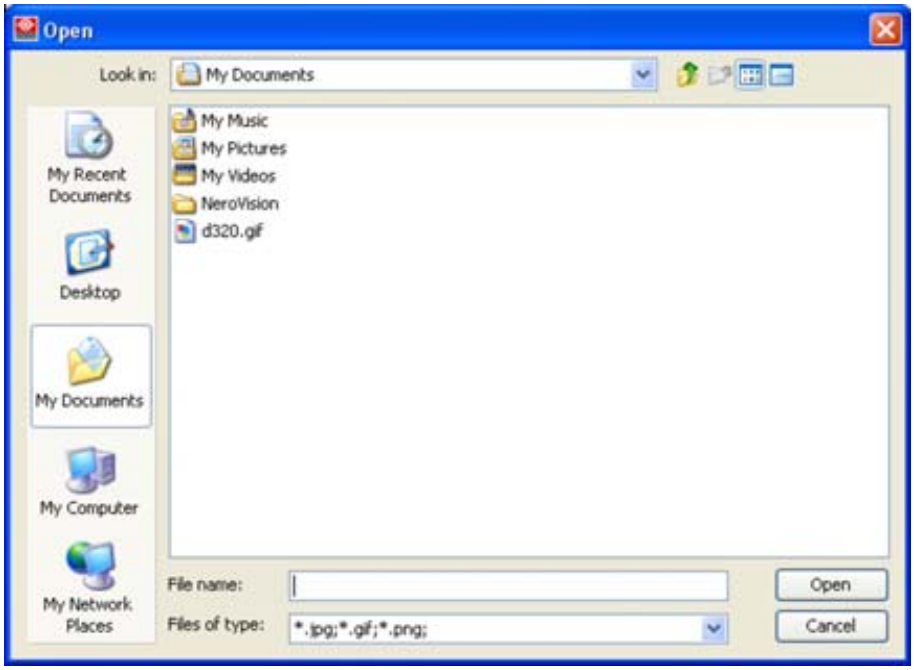


Image 19-127
Browse for image

Image 19-128
Background image inserted

How to remove the image

1. Right click in the design window. (image 19-129)

   A content menu opens.

2. Select *Remove background image*.

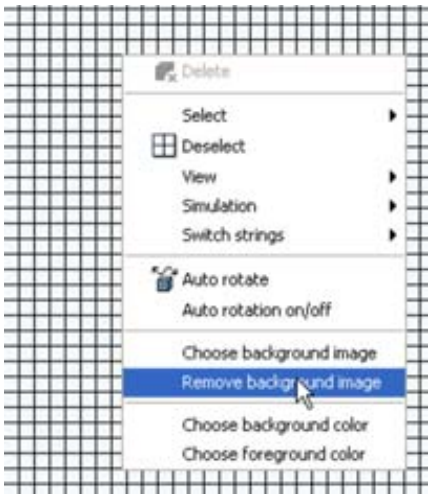


Image 19-129
Remove background image

19.2.16 Foreground - background color design window

What can be done ?

The background color of the design grid can be changed to any color. Even the lines of the design grid (foreground) can be changed to any desired color.

Changing the background color when a background image is inserted is not visible in the design window.

How to change

1. Right click in the design window. (image 19-130, image 19-131)

   A content menu opens.

2. Select *Choose foreground color* or *Choose background color*.

   The color picker menu opens.

   Colors can be selected via *Swatches*, *RGB* or *HSB*. For a detailed explanation about these windows, see "Color fill", page 358 and starts from step 2.

Image 19-130
Background color selection

Image 19-131
Foreground color selection

19.2.17 Zoom in - Zoom out

How to zoom ?

1. To zoom in, click on the zoom in icon ( ) on the IX module tool bar.

   To zoom out, click on the zoom out icon ( ) on the IX module tool bar.
   Or,
   press and hold the **Ctrl** key and scroll the mouse wheel up to zoom out, down to zoom in.

The left upper corner (coordinate 0,0) remains on its place. The zoom will be done diagonally. Use the scroll bars to move the preview to the desired location.

19.2.18 Printing placement and cabling scheme

Printing placement scheme

Click on the Print placement icon ( ).

The print placement preview window opens.

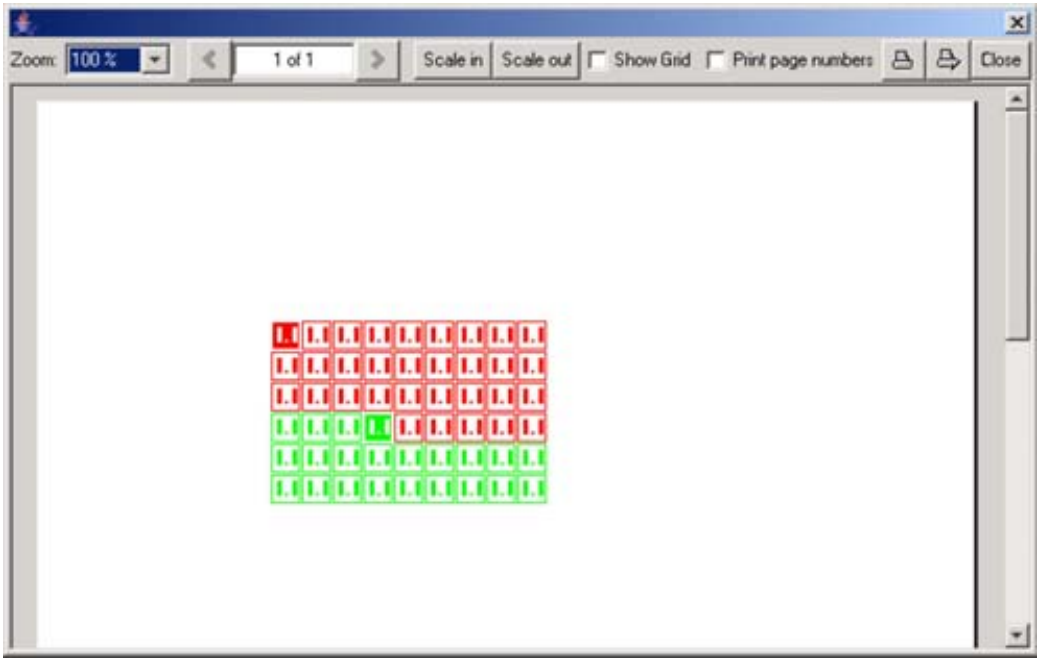


Image 19-132
Print preview placement scheme

Printing cabling scheme

Click on the Print cabling icon ( ).

The print cabling preview window opens.

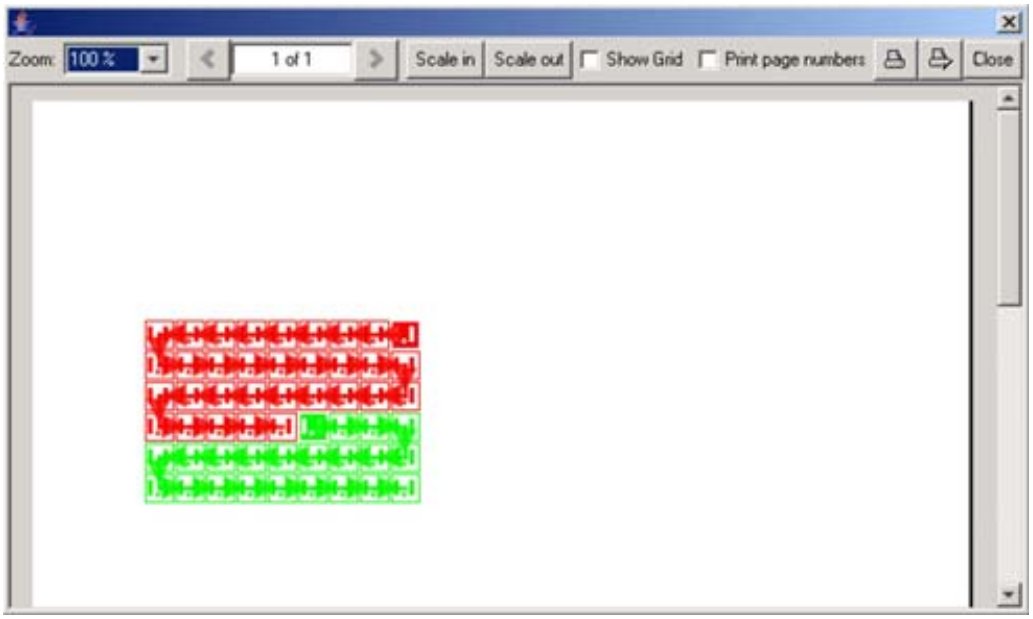


Image 19-133
Print preview cabling scheme

No *Printing cabling scheme* for MiSPHERE as there are no external connection to be made.

19.2.19 Some examples of design

How to create your design for some typical images ?

Example 1

To display a full image with all OLite blocks placed next to each other as 6 x 10 the following result image can be obtained with the created design.

To display result image 19-134, the design as in image 19-135 must be created and associated with the controller.

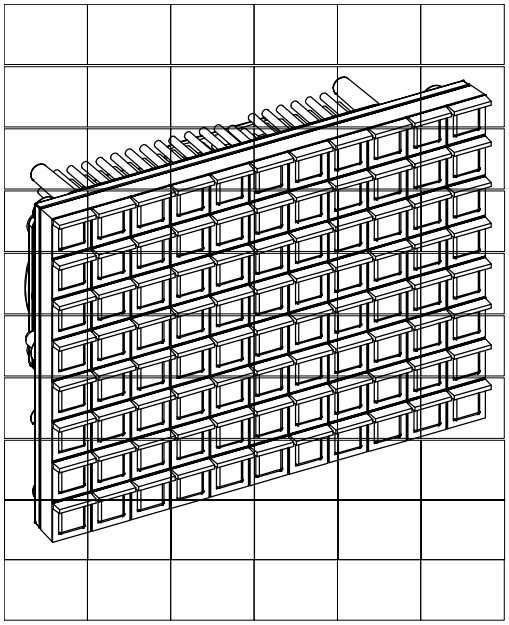


Image 19-134
Result image

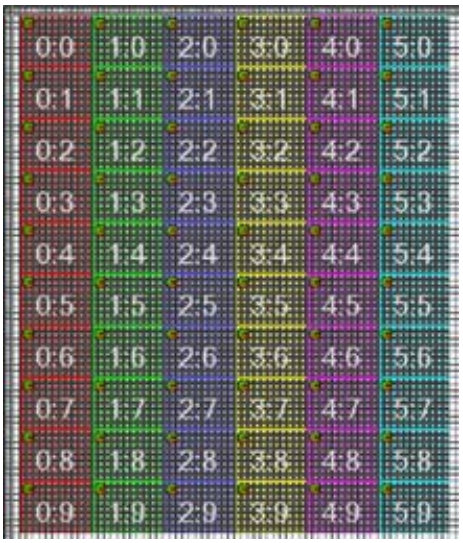


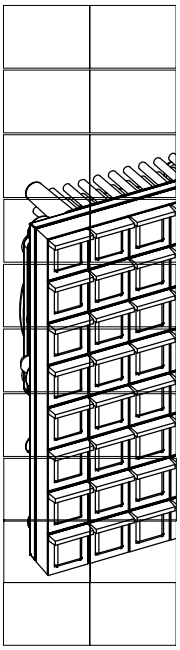
Image 19-135
Created design

That means that physically all blocks must be placed next to each other and above each other by using the standard cabling.

Example 2:

An image is displayed on 2 groups of OLite blocks. Between both groups, there is a gap of one block

To display result image 19-136, the design as in image 19-137 must be created and associated with the controller.



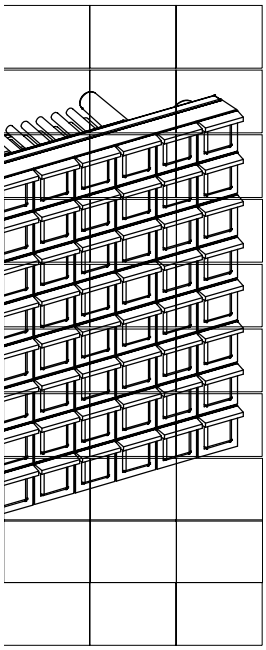


Image 19-136
Result image

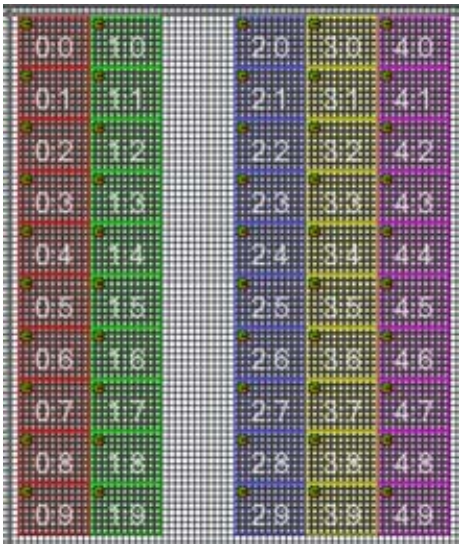
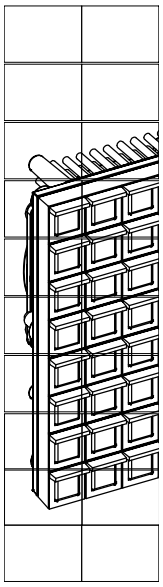


Image 19-137
Created design

Example 3 :

A full image displayed on two groups of OLite blocks which are placed on a distance of each other.

To display result image 19-138, the same design as for an closed image must be created (image 19-135) and associated with the controller.



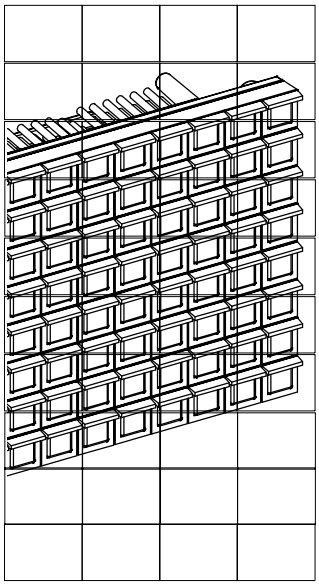


Image 19-138
Result image

That means that physically the blocks must be placed in two groups with certain distance between both groups. To realize this, use the Creativity pack cables as described in the installation manual of the OLite rental. The design which must be created in Director Toolset is the same as when the blocks are placed next to each other (see example 1).

19.3 Controller configuration

Overview

- Configurator activation
- Configurator window
- Apply a design to a controller
- Fetch a design from hardware
- Save a fetched design
- Z-ordering controllers
- Group - Ungroup controllers
- Align selected controllers as the first selected
- Scroll to visible
- Export a design
- Import a design
- Delete a design
- Moving controllers in active field
- Manual positioning of a controller in the active field
- Panning the preview window

CAUTION: Be careful when switching back to *Tile positioning*.

When controllers are positioned in a custom way, via the *IX configurator* part of the *IX module*, switch to *Manual positioning* when returning to the *Tile positioning* module before changing any *horizontal* or *vertical* resolution of a typical controllers. Otherwise, the controllers will be repositioned grid wise.

19.3.1 Configurator activation

How to activate ?

1. When the IX module is activated, click on the *Activate Configurator* icon ( ) on the IX tool bar.

   The configuration window opens (image 19-139).

19.3.2 Configurator window

Overview

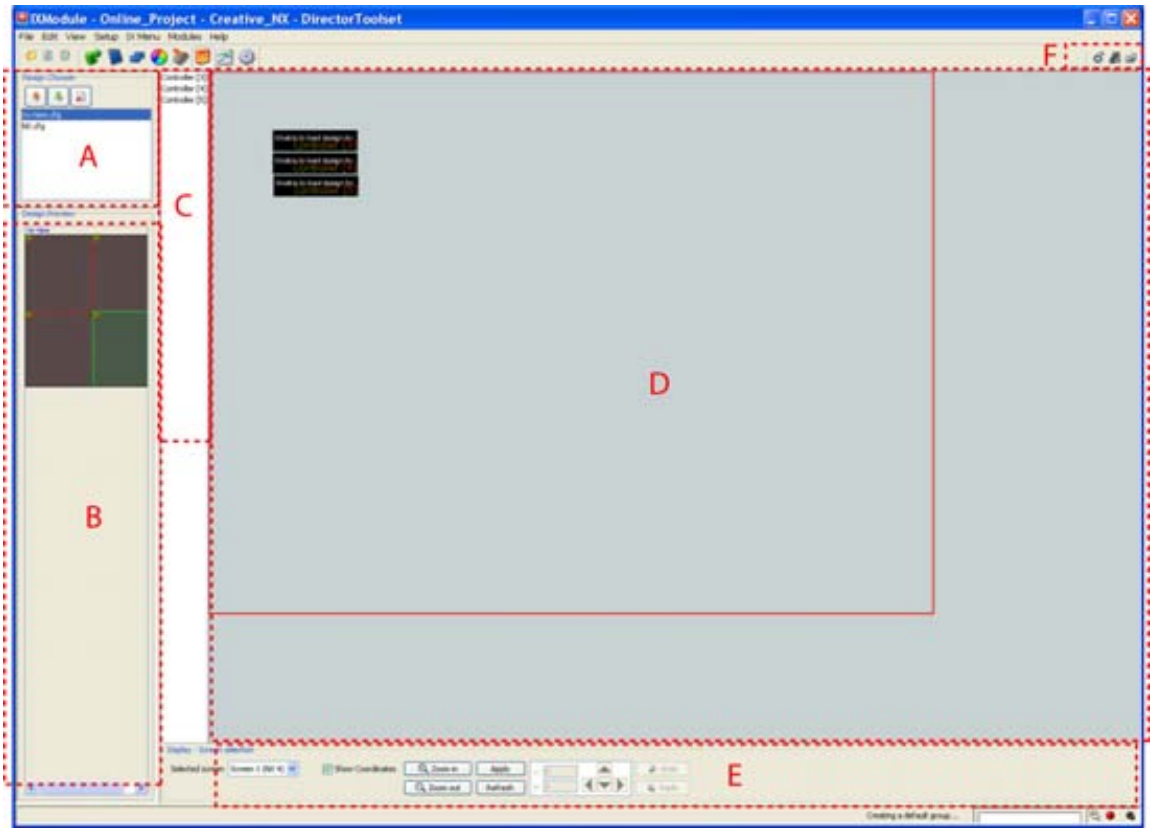


Image 19-139
Configurator window

A	Design chooser
B	Design preview
C	Controller overview pane
D	Controller layout in active field
E	Logging information and options pane
F	Configurator Menu buttons

What can be done in the IX configurator ?

The following actions can be done:

- Controller management
- Design - controller association
- Controller layout

19.3.3 Apply a design to a controller

Add design to a single controller, drag and drop method

1. Browse to a design in the *Design chooser* (a). (image 19-140)
2. Select the design by clicking on it.

   The background changes to dark blue.
3. While clicking, hold down the mouse button and drag the selected design onto the desired controller in the controller overview pane (b1) or controller layout pane (b2).

4. Release the mouse button.

   The selected design is applied to the controller. A preview will be given in the controller layout pane.

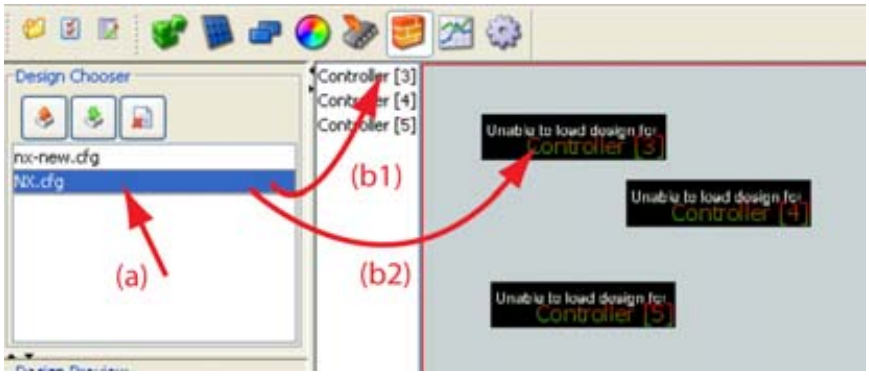


Image 19-140
Design association to a device

Apply design to more controllers

1. Click on a controller in the controller overview pane (a1) or controller layout pane (a2). (image 19-141)
   Note: *Multiple selection is possible by holding down the* ***Ctrl*** *key while clicking on the controllers.*
2. Browse to a design in the *Design chooser* (b).
3. Right click on the desired design.

