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SYSTEMS

LED Effects Technology for professionals.

User Guide PixelPatch 2.0

PixelPatch 2.0

Thanks to the PC software PixelPatch 2.0, patching LED matrix systems is easy. With the comprehensive tool, LED installations can be configured for performances with video content.

You can easily design and check matrix systems at a computer or convert video data to DMX files.
A test function allows you to directly check the patch on the LED installation.

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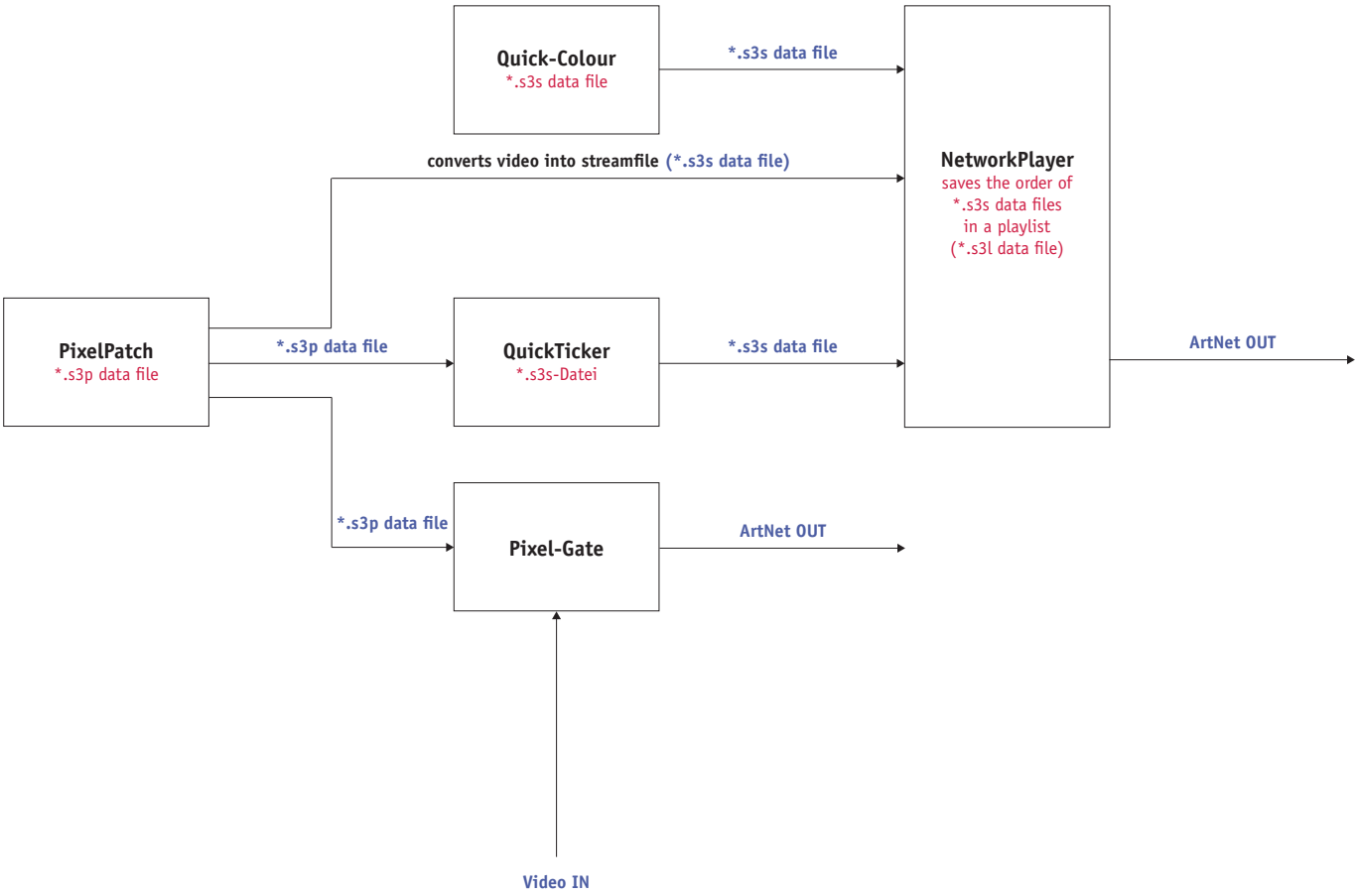
Overview and workflow of the S3 data formats/software



