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# 01

## Hardware

### 01.1 Hi-LED 55 cabinet



Aluvision offers **two types of Hi-LED 55**:

- 2.8 (176 x 176 pixels, pitch 2.8mm)
- 2.5 (192 x 192 pixels, pitch 2.5mm)



Please make sure you know what type of Hi-LED you have and which batch they are. The batch number and amount of pixels is important when setting up the Hi-LED configuration.

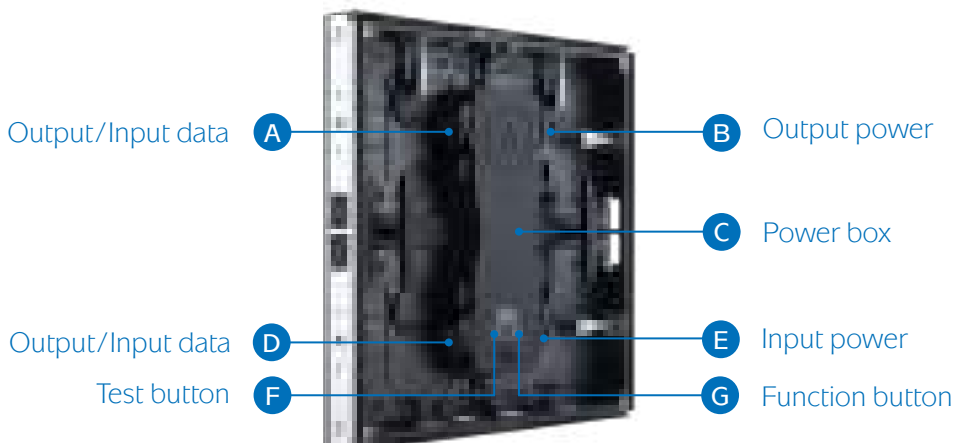
Each cabinet consists of **4 replaceable LED modules**. On the back of each module you can find the **batch number**.

- Hi-LED 55 2.8: batch 121, 122, ...
- Hi-LED 55 2.5: batch 201, 202, ...

At the back of the cabinet a **power box** is mounted, the power box has 4 connectors. There are 2 power connectors on the right, a **power input** (male connection) and an **output** (female connection). On the left you can find **two signal connectors**, both can be used as either input or output.

At the bottom of the power box 2 buttons are available. The **test button** is used to play a colour or a pattern to check the brightness, check for broken LED's... Press the button twice to enter the test modes. Then press once to switch in between the modes.

Pressing the **function button** shows some more info about the cabinet on the LCD information display: *software version, current temperature and operating hours*.



### Extra specifications



Weight: 8,8 kg (2.8), 9,8 kg (2.5)



Horizontal viewing angle: 140°



Panel dimensions: 495,8 x 495,8 mm



Max. hanging quantity: 20 cabinets



Vertical viewing angle: 120°



Max. stacking quantity: 10 cabinets  
(without support)

## 01.2 Cables & connection

- A Truecom power cable of 10 meters is used to power the cabinets.



EU power cable



US power cable



Power input

- A Neutric signal cable CAT5E of 20 meters is used to provide the data to the cabinets.



Signal input

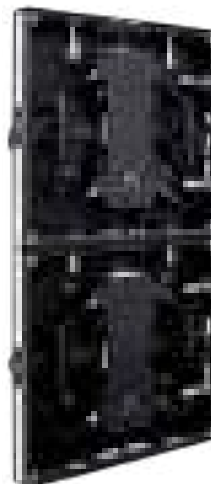
- **Interlink cables** are used to link the cabinets and send the power and data from one cabinet to another. Interlink power cables can be connected to each other, interlink signal cables can't.



Truecom Interlink power cable  
(1, 3, 6 or 10 meters)



Neutric Interlink signal/  
data cable CAT5E  
(1, 3, 6 or 10 meters)



### 01.3 Power flow

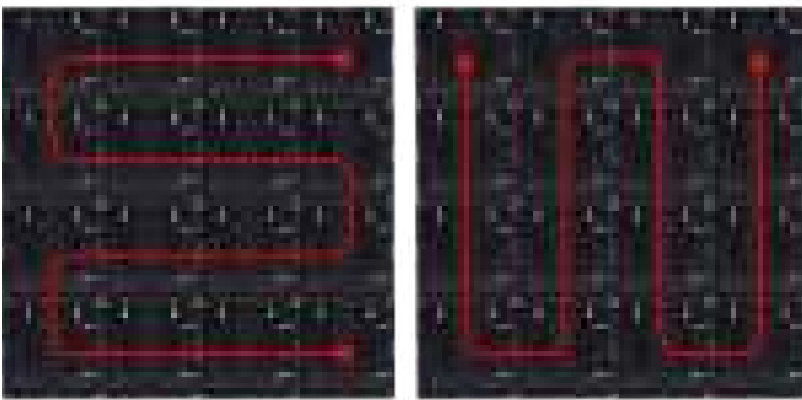
Connect up to **18 (EU)/9 (US) 2.8 cabinets** and **17 (EU)/8 (US) 2.5 cabinets** in one power flow, but always keep in mind the maximum and average power consumption.

- Maximum power consumption: 590 W/m<sup>2</sup> (Hi-LED 2.8), 610 W/m<sup>2</sup> (Hi-LED 2.5)
- Average power consumption: 197 W/m<sup>2</sup> (Hi-LED 2.8), 203 W/m<sup>2</sup> (Hi-LED 2.5)

Connecting to many cabinets in one power flow can create a hazardous situation.



Maintain the overview: work in a vertical or horizontal data/signal flow.

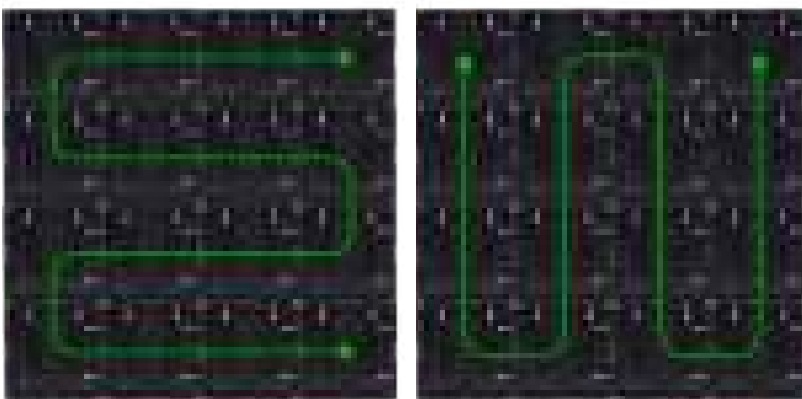


### 01.4 Signal/data flow

The signal/data flow is the order in which the cabinets are connected. The signal/data flow is very important to keep in mind for the configuration of the cabinets later on.



Maintain the overview: work in a vertical or horizontal power flow.



*Horizontal flow*

*Vertical flow*

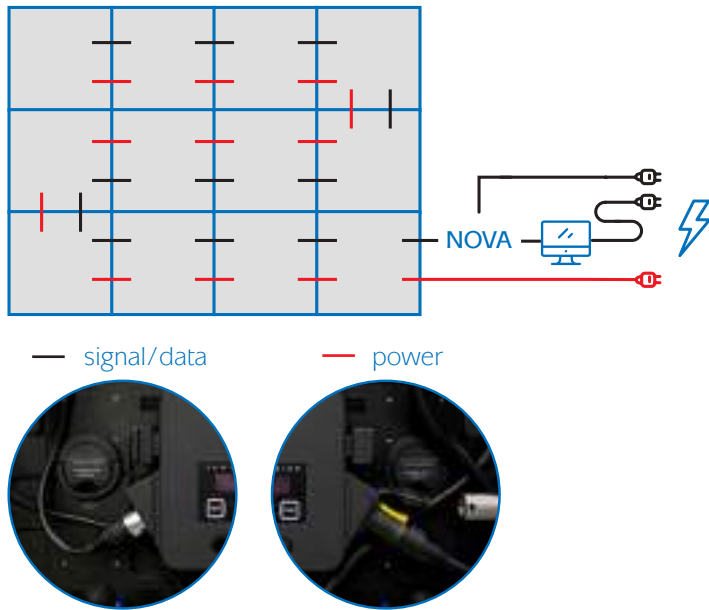
The maximum amount of cabinets in 1 signal/data flow depends on the used controller. See below.



The power and data do not necessarily need to follow the same flow.

## 01.5 Hi-LED 55 chain

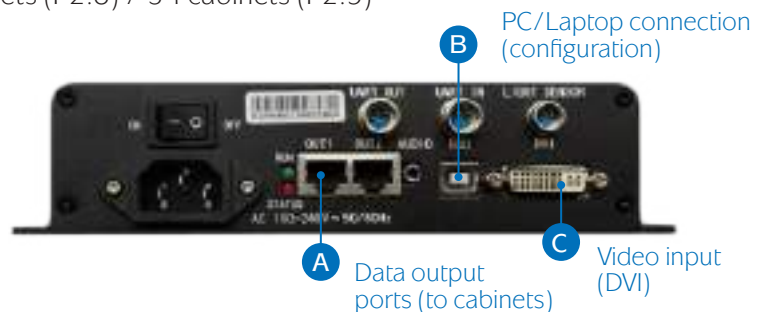
After all cabinets are linked with interlink power and signal/data cables, use the 10 meter Truecom power cable to connect the first cabinet in the flow with a power socket. Use the 20 meter Neutric data/signal cable to connect the first cabinet in the flow with a Novastar controller. The Novastar controller is also connected to a media device (Laptop/PC, Blu-ray/DVD-player, BrightSign...).



## 01.6 Novastar controllers

A LED controller/sending box is required to send the correct data to each cabinet. Aluvision makes use of Novastar controllers. Different types can be used, depending on the amount of cabinets in your setup and its functionalities. Aluvision offers four types:

- **Novastar MCTRL300**
  - Supports 1.3 million pixels, 2 data outputs
  - Output maximum: 20 cabinets (P2.8) / 17 cabinets (P2.5)
  - Controller maximum: 40 cabinets (P2.8) / 34 cabinets (P2.5)



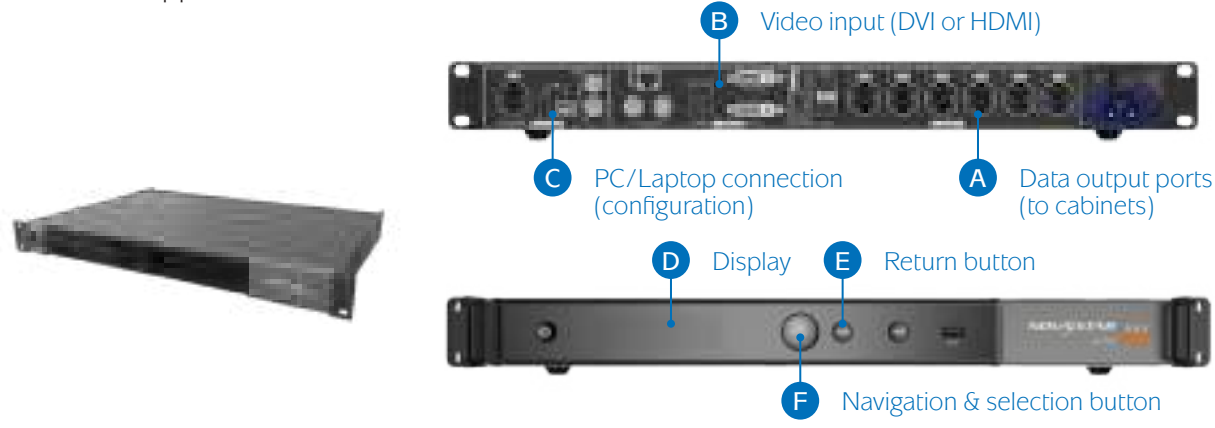
- **Novastar MCTRL660**

- Supports 2.3 million pixels, 4 data outputs
- Output maximum: 20 cabinets (P2.8) / 17 cabinets (P2.5)
- Controller maximum: 72 cabinets (P2.8) / 60 cabinets (P2.5)
- No PC/laptop required for basic configuration and testing
- FullHD support



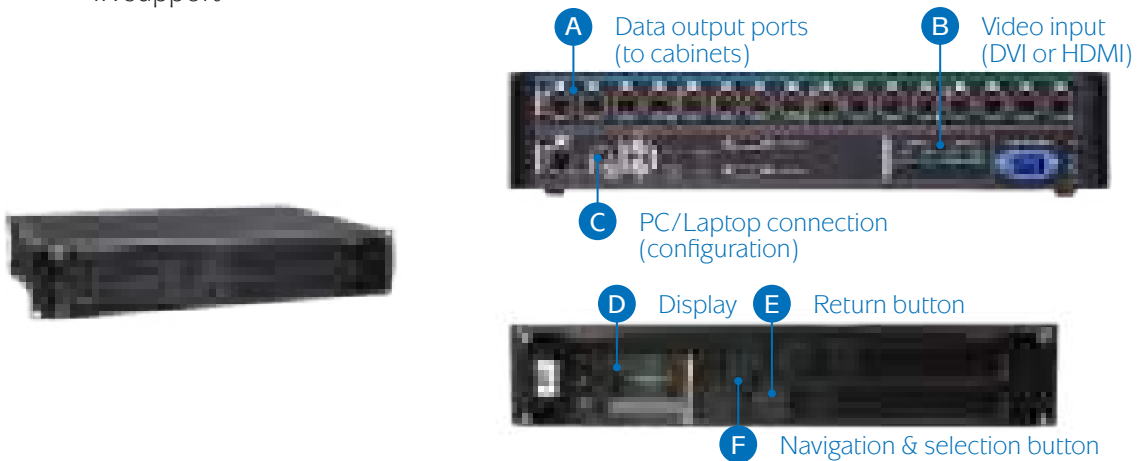
- **Novastar MCTRL660 PRO**


- Supports 2.3 million pixels, 6 data outputs
- Output maximum: 20 cabinets (P2.8) / 17 cabinets (P2.5)
- Controller maximum: 72 cabinets (P2.8) / 60 cabinets (P2.5)
- No PC/laptop required for basic configuration and testing
- 10/12-bit video support, low latency
- FullHD support



- **Novastar MCTRL4K**

- Supports: 8.3 million pixels, 16 data outputs
- Output maximum: 20 cabinets (P2.8) / 17 cabinets (P2.5)
- Controller maximum: 256 cabinets (P2.8) / 224 cabinets (P2.5)
- No PC/laptop required for basic configuration and testing
- HDR support
- 4K support




 To be sure never to exceed the controller’s maximum amount of supported cabinets, divide this maximum by the amount of the controller’s data output ports. Keep in mind: the result is not the port’s absolute maximum, this is a relative number if you want to use all ports.

Not only the amount of supported cabinets determines what controller to choose, also the **supported resolutions** are important to take into account. A resolution is a **rectangle** with a certain width and height **shown in pixels**. All Hi-LED tiles should fit one of those resolutions. Hi-LED’s, or parts of it, beyond this chosen resolution, will not be supported and will just stay black.

**Recommended preset resolutions:**

- MCTRL300: 1280×1024, 1024×1200, 1600×848, 1920×712 (pixels)
- MCTRL660 (Pro): 1600×1200, 1920×1080, 1920×1200, 2560×960 (pixels)
- MCTRL4K: 3840×2160, 7680×1080 (pixels)

 All resolutions smaller than the ones recommended are supported too. Also custom resolutions are possible within the restrictions of the controller.

 To support more cabinets or larger resolutions, combining multiple controllers is also a possibility.