   A menu pops up.
4. Select *Apply* and move the mouse to the right (c).
5. Select *Apply to all selected tiles* (devices).

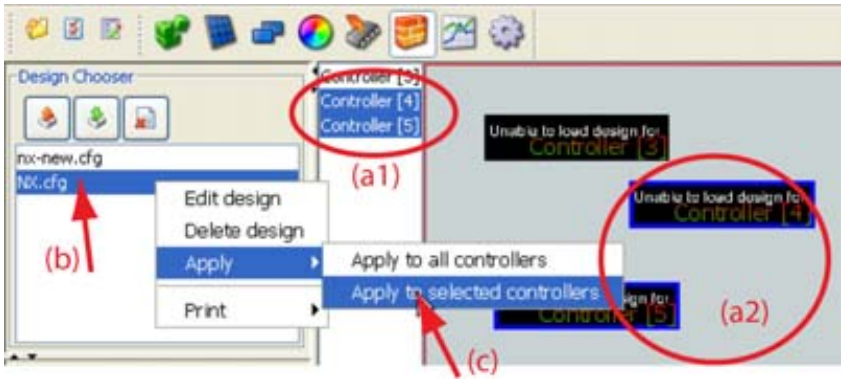


Image 19-141
Design association to multiple controllers

Apply a design to all controllers

1. Browse to a design in the *Design chooser* (a). (image 19-142)
2. Right click on the desired design.

   A menu pops up.
3. Select *Apply* and move the mouse to the right.
4. Select *Apply to all tiles* (all controllers).
   Or,
   The selected design will be associated with all controllers.

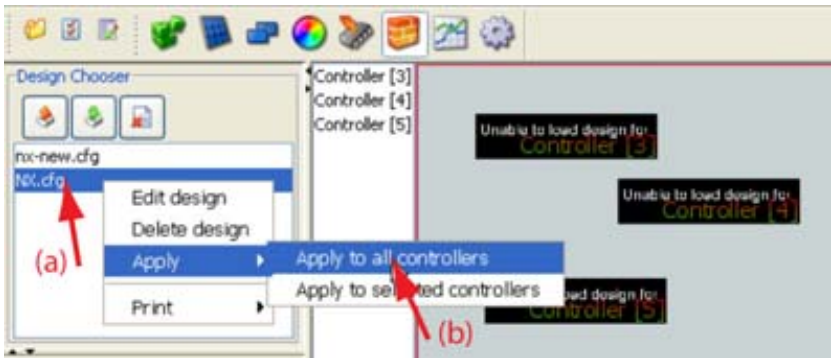


Image 19-142
Design association to all controllers

The limit of different designs which could be applied to one wall is 20.

Possible constraint

While applying a design to a device, the following constraint is possible: “The number of total pixels is to low, adjust the timings accordingly”.

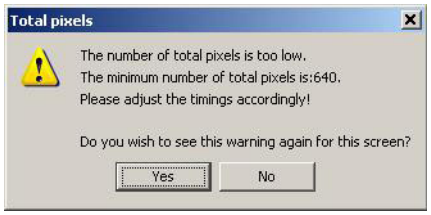


Image 19-143
Apply constraint

To solve that problem, go to the timings window of your digitizer and point with your mouse on the total number of pixels. A tool tip pops up and indicates the minimum required value.

19.3.4 Fetch a design from hardware

How to fetch ?

1. Right click on a controller in the controller overview pane or controller layout pane. (image 19-144, image 19-145)

   A menu pops up.

2. Click on *Fetch design from Hardware*.

   When working online (serial connection established) with an online configuration, the design stored in the controller will be recalled to the preview pane. The actual design in the preview pane will be overwritten. The fetched design can now be saved on the disk.

   When working offline with an online configuration, a warning message *’Currently, there’s no connection with the hardware. Make a connection now? ’* will be displayed.

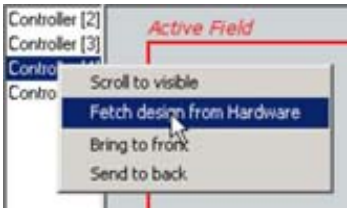


Image 19-144
Fetch design from hardware selected

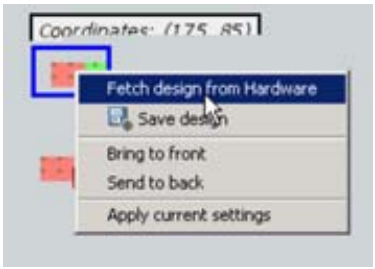


Image 19-145
Fetch design from hardware

19.3.5 Save a fetched design

What is possible ?

A fetched design from hardware can be stored locally on a desired name.

How to save ?

1. Right click on the device with the fetched design (a). (image 19-146)

   A menu pops up.

2. Click on *Save design* (b).

   The Save design browse window opens (c).

3. Browse to a location and enter a name for the design (d).

4. Click on **Save** (e).

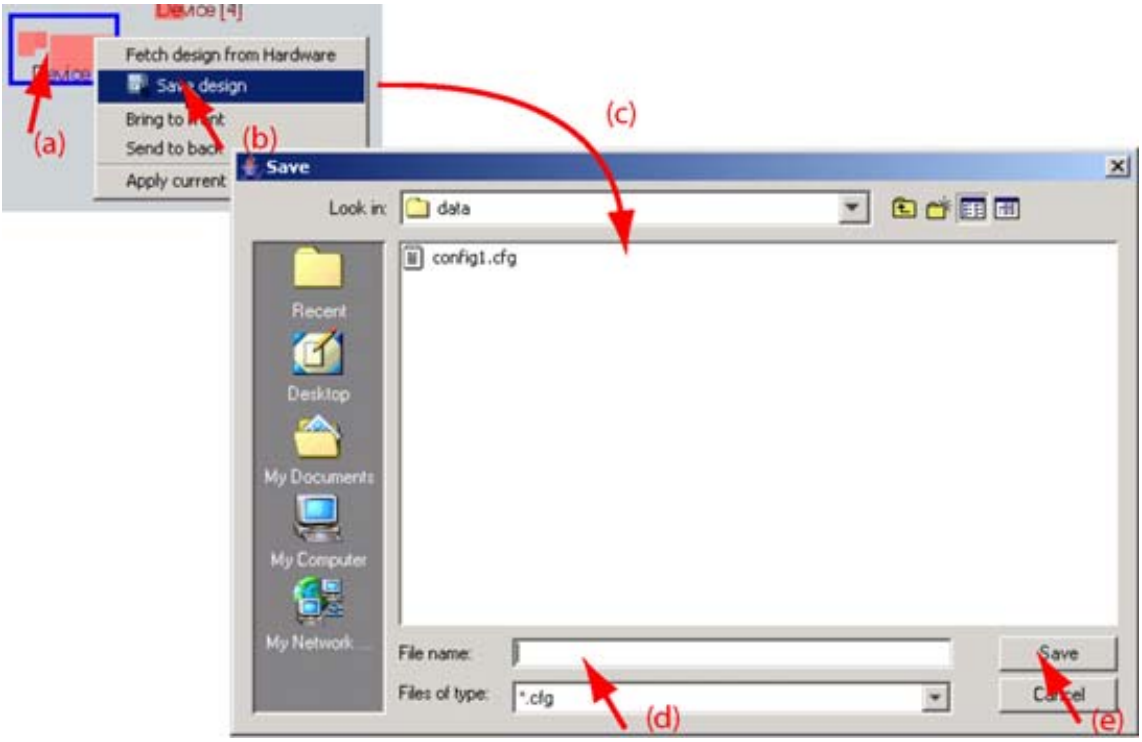


Image 19-146
Save design after a fetch

19.3.6 Z-ordering controllers

What is possible ?

Controllers can be situated one before the other in the active field so that several controllers can display the same image. The order in the preview pane can be changed.

How to change the order ?

1. Right click on a design in the controller overview pane or controller layout pane. (image 19-147, image 19-148)

   A menu pops up.

2. Click on *Bring to front* or *Send to back*.

Bring to front	The selected device will be shown in front of the others.
Send to back	The selected device will be hided behind the others.

Image 19-147
Z-order controllers via controller list

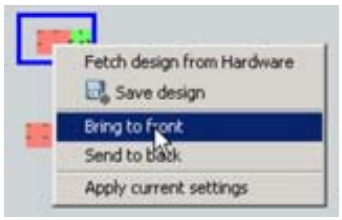


Image 19-148
Z-order controllers via controller preview

19.3.7 Group - Ungroup controllers

What is possible ?

Two are more controllers can be grouped together and will act as one. When moving the controllers, all controllers in the group will move in the same direction. The relative position to each other remains the same.

How to group ?

1. Click in the active field and hold down the mouse button. (image 19-149)
2. Drag the mouse pointer until the desired devices are within the selection (a).

   The background of the selection becomes blue.

3. Release the mouse button.

   All devices within the selection are selected.

4. Right click on a selected device (b).

   A pop-up menu appears.

5. Select *Group* (c).

   All devices in the selection will be grouped together and will act as one controller.

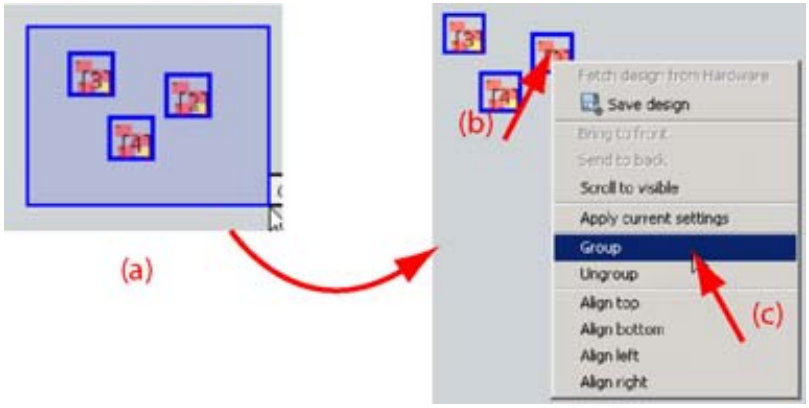


Image 19-149
Group devices

How to ungroup ?

1. Click on a group of devices to select.

   All devices in the group will be selected.

2. Right click anywhere on a group of devices. (image 19-150)

   A pop-up menu appears.

3. Select *Ungroup*.

   The grouped devices will be ungrouped, each device in the previous group will act now as a single device.

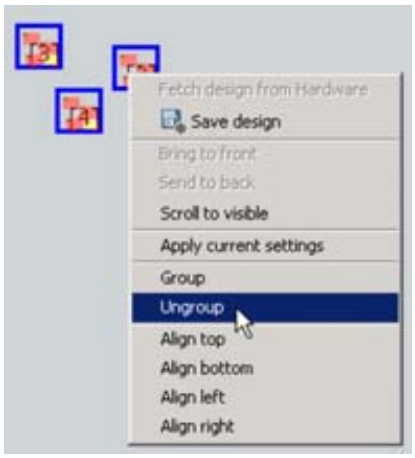


Image 19-150
Ungroup devices

19.3.8 Align selected controllers as the first selected

What is possible?

A selection of controllers can be aligned, left, right, top or bottom as the first selected controller in de selection.

How to align?

1. Decide which controller must be the master and select this controller as first one (A). (image 19-151)
2. Select the other controllers which must be aligned as the first selected (B).
3. Right click on a selected controller (C).

   A pop-up menu appears.

4. Select the desired alignment method.

Left	All selected controllers will be aligned with the left side of the first selected controller.
Right	All selected controllers will be aligned with the right side of the first selected controller.
Top	All selected controllers will be aligned with the top side of the first selected controller.
Bottom	All selected controllers will be aligned with the bottom side of the first selected controller.

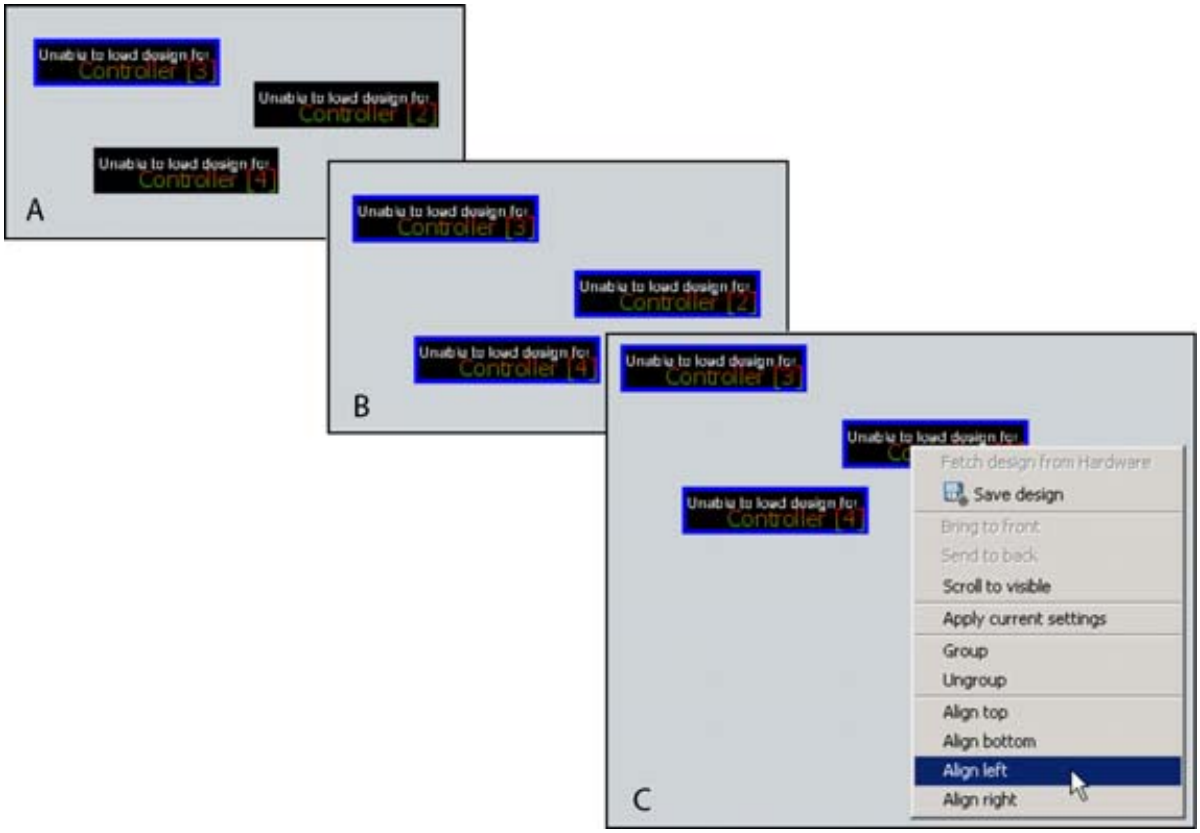


Image 19-151
Controller alignment

19.3.9 Scroll to visible

What is possible ?

Controllers which are not visible on the preview pane due to a zoom action or to a scroll action can become visible by using the *Scroll to visible* function.

How to activate ?

1. Right click on a controller in the controller list which is not visible in the controller preview pane (a). (image 19-152)

   A menu pops up.

2. Click on *Scroll to visible* (b).

   The selected controller becomes visible in the preview pane (c).

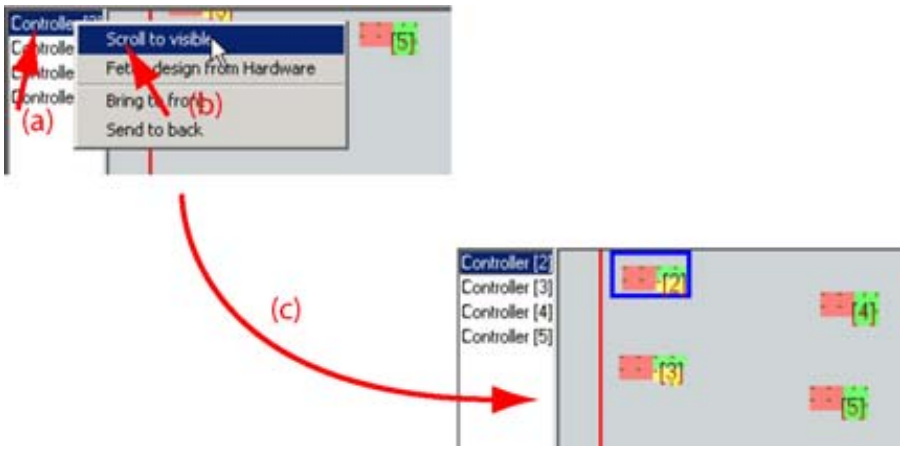


Image 19-152
Scroll to visible

19.3.10 Export a design

How to export a single design

1. Select a design in the *Design chooser* (a). (image 19-153)
2. Click on the export button in the *Design chooser* (b).

   The *Export design* dialog opens (c).
3. Check the radio button in front of *Export the selected design if not yet selected* (d).
4. Click **OK** (e).

   The *Save* window opens (f).
5. Browse to the desired location (g) and if necessary, change de name of the file (h).
6. Click **Save** (i).

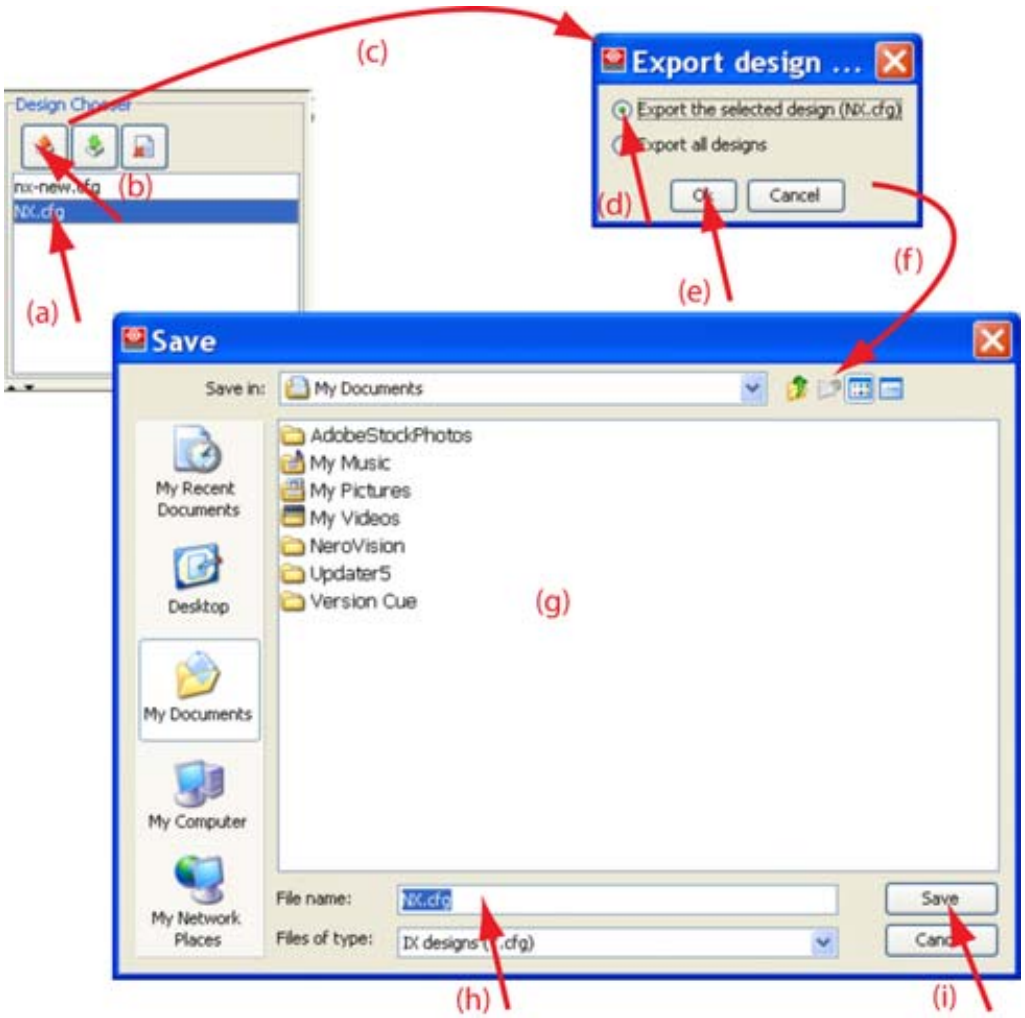


Image 19-153
Export a design

How to export all designs

1. Click on the Export button in the *Design chooser* (a). (image 19-154)

   The *Export design* dialog opens (b).