***.s3p is a patch file:**

The sequencing and addressing of the LED products are saved in this file. The patch file matches the pixel of an arranged video resolution to the individual LEDs.

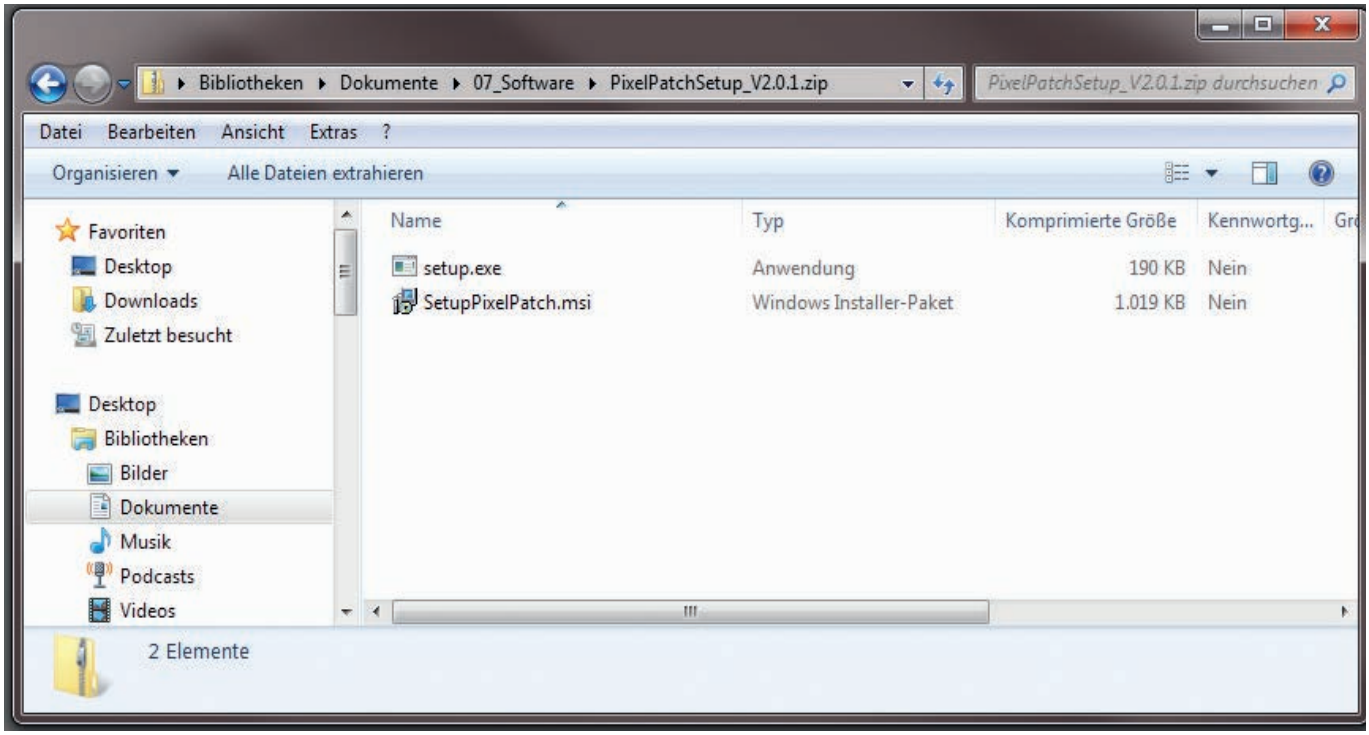
***.s3s is a streaming file:**

Generated and recorded DMX show progressions are saved in this file. *.s3s files can be rendered with the DMX-Player or with the NetworkPlayer.