## 01.7 Media device

A media device is required to play content on your LED display. You can use any media device you want: PC/laptop, DVD/Blu-ray player, game console... or you can use a media player such as a '**BrightSign**' device. BrightSign LS424 (HD) is recommended by Aluvision. For 4K support, BrightSign HD224 is available.

The media device should be connected to the Novastar controller using an HDMI or an HDMI to DVI cable (only with Novastar MCTRL300).



## 01.8 Corners, cubes and curves

Aluvision offers, next to the regular flat tiles, also corners, cubes and curves. All can be integrated seamlessly in the original Aluvision frame system.

- **Hi-LED 2D corner**
  - 2 sides closed
- **Hi-LED 3D corner**
  - 3 sides closed



- **Hi-LED cube**
  - 5 sides closed



Each side of a corner/cube consists out of **4 replaceable LED modules** with beveled corners which are powered by the same kind of power boxes as the regular flat Hi-LED tiles. Each side consists out of 176 x 176 (Pitch 2.8) or 192 x 192 pixels (Pitch 2.5). The viewing angle (horizontal: 140° - vertical: 120°) and power consumption (MAX 590W/m<sup>2</sup> (2.8), 610W/m<sup>2</sup> (2.5) - AVG 197 W/m<sup>2</sup> (2.8), 203 W/m<sup>2</sup> (2.5)) remain the same as for a regular Hi-LED.

Cabling and configuring a corner/cube works the same way as for the regular Hi-LED's. Handle each side as a different cabinet.



- **Hi-LED R437 convex**
  - Outer curve
  - Resolution: 300 x 192 pixels (Pitch 2.5)
  - Viewing angle (Horizontal/Vertical): 120° / 120°
- **Hi-LED R437 concave**
  - Inner curve
  - Resolution: 266 x 192 pixels (Pitch 2.5)
  - Viewing angle (Horizontal/Vertical): 140° / 120°



The curved Hi-LED tiles are  $\frac{1}{4}$  of a circle segment and match a standard Omni-55 R437 frame. They consist out of **4 flexible (and replaceable) LED modules**. The height is the same as a regular 2.5 Hi-LED tile (192 px), the width is different and depends if the curved Hi-LED is an inner (266 px) or an outer curve (300 px). The power box looks a little different, but has the **same functionalities** as the ones for a flat Hi-LED.



Since the pixel pitch is 2.5, the power consumption per  $m^2$  is the same as for a flat 2.5 pitch Hi-LED (MAX 610W/ $m^2$  – AVG 203 W/ $m^2$ ). **But be aware**, this does not mean you can connect as many curved Hi-LED tiles as flat tiles in one power flow! Since they all have different dimensions, please take the different types of Hi-LED tiles into account when calculating the power.

The same reasoning applies to calculating how many cabinets can be connected in one data flow. Keep the different amount of pixels for each type of Hi-LED tiles into account. Basically 11 convex and 12 concave Hi-LED tiles can be connected in one data flow. But this number only applies when all tiles are the same type. Having a combination requires a **custom calculation**. An easy and safe way for quick calculation is counting all curved Hi-LED's as 2 flat tiles.



Since the curved Hi-LED tiles are only available in pixel pitch 2.5, they can only be combined with other pixel pitch 2.5 Hi-LED tiles.

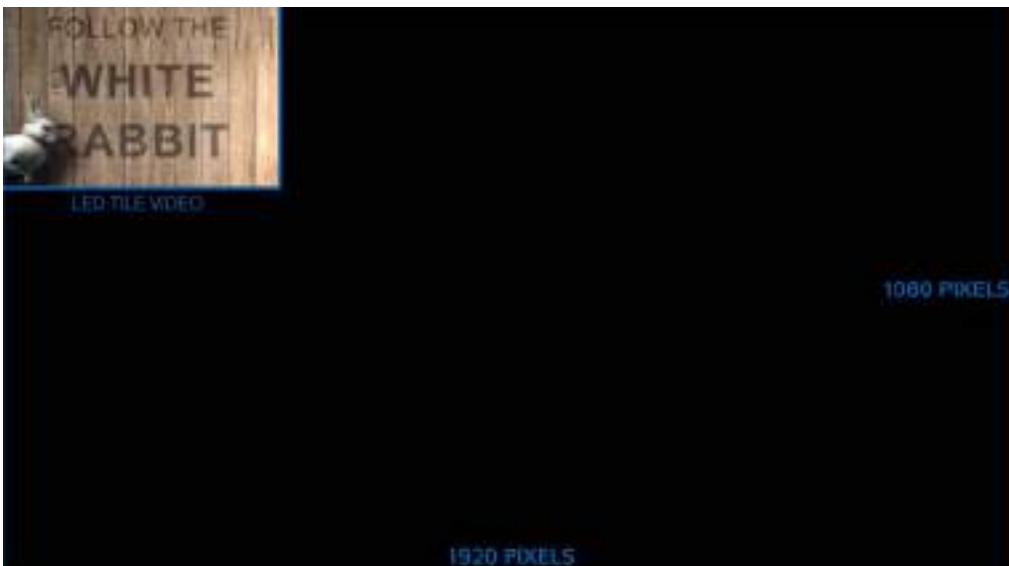
# 02

## Video file

### 02.1 Video setup simple screen

A simple screen is defined as a **setup with all cabinets in one big rectangular shaped screen**.

The resolution of the video file that is played back by the media device is different from the actual resolution of the screen. When exporting the video, **use standard HD (1920 x 1080 pixels) or 4K (3840 x 2160 pixels) video resolution**. The footage that is shown on the screen (LED tile video) is positioned in the top left corner within this video. The remaining part of this video should stay black.



Depending on the media player, other resolutions can be used. Below you can find the instructions how to prepare your video using a BrightSign media player. Also other workflows are possible, but this workflow makes sure you won't face any scaling issues later on.

The resolution of the LED tile video should be exactly the same as the resolution (amount of pixels) of the screen. This is called 'pixel to pixel' and means that every pixel in the video represents a pixel in the screen.

To calculate the resolution of the screen, first you need to **count the amount of cabinets in your screen**. To calculate the resolution width, multiply the amount of horizontal cabinets in your screen with the amount of horizontal pixels in one cabinet (Hi-LED 55 2.8 = 176 pixels; Hi-LED 55 2.5 = 192 pixels). To calculate the resolution height, **multiply the amount of vertical cabinets in your screen with the amount of vertical pixels in one cabinet** (2.8 = 176 pixels; 2.5 = 192 pixels).



*Example of a simple screen (6 cabinets)*

The setup is a 6 cabinet LED screen (3 wide, 2 high). We need to calculate the amount of pixels in the screen to determine what the resolution of the LED tile video should be. It's important to know what type of cabinets you have, since Hi-LED 55 2.8 and Hi-LED 55 2.5 have a different amount of pixels.

Resolution width: 3 x 176 pixels = **528 pixels** (Hi-LED 55 2.8)  
 3 x 192 pixels = **576 pixels** (Hi-LED 55 2.5)

Resolution height: 2 x 176 pixels = **352 pixels** (Hi-LED 55 2.8)  
 2 x 192 pixels = **384 pixels** (Hi-LED 55 2.5)

Screen resolution: **528 x 352 pixels** (Hi-LED 55 2.8)  
**576 x 384 pixels** (Hi-LED 55 2.5)

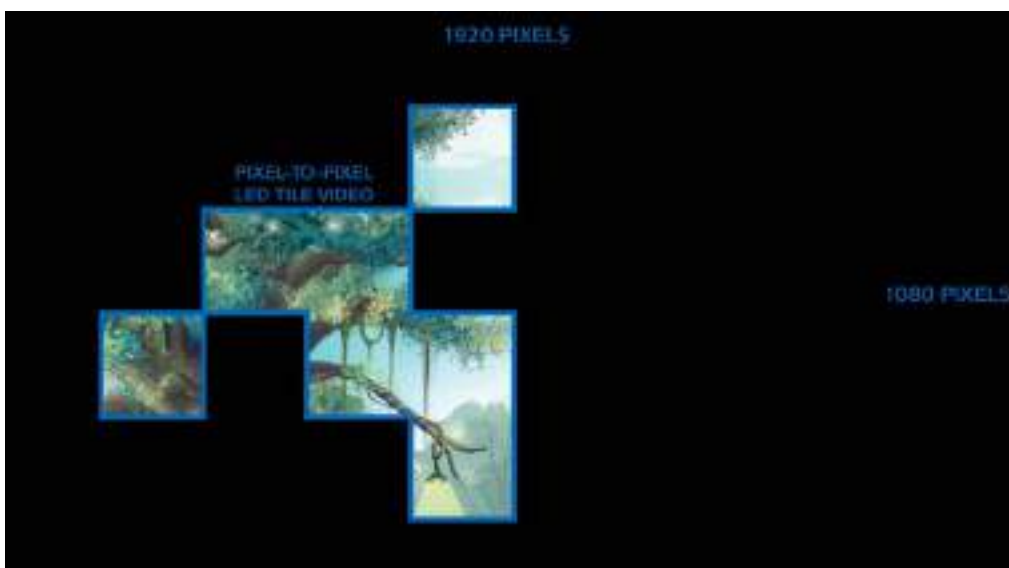




## 02.2 Video setup complex screen

A complex screen is defined as a setup with cabinets in a random shape, not necessarily right next to each other.

Again the resolution of the video file that is played back by the media device is different from the actual resolution of the screen. When exporting the video, **use standard HD (1920 x 1080 pixels) or 4K (3840 x 2160 pixels)** video resolution. The footage that is shown on the screen (LED tile video) is represented by squares positioned in the same way the cabinets are. The remaining part of this video should stay black.



Depending on the media player, other resolutions can be used. Below you can find the instructions how to prepare your video using a BrightSign media player. Also other workflows are possible, but this workflow makes sure you won't face any scaling issues later on.

Again the LED tile video should be 'pixel to pixel' with the amount of pixels in the screen. The LED tile video consists of squares with the same resolution as the used cabinets (Hi-LED 55 2.8 = 176 x 176 pixels; Hi-LED 55 2.5 = 192 x 192 pixels). If there's a gap between two cabinets in the screen, also leave a gap in the video. Make sure also the gaps are 'pixel to pixel', this means that if the gap is as big as 1 cabinet, it should be 176 x 176 pixels (2.8) or 192 x 192 pixels (2.5).

Use a grid to represent the cabinets and to help position each square of video.



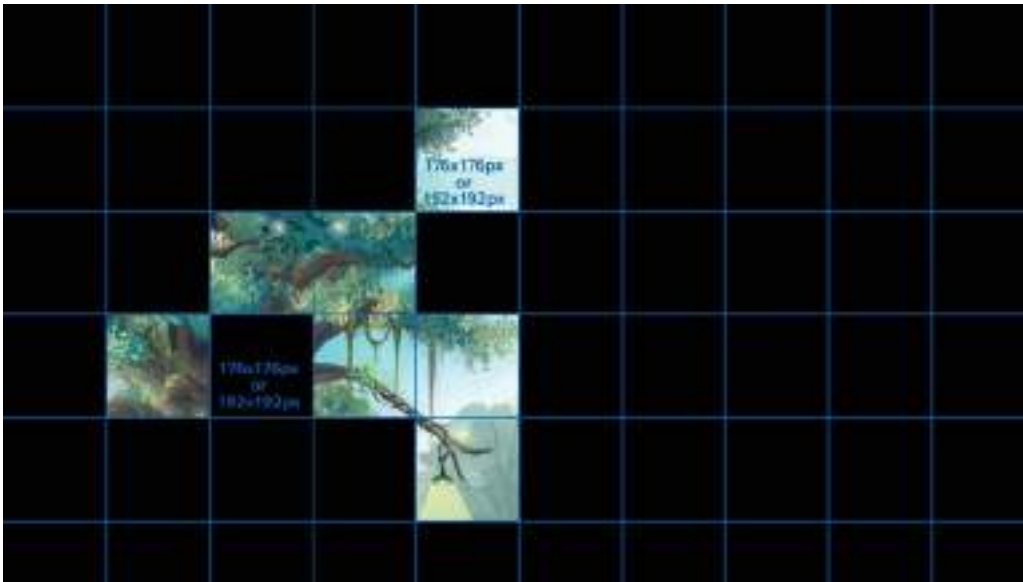
#### *Example of a complex screen (7 cabinets)*

The setup is a 7 cabinet LED screen with the cabinets in a random shape. First **check the type of cabinets you have**, since Hi-LED 55 2.8 and Hi-LED 55 2.5 have a different amount of pixels. Start from your full image and determine which parts of the footage should be shown on the screen (LED tile video). You can **use a grid** to make it easier on yourself. The grid should have a gridline every 176 pixels (Hi-LED 55 2.8) or every 192 pixels (Hi-LED 55 2.5). In the picture below the LED tile video is marked in blue.

The indication of which parts that should be shown is called a **pixelmap** and is used to configure the screen later on.



To prepare a pixel to pixel video (according pixelmap), make sure only the LED tile video remains. The result is a video consisting of 7 squares (176 x 176 pixels or 192 x 192 pixels) each of them representing a cabinet, **positioned in the same way the cabinets are**. Also the gaps have the same resolution as the squares and represent a blank cabinet.



## 02.3 Video file export settings

Take following settings in mind when exporting the video file:

- Format:** .mp4 (Other formats possible depending on media player)
- Resolution:** 1920 x 1080 (4K: 3840 x 2160)
- Codec:** H.264/H.265 (Other codecs possible depending on media player)
- Frame rate:** 25/50fps (Europe) – 30/60fps (US)
- Field order:** progressive
- Bitrate:** 10-20mbps

## 02.4 BrightAuthor

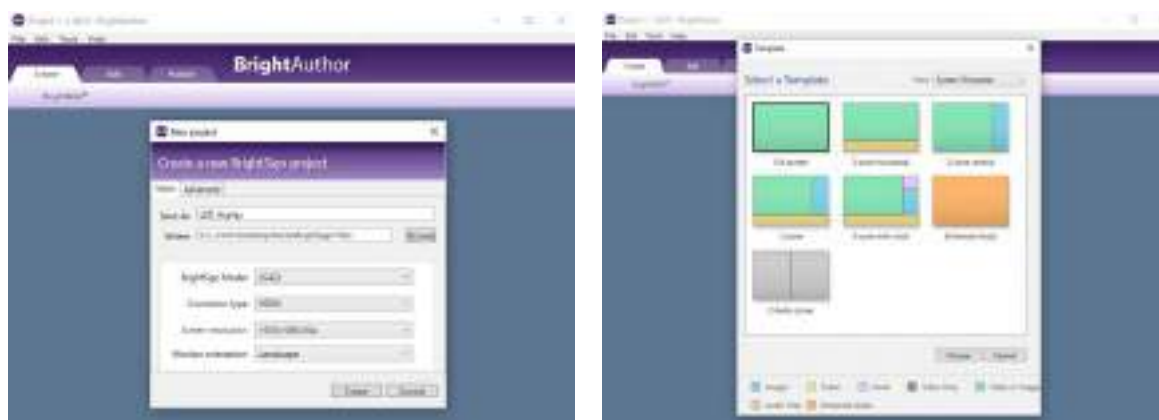
To play back the video properly using a BrightSign media player, some extra steps are required. After exporting the video file, it also needs to be published. To publish the video you can make use of the free software offered by BrightSign: **BrightAuthor**. The files that are created by publishing have to be copied on a micro-SD card which is inserted in the BrightSign media player.