2. Check the radio button next to *Export all designs* (c).
3. Click **OK** (d).

   A browse window opens (e).

4. Browse to the desired location (f) and click **Save** (g).

   All designs are exported to the selected location.

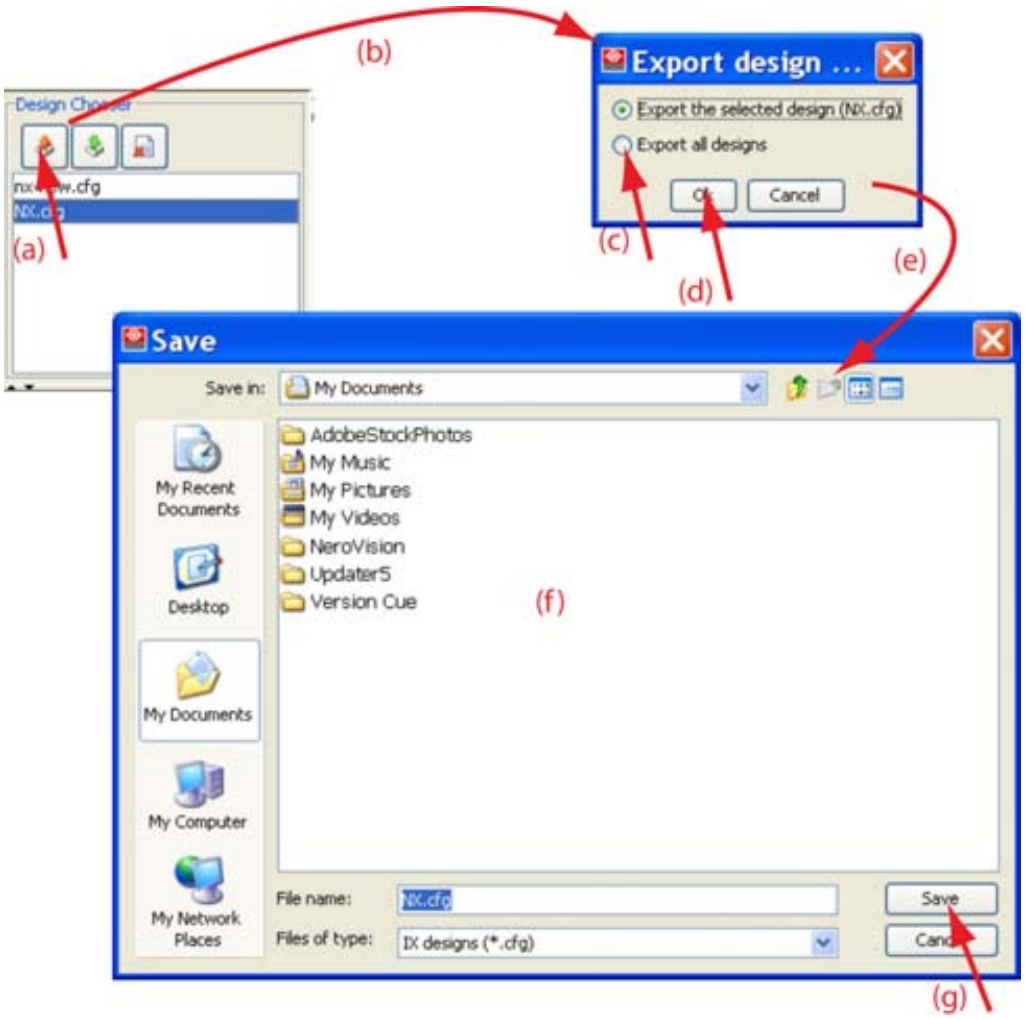


Image 19-154
Export all designs

19.3.11 Import a design

How to import

1. Click on the import button in the *Design chooser* (a). (image 19-155)

   A browser window opens (b).

2. Browse to the desired design and select that design (c).
3. Click **Open** to import the selected design (d).

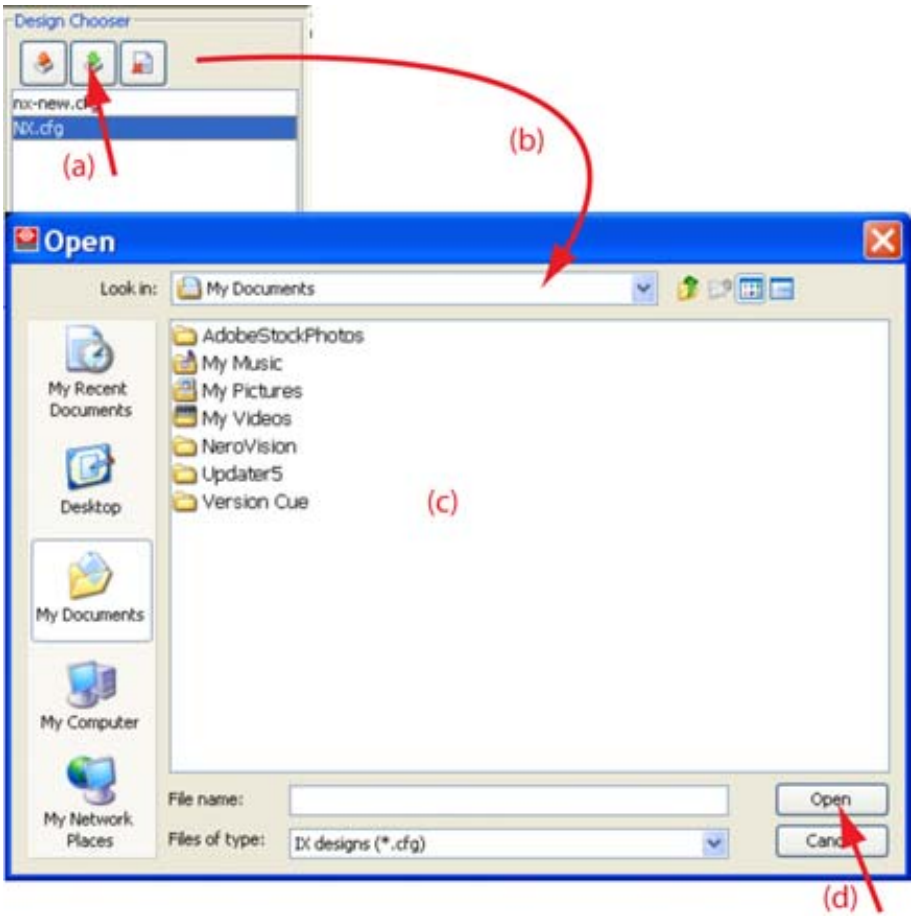


Image 19-155
Import design

19.3.12 Delete a design

Delete via content menu

1. Select the design in the *Design chooser* (a). (image 19-156)
2. Right click on the desired design.

   A menu pops up.
3. Select *Delete design* (b).

   The design will be removed from the *Design Chooser*.

Image 19-156
Delete design

Delete via buttons

1. Select the design in the *Design chooser* (a) (image 19-157)

2. Click on the delete icon (b).

   The design will be removed from the *Design Chooser*.

Image 19-157
Delete design

19.3.13 Moving controllers in active field

How to move a single controller ?

1. Click on a controller in the controller preview pane and hold down the mouse button. (image 19-158)

   The mouse pointer changes to a four arrow cursor.

2. Drag the controller to the desired location.
3. Release the mouse button to drop the controller on the new location.

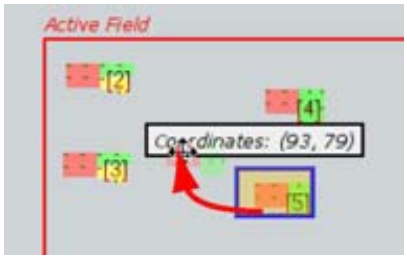


Image 19-158
Move controller in active field

How to move multiple controllers ?

1. Click in the active field and hold down the mouse button.
2. Drag the mouse pointer until the desired controllers are within the selection. (image 19-159)

   The background of the selection becomes blue.

3. Release the mouse button.

   All controllers within the selection are selected.

4. While still holding down the **Ctrl** button, click with the mouse on a controller inside the selection. Hold down the mouse button and drag the selection to the desired location.

Image 19-159
Select multiple controllers

19.3.14 Manual positioning of a controller in the active field

What can be done ?

As it is very difficult to move a controller in the active field to an exact location, using coordinates which can be entered directly or via a click system will make the job easier and more precise.

How to enter the exact coordinates ?

1. Click on the controller which must be positioned. (image 19-160)
2. Click in the *x* input field on the *Display - Screen selection* pane, select the current value and enter a new value with the keyboard.
3. Press **ENTER** to accept.
4. Click in the *y* input field on the *Display - Screen selection* pane, select the current value and enter a new value with the keyboard.
5. Press **ENTER** to accept.

   The controller will jump its new location.

Image 19-160
Position via coordinates

How to use the click system ?

1. Click on the controller which must be positioned.
2. Click on the left or right arrow key on the *Display - Screen selection* pane to move the controller horizontally. (image 19-161)

   The value next to x will change accordingly.
3. Click on the up or down arrow key on the *Display - Screen selection* pane to move the controller vertically.

   The value next to y will change accordingly.

Image 19-161
Position via click

It is also possible to use the arrow keys on the keyboard to move a selected controller.

Once you stopped clicking on the arrow keys, the digitizer is moving the controller to the new location. During this time it is not possible to click again on the arrow keys. A warning message appears.

19.3.15 Panning the preview window

How to pan ?

1. Hold down the **Ctrl** button.
2. Click in the preview pane but not on a controller and hold down the mouse button. (image 19-162)
   The mouse pointer changes to a hand cursor.
3. Drag the mouse to move the actual preview.
4. Release the mouse button to drop the actual view in the preview pane.

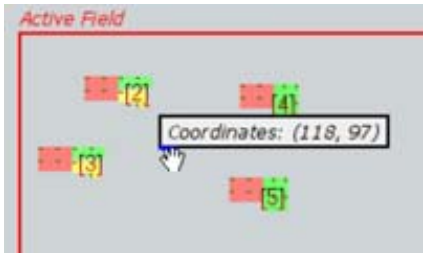


Image 19-162
Panning preview

19.4 Printing designs

Overview

- Introduction
- Starting a print preview
- Page viewing
- Page content facilities
- Page setup
- Print a hardcopy of the design

19.4.1 Introduction

Overview

Once a design is created, the user has the possibility to print out:

- a block placement scheme which can be used while adding blocks to the physical grid.
- a cabling scheme which can be used to interconnect the blocks.

The print out can be scaled, zoomed so that it matches on the well defined sheet of paper. The background grid can be added so that ready the scheme becomes more easy.

The print facility can be started from

- the designer window
- the *Design chooser* in the configurator window.

Both facilities offer the possibility to create preview, which can be adapted until the best result is obtained, before printing.

If all settings are correctly installed, it is possible to print directly, without preview, when in the Configurator window.

19.4.2 Starting a print preview

Via the configurator

1. Browse to the design in the *Design chooser* and right click on it.

   A pop-up menu appears. (image 19-163)

2. Select *Print* and move the mouse pointer to the right.

   The pop-up menu expands.

3. Select *Print preview placement scheme* or *Print preview cabling scheme*.

   The corresponding print preview window opens. The functions on top of both windows are equal and will be discussed hereafter. (image 19-164)

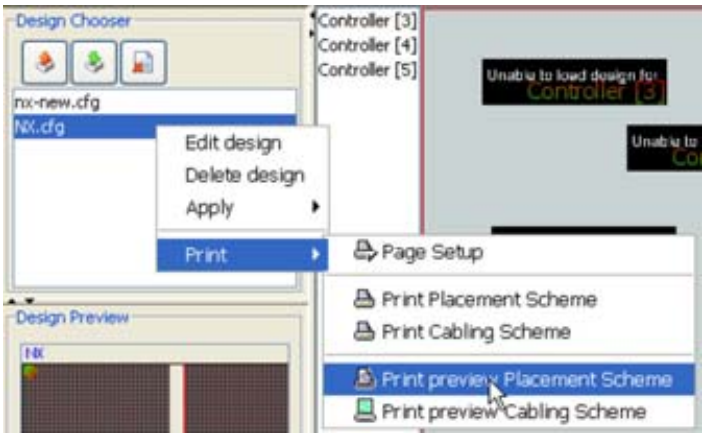


Image 19-163
Print preview selection

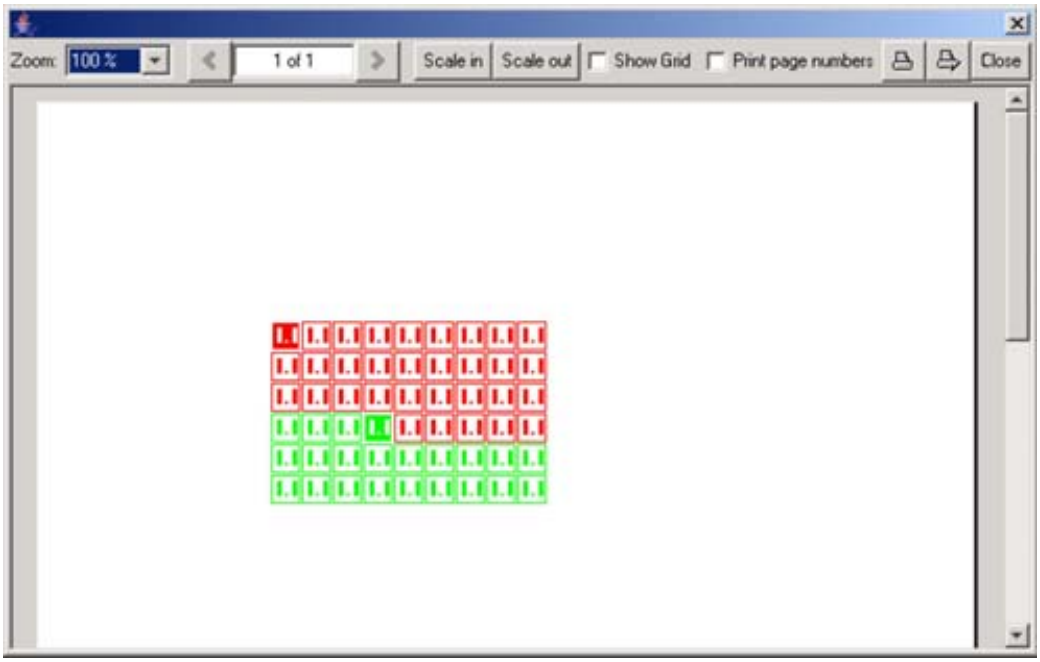


Image 19-164
E.g. Print preview placement scheme MiPIX.

Via the designer window

1. Create a design or activate a design in the designer window.
2. Click on the **Print placement** icon ( ) on the IX module tool bar.
   Or,
   click on the **Print cabling** icon ( ) on the IX module tool bar.
   The corresponding print preview window opens (image 19-164). The functions on top of both windows are equal and will be discussed hereafter.

The placement scheme is always printed looking from the front side of the blocks.

The cabling scheme is always printed looking from the back side of the blocks.

19.4.3 Page viewing

What is possible ?

The page preview can be zoom in or out to view a bigger view on the screen. When multiple pages are available, the preview can be switched to the desired page.

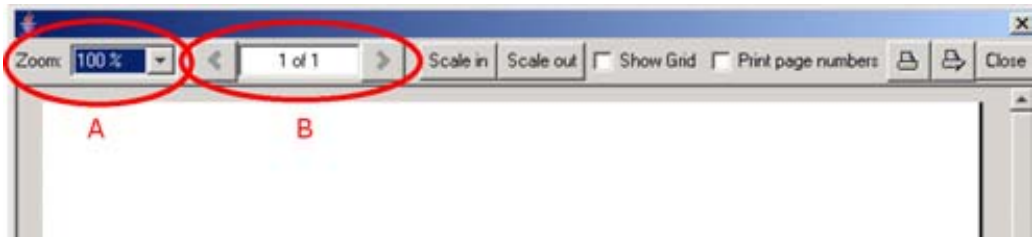


Image 19-165
Print preview heading for view manipulations

Zoom

1. Click on the combo box (A).

   A drop down menu opens.

2. Select the desired zoom percentage.

Page selection

1. Click on the left or right arrow keys (B) to scroll to the desired page.
   Or,
   Click in the input field, select the actual value and enter a new value with the keyboard.

If the page preview is not as desired, use Page setup to select another page format or orientation.

19.4.4 Page content facilities

What can be done ?

The page content can be scaled on the page to be more readable or to display extra information on the page. Grid lines can be added to facilitate the reading of the scheme. A page numbering can be added.

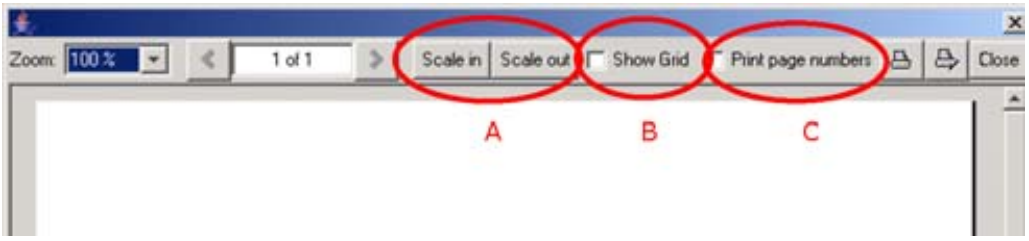


Image 19-166
Print preview header, content facilities

Content scaling

1. Click on **Scale in** or **Scale out** (A).

The content on the page will be scaled in steps. The page itself remains the same.

Scale in	The image will be enlarged on the page.
Scale out	The image will be reduced on the page.

Example: Scale in (image 19-167)

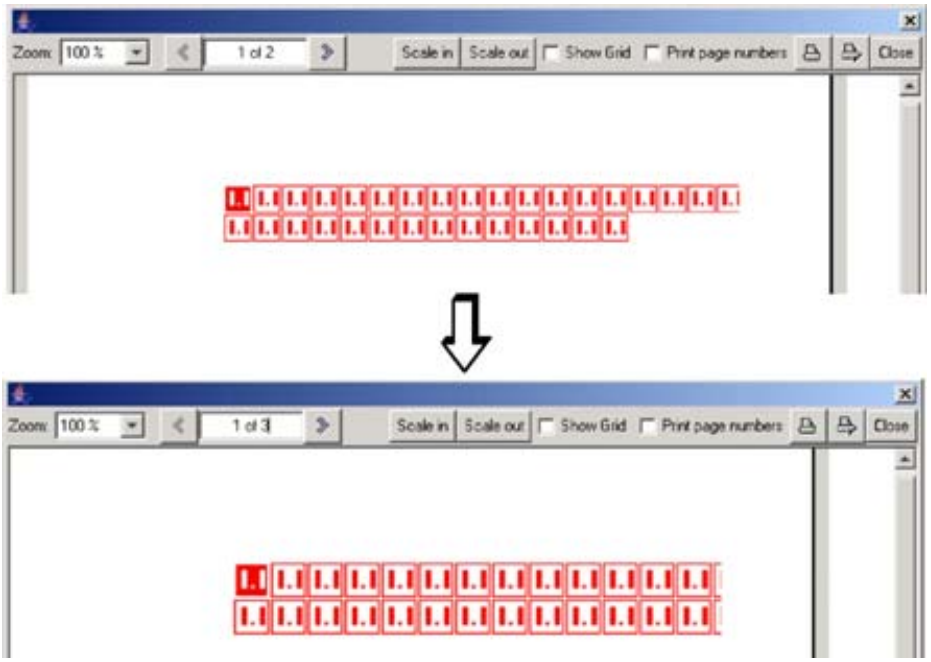


Image 19-167
Scale in

Show grid lines

1. Check the check box in front of *Show Grid*.

   The designer grid will be added on the preview.