***.s3l is a playlist file:**

In an *s3l file, the names and sequences of individual *.s3s files are saved for playback in the NetworkPlayer.

Installation



System Requirements

· Microsoft Windows XP/Vista/7
· 32 or 64 Bit
· at least 1GB RAM

for live testing functions:

· network card
· Ethernet (at least 100 Mbit/s)

for video export as *.s3s file:

· DirectX Redistributable (June 2010)

Installation

· unzip file

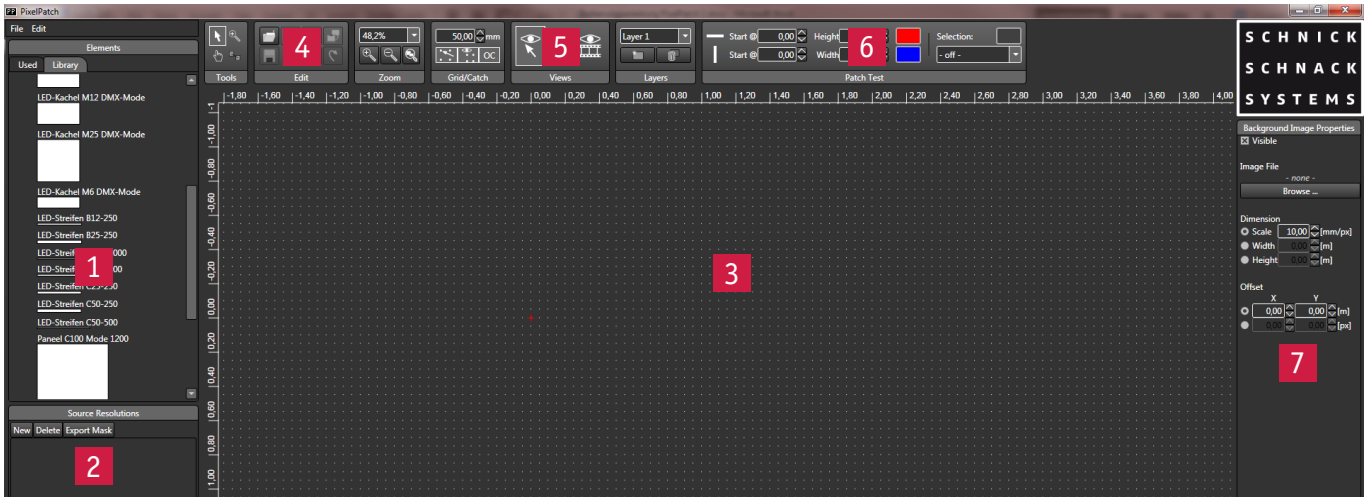
· in the unzipped folder, open the file **setup.exe** by double clicking the left mouse button and then follow the instructions of the installation program

During the first installation of the software from Schnick-Schnack-Systems you should pay attention to the following: The software supplied by us for our products is free for you as the user.

During the first installation you will be asked to enter a license key* in order to use the software.

** We will send you the license key at no cost once we have received the signed license agreement from you. This way you guarantee us that you will only use the program exclusively with products of the company Schnick-Schnack-Systems GmbH and according to the license agreement.*

Overview of the user interface



1. Elements

Under the menu entry **Library** you will find all products of Schnick-Schnack-Systems GmbH. Under the menu entry **Used**, all the elements in the current patch are listed.

2. Source Resolution

In the section **Source Resolution**, video resolutions can be set and the LED array can be adjusted. By selecting **New**, a new window is created in which the resolution, scaling and position of the video file in relation to the LED products can be determined.

3. Workspace

In the workspace, you create your patch from the Schnick-Schnack-Systems GmbH products. The workspace is metric and depicts the real LED array to scale.