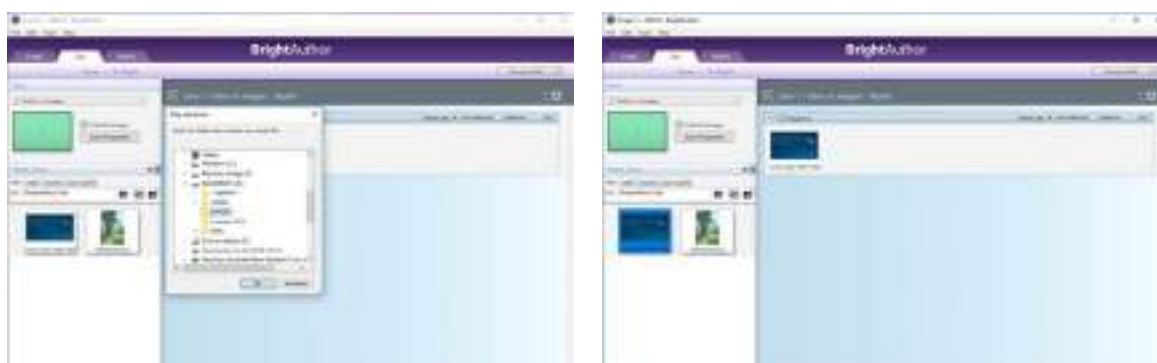
To publish a video, do the following:

First of all, open the BrightAuthor software and create a new project.

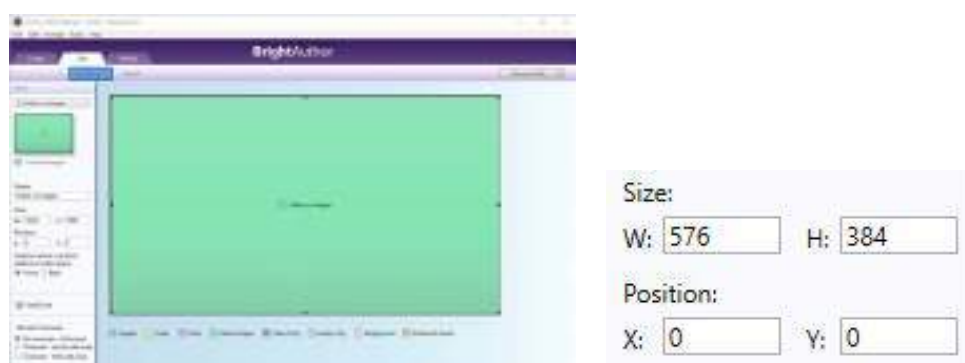
In the top menu choose **'File' > 'New project'**. Choose your model **'LS424'** (recommended for HD), **'HD224'** (recommended 4K) or another model. Choose the **connector type** (in most cases HDMI). Choose the **resolution**, this is the same as the video file resolution: **'1920x1080x50px' (Europe) or '1920x1080x 60px' (US)** (4K: **'3840x2160x50px' (Europe) or 3840x2160x60px (US)**). Choose **'Landscape'** as monitor orientation. Click **'Create'** and in the next screen, choose **'Full screen'** as template.



Select the **'Edit'** tab, choose the folder with the exported video in it and drag & drop the video in the **'Drag media here'** box. You can also drag and drop the video in this box directly from an Explorer window (Windows) or a Finder window (Mac).

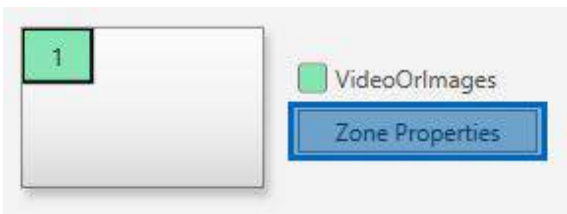


When the video is not prepared to match your screen, it's also possible to scale the video using the BrightAuthor software. Navigate to the **'Layout'** page and set the screen's width and height.

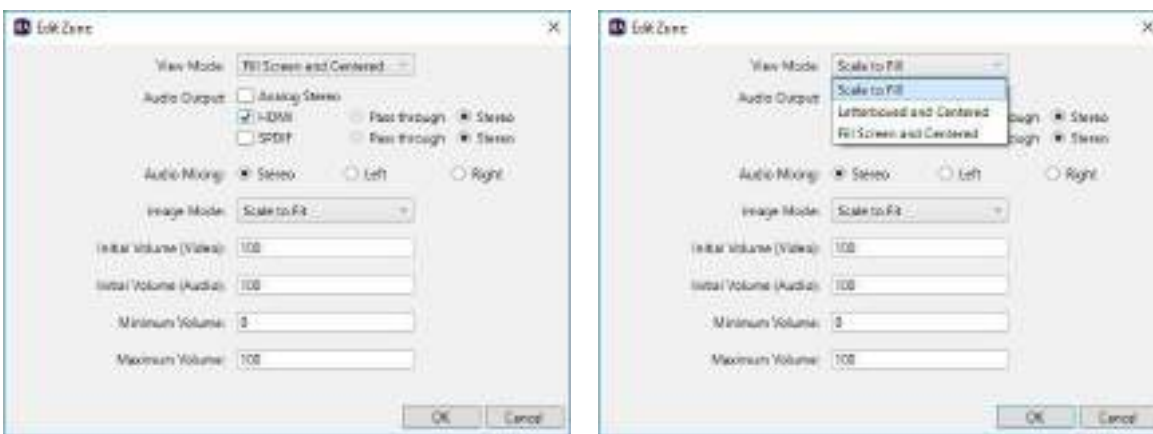




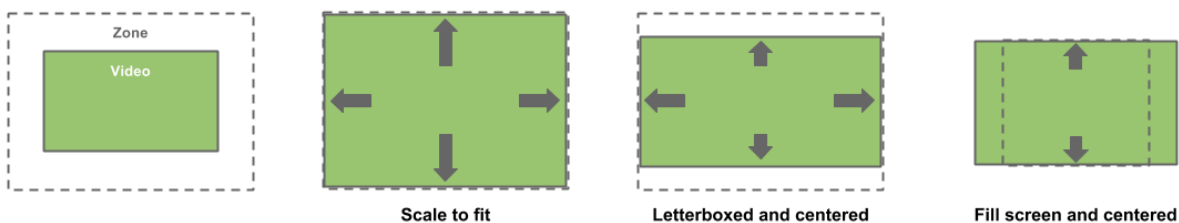
Next, go back to the 'Playlist' page and click the 'Zone Properties' button. A pop-up window shows up.



The 'View mode' option allows you to determine how the video will be scaled to fit the screen. Logically, there will be no effect if the video and the screen are the same size.



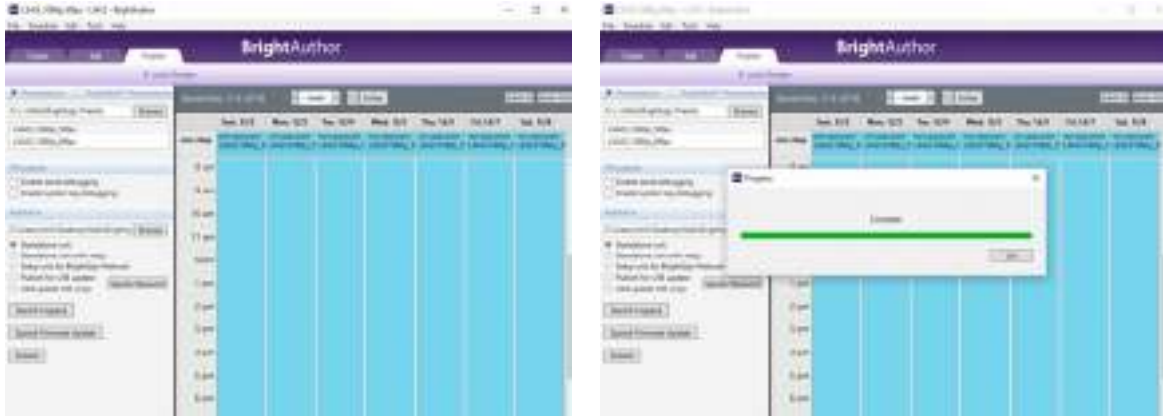
3 different options are available to scale the video, depending on what is important, filling the screen or maintaining the aspect ratio.



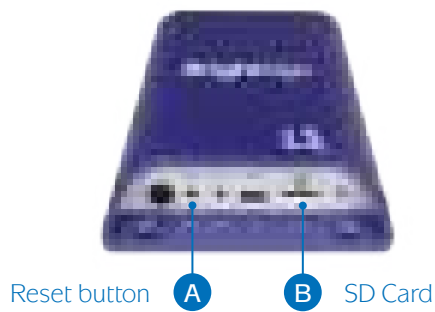
- **Scale to Fill:** scales the video without maintaining the aspect ratio, video is stretched
- **Letterboxed and Centered:** centers video and adds black borders to show the full video and to maintain the aspect ratio
- **Fill Screen and Centered:** centers and crops the video to fill the screen and to maintain the aspect ratio



For the last step select the **'Publish'** tab. Choose a folder to publish to, click **'Publish'** and click **'OK'** when completed.



Now copy everything from the publish folder to a formatted SD Card. Insert the SD Card in the BrightSign player and press **'Reset'**. The video is now ready to play back.



# 03

## Controlling Hi-LED 55

### 03.1 Simple screen

A simple screen is defined as a **setup with all cabinets in one big rectangular shaped screen**. This is the easiest setup. To configure the controller for this kind of screen two things are important to keep in mind: the amount of horizontal and vertical cabinets and the signal/data flow in between the cabinets. In the example below the configuration of a simple 6-cabinet screen is shown step by step.



*Example of a simple screen (6 cabinets)*

### × Simple screen – MCTRL300 controller setup

To configure a simple screen using a MCTRL300 controller, a Windows PC/laptop with NovaLCT software is required. The software doesn't run on Macintosh.

Connect your PC/laptop to the MCTRL300 controller using an USB cable and power up the controller.



Next, open the **NovaLCT software**. This software is used to configure the MCTRL300 controller.



The software installation file can be downloaded from the Aluvision website: [www.aluvision.com/en/products/downloads](http://www.aluvision.com/en/products/downloads). Make sure to use software version 4.9.0, do not use the latest version from the Novastar website.

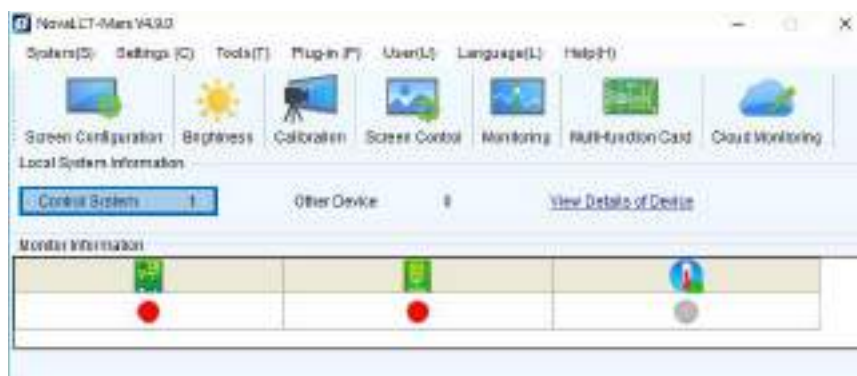


Possible issue installing the NovaLCT software: the person installing the software (= the actual user logging in to the PC) needs to have (temporary) administrator rights during the installation process of the software. If not, he will not be able to access the program after installation.

After opening the software, choose 'User(U)' > 'Advanced User Login' from the top menu to login. Without logging in you won't be able to make any changes to the controller. As password fill in 'admin' or '666' and press 'Login'.



After login, check the 'Local System Information': 'Control System' shows if the controller is successfully connected. '1' indicates that the connection to the controller is OK, '0' indicates that no connection to a controller has been found. If this is the case, do the following: check if the controller is powered, if not switch it on at the back of the controller. Also check if the USB cable is connected and if the USB cable or USB port is not damaged. Now choose 'System (S)' > 'Reconnect (R)' from the top menu, the '0' should change into '1'.



To start the configuration of a simple screen, click the **'Screen Configuration'** button.



A pop-up window shows up. When you have a successful connection with a controller, the communication port will be selected automatically. Otherwise the drop down menu will stay empty. Click **'Next'** in the pop-up box. The **'Screen Configuration'** window shows up.



Select the first tab: **'Sending Card'** and check if the sending card resolution is 1920 x 1080(1080P) (3840 x 2160 if you are using a 4K controller). If not change the resolution. Select the refresh rate: **'50Hz'** for Europe, **'60Hz'** for the US. Click **'Set'** to confirm and click **'Save'** to store the data.



Next, select the third tab: **'Screen Connection'** and select the first screen type option: **'Simple Screen'**. Under **'Basic Information'** you can find the coordinates. This refers to the position in the video matching the top left position of your screen. By default **'X'** and **'Y'** are both **'0'**. Do not change this unless you don't want to match the top left position of your video with the top left position of your screen.

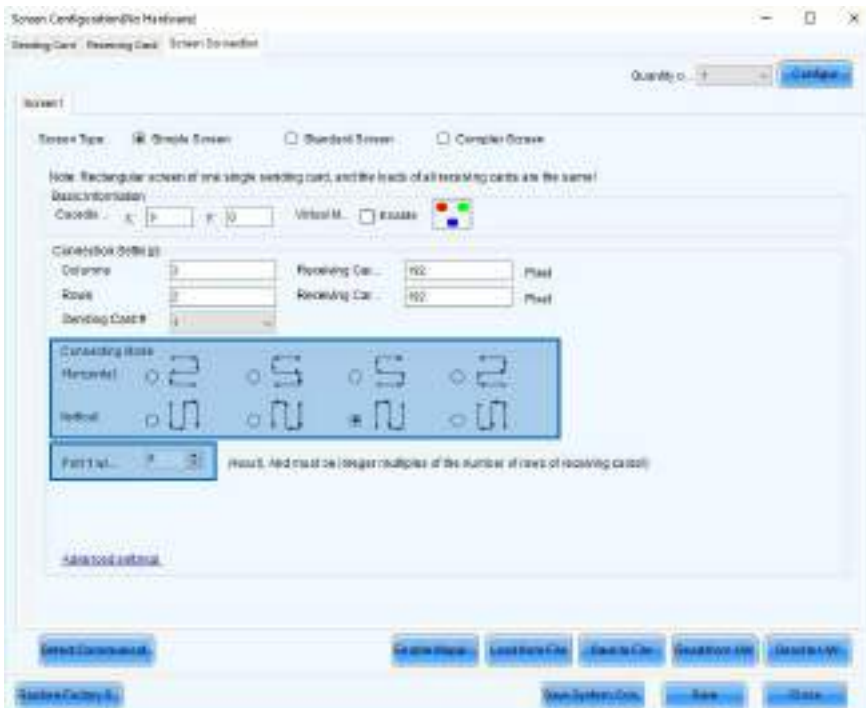
Complete the connection settings: set the amount of **'Columns'** (vertical cabinets) and the amount of **'Rows'** (horizontal cabinets). The screen in this example consists of 3 columns and 2 rows. The receiving card width/height refers to the amount of horizontal/vertical pixels in one cabinet. When using Hi-LED 55 2.8, this is 176 pixels. When using Hi-LED 55 2.5, this is 192 pixels.



To set the correct connecting mode, it's necessary to know the physical signal/data flow in between the cabinets, because you have to tell the software in what order the cabinets are connected. In the example below the signal/data flow starts with the bottom left cabinet and runs in a vertical flow to the top right cabinet. The blue line and arrows represent the direction of the cabling.