   As the preview always start with coordinate (0,0) of the designer window, the grid from (0,0) to the end of the design will be displayed in the preview. (image 19-168)

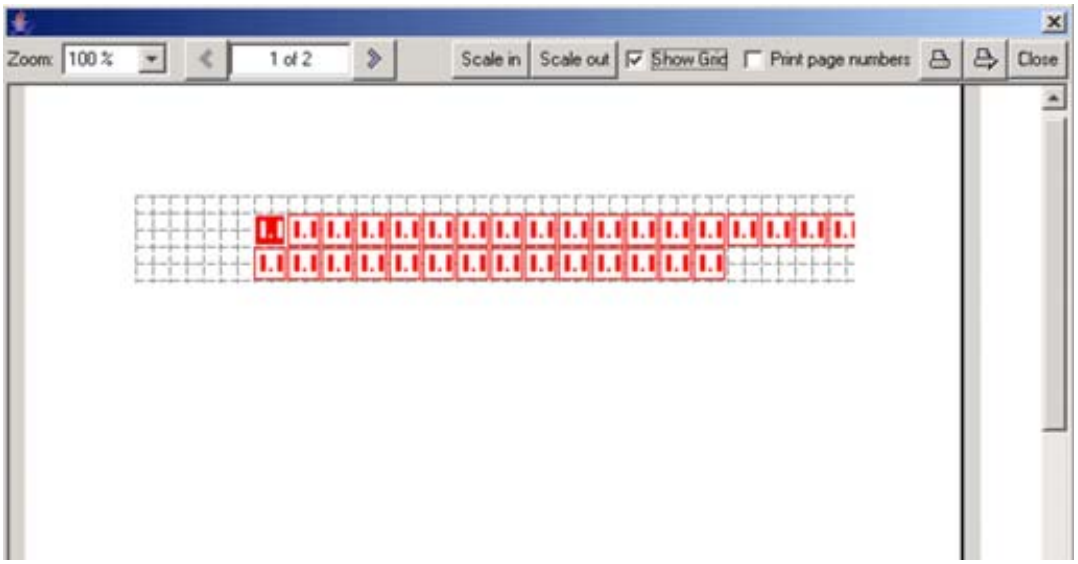


Image 19-168
Show grid

Show page numbering

1. Check the check box in front of *Print page numbers*.

   A page number on each page will be added on the preview.

19.4.5 Page setup

Start up via the Design chooser

1. Browse to the design and right click on that design (a). (image 19-169)

   A pop-up menu appears.

2. Select *Print* and move the mouse pointer to the right (b).

   A sub menu opens.

3. Select *Page Setup*.

   The *Page Setup* window opens (c).

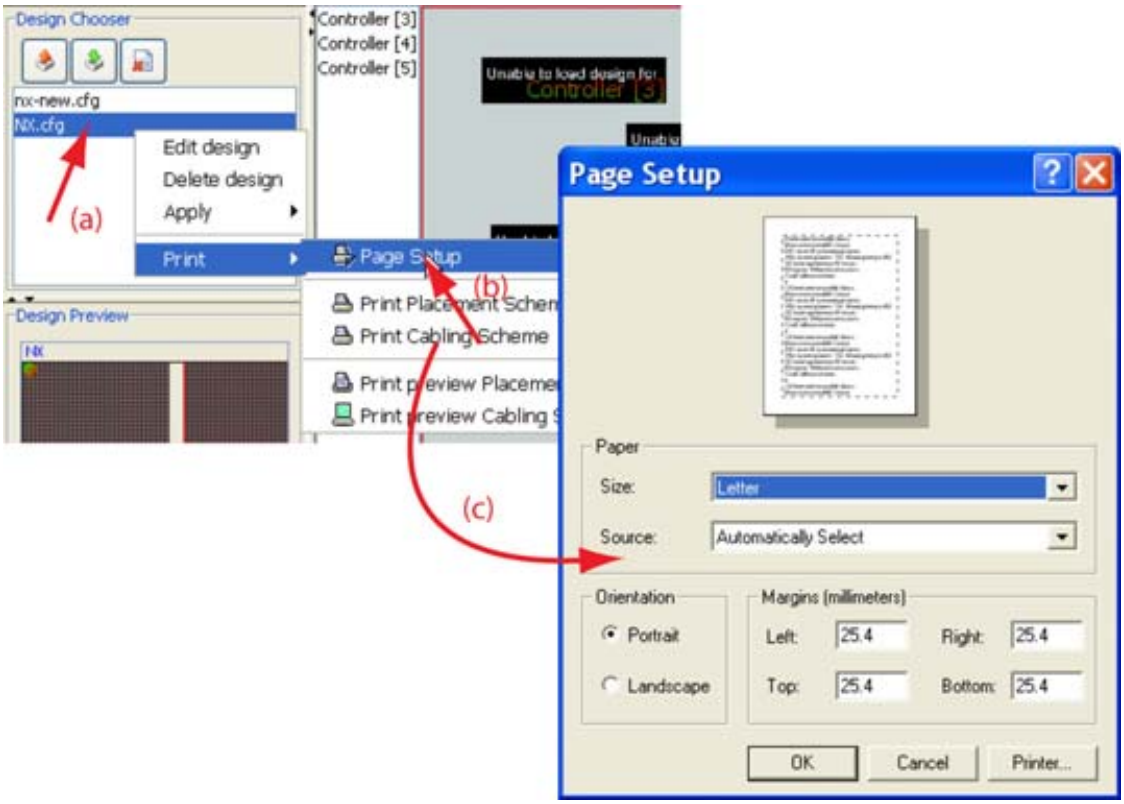


Image 19-169
Page setup via design chooser

Start up via the print preview window

1. Start first the print preview window, see "Starting a print preview", page 558. (image 19-170)
2. Click on the **Page Setup** icon ( ) (a).

   The Page Setup window opens (b)

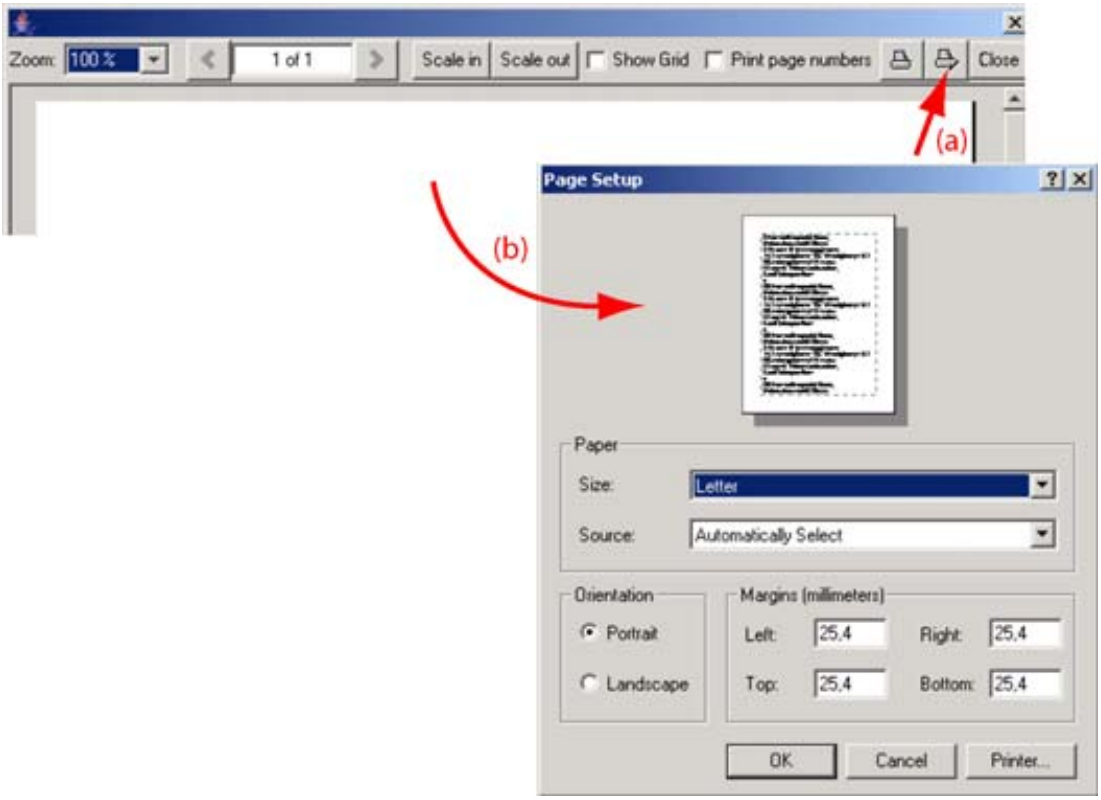


Image 19-170
Page setup via print preview window

Before changing one of the page settings, select your printer by clicking on Printer... . The printer selection opens.

Page Setup

All changes will be visible on the page preview on top of the *Page Setup* window.

Page size : Click on the combo box and select the desired page size.

Paper source : click on the combo box and select the desired source.

Paper orientation : Portrait or Landscape. Click on the radio button of your choice.

Margins : Set up the left, right, top and bottom margin. Click in the input field and enter the desired value.

When finished, click **OK**.

19.4.6 Print a hardcopy of the design

Via the design chooser

1. Browse to a design and right click on that design. (image 19-171)
   A pop-up menu appears.
2. Select *Print* and move the mouse pointer to the right.
3. Select *Print Placement Scheme* or *Print Cabling Scheme*.
   The selected scheme will be printed.

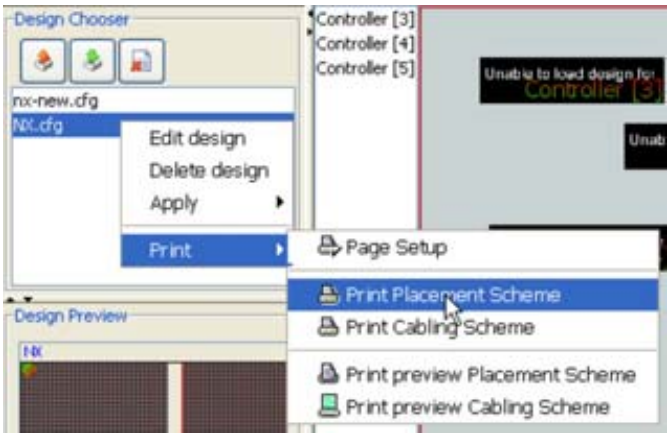


Image 19-171
Print a hardcopy of the design

Via the print preview window

1. Start first the print preview window, see "Starting a print preview", page 558.

2. Click on the **Print design** icon ( )

   The selected scheme will be printed.

19.5 Display - screen selection pane

Overview

- Display - Screen selection
- Show coordinates
- Zoom in-out of the preview pane
- Automatic layout
- Apply options
- Refresh
- Undo - Redo buttons

19.5.1 Display - Screen selection

What are the possibilities ?

Image 19-172
Display - screen selection

A setup can contain different displays (stack configuration). Each display contains at least one screen. All creative screens will be available in the screen drop down menu.

Adjustments done in the Operations module are typical for the selected display and screen.

How to select ?

1. To select a screen, click on the combo box and select the desired screen.

19.5.2 Show coordinates

Overview

The exact coordinate of the mouse position can be indicated in a pop up window which follows the mouse movement.

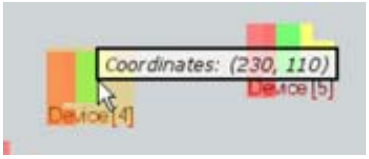


Image 19-173
Coordinate indication

The first value indicates the X-position, the second value the Y-position.

To display the coordinates, check the box in front of *Show Coordinates*.

19.5.3 Zoom in-out of the preview pane

What can be done ?

The preview can be displayed more in detail or more information can be displayed in the preview.

Zoom in	More detail view of the preview is displayed
Zoom out	Less detail view of the preview is displayed

19.5.4 Automatic layout

What can be done ?

An automatic layout can be created for the available devices. The devices will be organized one next to each other, from left to right in the active field.

Click on the **Automatic layout** button start the automatic layout.

19.5.5 Apply options

Overview

When Apply is clicked, the settings of all devices will be uploaded to the devices.

19.5.6 Refresh

Overview

When the preview contains a lot of controllers with different designs, and when moving something within the preview, it is possible that the preview is not real time updated. To force an update of the preview, press once on **Refresh**.

19.5.7 Undo - Redo buttons

Overview

With Undo, action can be undone in reverse order.

With Redo, action undone with Undo can be redone.

20. MONITORING

Overview

- Introduction
- Monitoring window
- Setups available for monitoring
- Monitoring Status
- Display overview and selection
- Monitor Settings
- Log Data
- Notification option

20.1 Introduction

Purpose of Monitoring

With the monitoring module it is possible to get an overview of the temperature of all tiles, to display diagnostic logging and to set up the ambient light environment control which can influence the contrast of the LED wall.

Start up

To start up the monitoring, just click on icon on the tool bar or

click on the menu bar on *Modules* and select *Monitoring*.

Image 20-1
Monitoring start up

20.2 Monitoring window

Overview

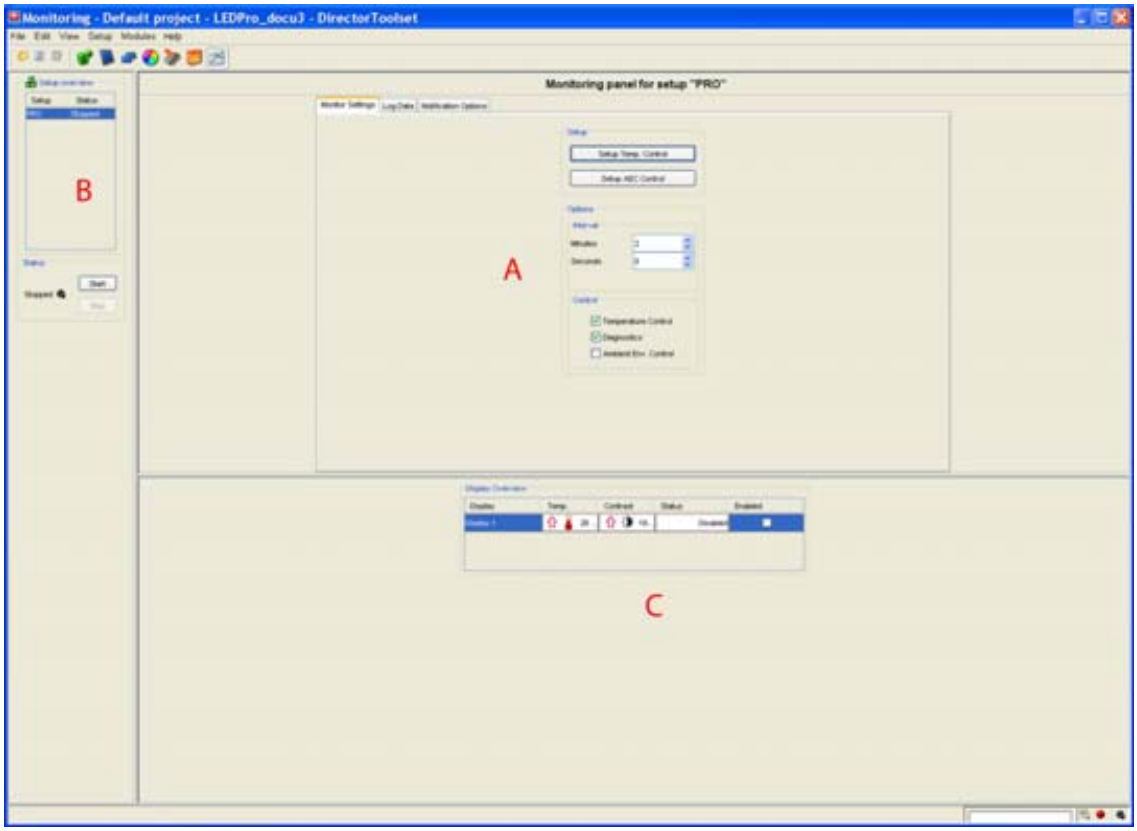


Image 20-2
Monitoring window

A Monitoring settings pane or Data log pane
B Active setups
C Display overview of selected setup

The monitoring window contains one master pane with 3 tab pages, Monitoring Settings, Data log and Notification options..

The content of the tab pages depends on the selection made in *Setup overview*.

20.3 Setups available for monitoring

Overview

All setups which are online are shown in the Setup overview. Only those setups can be monitored.

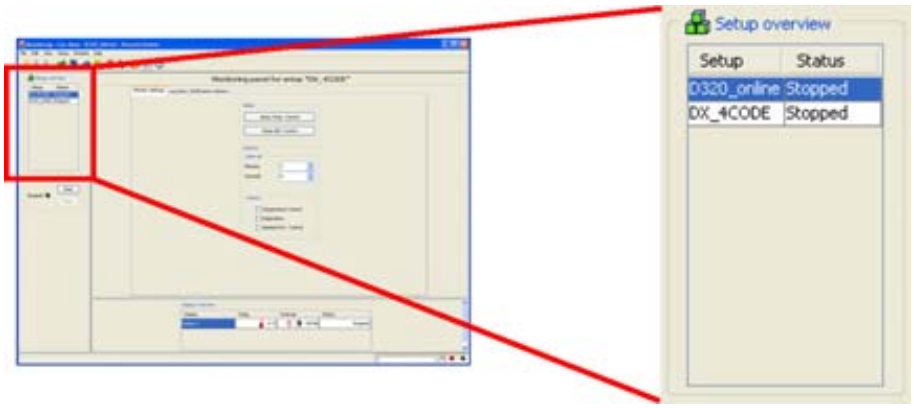


Image 20-3
Setup overview

To select a setup, just click on it. All other panes in the monitoring window are changing to the settings, values for the selected setup. If this setup contains different displays, the settings or values will only be shown for the selected display. To select a display, see "Display overview and selection", page 570.

20.4 Monitoring Status

Overview

The monitoring is always done for all displays in a setup and for all setups in the *Setup overview*.

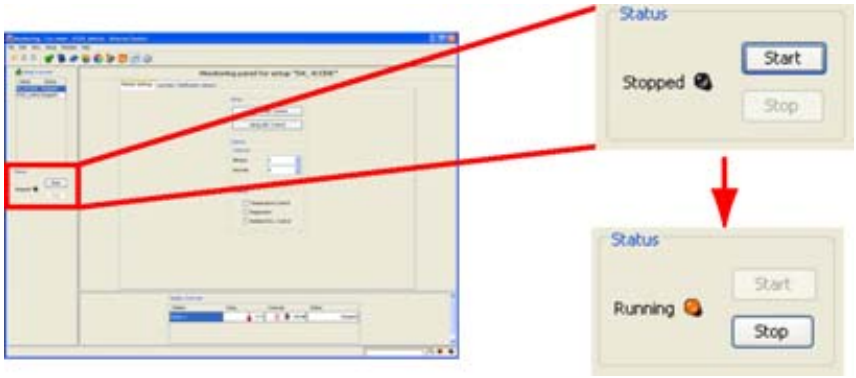


Image 20-4
Start-stop monitoring

To start the monitoring, click on **Start**. The indication changes to *Running* and the icon next to it changes to orange. The orange icon will flash too. Even the monitoring icon at the right bottom of the Director Toolset window will flash (Director Toolset tray). The Director Toolset icon in the window tray will flash from red to orange and back.

To stop the monitoring, click on **Stop**. The indication changes to *Stopped* and the icon next to it changes to black. No flashing of any other icon. The monitoring icon at the right bottom of the window will be black too.

Alternative way to start or stop monitoring: right click on the system tray and select *Monitoring*. Move the cursor to *Start* for starting the monitoring on all displays or to *Stop* for stopping the monitoring on all displays.

Image 20-5
Monitoring via system tray

When no control is selected in any setups (no monitoring configured yet) and Start is pressed, a message indicates that nothing is configured.

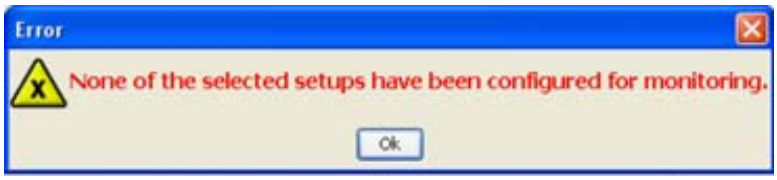


Image 20-6

When at least one of the setups is configured for monitoring, then warning will be displayed to ask if you want to continue with monitoring for the configured setup.

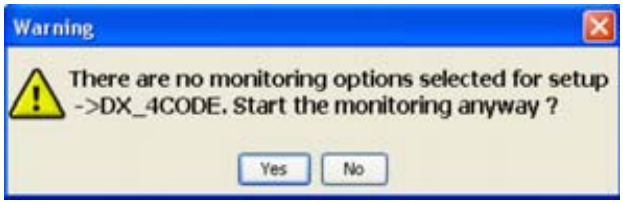


Image 20-7
Status warning

When monitoring is started, it recommended to minimize the Director Toolset.