4. Tools, Edit, Zoom and Grid/Catch

These menus contain a variety of work tools which allow you to optimally adjust your patch.

- in the field **Tools**, work tools are available to you with which you can add to and modify elements in the workspace
- the heading **Edit**, commands to save, copy, cut, paste and undo can be found
- you can change the view of the workspace by using the **zoom palette**
- the size and locking of the displayed pitch can be configured with the help of the menu palette **Grid**

5. View

In this field you can switch between three views in the workspace:

- **Select View**: editing of the patch, placing of elements
- **Patch View**: in this view, red lines appear in the patch. Using these red lines, the sequence and wiring of the individual LED elements can be followed
- **Live View**: with this view, videos in your patch can be displayed as virtually simulated previews

6. Patch Test

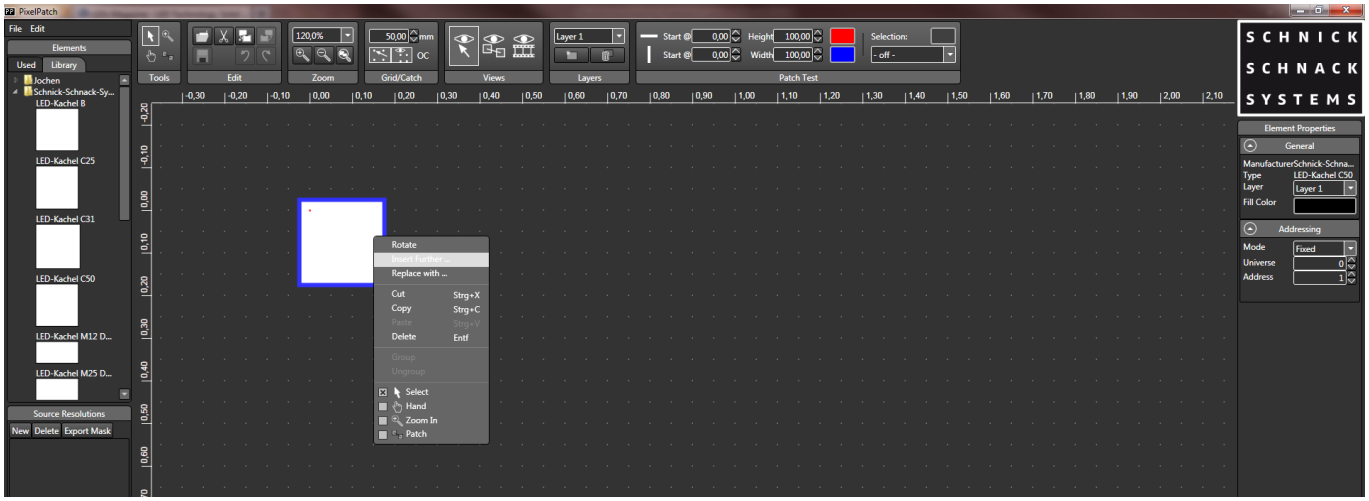
With the different tools of the palette **Patch Test**, you can check your patch at the installation (the PC with the software PixelPatch must be connected to the LED installation via Ethernet)

7. Palette for further settings

Displays additional information and options:

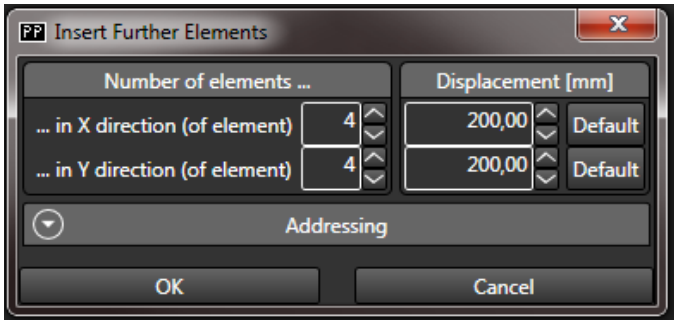
- for the selected LED element in the workspace: settings for selected element/addressing of the LED element
- if no element is selected: options for the loading and configuration of background images are displayed