Accordingly to this flow, select the third vertical connection mode option. Also enter the total amount of cabinets (6).



Always start your signal/data flow in one of the corners of your screen and work in a horizontal or vertical flow (8 possible flows).



The connection mode setting in the software is front view. In other words, it represents the flow when standing in front of the screen. This can be confusing, since the cabinets are connected from the back, the flow is mirrored.

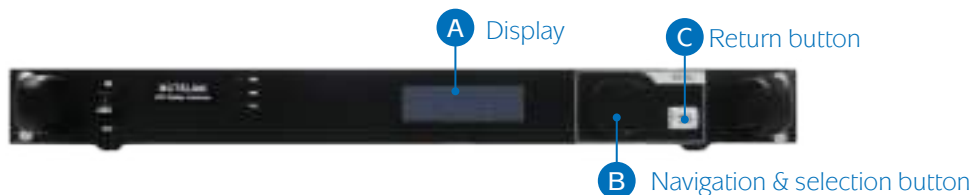
The configuration is now complete, the only thing that's left is sending this configuration to the controller and save it. Click 'Send to HW' and click 'Save'. The video plays properly now.

You can also save this configuration to a file by clicking '**Save to File**', to use again for future projects.



## × Simple screen – MCTRL660 controller setup

The same kind of simple screen can also be configured using a Novastar 660 controller. **The big advantage is you don't need a PC/laptop to execute the configuration.** All settings to make the correct configuration can be found and set using the controller's built-in display and navigation/selection button.

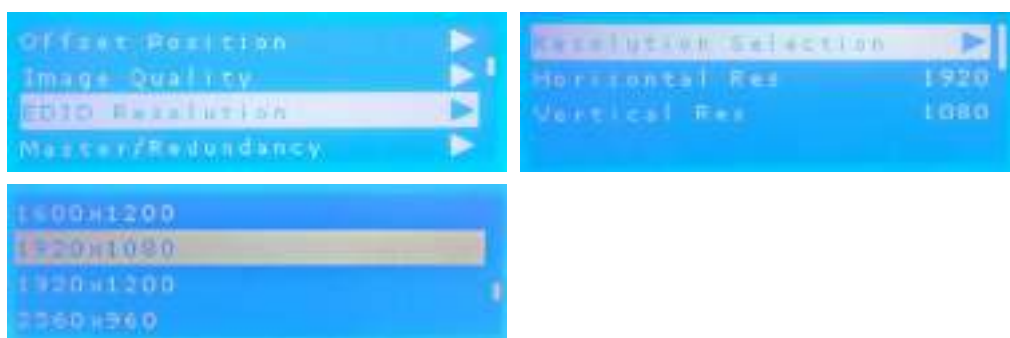


For more complex screen configurations, a PC/laptop with the NovaLCT software is still necessary!

First of all, power up the controller and push the navigation/selection button to enter the menu. Navigate to **'Advanced Settings'** and push the button to enter the **'Advanced Settings'**.



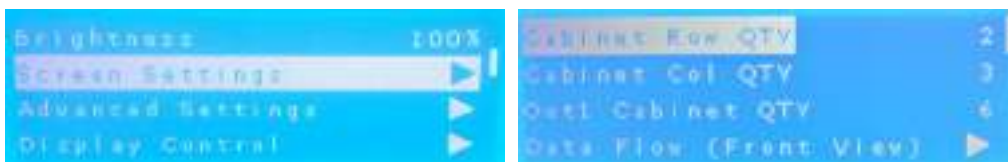
Navigate to **'EDID Resolution'** to select the sending card resolution and push the button. Push the button again and choose **'1920x1080'** from the options, confirm by pushing the button once again. After confirming, push the return button to return to the **'Advanced settings'**.



Navigate to **'Offset position'** and confirm. Set **'Horizontal Offset X'** and **'Vertical Offset Y'** to **'0'** to match the top left position of your video with the top left position of your screen.



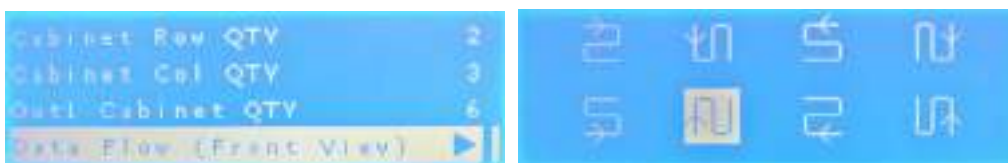
Push the return button twice to return to the main menu. To configure the amount of cabinets and their flow, navigate to **'Screen Settings'** and confirm by pushing the navigation/selection button. Set the amount of columns (vertical cabinets) and the amount of rows (horizontal cabinets). The screen in this example consists of 3 columns and 2 rows. Also set the total amount of cabinets, in this case 6.



The last step is to set the correct connecting mode (signal/data flow). To do this it's necessary to know the signal/data flow in between the cabinets, because you have to tell the software in what order the cabinets are connected. The example's signal/data flow starts with the bottom left cabinet and runs in a vertical flow to the top right cabinet.



Select the correct setting by navigating and selecting **'Data Flow (Front View)'**, choosing and confirming the second option from the bottom row.



Always start your signal/data flow in one of the corners of your screen and work in a horizontal or vertical flow (8 possible flows).



The connection mode setting in the software is front view. In other words, the flow when standing in front of the screen. This can be confusing since the cabinets are connected from the back, the flow is mirrored.

The configuration is now complete. In contrast to configuring the LED screen through the software, changes are stored immediately in the Novastar controller, there's no need to save. The video plays properly now.



## 03.2 Complex screen

Not all LED screen setups are a conventional rectangle, some setups are more complex. A complex screen is defined as a setup with cabinets in a random shape, not necessarily right next to each other.

To configure the controller for this kind of screen three things are important to keep in mind: the pixelmap of the video content, the signal/data flow in between the cabinets and how they are positioned to each other. In the example below the data flow and configuration of a complex 7-cabinet screen are explained step by step.

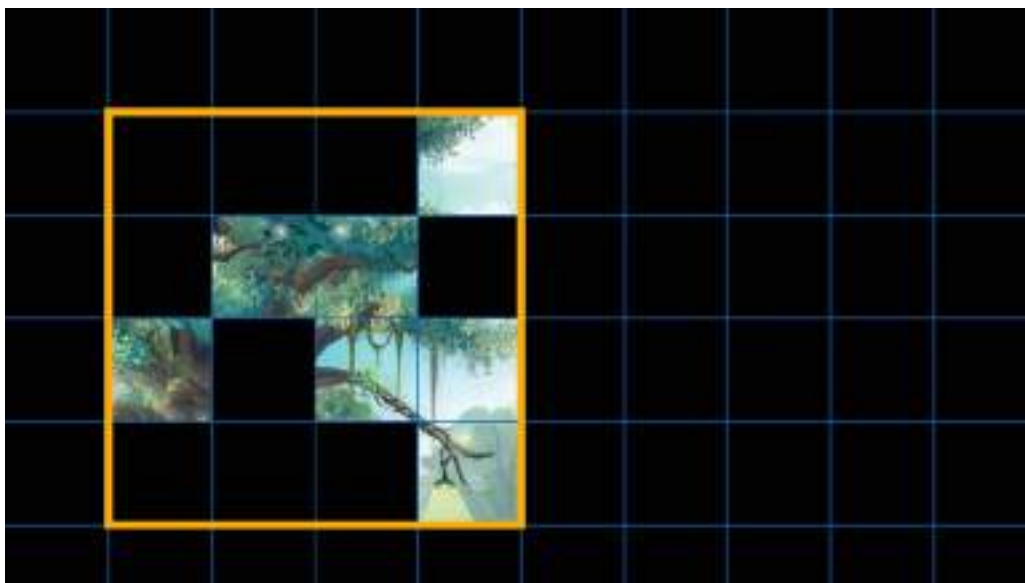


*Example of a complex screen (7 cabinets)*

### × Data flow of a complex screen

Providing the cabinets with data for a complex screen, works in the same way as for a simple screen. It's even more important to maintain the overview of the signal/data flow: also **start in one of the corners of the screen and always work in a horizontal or vertical flow**. Another very important aspect is the controller also counting the gaps in between the cabinets as 'taxed pixels'.

The controller is only able to count pixels within a rectangular shape, in other words: the controller draws a virtual four-sided shape around all cabinets. All pixels within this rectangle are taxed from the port's capacity. The rectangle is always as small as possible. Any other gaps in the pixelmap (here: border between left- and topside) are taxed from the controller's capacity, not the port's.



### *Virtual four-sided shape*

In this example it works as followed: when drawing a four-sided shape around the cabinets, this results in a rectangle of 4 by 4 cabinets. This means the controller will tax 16 cabinets from the port's capacity. Since the port's capacity for Hi-LED 55 2.5 is 17, this data flow is correct and all cabinets will work properly. If the result would be a 5 by 5 rectangle, the controller would tax 25 cabinets, which is too many. This data flow would not be correct and a part of the screen would stay black. The software gives you a warning when trying to send a configuration with a port overload.

When the maximum capacity for the first output is reached, provide a second data flow from the second output, again taking the rectangular shape and the port's maximum capacity into account. This can be repeated for all remaining output ports, if available. This way the complex screen gets divided into rectangles. The more outputs the controller has, the more wiggle room you have to fit your complex screen within the controller's maximum capacity.

## ✕ Configuration of a complex screen

The configuration of a complex screen is the same for all types of controller (and all other Novastar controllers). A Windows PC/laptop with NovaLCT software is required.

Power up the controller, connect it to the computer and open the NovaLCT software. Make sure a successful connection is established between the computer and the controller before you start configuring. Login to the software and open the Screen Configuration window. Select the first tab and set the sending card resolution and refresh rate.



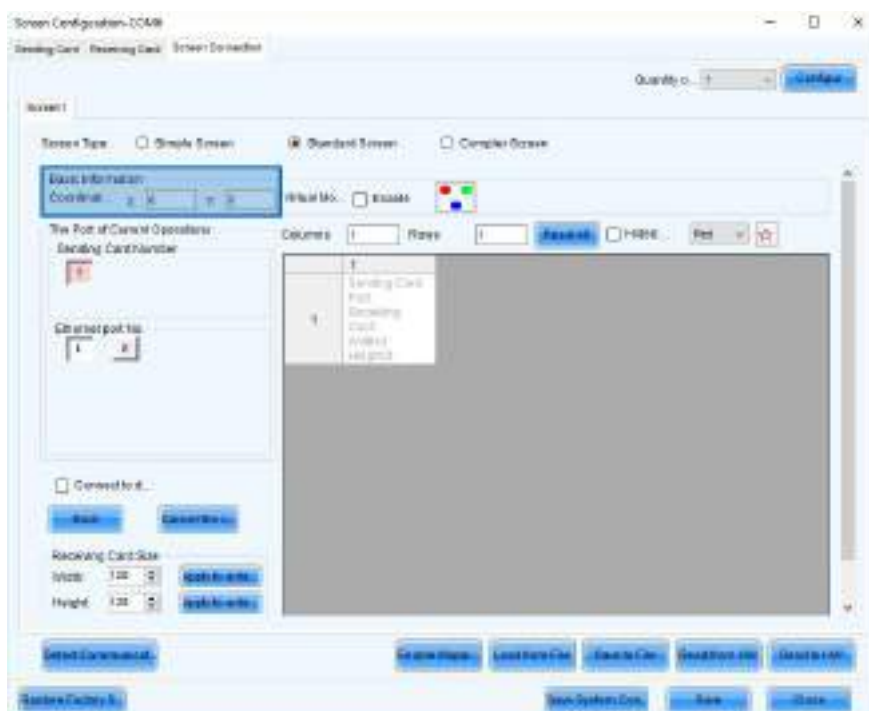
Installing and logging into the software, connecting the computer, opening the screen configuration window and setting the resolution and refresh rate are described in more detail in chapter 'Simple screen – MCTRL300 controller setup'.

Select the third tab: 'Screen Connection' and select the second screen type option: 'Standard Screen'.



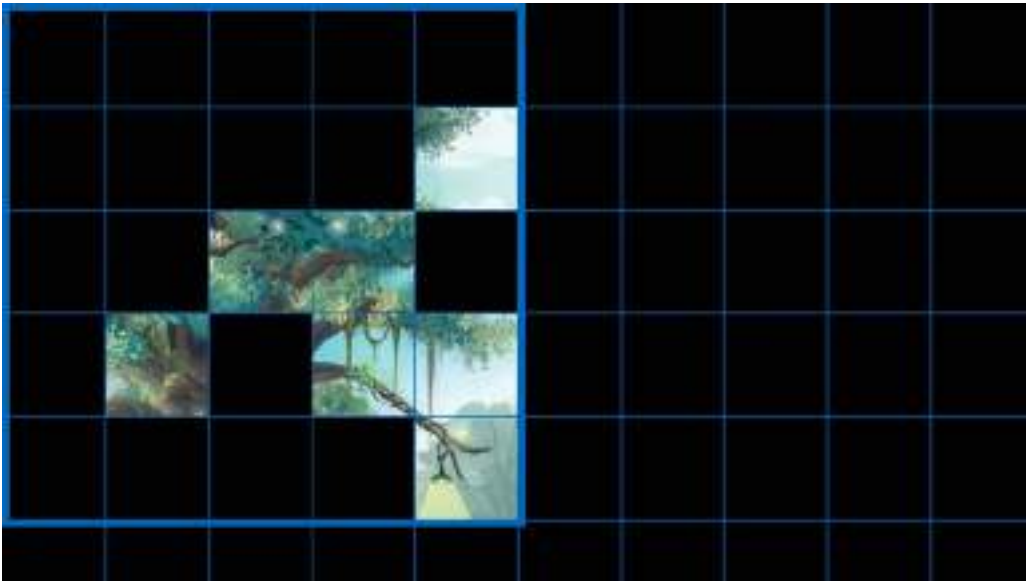
Screen type options 'Standard Screen' and 'Complex Screen' are similar to each other and can both be used to configure a complex LED screen. This example will make use of screen type option 'Standard Screen'. Attention: this is still a complex screen. The screen type option 'Complex Screen' will be handled later on.

Below the screen type selection you can find the coordinates. This refers to the position in the video matching the top left position of your screen. By default 'X' and 'Y' are both '0'. Do not change this unless you don't want to match the top left position of your video with the top left position of your screen.



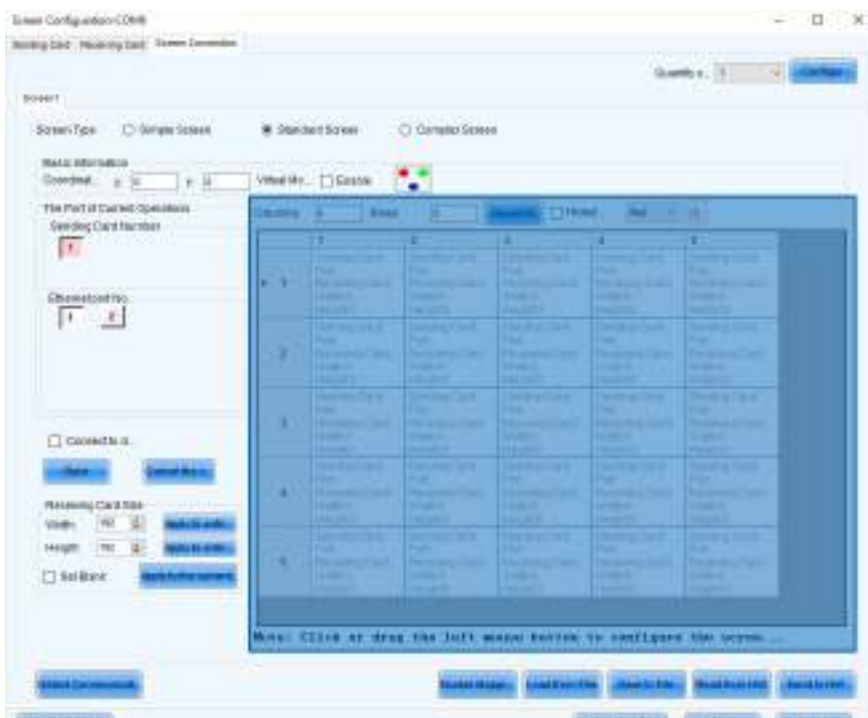
Set the amount of columns and rows. In a simple screen setup this equals the amount of vertical and horizontal cabinets. But in a complex screen setup, the gaps also have to be taken into account, use a grid to make the gaps more visual (see chapter 'Video file'). If your video content was created properly, each gap has the same resolution as a cabinet and can be represented by a blank cabinet.