While monitoring is running, when closing the complete Director Toolset, a warning will be displayed.

Image 20-8

20.5 Display overview and selection

How to select a display?

1. To select a display, just click on the desired display in the first column. (image 20-9)

The background changes to dark blue as an indication that the display is selected.

Extra information for each display is given, such as temperature, contrast and monitoring status. An arrow up or down or no arrow next to the displayed value indicates the direction the current value is moving.

- arrow up : current value is higher than previous measured value.
- arrow down : current value is lower than previous measured value.
- no arrow : current value is equal to the previous measured value.

2. The monitoring can be enabled or disabled. Check the check box of the corresponding display in column *Enabled*.

   The Status indication changes accordingly between Enabled, Disabled or Stopped (only when the monitoring is not started).

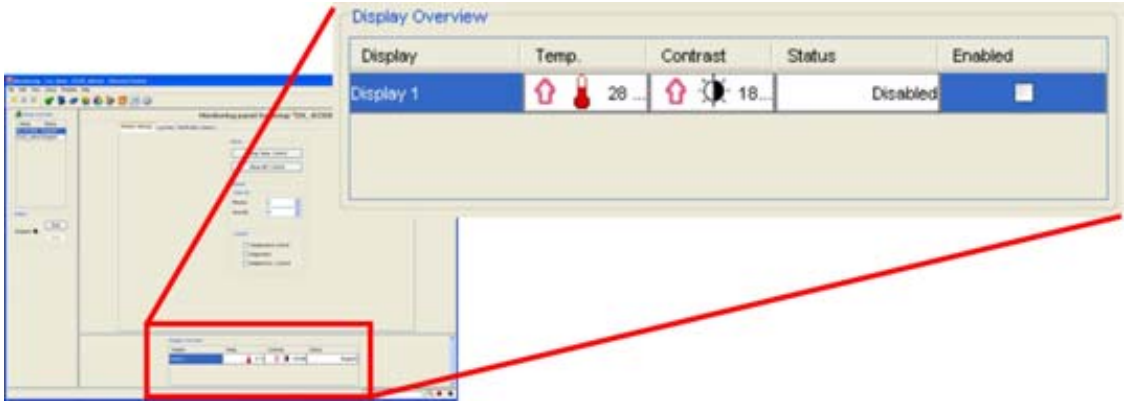


Image 20-9
Display overview

20.6 Monitor Settings

Overview

- Temperature Control Setup
- AEC Control Setup
- Options setup

20.6.1 Temperature Control Setup

Temperature control setup has to be done for each display separately.

What can be done?

For each display the target temperature can be set. This target temperature is significantly lower than the critical temperature for the wall. When this target temperature is reached, the contrast of the wall will be automatically reduced so that the wall will not overheat. This contrast regulation is done with a PID regulator to obtain a smooth contrast regulation and a stabilization of the temperature around the target temperature. This PID regulator will take the history temperature values into account and try to predict the new temperature value for the next measurement and anticipate already on the contrast regulation so that the temperature on the wall remains stable. More advanced users can change the parameters of the regulator to obtain another regulation behavior. The default parameters, implemented after a lot of tests, give the best result.

Fail safe contrast drop: when the critical temperature is reached the initial contrast will be drop immediately with a percentage. If the temperature is still to high during a next measurement, this contrast drop can be repeated as many times as set in the failsafe interval. This contrast drop remains for 20 minutes after the last drop. If then, the temperature is below the critical value, the contrast will be increased again in steps as setup with the PID parameters.

How to setup?

1. Select first a display, see "Display overview and selection", page 570.
2. Click on **Setup Temp. Control**. (image 20-10)

   The *Temperature Monitoring setup* window opens. (image 20-11)
3. Click in the *Target temperature* input field and enter the desired value for the LED display.
   Or,
   click on the up down control of the spin box until the desired value is reached.

   The critical temperature for that specific tile type is given as information.

   Once the target temperature is reached, the contrast regulation will start.

   When the critical temperature is reached, the contrast of the LED wall will be set to zero (0). The customer has to take measurement to reduce the temperature.
4. Set up of the target contrast (preferred contrast to use the display). Click on the slider and move left or right until the desired value is reached
   Or,
   click the input field and enter the desired value with the keyboard.

   The current contrast is given as read only value. The monitoring system will try to use the display on the target contrast but when necessary due to higher temperatures it will reduce this value.
5. Set up of the failsafe contrast drop value and the number of intervals. Click in the input box and enter the desired value or click on the up down control of the spin box until the desired value is reached.

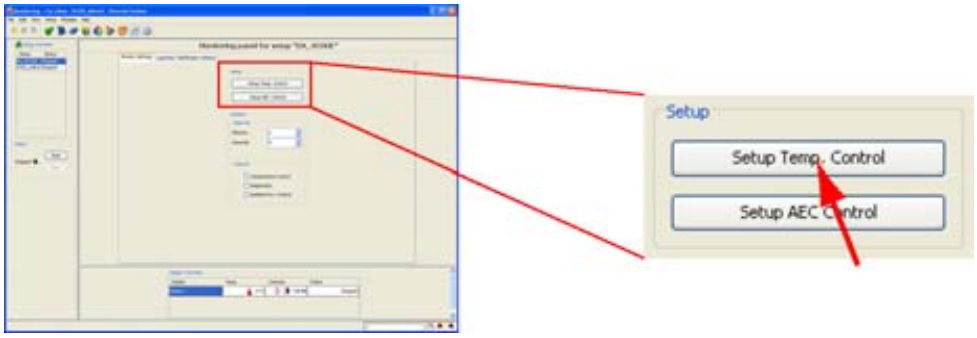


Image 20-10
Select temperature setup window

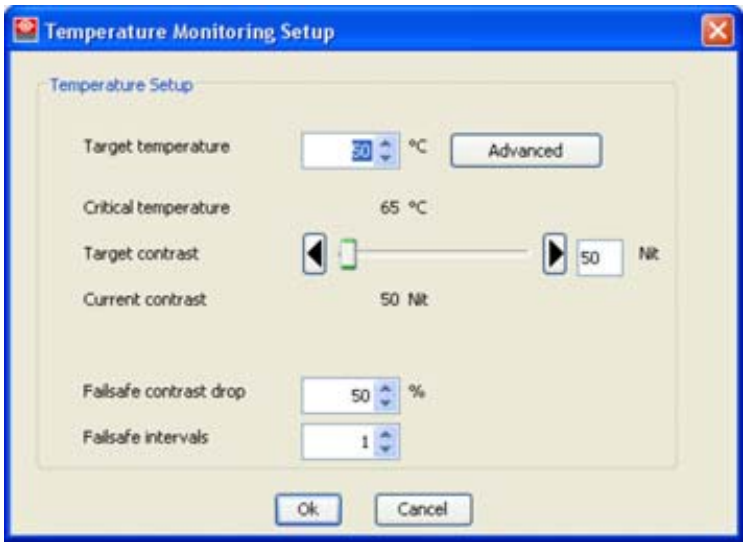


Image 20-11
Temperature monitoring setup

For creativity applications, the critical temperature is the temperature of the controller unit.

For OLite, the critical controller temperature is given as information.

Advanced settings

To change the parameters of the PID regulator, click on **Advanced**.

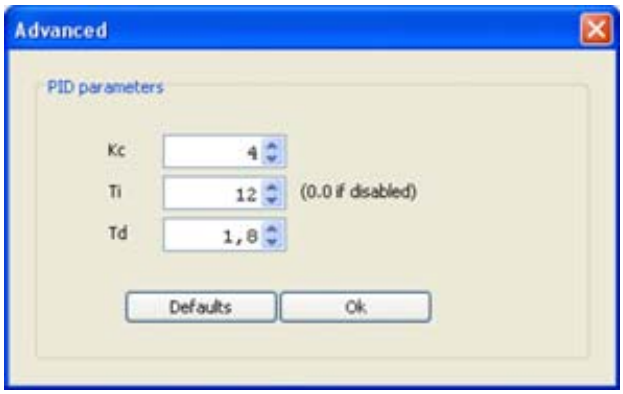


Image 20-12
PID parameters

The following parameters can be changed:

- Kc = (Proportional) Gain of the controller.
- Ti = Time-Constant Integral gain, influences the memory of the controller.
- Td = Time-Constant Derivative gain, influences the predictive nature of the controller.

Click **OK** to activate the new values.

To return to the default parameters, click on **Default**.

20.6.2 AEC Control Setup

20.6.2.1 Access to the AEC control setup

AEC control setup has to be done for each display separately.

What can be done?

The contrast of the LED wall can be adjusted between minimum and maximum values according the ambient light environment. When this measured value changes, the contrast will be changed accordingly.

Each LED wall can have several AEC units. The weight in the final result of each AEC unit can be setup.

As an AEC unit has 4 sensors, each sensor cooperates in the final measuring result for a part.

How to access?

1. Select first a display, see "Display overview and selection", page 570.
2. Click on **Setup AEC Control**. (image 20-13)

   The *AEC monitoring setup window* will be displayed. (image 20-14)

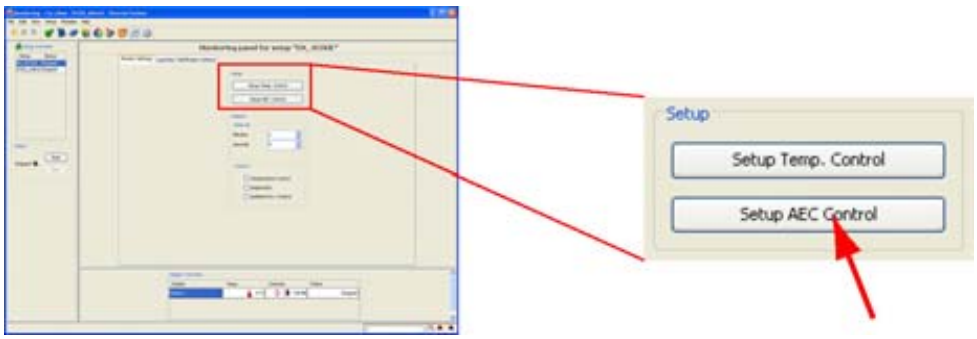


Image 20-13
Start AEC monitoring setup

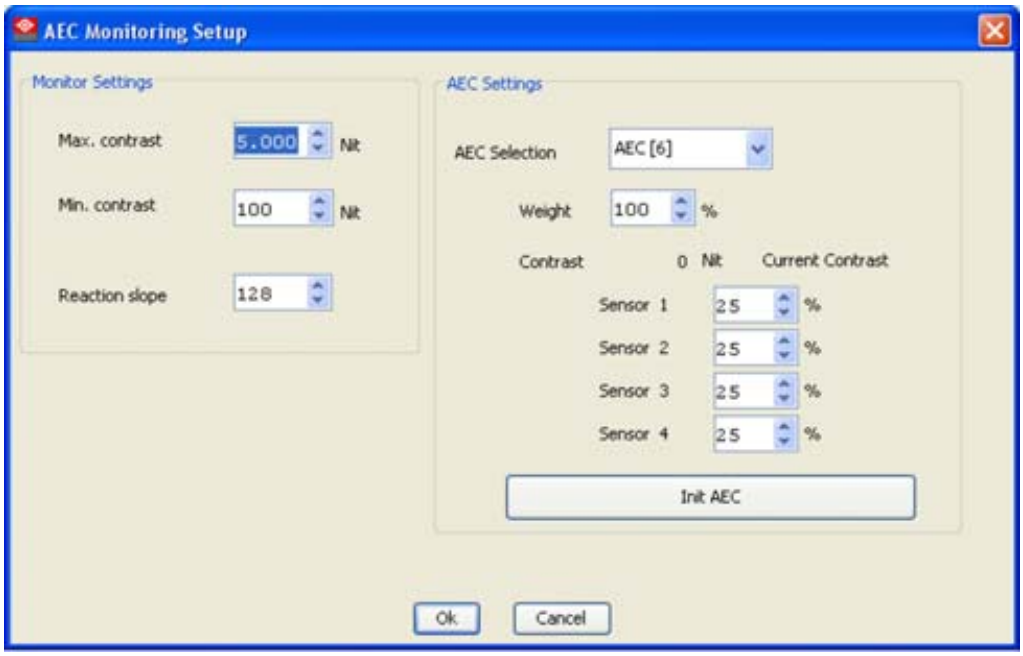


Image 20-14
AEC monitoring setup

20.6.2.2 Monitor settings

For OLite 510, the maximum possible contrast value which can be filled out is the contrast value in boost mode. When not playing in boost mode, this value will never be reached and the normal maximum value will be taken in account.

How to setup?

1. Click in the input field next to *Max. Contrast* and enter the desired value with the keyboard image 20-14.
   Or,
   click on the up and down arrow keys until the desired value is shown in the input field.
2. Click in the input field next to *Min. Contrast* and enter the desired value with the keyboard.
   Or,
   click on the up and down arrow keys until the desired value is shown in the input field.
3. Click on the input field next to *Reaction slope* and enter the desired value with the keyboard.
   Or,
   click on the up and down arrow keys until the desired value is shown in the input field.

20.6.2.3 AEC settings

How to set up?

1. Click on the drop down box next to *AEC selection* and select the AEC for which the settings are valid image 20-14.

   More AEC units are possible for the same LED wall. The AEC settings must be set for each AEC unit.
2. Define the weight of the selected AEC unit. Click on the input field next to *Weight* and enter the desired weight.

   When the weight is set to 100%, only this unit will be taken in account to define the final value.
3. Enter the weight for each sensor by clicking in the input field and entering the desired value with the keyboard.

When a weight is set to 0 (zero) %, this sensor is switched off.

4. Click on **Init AEC** to calibrate the AEC.

20.6.2.4 How to initialize the AEC for optimal working

Overview

Initializing the AEC is setting the contrast of the display in proportion to the environment light.

1. Set the working limits of the AEC: these are the minimum and maximum contrast. (These limits actually limit the contrast of the display, not the AEC measurements).
2. Set the contrast of the wall so that the image on the wall is visible for the current environment light.

   If it is a normal clear day, set the wall e.g. on 3000 nit. If it is a very sunny day, you might set the wall to e.g. 4500 nit.
3. When the **Init AEC** is pressed, the AEC will measure the environment light and get the display contrast that has been set. Both values are then used for calculating the new display contrast for the changing environment light.

For proper working of the AEC, beware that the display contrast, set before the initialization, is within the working limits of the AEC. If it is not the display contrast will directly clip to one of the limits once the AEC monitoring is started and therefore the wall will have a wrong contrast for that situation. So initialization of the AEC should be done at a normal day (not very cloudy or sunny). e.g. if the display contrast is 4000 for a sunny day, and the limits are 3500 and 500, when starting the AEC monitoring the display contrast will directly clip to 3500. As a result the image will be to dark for the given environment light and therefore less visible.

CAUTION: Once the AEC is initialized it does not require further initialization, even not when the Director Toolset software is updated.

20.6.3 Options setup

Interval setup

1. Click respective in the input field for the minutes and seconds and enter the desired time. (image 20-15)
   Or,
   click on the up down control of the spin box until the desired value is reached for the minutes and seconds.

   This time will be the time between two observations. This time is limited between minimum 2 minutes and maximum 7 minutes.

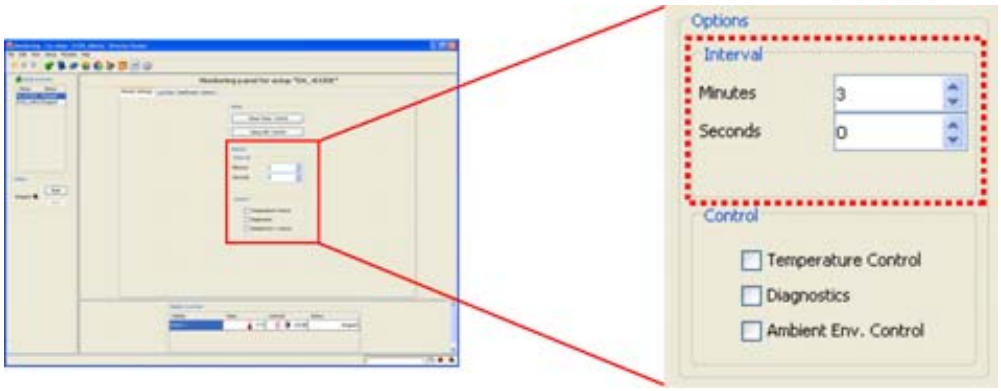


Image 20-15
Interval setup

Control setup

1. Check the check box in front of the control which must be monitored. (image 20-16)
   The following controls are possible:
   - Temperature control
   - Diagnostics
   - Ambient Environment control (this item will be grayed out when no AEC unit is available).

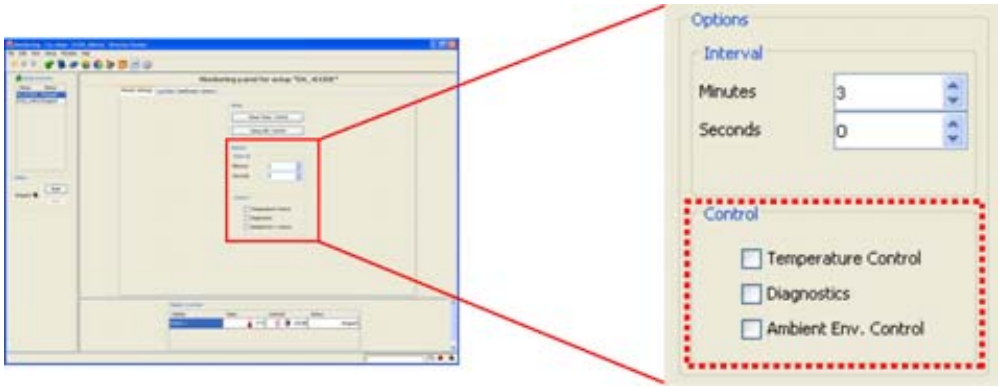


Image 20-16
Control functions setup

20.7 Log Data

Overview

- Access to the data logging
- Diagnostics data
- History data
- Options
- Options, Export data

20.7.1 Access to the data logging

How to get access?

1. Click on the **Log data** tab to display the Log data page. (image 20-17)

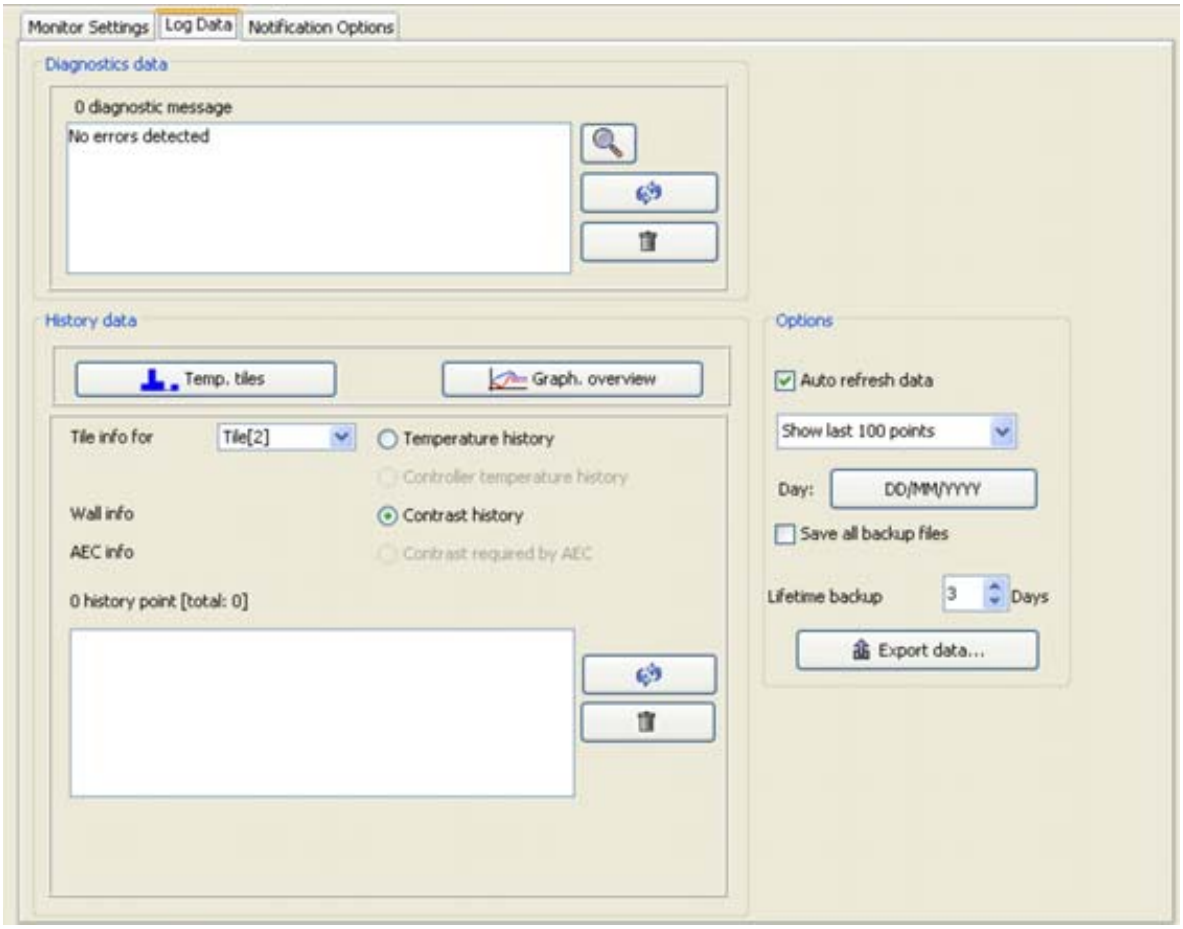


Image 20-17
Monitoring, log data

20.7.2 Diagnostics data

Overview

The diagnostics data is given in a list form in which you can scroll.