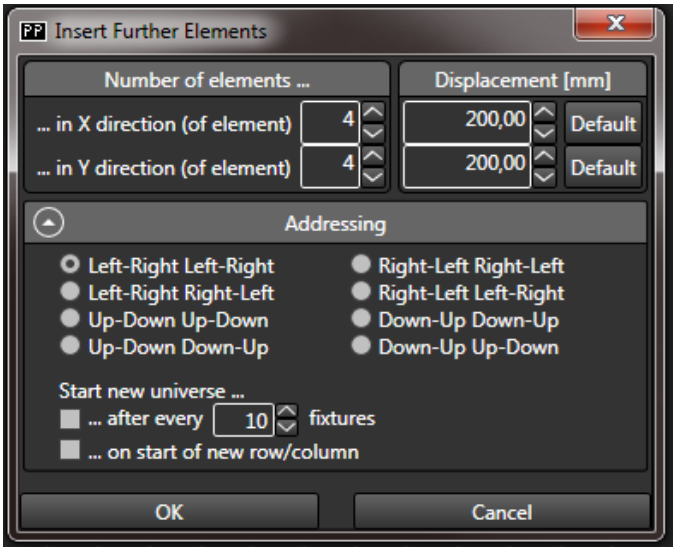
Create an LED array



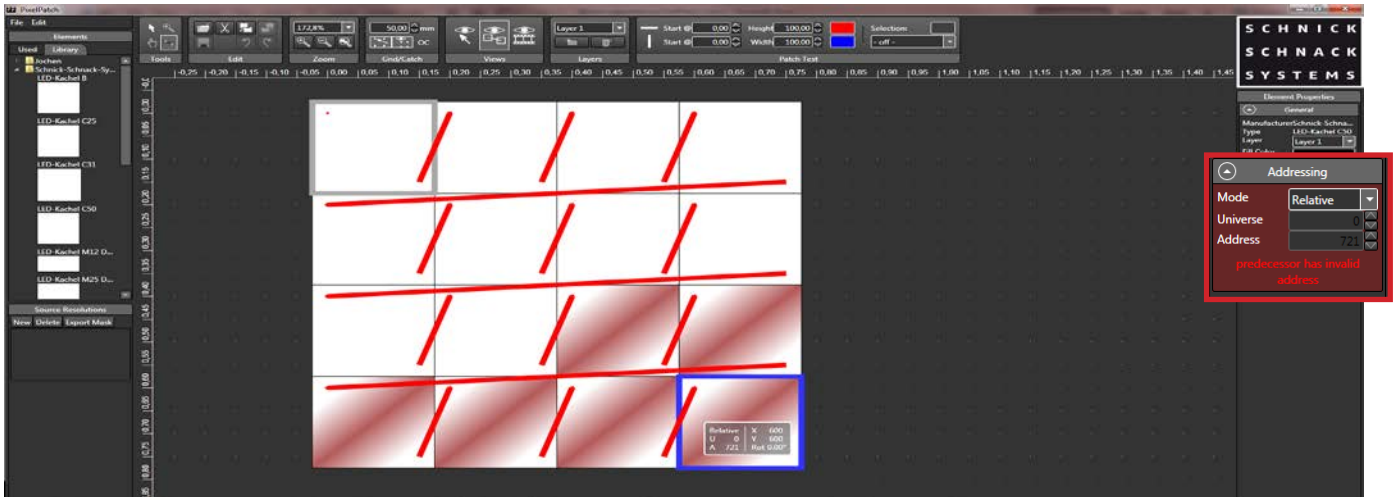
Selecting, positioning and duplicating an LED element:

- pull the desired element (e.g. LED-Tile C50) from the **Library** to the workspace by holding the left mouse button (note: the zero point will be marked by a red cross)
- the pull-down menu is opened by right-clicking the LED-Tile
- with **Insert Further** you can duplicate the LED-Tile –a new menu window opens
- with the entry field **Number of Elements**, you can duplicate the LED-Tile (e.g. x-axis= four LED-Tiles C50, y-axis= four LED-Tiles C50)
- in the field **Displacement**, you can determine at which displacement the indicated elements are arranged with each other. In the example, all 16 LED-Tiles (four on x-axis, four on y-axis) are arranged next to each other, so that the pixel spacing of 50mm continues seamlessly in the x- and y-axes. This value is set as the default value PixelPatch
- if you click on the field **Addressing**, an advanced options menu will open in which you can further specify the addressing of individual elements among each other

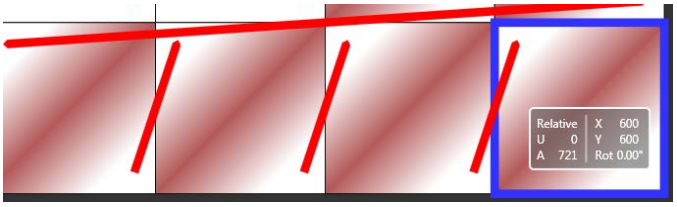




Define, correct and verify addressing



Select the **Patch-Tool** in the tool palette.
The software switches to **Patch View**.



Red connecting lines indicate in which order the inserted LED-Tiles are connected with each other.

Following applies:

- white LED-Tiles: DMX addressing OK

- red crisscrossed LED-Tiles:
  conflict with the DMX addressing, correction necessary

If you let the cursor hover over an LED-Tile for a moment, a window will open which displays the addressing and coordinates of the respective LED-Tile.

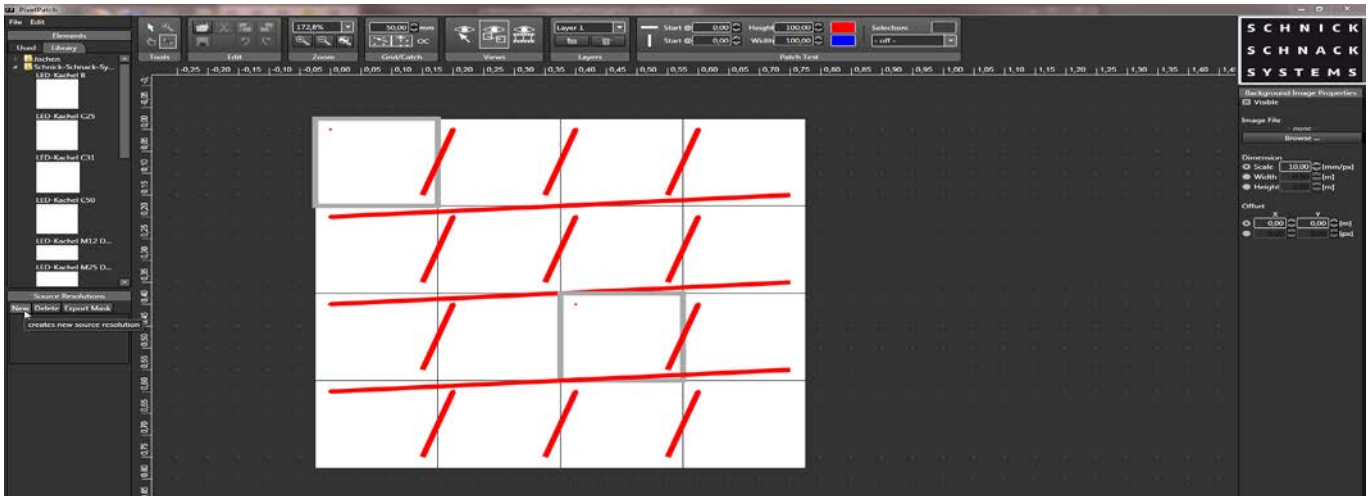
If an LED-Tile is selected, you can switch the addressing mode between **Relative** and **Fixed** in the menu **Element Properties** (right-hand side of screen).