Start counting the squares, representing either a cabinet or a gap (blank cabinet), from the top left. We need 5 columns and 5 rows to be able to show all the video content.



*Pixelmap complex screen*

Fill in the appropriate boxes in the software. 5 columns and 5 rows are created, but all of them are still empty, in other words, the cabinets aren't assigned to the correct positions yet. That's what's need to be done next.



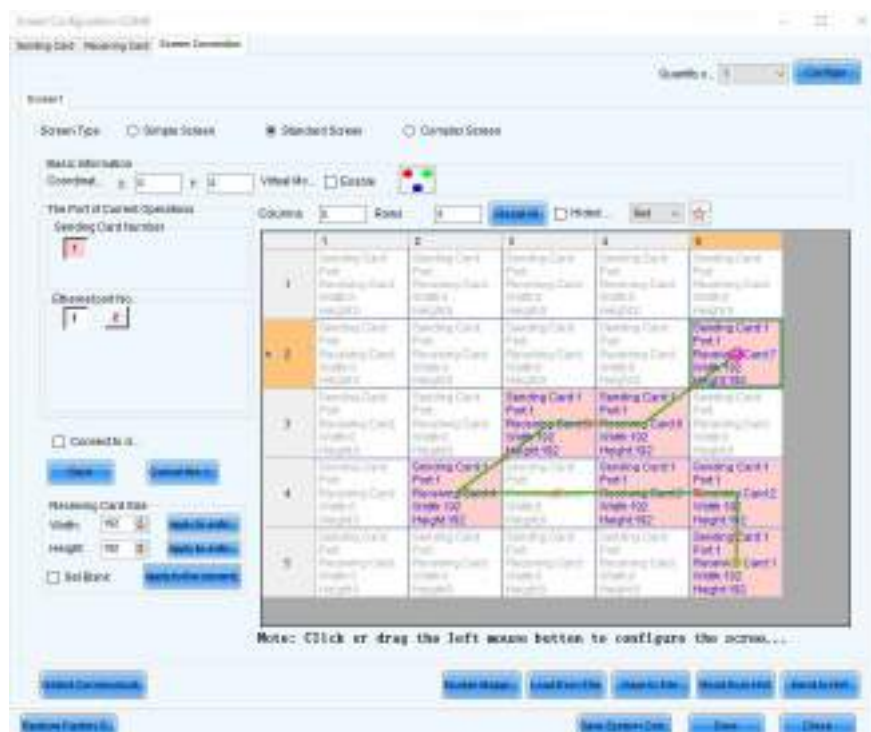
Before assigning the cabinets, set the **'Receiving Card Size'**. This refers to the amount of pixels in one cabinet. When using Hi-LED 55 2.8, this is 176 x 176 pixels. When using Hi-LED 55 2.5, this is 192 x 192 pixels.

To assign the cabinets to the correct position, it's necessary to know the physical signal/data flow in between the cabinets, because you have to tell the software in what order the cabinets are connected.

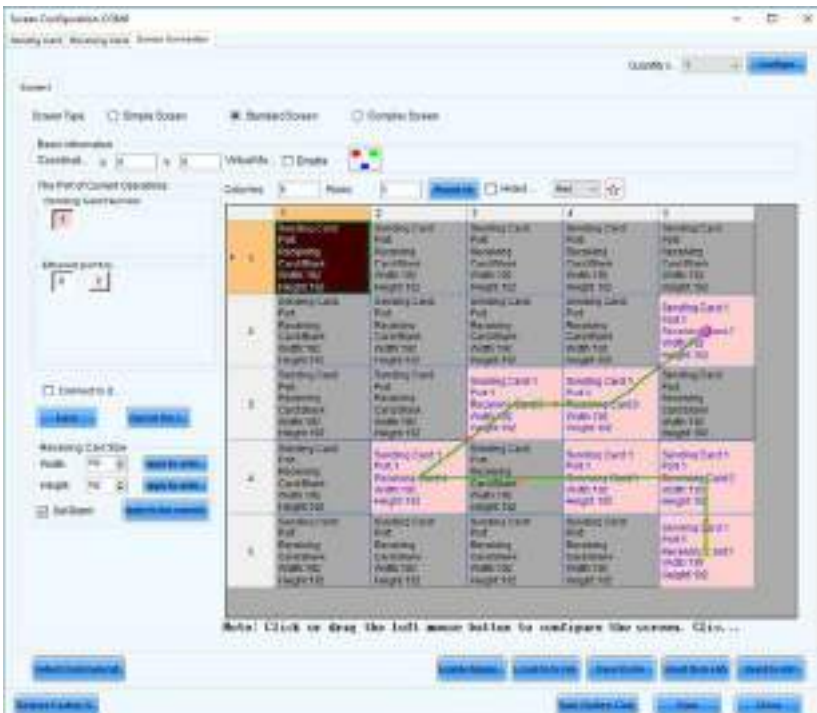
In the example below the signal/data flow starts with the bottom right cabinet and runs in a horizontal flow to the top right cabinet. The blue line and arrows represent the direction of the cabling.



Accordingly to this flow and the video's pixemap, assign the cabinets by clicking the correct position one by one, starting with the bottom right position (first cabinet in the flow). The green line that appears represents the signal/data flow.



All cabinets are now assigned to the correct position. Next, we have to tell the software that the gaps in between the cabinets have the same resolution as the cabinets. You can do this by setting the positions without video to blank. In other words, assigning an imaginary cabinet to the positions that are black in de video's pixemap. Click the top left position and select the box **'Set Blank'**. Proceed by clicking all empty positions.



Maintain the overview of your signal/data flow: start in one of the corners of your screen and work in a horizontal or vertical flow.



The software is front view. In other words, it represents the flow when standing in front of the screen. This can be confusing. Since the cabinets are connected from the back, the flow is mirrored.

The configuration is now complete, the only thing that's left is sending this configuration to the controller and save it. Click **'Send to HW'** and click **'Save'**. The video plays properly now.

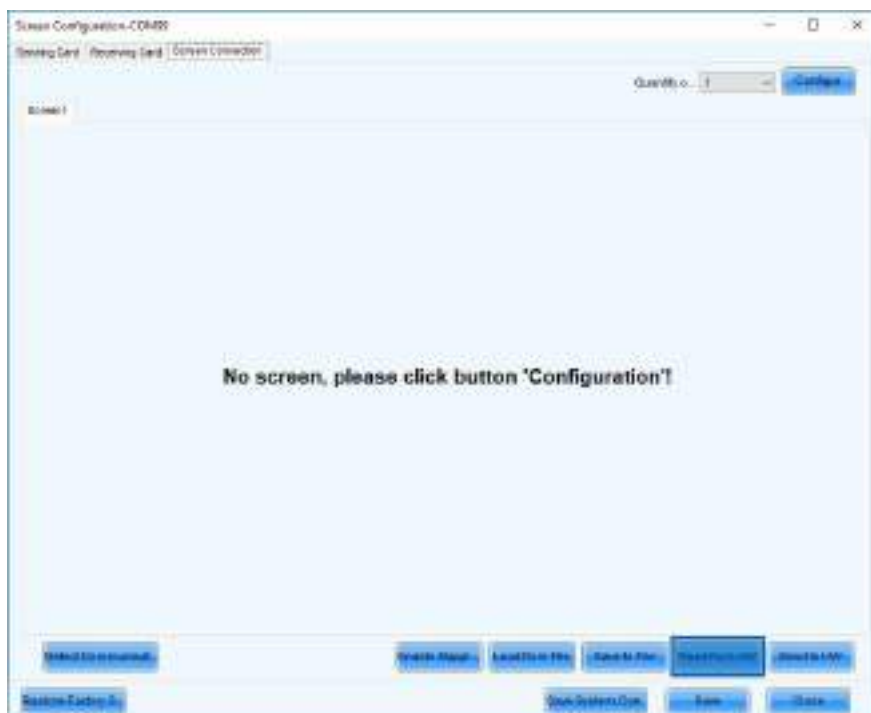
You can also save this configuration to a file by clicking **'Save to File'**, to use again for future projects.



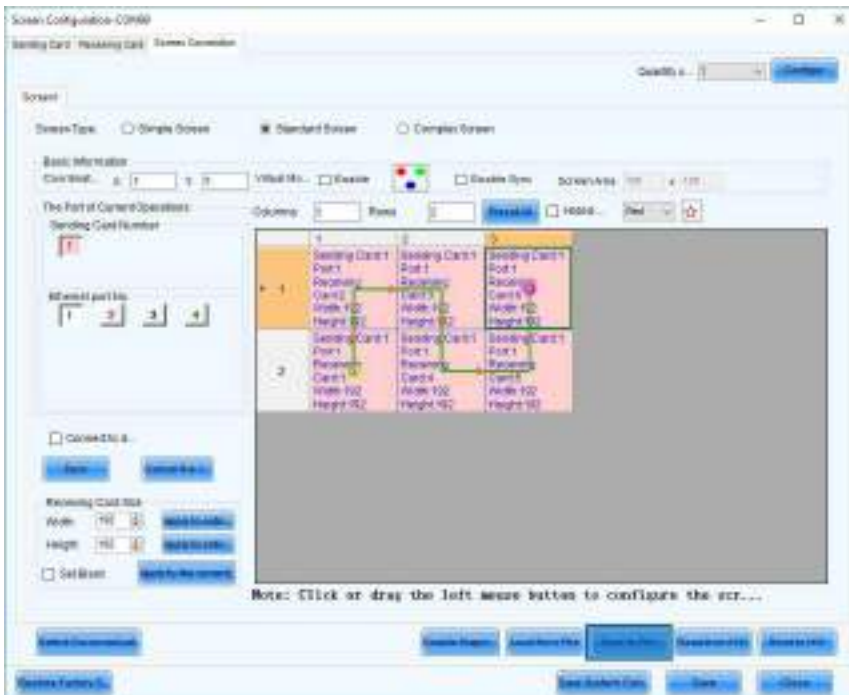
### 03.3 Save and load configuration

When a setup configuration is saved, it's stored inside the controllers memory and will stay saved until it gets overwritten. For this reason it is possible to configure a setup and rebuild this setup at a different location without having to configure the setup again. Very important here is to maintain the same data flow, otherwise reconfiguration will be necessary! The power flow isn't influenced by the configuration.

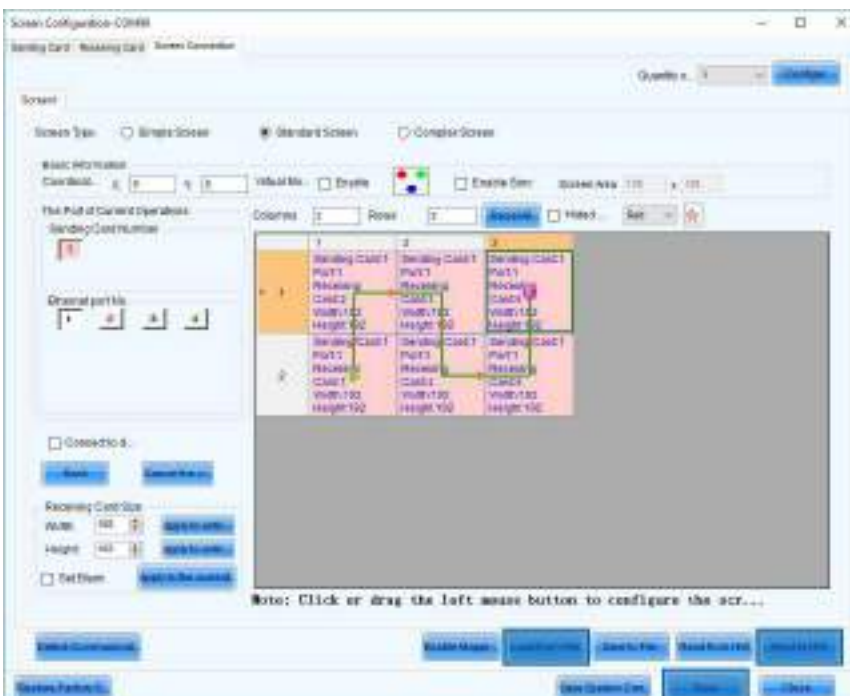
After connecting a configured controller to a computer and opening the 'NovaLCT' software, the software will load and show the existing configuration automatically. In case the software was started before connecting the controller to a computer, choose '**Read from HW**', to load the saved configuration from the controller to the software.



It's also possible to save a setup configuration to a file. This way it's possible to retain a configuration, even if it was overwritten. Saving can be done by choosing '**Save to File**'.



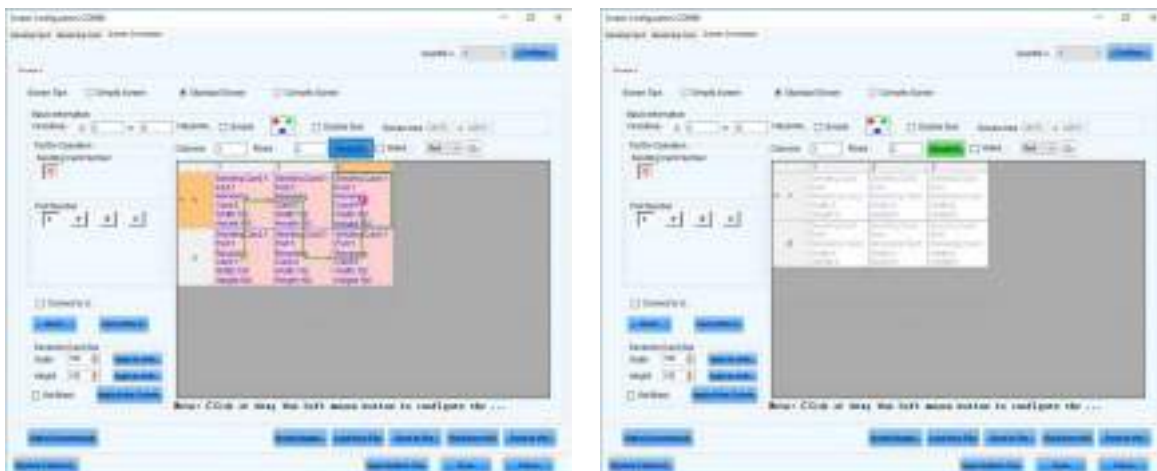
Click **'Load from File'** to load the configuration back to the software. Do not forget to also choose **'Send to HW'** and **'Save'** to store the configuration in the controller again. Remember to maintain the correct data flow according the configuration.