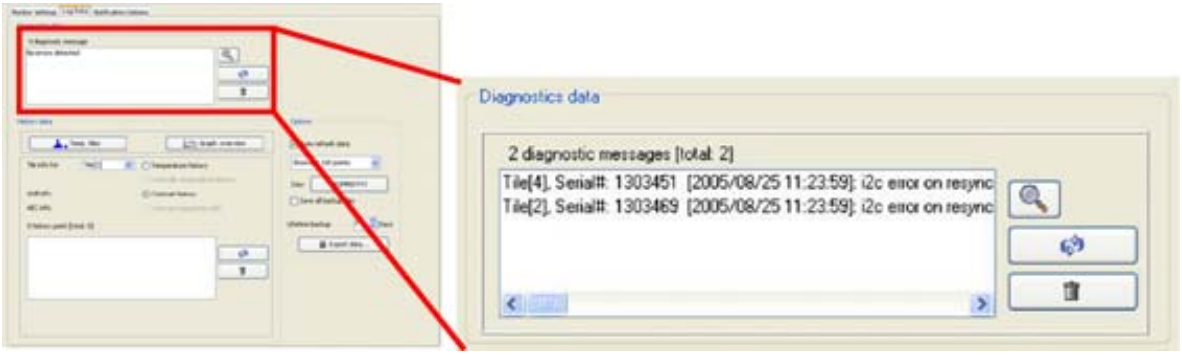


Image 20-18
Diagnostics data

To refresh the data, click on the **refresh** button ( ). The latest diagnostic information will be displayed.

To clear the diagnostic data, click on **Clear**( ). All diagnostic data till now will be erased.

To see more detail about a diagnostic message, select the message (a) and click on the **Detail** button ( ) (b).

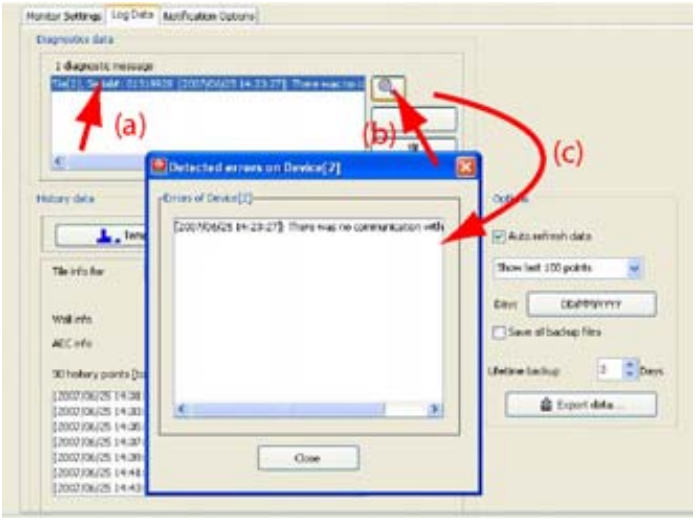


Image 20-19
Message detail

20.7.3 History data

What is possible?

History data per tile (controller for creative solutions) can be displayed. The temperature inside the tile or the controller temperature or even for OLite, both temperatures. The contrast of the tile and the contrast required by AEC.

This information can be displayed in list or in a graphic.

History data setup

1. To select which history data should be displayed, click on the radio button in front of the possible item (a). (image 20-20)
   The following items are possible:
   - Temperature history
   - Controller temperature history (only for OLite)
   - Contrast history
   - Contrast required by AEC
2. Click on the tile selection drop down box and select for which tile the history must be displayed (b).

   The corresponding list will be displayed.
3. To refresh the data immediately, click on **Refresh** ( ) (c).
4. To clear the data, click on **Clear** ( ) (d).

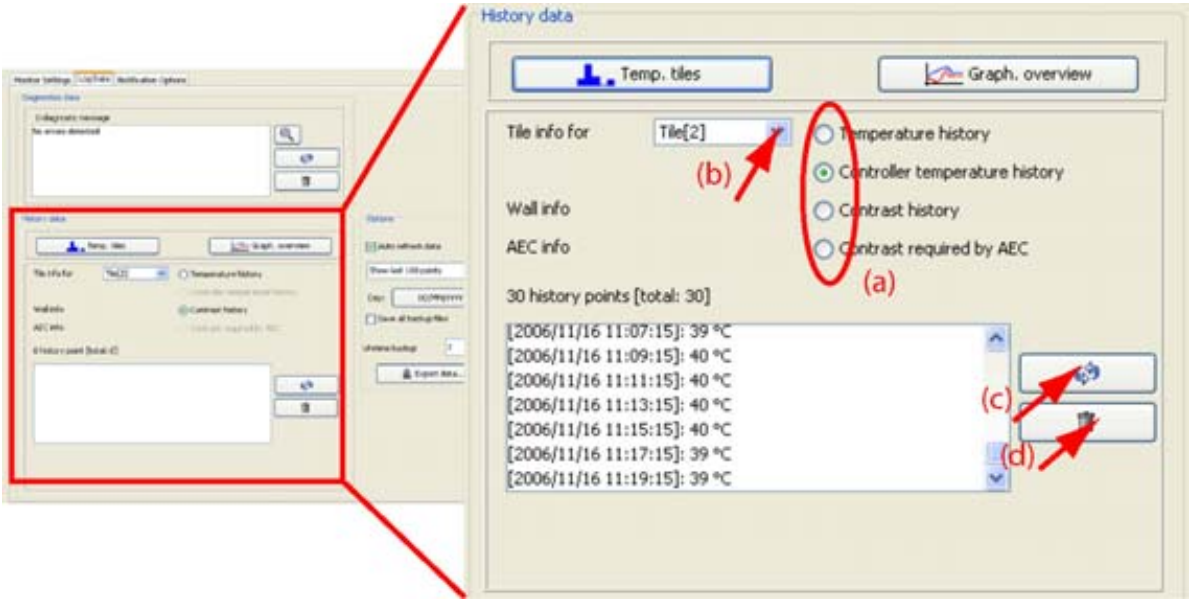


Image 20-20
History data display

Graphical representation of the history data

1. Click on the **Graph overview** button to displayed the history data in a wire diagram. (image 20-21)
2. To expand the wire diagram with extra diagrams, check the check boxes on top of the wire diagram.

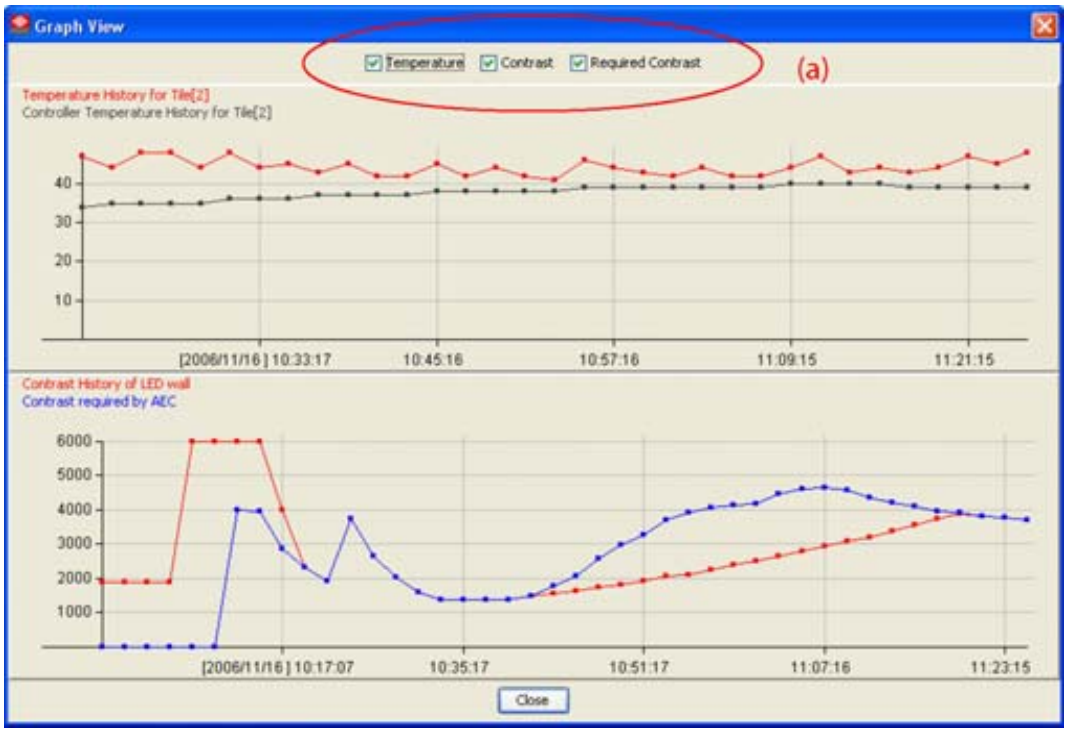


Image 20-21
Wire diagram history data

Compare temperature of all tiles

1. Click on the Temp. tiles button.

A bar diagram will be displayed containing all tiles and the corresponding temperature of these tiles. (image 20-22)

For OLite tiles, both temperatures overview (tiles and controllers) are given.

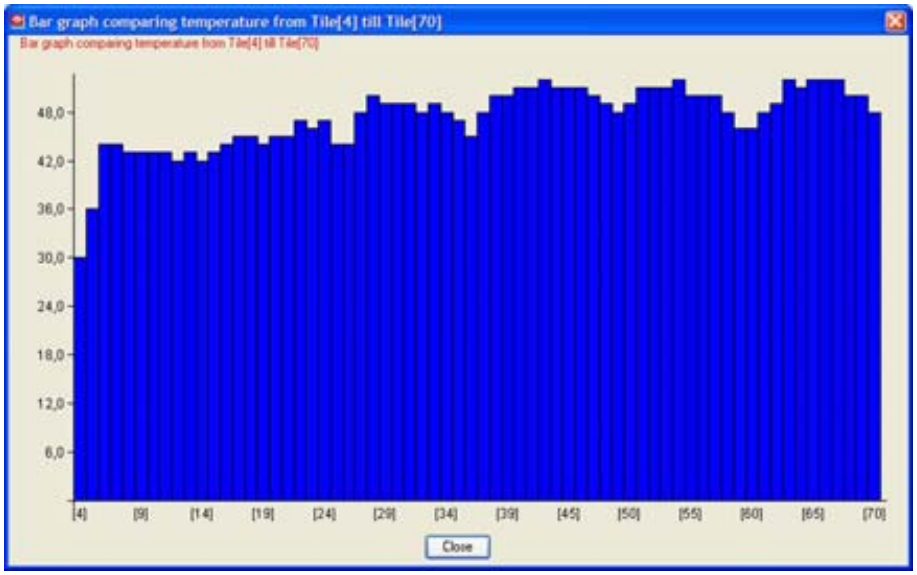


Image 20-22
Compare temperature of all tiles

20.7.4 Options

Overview

Image 20-23
Log data options

Auto refresh data

When Auto refresh data is checked, the information in history data will be refresh with the same interval as set in Monitor setup.

When Auto refresh data is not checked, a manual refresh is necessary by clicking on the refresh buttons.

Show points

By clicking on the combo box next to *Show*, the number of points in the history list can be adapted.

The following selection is possible:

- Show all points
- Show last 50 points
- Show last 100 points

The data for which the points must be shown can be chosen. Click on the current filled in data next to *Day* to open the *Choose data* window.

Image 20-24
Choose date

Click on the up down control of the spin box to select a day. Only the information of the last 10 days can be shown. If no files are available for the selected day, a warning message is displayed.

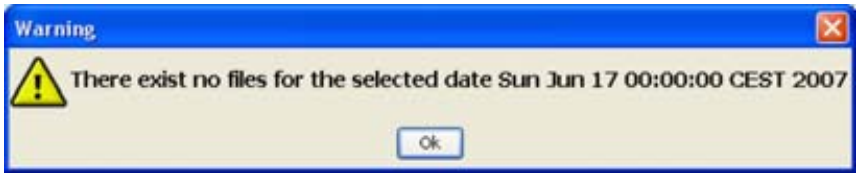


Image 20-25
No files available

Save all backup files

When checked, the backup files will be saved in diagnostics directory.

Lifetime backup

The lifetime indicates the number of days backup files are saved in the diagnostic directory.

Export data

To export history data, click on **Export data ...** button. The *Export history data* window opens.

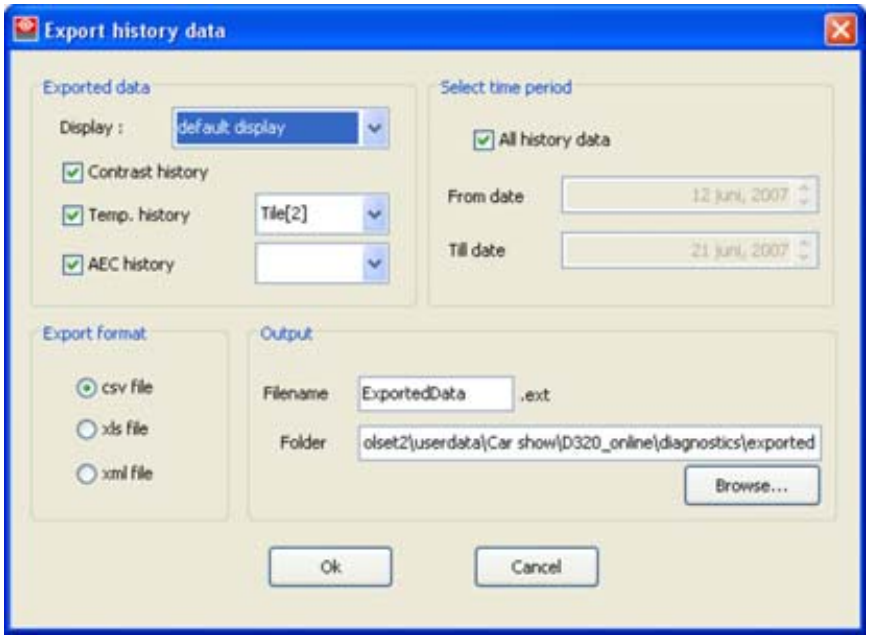


Image 20-26
Export history data

20.7.5 Options, Export data

Display selection

When the wall contains multiple display, export data is done for a typical display. Click on the combo box next to *Display* and select the desired display.

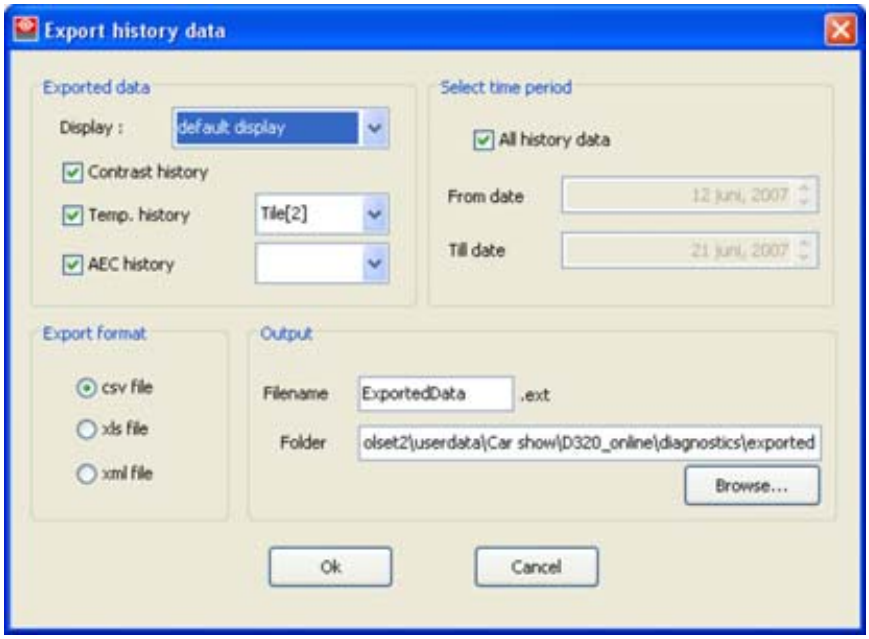


Image 20-27

Data type for export

The following data can be exported:

- Contrast history
- Temperature history for a specific tile in the display. Click on the combo box next to Temp history and select the desired tile.
- AEC history for a specific AEC in the display. Click on the combo box next to AEC history and select the desired AEC.

Time period selection

To display all history data, check the check box next to *All history data*.

When All history data is not checked, a time period can be entered.

To enter a *From date* and a *Till date*, click on the up down control of the spin box until the desired date is displayed.

Export format

The export file can be written as:

- cvs file
- xls file
- xml file

Output

Filename: click in the input field and enter a file name with the keyboard.

Location: the default proposed folder for the data will be : `[Set up directory Director Toolset]\Userdata\[Project name]\[setup name]\diagnostics\exported`

To change this default path, click in the input field and enter the desired path with the keyboard

or click on **Browse** and browse to the desired location.

Export data

Click **OK** to export the data.

20.8 Notification option

Overview

- E-mail notification

20.8.1 E-mail notification

Overview

E-mail notification must be set up for each display in a wall. E-mail addresses can be different from display to display.

Start first by selecting a display via the *Display selection* pane.

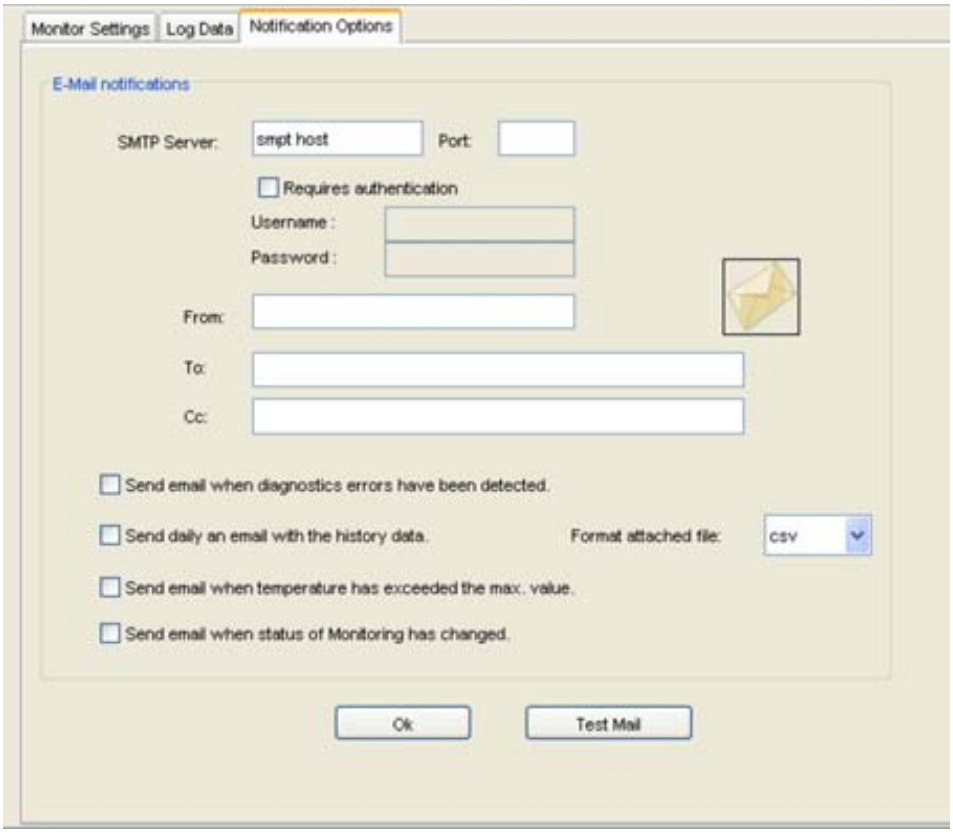


Image 20-28
Notification options

SMTP

SMTP (Simple Mail Transfer Protocol) is a TCP/IP protocol used in sending E-mail.