Relative

The DMX address of the element automatically configures itself with respect to that of the preceding element. The DMX addressing continues automatically. In the Patch mode, red connecting lines indicate the connection and there is no need for manual calculation of the address.

Fixed

A fixed DMX address and an ArtNet universe are assigned to the selected element.



For example:

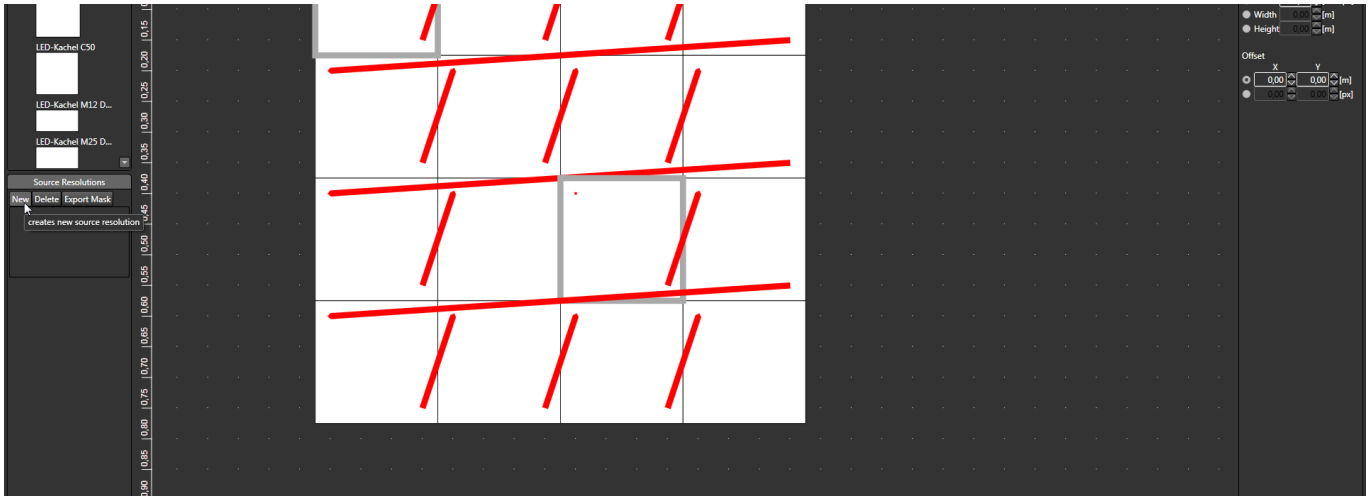
The DMX address conflicts of the previously inserted 16 LED-Tiles C50 are resolved when all LED-Tiles are shaded white. To this end, the start addresses and universes of the red shaded LED-Tiles must be adjusted.

To do this, select the first red LED-Tile in the third row with a mouse click and set, under **Addressing**, the mode to **Fixed** and the **Universe** to 1.

As the subsequent LED-Tiles are arranged relative to the selected LED-Tile, they will automatically assume the new addresses. The red crisscrossing disappears.

With the **Patch Tool,** an optional graphical „cable connection“ is possible with the mouse cursor. To do this, left-click on an LED element in the workspace and draw a connection line to the desired LED element by holding the mouse button.

Setup video resolution



To play back a video on an LED installation correctly using the Pixel-Gate, you must assign a corresponding video resolution to the LED array in PixelPatch.
The Pixel-Gate processes an incoming video signal in order to pass it on as an ArtNet signal to the respective adaptors.

You determine in PixelPatch the position which your LED elements occupy within a video resolution. Furthermore, with the help of the scale function, you can configure the logical connection between a video resolution in pixels and the metric LED arrangement in meters.