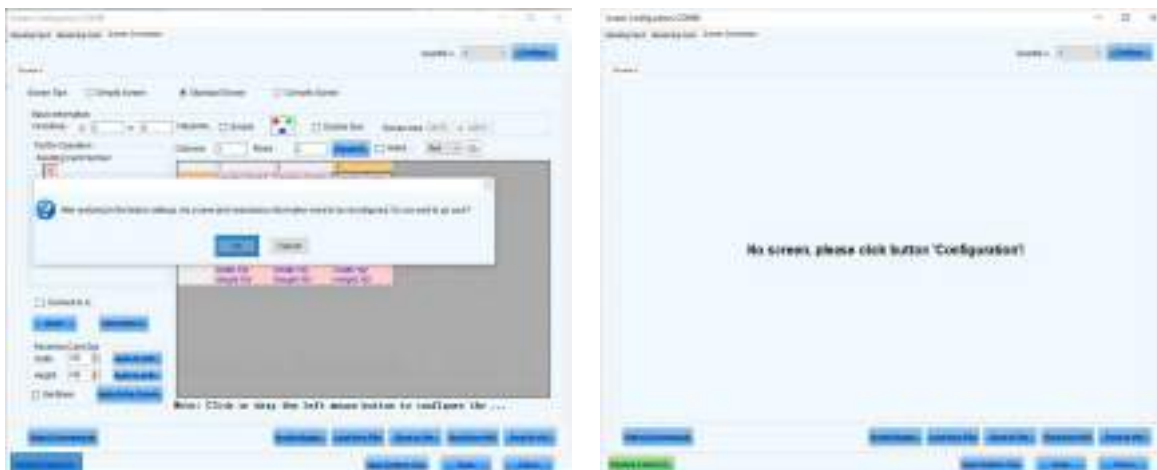


### 03.4 Remove configuration

As already mentioned in the previous chapter, the NovalCT software will load the present configuration from the controller when started. To remove the configuration and start again from scratch (as with a new controller), click the 'Restore Factory Settings' button. Choose 'OK' in the pop-up box. All configured screens will be removed and also the original 'Sending Card' settings will be restored.



It's also possible to remove the data flow for a screen without removing any other settings. This situation arises for instance when the screen setup remains the same, but the wiring is done differently or when a mistake was made and the data flow has to be reconfigured. To do this, click the 'Reset All' button; all assigned cabinets for this screen become clear again, but any other settings (columns & rows, other screens, receiving card size...) remain.



Click the first cabinet in the data flow (bottom left), next click the second cabinet (top left) and continue by clicking all other cabinets in the setup following the vertical flow. The sixth and last should be the top right cabinet. Instead of clicking, dragging from one cabinet to the other is another possibility. To cancel the assignment, right-click the cabinet.

## 03.5 Other options

In the previous examples you've seen how to configure the cabinets using a specific screen type option: **'Simple'** mode or **'Standard'** mode. But depending on your setup it's also possible to configure the cabinets in another mode, or another mode can be required for your setup. The following examples show how to do this step by step. There's also a third screen type option **'Complex'** and even other software to try out: **'SmartLCT'**.

The configuration of the following examples are the same for both types of controller (and all other Novastar controllers). The first steps are the same every time and will not be repeated for each setup. Always start by following next steps: Power up the controller, connect it to the computer and open the NovaLCT software. Make sure a successful connection is established between the computer and the controller before you start configuring. Login to the software and open the **'Screen Configuration'** window. Select the first tab and set the **'Sending card resolution'** and **'Refresh rate'**.



Installing and logging into the software, connecting the computer, opening the screen configuration window and setting the resolution/refresh rate are described more detail in chapter **'Simple screen – MCTRL300 controller setup'**.

### × Simple screen setup in **'Standard'** mode

Configuring a simple screen can be done in **'Simple'** mode and using a MCTRL660 controller you don't even need a computer. But following the same logic as for a complex screen, configuration can also be done in **'Standard'** screen type mode. How to do this is described below. The same simple screen setup example as before is used:

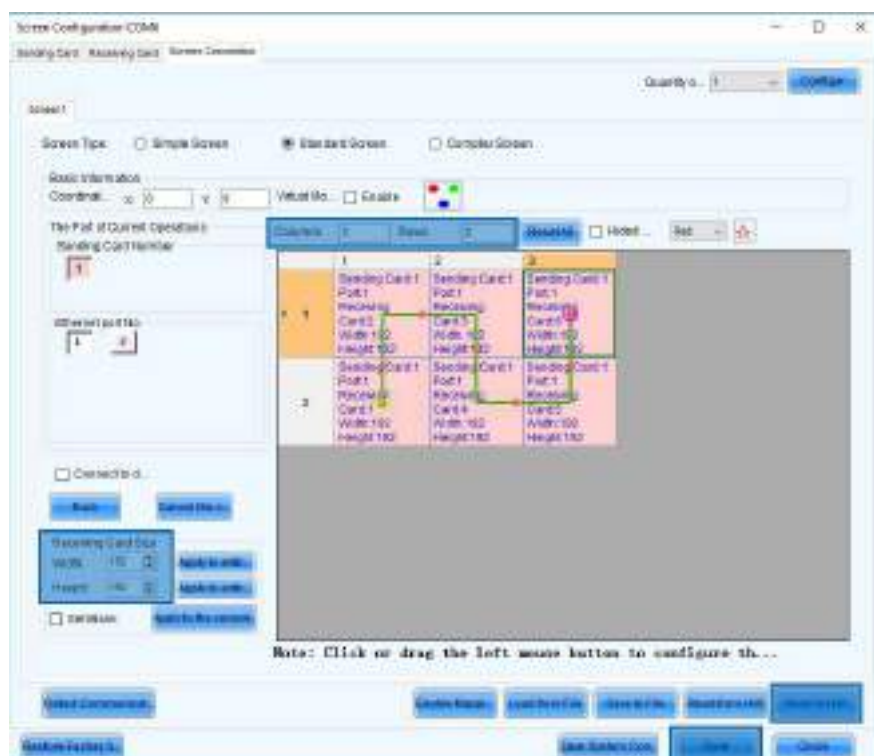


In the **'Screen Configuration'** window select the third tab: **'Screen Connection'** and select the second screen type option: **'Standard Screen'**.

Set the following data:

- **Columns:** 3, **Rows:** 2
- **Receiving Card Size:** 176 x 176 pixels (Hi-LED 55 2.8) or 192 x 192 pixels (Hi-LED 55 2.5)

Click the first cabinet in the signal/data flow (bottom left), next click the second cabinet (top left) and continue by clicking all other cabinets in the setup following the vertical flow. The sixth and last should be the top right cabinet.



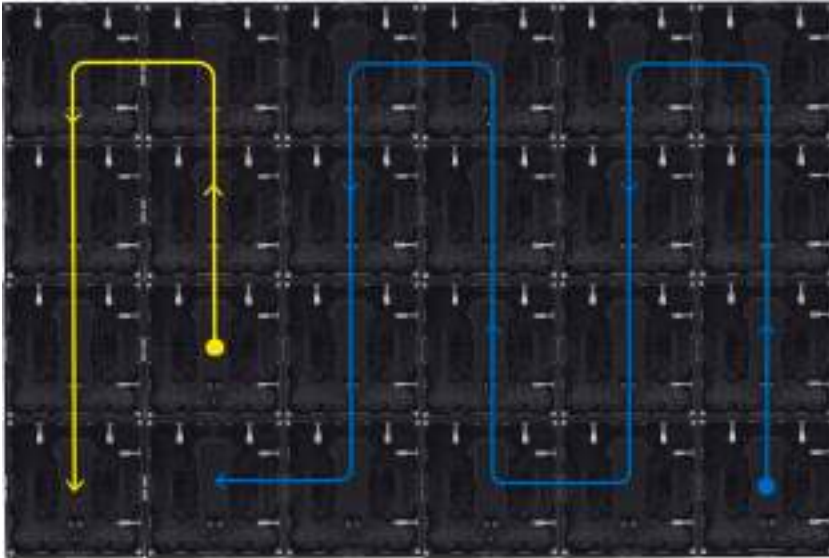
Send the configuration to the controller and save it by clicking ‘**Send to HW**’ and ‘**Save**’. The video plays properly now.

## ✕ Multiple data port outputs

As already mentioned, a controller's data port/output has a maximum amount of pixels to control. This results in a maximum amount of cabinets in 1 signal/data flow. When the amount of cabinets in the screen setup exceeds this maximum amount, you will have to divide the cabinets in your setup between multiple data port outputs. How to do this is described below.

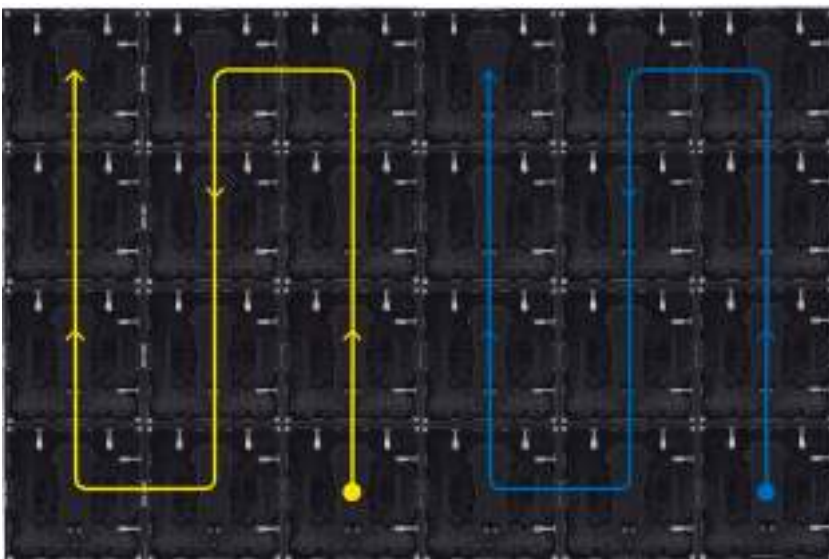
In this example a LED screen setup of 24 cabinets (6 wide, 4 high) is assumed, controlled by a Novastar MCTRL300 controller. Using Hi-LED 55 2.5 cabinets, this results in a maximum amount of 17 cabinets in one signal/data flow or in other words 17 cabinets for each data output (Hi-LED 55 2.8 = 20 cabinets). Check chapter ‘**Novastar controllers**’ for more detailed information about these numbers.

Linking up all 24 cabinets in 1 signal/data flow results in an overload error and that's why not all cabinets will work properly. Therefore it's necessary to have a second signal/data flow connected to the second data output port. The first output connects with the first 17 cabinets (flow 1), the second output connects with the last 7 cabinets (flow 2). This means there's no interlink cable between cabinet 17 and cabinet 18. Cabinet 18 is the first cabinet in flow 2 and is connected directly to the second output of the controller.



*Backview 6 x 4 screen:  
Output 1 = flow 1 (blue) = 17  
cabinets, output 2 = flow 2  
(yellow) = 7 cabinets*

To make it even easier on yourself, just work in 2 signal/data flows of 12 cabinets each.



*Backview 6 x 4 screen:  
Output 1 = flow 1 (blue) = 12  
cabinets, output 2 = flow 2  
(yellow) = 12 cabinets*



*MCTRL300 controller with 2 data flows:  
Output 1 = flow 1 (blue), output 2 = flow 2 (yellow)*



It's not possible to have more data flows than available data output ports. Novastar MCTRL 300 controller only has 2 outputs, so a maximum of 2 data flows is possible to configure. If you need more outputs to provide all your cabinets of data, switch to a controller with more data output ports.



Data output port 1 controls data flow 1, data output port 2 controls data flow 2.



The data flow in the software should always match the actual data flow of the cabinets.



Attention: software is front view!

Configuring a screen using multiple data output ports can be done using the NovaLCT software, but is also possible without (Novastar MCTRL660 or up).

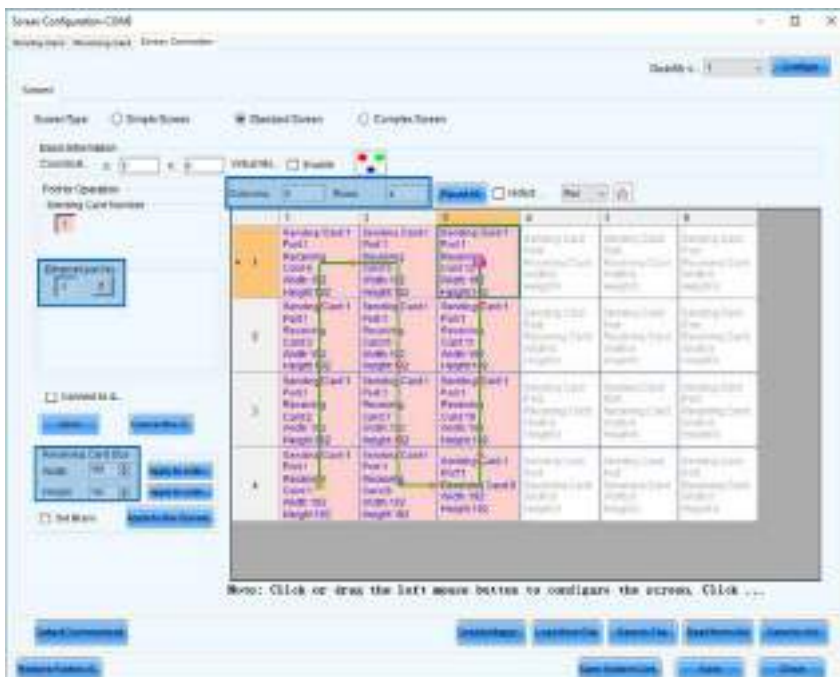
To configure the screen using the software, first open NovaLCT. In the **'Screen Configuration'** window select the third tab: **'Screen Connection'** and select the second screen type option: **'Standard Screen'**.

Set the following data:

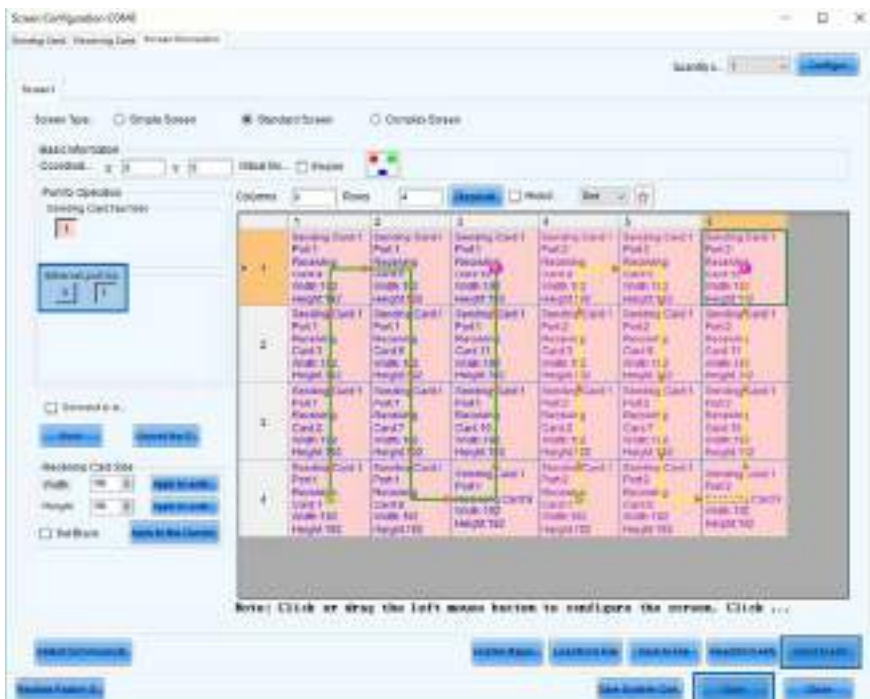
- **Columns:** 6, Rows: 4
- **Receiving Card Size:** 192 x 192 pixels (since we're using Hi-LED 55 2.5)

On the left side of the **'Screen Configuration'** window you can choose which signal/data flow you want to configure (**'Ethernet port No'**). The software automatically shows the correct amount of available data output ports corresponding to the connected controller. The first data output port is automatically selected.