SMTP server

Contact your system administrator in your organization to obtain the correct address (and port) so that mails can be sent by the software.

If an authentication is required, check the check box and fill out the user name and password.

From

Enter an valid E-mail address from where the mails can be sent.

To

E-mail address can be entered to where a notification must be sent.

CC

E-mail address can be entered to where a copy notification must be sent.

Send condition

The following conditions are possible:

- Send E-mail when diagnostics errors have been detected : every time a diagnostic error is detected a mail will be send to the *To* mail addresses.
- Send daily a mail with the history data: the daily history data will be mailed to the *To* and CC address and that in the selected format. This format can be xls, cvs or xml. Click on the combo box and select the desired format.
- Send E-mail when temperature has exceeded the max value: when the maximum value of the display is exceeded, a mail is sent to the *To* and CC address
- Send E-mail when status of monitoring is changed: a mail is sent to the To and CC address with following message : “The status of the Monitoring has been changed for the Setup with name ’dvdd’ : -> The Monitoring process is now running.”

Test mail

Click on this button to check the entered mail addresses in the To and CC field. When OK, these mail addresses receive a message as : “This E-mail is a test notification mail, sent by the Director Toolset. If you received this message, this means that the E-mail notification can work correctly”.

21. REPORTING

Overview

- System Reporting start up
- Report selections
- Report setup
- Report preview
- Report printing
- Report export
- Bug reporting

21.1 System Reporting start up

What can be done ?

A report can be created containing all sort of tile information such as device types, addresses, serial numbers, software versions. The generated report can be printed or exported to csv, xls, pdf, html or xml file.

How to start up ?

1. Click on the menu bar on *File*. (image 21-1)

   The drop down menu opens.

2. Select *Report configuration ...* .

   The *Configuration report* window opens.

Image 21-1
Start up reporting

21.2 Report selections

Tab Device types

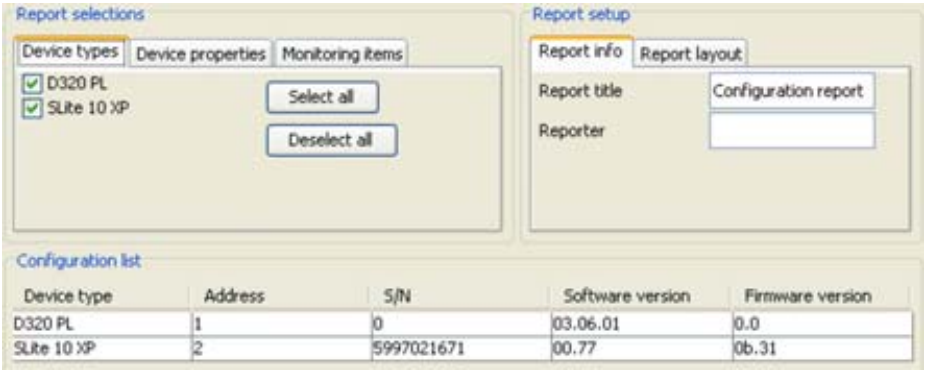


Image 21-2
Reporting, device types

Check the devices which must be added to the report.

To select all, click on **Select all**.

To deselect all, click on **Deselect all**.

Tab Device properties

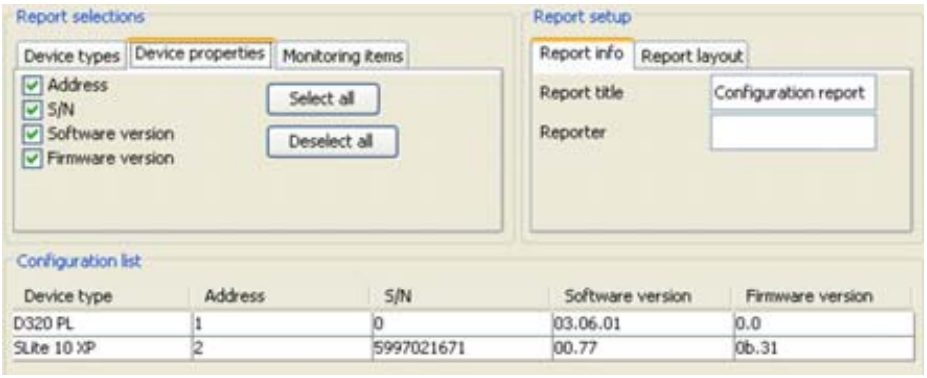


Image 21-3
Reporting, device properties

Check the properties which must be included in the report.

To select all, click on **Select all**.

To deselect all, click on **Deselect all**.

Tab Monitoring items

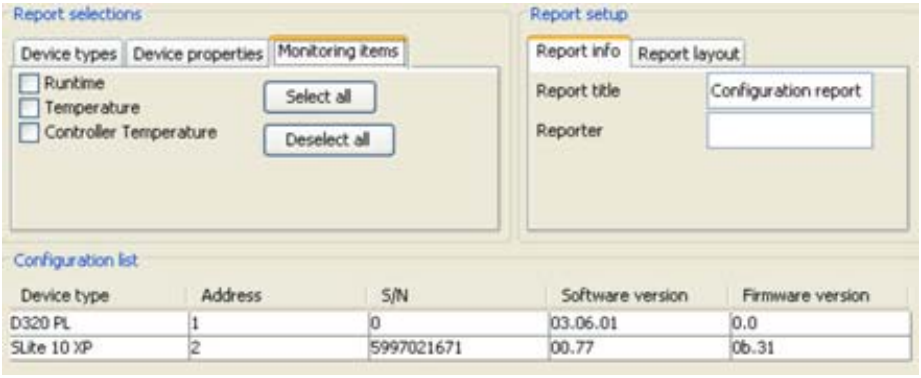


Image 21-4
Reporting, monitoring items

Monitoring items such as Runtime and Temperature of the tile can be added to the report. Check the item which must be added.

To select all, click on **Select all**.

To deselect all, click on **Deselect all**.

21.3 Report setup

Report info

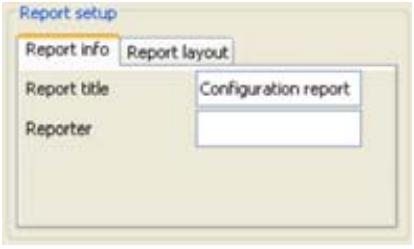


Image 21-5
Reporting, report info

The report info contains a report title and reporter name.

To change one of these, click in the input field and enter new title or reporter name.

Report layout

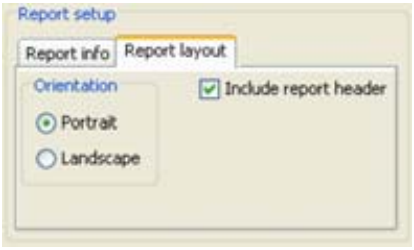


Image 21-6
Reporting, layout info

To change the layout of the report, select Portrait or Landscape.

To include a report header, check the check box in front of *Include report header*.

21.4 Report preview

To get a preview

1. Click on **Preview**. (image 21-7)

   A preview will be composed. This can take a while.

Image 21-7
Select preview

21.5 Report printing

How to print ?

1. Click on the **Print** button. (image 21-8)

   The print dialog opens.

2. Set the printer properties as necessary for your printer.
3. Click **OK** to continue.

Image 21-8
Select print

21.6 Report export

How to export ?

1. Click on **Export**. (image 21-9)

   A Save dialog opens

2. Click in the file name input field and enter a file name.

3. Click on the file type combo box and select the desired file format.
   The following formats are available:
   - cvs (comma separated file)
   - xls (spreadsheet file)
   - html
   - pdf
   - xml

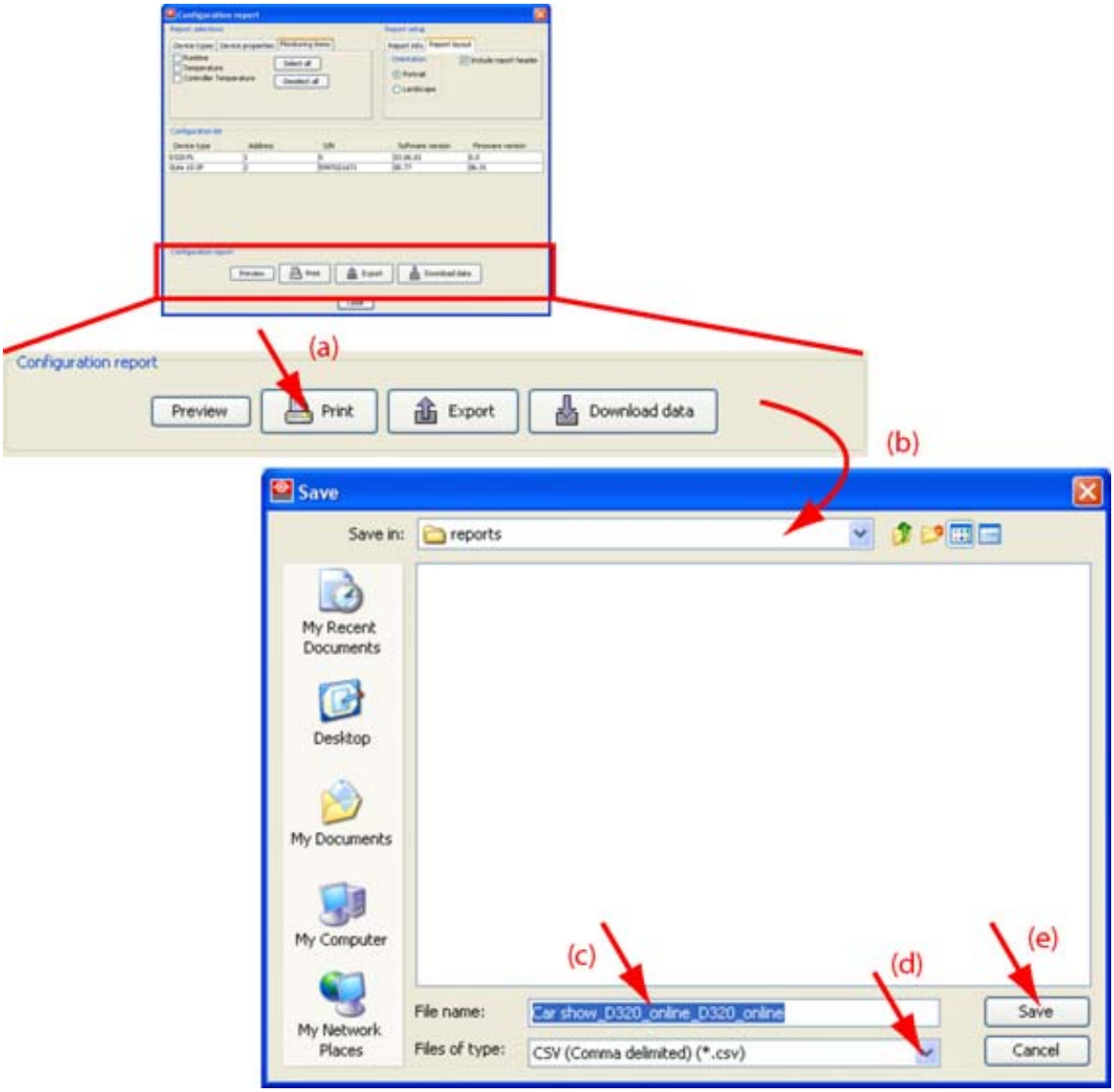


Image 21-9
Export report

21.7 Bug reporting

What can be done ?

When the software detects an error, it is possible that the software asks if you want to send a bug report to Barco so that the problem can be investigated and solved.

The report will be sent with the information entered in *Preferences – Bug reporting*.

It is also possible to report a bug manually, therefore, follow the next procedure.

Sending a bug report

1. Click on the menu bar on *Help* and select *Report a bug ...* (a). (image 21-10)

   The Bug reports window opens (b).

   The personal data is normally already filled out (only when the Preferences – Bug report are filled out). If not, follow with the next step.

2. Click **Edit** to open the *Personal data* window (c). Fill out that window and click **OK**. (image 21-11)

3. Select the type of problem.
   The following problems can be selected:
   - bug
   - severe problem
   - fatal error
   - request

4. Fill out the behavior that you experience.

5. Fill out how we can reproduce the problem.

6. Fill out eventually other remarks.

7. Select the way you want to report the problem.
   - Save it to disk
   - Send it by E-mail

8. To setup the mail settings, click on **Mail settings** (d).

   The mail settings window opens. Fill out and click **OK**. (image 21-12)

9. Click **OK** to save the report and to mail the report.

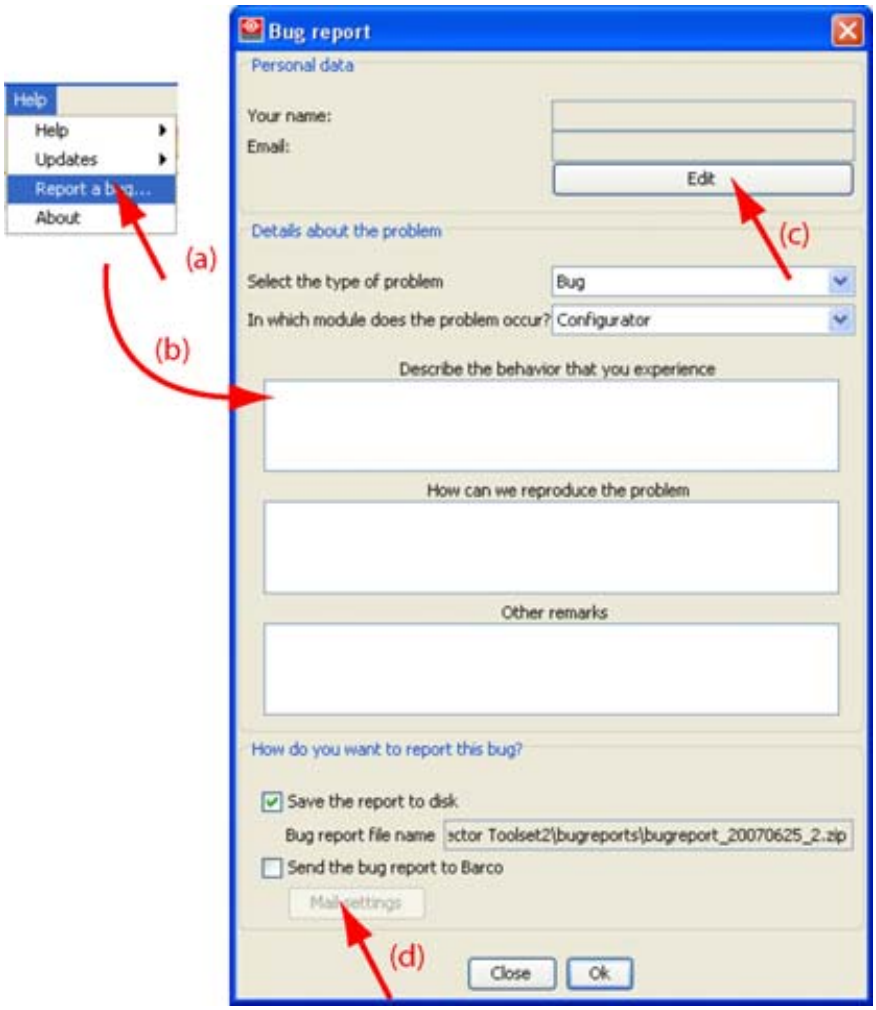


Image 21-10
Bug reporting window

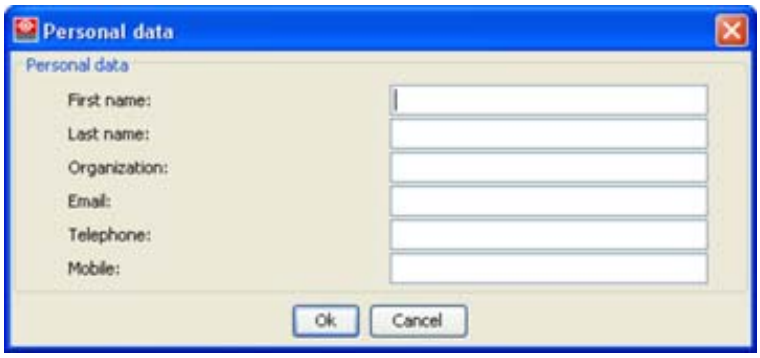


Image 21-11
Personal data window

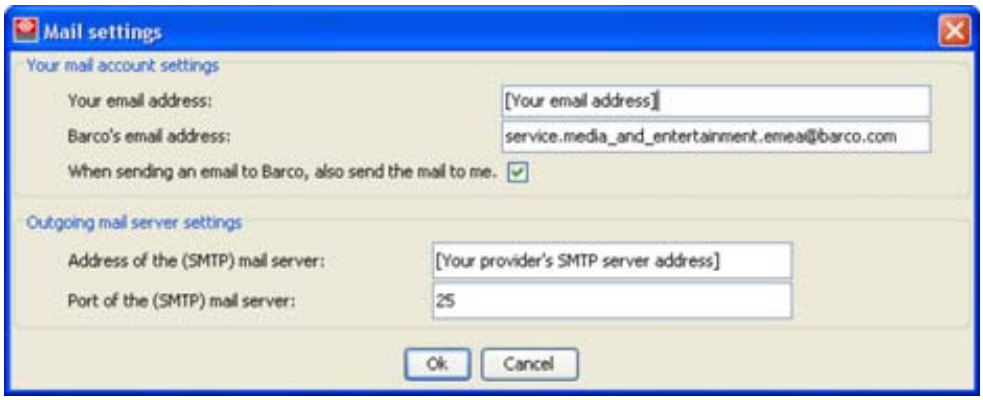


Image 21-12
Mail settings window

A. GAMMA ADJUSTMENT OF A DISPLAY

Gamma

The transfer characteristics of most cameras and displays are nonlinear. For a display, a small change in amplitude when the signal level is small produces a change in the display brightness level, but the same change in amplitude at a high level will not produce the same magnitude of brightness change. This nonlinearity is known as gamma. Different gamma curves are available to compensate the nonlinearity.

Overview

- Ways to enter the Gamma adjustment
- Manual gamma adjustment
- Predefined gamma adjustment

A.1 Ways to enter the Gamma adjustment

Via the LED wall settings

Go to the Configurator module and double click on the LED wall icon in the configuration preview. The LED wall settings becomes available.

Click on tab **Output** to display the output settings.

Click on **Gamma** in *Advanced* to start up the gamma adjustment.

Image A-1
Gamma adjustment via LED wall settings

Via the Operations module

Go to the Operations module and select tab **Display settings**.

Click on **Adjust** within *Gamma adjustment*.

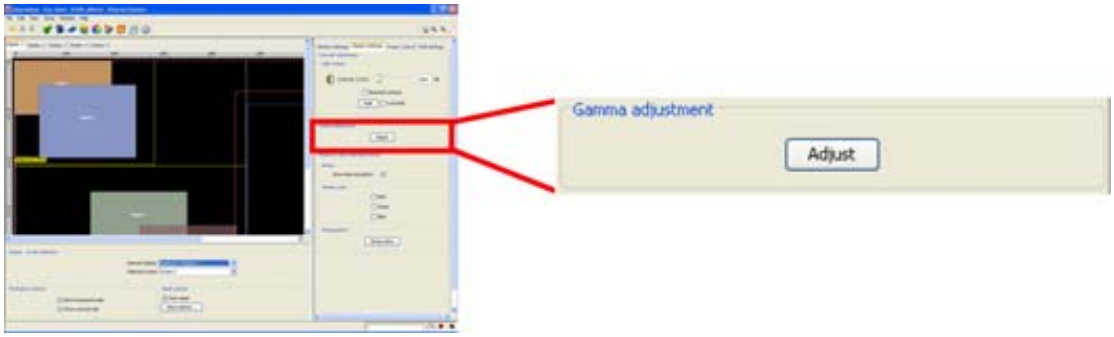


Image A-2
Gamma adjustment via Operations module

A.2 Manual gamma adjustment

How to adjust ?