With the first output selected, click the first cabinet from the first signal/data flow (bottom left, front view), next click the cabinet above and continue by clicking all other cabinets in this flow (12) in a vertical way.



Select the second output (**'Ethernet port No: 2'**) and click the first cabinet from the second signal/data flow (bottom, 4<sup>th</sup> from the left). Next click the cabinet above and continue by clicking all other cabinets in this flow (12) in a vertical way.



Send the configuration to the controller and save it by clicking '**Send to HW**' and '**Save**'. The video plays properly now.

When configuring a multiple data output screen, without using the software (controller setup), you have to take some precautions into account; all outputs, except for the last one, should have the same amount of cabinets. This amount should be a multiple of the number of horizontal or vertical cabinets in the screen. The last output should have a smaller or equal amount of cabinets than the others. Also, very important is to have the same data flow for all outputs.

Now use the controller's interface to set the amount of horizontal and vertical cabinets. Also set the total amount of cabinets for output 1 and choose the correct data flow. The screen should play the video properly now.

## × Full HD screen setup

To build a Full HD screen (1920 x 1080px), calculate how many cabinets are required to fit a Full HD video. The calculation depends on what type of Hi-LEDs are used. Divide the Full HD video width/height by the cabinet width/height. The result is the amount of horizontal/vertical cabinets that fit in a Full HD format, logically these should be rounded numbers. Always round them down to fit within the Full HD format, rounding them up would result in an amount of cabinets which exceeds this format. In this case, parts of the screen would stay black without scaling up the video. Scaling up a Full HD video also requires hardware that supports bigger formats.

### Hi-LED 2.8

- Horizontal cabinets: 1920px (screen width) divided by 176px (cabinet width) is  $10,9 = 10$
- Vertical cabinets: 1080px (screen height) divided by 176px (cabinet height) is  $6,1 = 6$
- The Hi-LED screen should be 10 cabinets wide and 6 cabinets high

### Hi-LED 2.5

- Horizontal cabinets: 1920px (screen width) divided by 192px (cabinet width) is  $10$
- Vertical cabinets: 1080px (screen height) divided by 192px (cabinet height) is  $5,6 = 5$
- The Hi-LED screen should be 10 cabinets wide and 5 cabinets high

As seen in the calculations above, the screen will not match the Full HD video perfectly. Therefore the video needs to be slightly scaled to fit the screen. Scaling can be done in 2 ways: matching the width or matching the height.

### Hi-LED 2.8 (10 x 6 cabinets)

- Video width matches screen width: black banding at top and bottom of the screen.
- Video height matches screen height: video is full screen, but some of the video is lost at the left and right of the screen.

### Hi-LED 2.5 (10 x 5 cabinets)

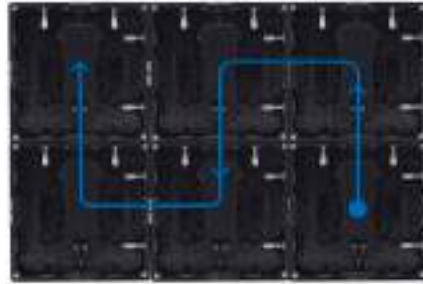
- Video width matches screen width: video is full screen, but some of the video is lost at top and bottom of the screen.
- Video height matches screen height: black banding at left and right of the screen.

Either way the video is scaled, you will have to choose between losing a part of the video (full screen) or showing the full video (black banding, not full screen). In other words the screen is not Full HD, but it supports Full HD playback. If you would build a bigger screen, it's even possible to play 4K content (3840 x 2160px). Make similar calculation as above to know how many cabinets are needed for a 4K screen setup.

To build a Hi-LED screen that's able to play a Full HD video (1920 x 1080px), calculate how many cabinets are needed to fit the video. This calculation depends on what type of Hi-LED's are used.

## × Multiple screens

Another possibility is having multiple screens in your setup. In this case 2 or more screens are combined in 1 configuration. Also the video's that should play back are combined in 1 file. Again multiple data output ports will be used so the workflow stays more or less the same as for the previous chapter.



### *Backview multiple screen setup:*

*Screen 1 = Output 1 = flow 1 (blue)*

*Screen 2 = output 2 = flow 2 (yellow)*



### *MCTRL300 controller with 2 screens:*

*Output 1 = screen 1 (blue),*

*output 2 = screen 2 (yellow)*

In this example a setup with 2 screens is assumed, controlled by a Novastar MCTRL300 controller. The first screen is 3 cabinets wide and 2 high, the second screen is 2 cabinets wide and 5 high. There are 16 cabinets in total, so 1 signal/data flow would be sufficient. But since there are 2 screens it's more logical and more clear to work with 2 data flows. Also 2 data output ports will be used.

Prepare the video content as described in the **'Video File'** chapter. Important to keep in mind is the amount of pixels your screens consist of. Combine both screens in 1 video, make use of a gap the size of 1 cabinet in between the screens. The video should look like this:



Follow next steps to configure the screen: open the NovaLCT software. In the **'Screen Configuration'** window select the third tab: **'Screen Connection'** and select the second screen type option: **'Standard Screen'**.



The first option is to combine both screens in 1 setup. To do this, set the following data:

- **Columns:** 6, Rows: 5
- **Receiving Card Size:** 192 x 192 pixels (Hi-LED 55 2.5)

With the first output selected, click the first cabinet from screen 1 (bottom left, front view), next click the cabinet above and continue by clicking all other cabinets from screen 1 in a vertical flow. The sixth and last should be the top right cabinet from screen 1.



Select the second output (**'Ethernet port No: 2'**) and click the first cabinet from screen 2 (bottom left, front view). Next click the cabinet above and continue by clicking all other cabinets in this flow in a vertical flow. The tenth and last should be the top right cabinet from screen 2. Since there's a gap in the video in between the screens, don't forget to set all remaining cabinets in the software to blank. You can see a resolution of 192 x 192 pixels is assigned to those cabinets.



It's also possible to place both video's next to each other, without a gap. If that's the case don't set the remaining cabinets in the configuration to blank, but leave them as they are. The software interprets them as cabinets without a width or height (0 x 0 pixels). You can also just remove the extra column and have no gap inbetween both screens. These options both give the same result.

Send the configuration to the controller and save it by clicking **'Send to HW'** and **'Save'**. The video plays properly now.

The second option is to configure both screens in 2 setups. Therefore, first select the quantity of screens you want to configure, in this example. Click **'Configure'** to confirm this number. 2 screen tabs appear on top of the screen configuration window. Select the first tab **'Screen 1'**. With the first output selected (Ethernet port No. 1), configure data flow 1 (Columns: 3, Rows: 2). Please note that the coordinates are both '0'.



Now select the second tab **'Screen 2'**. With the second output selected (Ethernet port No. 2), configure data flow 2 (Columns: 2, Rows: 5). Since the video for screen 2 doesn't start in the top left corner, it's necessary to set the correct coordinates. Based on the video's pixelmap we can define that the video for screen 2 starts 4 cabinets from the left and 0 cabinets from the top. This results in the following coordinates:  $X = 4 * 192 = 768, Y = 0$ . Fill in these coordinates in the corresponding boxes.

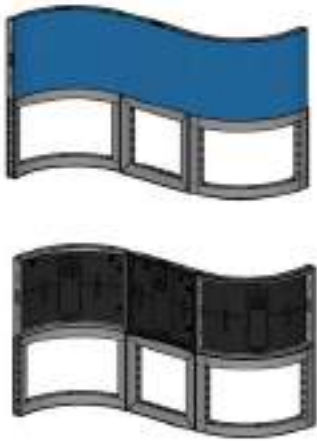


Send the configuration to the controller and save it by clicking **'Send to HW'** and **'Save'**. The video plays properly now.

## × Setup with curved Hi-LED tiles

The workflow of preparing and configuring a setup including curved Hi-LED tiles is nothing different from a setup with only flat tiles. The only extra thing to keep in mind is the resolution (width & height in pixels). Since Hi-LED cabinets with different resolutions are present in 1 setup, it's not possible to configure the screen using only the controller (no software) nor in 'simple screen mode' in NovaLCT.

A basic display (1 Hi-LED concave + 1 flat Hi-LED + 1 Hi-LED convex) is used here as an example:



Prepare the video content as described in the **'Video file'** chapter. Important to keep in mind is the amount of pixels your screens consist of. Calculate the width and height by adding the widths and heights of the cabinets in the setup.

- Width = 266 + 192 + 300 = 758 pixels
- Height = 192 pixels

This is how the video file for this setup should look like:



Follow next steps to configure the screen: open the NovaLCT software. In the **'Screen Configuration'** window select the third tab: **'Screen Connection'** and select the second screen type option: **'Standard Screen'**.

Set the amount of columns (3) and rows (1) and also set the **'Receiving Card Size'** (resolution) of the first cabinet in the data flow. In this example the data flow runs from left to right, meaning the first cabinet is an inner curve, the width is 266 pixels, the height 192 pixels. Assign this resolution to the first cabinet from the left by clicking it.



Next, click the second cabinet. It also gets assigned with the resolution that was set, but since the second cabinet is a flat Hi-LED, the width should be adapted to 192 pixels. Click the third and last cabinet, again it gets assigned with the resolution already set (192 x 192). To change this, adapt the width to 300 pixels with the cabinet still selected.

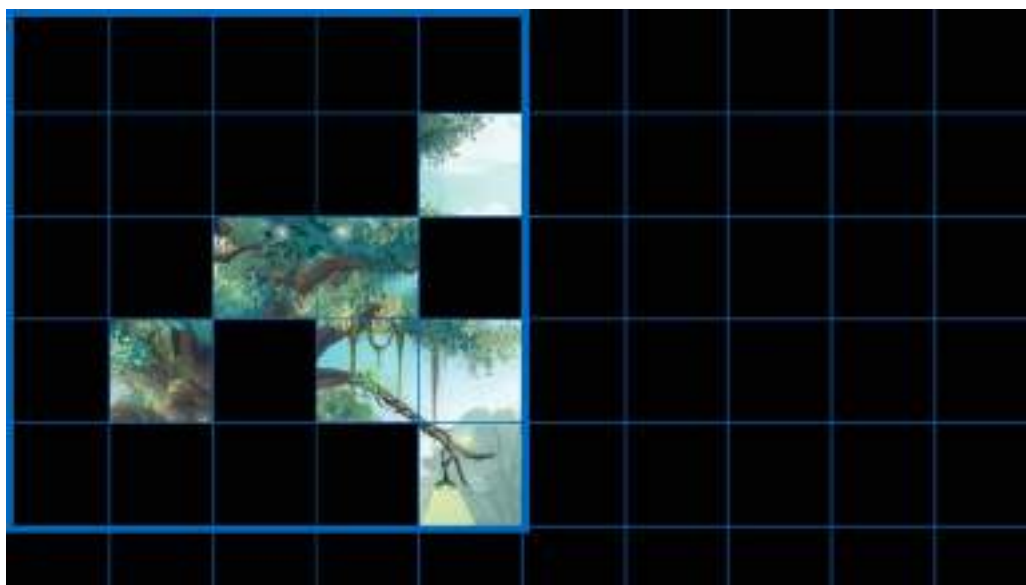


Send the configuration to the controller and save it by clicking **'Send to HW'** and **'Save'**. The video plays properly now.

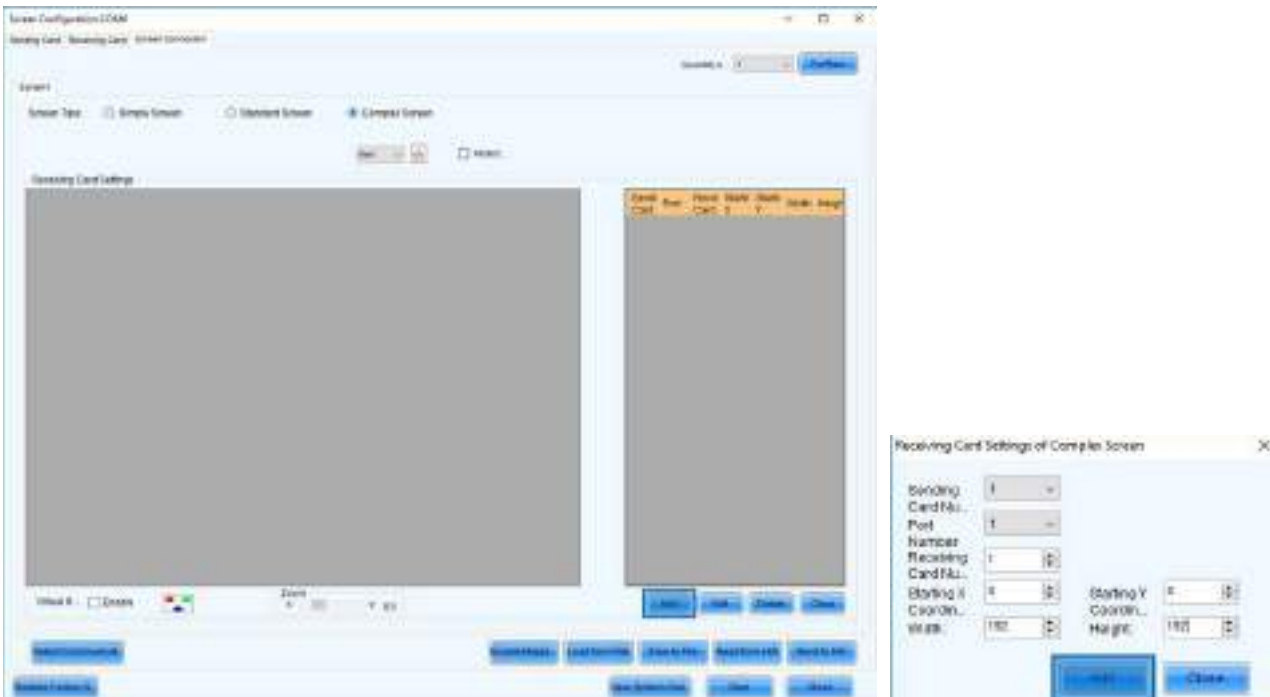
## × 'Complex' mode

In the Screen Configuration window a third screen type option is present: **'Complex Screen'**. Configuring a screen in this mode is very similar to configuring in the **'Standard Screen'** mode. The only difference is having to add the cabinets one by one and having to determine the cabinet positions manually. There's no difference between both modes in what kind of setup you can configure. Since all setups can be configured in both modes, it's up to you to decide which one to use.

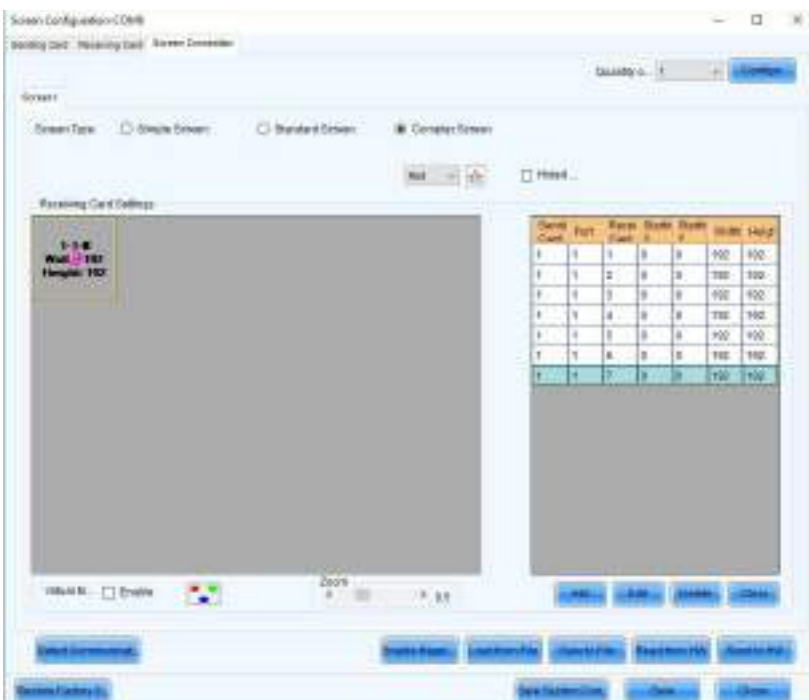
Follow the steps below to find out how to configure a setup in **'Complex Screen'** mode. We'll use the same setup as used for the 'Standard Screen' configuration mode. Also keep in mind the same pixelmap and signal/data flow.



Open the NovaLCT software. In the **'Screen Configuration'** window select the third tab: **'Screen Connection'** and select the third screen type option: **'Complex Screen'**. Click the **'Add'** button to start adding cabinets to the setup. A pop-up box shows up.



Set the cabinet width and height to 192 pixels (Hi-LED 55 2.5) or 176 pixels (Hi-LED 55 2.8). Next, click the **'Add'** button from the pop-up box. You can see an item is added in the panel on the right and in the left panel a cabinet appears. Click the **'Add'** button 6 more times. 7 cabinets are now added to the configuration. Notice that the receiving card number increases for each cabinet. Close the pop-up box.



Next, set the correct position for each cabinet in the list. The X & Y value represents the top left corner of a cabinet. Select the first item in the list (receiving card number 1) and start by setting the position for the first cabinet in your signal/data flow. In this example this is the cabinet on the bottom right. Select the second item in the list and set the position for the second cabinet in the flow. The order of cabinets (receiving card number) determines the data flow. Respecting this flow, set the position for all cabinets.


Follow the pixelmap to calculate the position of each cabinet. The distance between the first cabinet in the flow and the left border of the video is 4 cabinets. Therefore, the X value equals 768 (4 times 192). This distance to the top border of the video is also 4 cabinets, so the Y value equals 768. The X value of the last cabinet in the signal/data flow equals 768 (4 cabinets to left border) and the Y value equals 192 (1 cabinet to top border).



Send the configuration to the controller and save it by clicking 'Send to HW' and 'Save'. The video plays properly now.

## ✕ SmartLCT

Novastar also offers a second type of configuration software: SmartLCT. This software has a complete new interface, but doesn't have all the options NovaLCT has. Calibration and flashing the modules for instance are not supported by SmartLCT. However, the software looks modern, is very user friendly and can be used as an alternative, more simplified way to configure LED cabinets. Uptill now not all Novastar controllers are supported yet, but the most common ones (MCTRL300, MCTRL660 (Pro) & MCTRL4K) are.


**SmartLCT can be downloaded from the Novastar website:**  
<https://www.novastar.tech/download>.

How to use this software will be added to this manual later on.

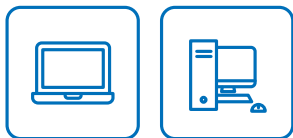


## × Novastar website

Visit the Novastar website -[novastar.tech](http://novastar.tech)- to retrieve extra and more detailed information on their products (controllers, sending and receiving cards, calibration...). Also a lot of files are available for download: user manuals, product specifications, firmware, software... In addition, they offer support and trainings for their products.



### 0.3.5 Laptop/PC



A **Windows system laptop or PC** is required for LED display configuration using an MCTRL300 controller and also for a complex configuration using an MCTRL660. Basic configuration for an MCTRL660 controller can be done with the device itself.

As already mentioned in the 'hardware' part of this manual. A laptop/PC can also be used as a media player. Depending on if you prepared a pixel-to-pixel video or not, choose the correct instructions and follow the steps:

#### Pixel to pixel video:

1. Connect the computer to the controller with a DVI or HDMI cable
2. Open the computer's '**Screen Configuration**' settings
3. The LED screen should be recognized as a second screen
4. Set the second screen as a duplicate of the first one
5. If possible set the '**Screen Resolution**' to '**1920 x 1080px**', otherwise keep the recommended setting or choose at least a resolution with a 16:9 ratio.
6. (A part of) the computer screen is shown on the LED screen (starting from the top left)
7. Play the pixel to pixel video in full screen mode
8. If necessary, move the video to the correct position using the coordinates function in the NovaLCT software or the controller (first connect PC with controller using an USB cable)



### Standard video:

1. Connect the computer to the controller with a DVI or HDMI cable
2. Connect the computer to the controller with an USB cable
3. Open the NovaLCT software
4. In the **'Screen Configuration'** window, select the first tab: **'Sending Card'**
5. Check the **'Custom resolution'** box
6. Calculate and fill in the LED screen resolution ( $176/192 * \text{\#horizontal cabinets} = \text{width}$ ,  $176/192 * \text{\#vertical cabinets} = \text{height}$ )
7. Set and save these changes
8. Open the computer's **'Screen Configuration'** settings
9. The LED screen should be recognized as a second screen
10. Set the second screen as an extension of the first one
11. The **'Screen Resolution'** for the second screen should automatically match the resolution of the LED screen (step 6)
12. From the second screen, play the video in full screen mode
13. Use settings from the media player software (standard media player PC/MAC, VLC, PotPlayer...) to choose how to scale (fill or remain proportions)



Since scaling is done by the computer's graphics card, using this workflow will only work properly within the restrictions of the graphics card. This is different for every computer. Trying to use an unsupported resolution will result in the LED screen staying black.

# 04

## Hi-LED 55 configuration

### 04.1 Factory settings

When using the Hi-LED cabinets in different setups and projects, the cabinet settings get changed and can differ from each other after a while. When using those cabinets together again, it's possible there's a difference in colour or brightness between the cabinets. To match the colour and brightness settings again, you can perform a factory reset for one or more cabinets.

The factory settings are stored in a **configuration file (root file)**. Important to keep in mind is the batch number of your Hi-LED 55 cabinets, because **the configuration file is batch dependent**. Therefore performing a factory reset for multiple cabinets is only possible if those cabinets are from the same batch. Otherwise, wrong data will be sent to the cabinets causing errors.



The configuration files (.rfcgx) for all batches can be downloaded from the Aluvision website: [www.aluvision.com/en/products/downloads](http://www.aluvision.com/en/products/downloads).

To perform a factory reset you'll need the same setup as for configuring a screen.

A Windows PC/laptop with NovaLCT software is required. The software doesn't run on Macintosh.

Connect your PC/laptop to the controller using a USB cable and power up the controller.



Open the NovaLCT software. This software is used to configure the cabinets.



The software installation file can be downloaded from the Aluvision website: [www.aluvision.com/en/products/downloads](http://www.aluvision.com/en/products/downloads). Make sure to use software version 4.9.0, do not use the latest version from the Novastar website.

Possible issue installing the NovaLCT software: the person installing the software (= the actual user logging in to the PC) needs to have (temporary) administrator rights during the installation process of the software. If not, he will not be able to access the program after installation.

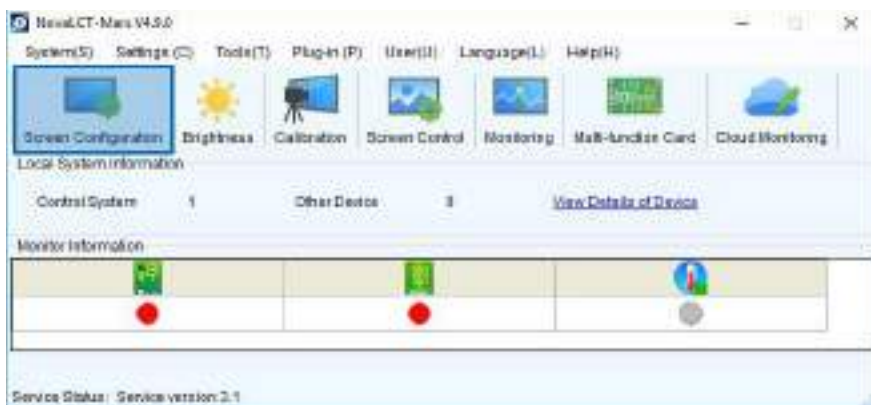
After opening the software, choose **'User(U)' > 'Advanced User Login'** from the top menu to login. Without logging in you won't be able to make any changes to the controller. As password fill in **'admin'** or **'666'** and press **'Login'**.



After login, check the **'Local System Information'**: **'Control System'** shows if the controller is successfully connected. **'1'** indicates that the connection to the controller is OK, **'0'** indicates that no connection to a controller has been found. If this is the case, do the following: check if the controller is powered, if not switch it on at the back of the controller. Also check if the USB cable is connected and if the USB cable or USB port is not damaged. Now choose **'System(S)' > 'Reconnect(R)'** from the top menu, the **'0'** should change into **'1'**.



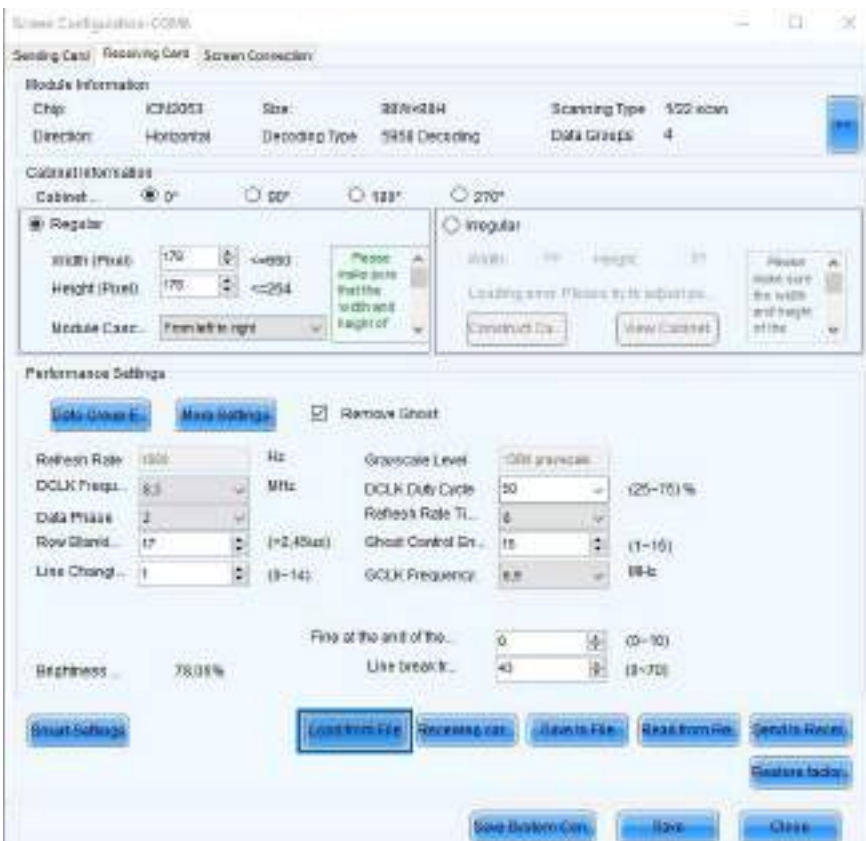
To start the Hi-LED 55 configuration, click the **'Screen Configuration'** button.



A pop-up window shows up. When you have a successful connection with a controller, the communication port will be selected automatically. Otherwise the drop down menu will stay empty. Click **'Next'** in the pop-up box. The **'Screen Configuration'** window shows up.



Select the second tab **'Receiving Card'** to open the overview page containing all the information and settings about the cabinets. To send the factory settings to the cabinets receiving card, it's necessary to retrieve the correct data first. Click **'Load from File'** and in the pop-up window select the correct configuration file (.rcfgx) matching the batch number. Click **'Open'** and click **'OK'** in the confirmation pop-up box.



Now the factory settings are properly loaded, you can send it to the cabinets receiving card by clicking 'Send to Receiving Card'.



The pop-up box 'Send Parameters to Receiving Card' appears. To reset the factory settings in all cabinets in your setup, select 'All Receiving Card' and click 'Send'.



If you want to reset a specific cabinet, select 'Specify Receiving Card' and specify the cabinet in your setup.



## 04.2 Flashing a Hi-LED 55 module

After replacing a module in a cabinet, this module will work immediately, but the cabinet needs to be configured with a **'Module Flash'** to reset the most optimal settings for all modules. This checks and reloads the correct calibration for each module in the cabinet. Not flashing the modules can cause colour deviations in the module. To perform a module flash you'll need the same setup as for configuring a screen.



A Windows PC/laptop with NovaLCT software is required. The software doesn't run on Macintosh.

Connect your PC/laptop to the controller (MCTRL300 or MCTRL660) using a USB cable and power up the controller.



Open the NovaLCT software.



The software installation file can be downloaded from the Aluvision website: [www.aluvision.com/en/products/downloads](http://www.aluvision.com/en/products/downloads). Make sure to use software version 4.9.0, do not use the latest version from the Novastar website.

Possible issue installing the NovaLCT software: the person installing the software (= the actual user logging in to the PC) needs to have (temporary) administrator rights during the installation process of the software. If not, he will not be able to access the program after installation.

After opening the software, choose **'User(U)' > 'Advanced User Login'** from the top menu to login. Without logging in you won't be able to make any changes to the controller. As password fill in **'admin'** or **'666'** and press **'Login'**.



After login, check the 'Local System Information': 'Control System' shows if the controller is successfully connected. '1' indicates that the connection to the controller is OK, '0' indicates that no connection to a controller has been found. If this is the case, do the following: check if the controller is powered, if not switch it on at the back of the controller. Also check if the USB cable is connected and if the USB cable or USB port is not damaged. Now choose 'System(S)' > 'Reconnect(R)' from the top menu, the '0' should change into '1'.



From the top menu choose: 'Settings (C)' > 'Module Flash (U)' to open the module flash window. Open the second tab 'Send by Topology'.



Select the first option 'Full screen' to flash all modules in the setup.



Select the third option '**Select by Topology or List**' to be able to choose the cabinet to flash the modules from. Select the correct cabinet from your setup by clicking it, the selected cabinet turns yellow.



Both options require the same workflow to flash the Modules. First of all click '**Flash check**', when this is successful a pop-up box appears, click '**OK**'.



Next, click '**Check Coefficients in modules**' and wait until a pop-up box appears. Perform a visual check yourself, if the colours in all modules match and no deviations are seen in the replaced module, click '**OK**' in the pop-up box.



The last step is saving all this information on the cabinets receiving card. Click **'Save calibration coefficients on receiving card'**. When this is successful a pop-up box appears, click **'OK'**.



### 04.3 Replacing the power box or receiving card

After replacing a cabinets power box or receiving card, resetting the factory settings and performing a flash check are necessary. To do this follow the steps described in the previous chapters **'Factory settings'** and **'Flashing a Hi-LED 55 module'**.



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