The gamma curve is represented through 4 points and 2 slopes. Changing any of the points or slopes results in a different gamma.

1. To change the points or slopes, click on the arrows below the gamma curve. (image A-3)
   Or,
   click in an input field and enter the desired value with the keyboard.
2. Click on **Apply** to update the gamma immediately.

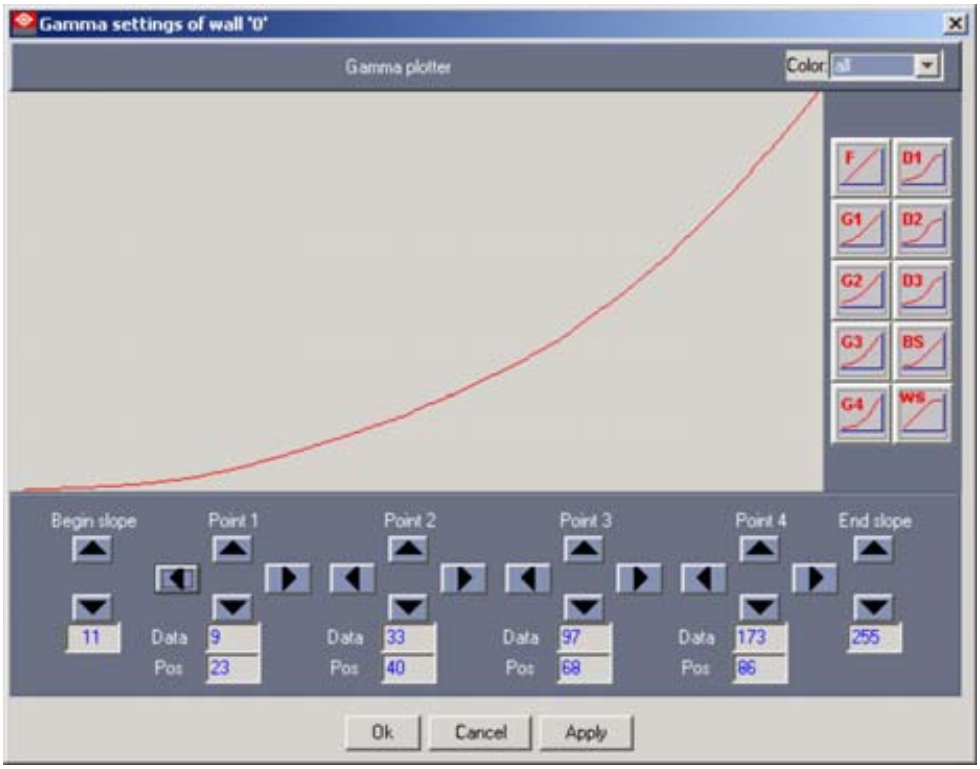


Image A-3
Gamma adjustment

A.3 Predefined gamma adjustment

Gamma preset curves

The curves represents the gamma curve that will be selected for that source. 10 gamma presets are available to choose from (the number of buttons can vary for ILite and ILite XP tiles).

How to adjust ?

1. Click on the according button to activate the predefined gamma. (image A-4)
2. Click on **Apply** to update the gamma immediately.

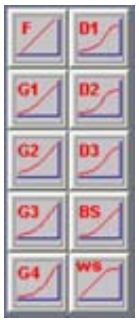


Image A-4
Predefined gamma buttons

About predefined gamma curves

Flat gamma curve

F on button represents 'flat', no gamma.

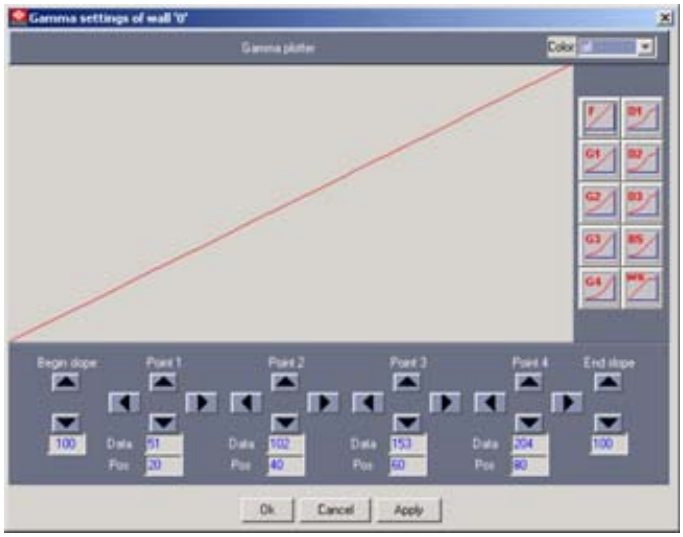


Image A-5
F gamma curve

G1-G4 general gamma curves

Example: G1 gamma curve

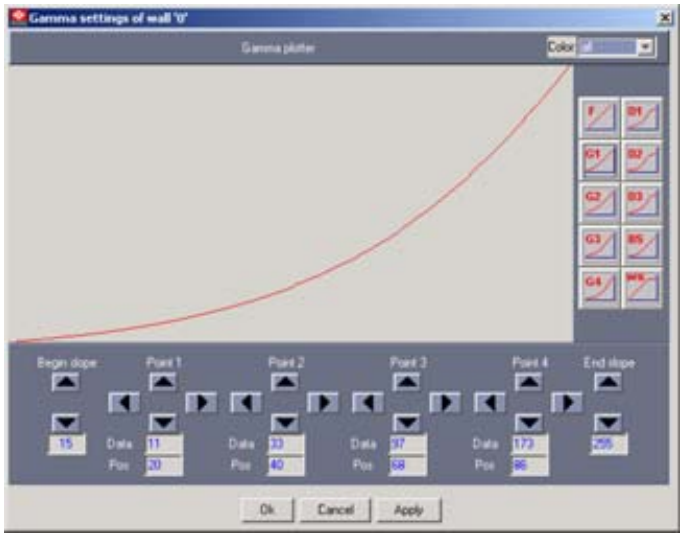


Image A-6
G1 gamma curve

D1-D3 S-curves

Dark = darker and light = lighter, hence better relative contrast.

Example : D1 gamma curve

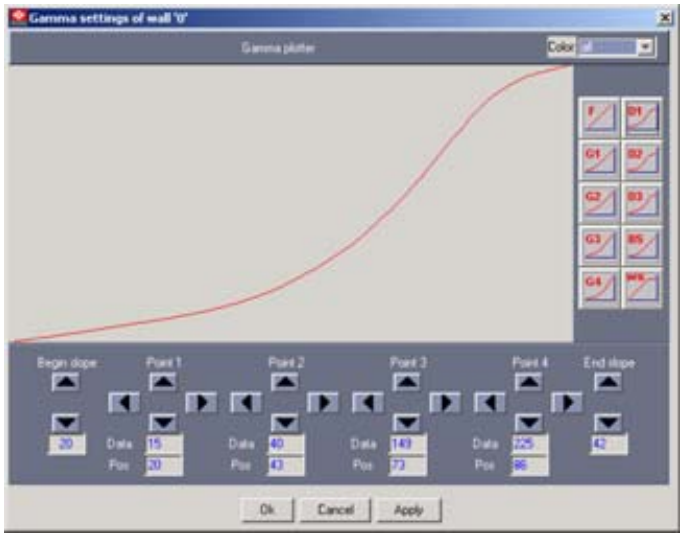


Image A-7
D1 gamma curve

WS gamma curve

White stretch gives more gamma in the high lights, hence brighter impression.

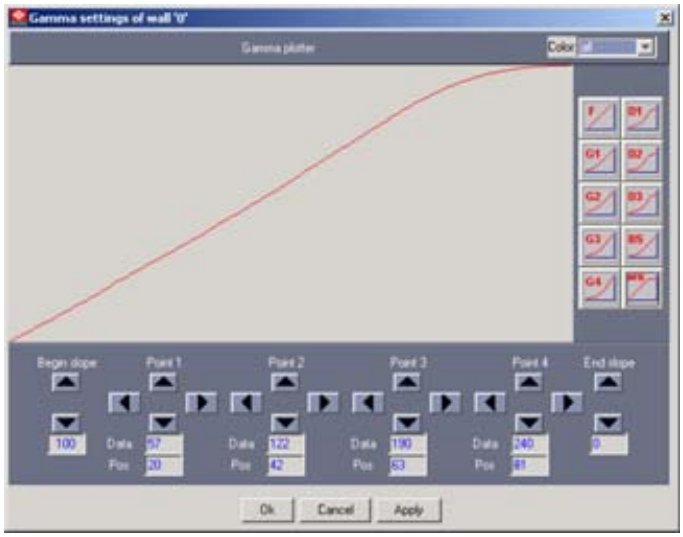


Image A-8
WS gamma curve

BS gamma curve

Black stretch gives more gamma in the low lights, hence darker impression.

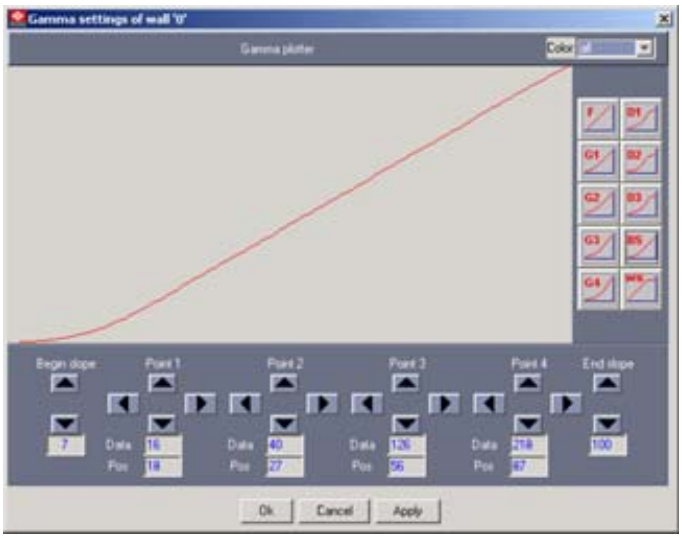


Image A-9
BS gamma curve

B. ALLOWED COMBINATIONS FOR MISTRIP

B.1 For MiSTRIP 613

Overview

The following combinations are possible on one output port of the control box:

MiSTRIP 613-380	MiSTRIP 613-750	MiSTRIP 613-1500
24	0	0
23	0	0
22	1	0
21	1	0
20	2	0
20	0	1
19	2	0
19	0	1
18	1	1
18	3	0
17	1	1
17	3	0
16	4	0
16	2	1
16	0	2
15	4	0
15	2	1
15	0	2
14	5	0
14	3	1
14	1	2
13	5	0
13	3	1
13	1	2
12	6	0
12	4	1
12	2	2
12	0	3
11	6	0
11	4	1
11	2	2
11	0	3
10	7	0

MiSTRIP 613-380	MiSTRIP 613-750	MiSTRIP 613-1500
10	5	1
10	3	2
10	1	3
9	7	0
9	5	1
9	3	2
9	1	3
8	8	0
8	6	1
8	4	2
8	2	3
8	0	4
7	8	0
7	6	1
7	4	2
7	2	3
7	0	4
6	9	0
6	7	1
6	5	2
6	3	3
6	1	4
5	9	0
5	7	1
5	5	2
5	3	3
5	1	4
4	10	0
4	8	1
4	6	2
4	4	3
4	2	4
4	0	5
3	10	0
3	8	1
3	6	2
3	4	3
3	2	4
3	0	5
2	11	0
2	9	1

MiSTRIP 613-380	MiSTRIP 613-750	MiSTRIP 613-1500
2	7	2
2	5	3
2	3	4
2	1	5
1	11	0
1	9	1
1	7	2
1	5	3
1	3	4
1	1	5
0	12	0
0	10	1
0	8	2
0	6	3
0	4	4
0	2	5
0	0	6

GLOSSARY

Active field

Timing window of the digitizer. Only the information within the active field can be displayed on a wall.

AEC

Automatic environment control unit. This unit measures the ambient light environment of the LED wall and adapts the contrast accordingly.

Alpha Blending

Alpha Blending enables the ability to add transparency to any selected source.

AMD setting

Automatic mode detection. The digitizer will search for the best fitting resolution and load the corresponding settings.

Apply options

These options determine how changes to a setting will be applied.

Aspect ratio

Relation between the horizontal & vertical dimension in which the window will be displayed, e.g. 4 by 3 or 16 by 9. Can also be expressed as a decimal number, such as 1.77. The larger the ratio or decimal, the wider are less square the image.

Bank

A “bank” is a way of combining inputs and outputs into independent video processors that are capable of driving one (or more) LED walls.

Banner Protect

With banner protect, the bottom 1/4 of the lines will not be processed in Filmmode detection. It avoids scrolling banners or “ticker tapes” causing FILM mode errors.

Calibration

The calibration modules allows to calibrate or re-calibrate the color reproduction of a complete wall or a single tile or a set of tiles.

Color enhancement

This is the method of substituting a certain color (color range) by another color.

Color key

Sometimes also called chroma key. This is a method of combining two video images. An example of chroma keying in action is the nightly news person standing in front of a weather map. In reality, the person is standing in front of a blue or green background and the camera image is mixed with a computer-generated weather map. This is how it works: a TV camera is pointed at the person and fed along with the image of the weather map into a box. Inside the box, a decision is made. Wherever it sees the blue or green background, it displays the weather map. Otherwise, it shows the person. So, whenever the person moves around, the box figures out where he is, and displays the appropriate image.

Color Transient Improvement (CTI)

CTI sharpen the transient between two next to each other projected colors.

Configurator

The configurator is the place to create and manage setups and configurations.

CVBS

Composite Video Broadcast System. For D320 CVBS module, also S-Video and Composite Video available.

DDC

Display Data Channel form VESA.

DDC allows you to control through the software the settings of a graphical display (digitizer input card); with this standard the digitizer input card can directly communicate with the video card of the source. The graphical adapter gets from the digitizer input car all the information about its features and it makes consequently an automatic configuration for the best refresh values depending on the resolution you use

Default Gateway

A router that serves as an entry point into and exit point out of a network. For example, a local network (LAN) may need a gateway to connect it to a wide area network (WAN) or to the Internet.

Design window

Grid sheet to create a creative design the creative units of Barco. As long as blocks (units) are available, those blocks (units) can be placed on a creative way on the designer window.

DHCP

Dynamic host configuration protocol. DHCP is a communications protocol that lets network administrators manage centrally and automate the assignment of IP addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address. When an organization sets up its computer users with a connection to the Internet, an IP address must be assigned to each machine. Without DHCP, the IP address must be entered manually at each computer and, if computers move to another location in another part of the network, a new IP address must be entered. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

Digitizer

A digitizer is a video processing device, designed to drive a screen. Digitizers can be chained in order to generate more windows on the output. Or digitizers can be stacked in order to be able to split generated output of the devices to multiple screens. New generation digitizers such as DX-700 can group internally outputs to drive big screens.

It a digital device that mixes all kind of input sources to a standard output format, mixed with the control signal to drive the LED wall.

DIS

Dynamic image stabilizer

DNS server

Computers, Projectors, Touch panels connected to a network are referenced by their IP address. The only problem is that remembering IP addresses is not easy. If you need to use hundreds of addresses then it will become impossible to remember them. This is why domain names are created. Internet names (domain and host names) are just aliases to these IP addresses. When you use an Internet address it is automatically translated to an IP address. In fact a program or device that translates those Internet names to IP addresses is called a DNS Server.

DVI

Digital Visual Interface is a display interface developed in response to the proliferation of digital flat panel displays.

The digital video connectivity standard that was developed by DDWG (Digital Display Work Group). This connection standard offers two different connectors: one with 24 pins that handles digital video signals only, and one with 29 pins that handles both digital and analog video. This standard uses TMDS (Transition Minimized Differential Signal) from Silicon Image and DDC (Display Data Channel) from VESA (Video Electronics Standards Association).

DVI can be single or dual link.

FiberLink

A FiberLink is bidirectional digital fiber optic transmission system used in an installation to cover real long distances between the digitizer and the LED wall with a very high bandwidth.

Flash update

The flash update modules allows to update the firmware of the different components in a configuration.

Gamma

The transfer characteristics of most cameras and displays are nonlinear. For a display, a small change in amplitude when the signal level is small produces a change in the display brightness level, but the same change in amplitude at a high level will not produce the same magnitude of brightness change. This nonlinearity is known as gamma. Different gamma curves are available to compensate the nonlinearity.

Grid editor

The grid editor allows to edit a segment (with tiles) manually until the desired tile configuration is reached for the LED wall.

Grouping

Only for DX-700 based digitizers. Internal stacking of outputs up to maximum 6 outputs.

IP

Internet Protocol. The network layer of TCP/IP. Required for communication with the internet.

IX configurator

Environment to design creative layouts for MiPIX, MiSPHERE, MiSTRIP, MiTRIX, OLite or NX and to assign designs to the respective control units.

Luma Transient Improvement (LTI)

LTI accentuates the transient between two parts of the image with different intensity.

Menu bar

Navigation bar that allows you to create, modify setups, change modules, create reports and help.

MiPIX

Building block of 2 x 2 pixels to design creative layouts for indoor use.

MiSPHERE

Building unit of 1 x 1 pixel to design creative curtains, room dividers, etc., indoor as well as outdoor.

MiSTRIP

Building unit with LEDs on a row to make creative designs for indoor as well as outdoor. This unit can be used in any position.

MiTRIX

Building unit of 16 x 8 pixels with a free view. Ultra light unit to make creative designs for indoor as well as outdoor.

Mixing console

The mixing console is a tool to get an overview of the window settings of all selected inputs in the configuration.

Monitoring

With monitoring it is possible to get an overview of the temperature of all tile, to display diagnostic logging and to set up the ambient light environment control.

Opacity

Opacity is equal to alpha blending. It enables the ability to add transparency to any selected source.

Operations

The operations module makes it possible to manage the different windows and viewports for typical setup and to position the screen and segments in the active field..

Panning

A part of the image is displayed on a monitor preview. To get an overview of the complete image, that part can be moved, panned so that another part of the image becomes visible on the monitor.

Preferences

Preferences determine the default behavior of the software. Some preferences can be generally set for the complete software, some others are only for the different plug-in modules.

Preset

A preset is a setup in which all the device parameters have a specific state at a given moment.

Project

A project is a set of setups with each its own presets.

SDI

Serial Digital Interface

Segment

A segment is a collection of consecutive tiles within a screen. One screen can contain several segments.

Setup

A Setup is a collection of hardware devices, such as digitizers, LED devices, e.g. that are linked with a computer.

SMTP

SMTP (Simple Mail Transfer Protocol) is a TCP/IP protocol used in sending E-mail.

SP

Sports perimeter used for advertising around a sport area in stadium.

Stack

A stack is a setup where several digitizers are used to create one big image on a display.

Stitching

Stitching is a stacked setup without loop through for the source. Each digitizer (or bank in a multi bank configuration) receives its own input signal with is 1 to 1 mapped on the screens in the digitizer.

Subnet mask

A number that is used to identify a subnetwork so that IP addresses can be shared on a local area network.

Tile positioning

The tile positioning module makes it possible to manage the different tiles in a wall. Tiles can be relocated, grouped in segments etc.

Tool bar

Navigation bar with icons that let you control the program.

Tool tip

Pop up information when moving the mouse pointer over a menu item or an icon in the tool bar.

UXGA

UXGA (Ultra Extended Graphics Array) is a display mode in which the resolution is 1600 pixels horizontally by 1200 pixels vertically (1600 x 1200). This amounts to a total of 1,920,000 pixels on the screen.

VESA

Video Electronics Standards Association

ViewPort

A part of the complete input signal (cut out of the complete signal) which will be displayed in a window.

Window texture

Background of window representation in operations. The texture can be a color or a picture.

YUV

A Color model used chiefly for video signals in which colors are specified according to their luminance--the Y component--and their hue saturation--the U and V components.

Z-order

The layer sequence in which windows will be displayed in relation to each other.

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