- click on **New** in the **Source Resolution** menu on the left of the screen

- a window with the following options will open

Name

In this field you can set the name for the resolution

Resolution

In the field **Resolution**, enter your desired resolution. Frequently used resolutions are saved in a list of selections. This can be called up by clicking on the arrow

Offset

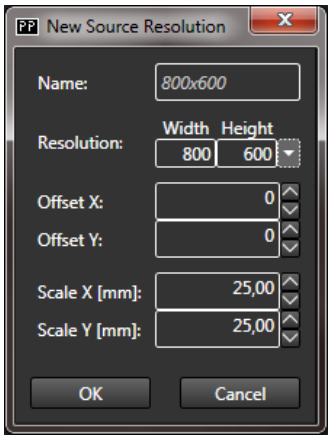
In the field **Offset**, you can set the offset of the resolution window to the zero point of the coordination system on the x- and y-axes.

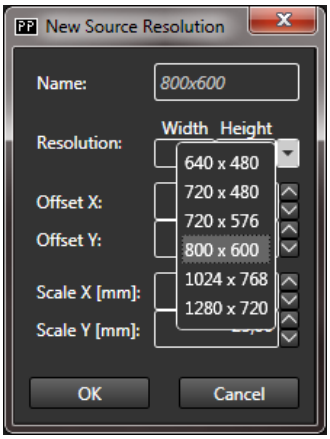
Scale

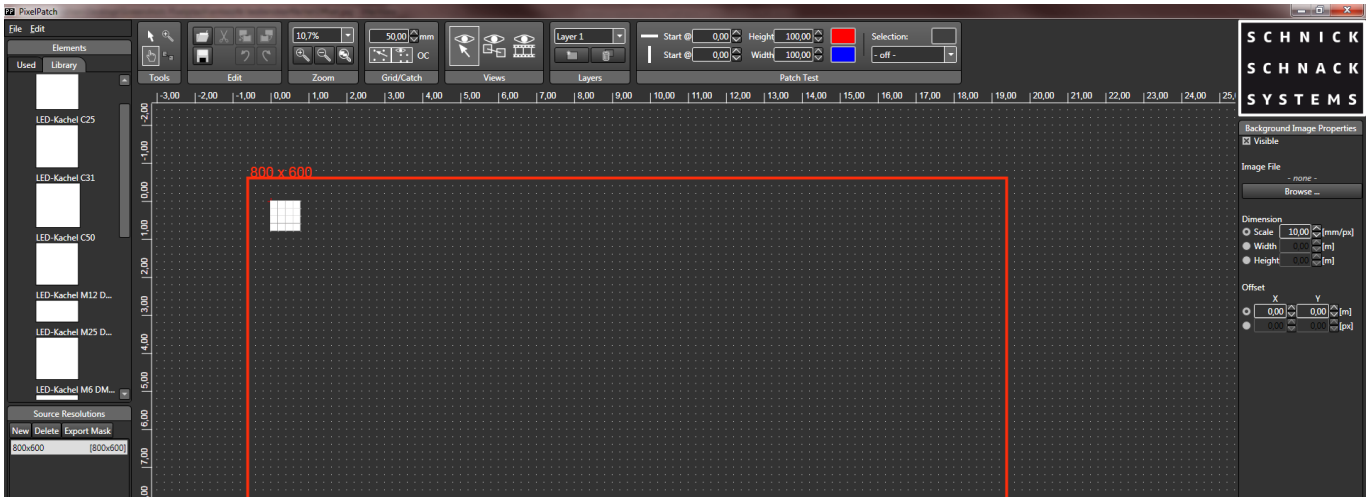
In the field **Scale**, you can set the mapping of the pixels in the video image to the metric resolution (in mm) of the installation.

The values for **Offset** and **Scale** can also be altered afterwards. Further information about the offset and scale features can be found on page 11.

Advice:
By this method you can create multiple resolutions in a PixelPatch file, which you can then select later in the Pixel-Gate as you wish.







In the field **Source Resolution**, the video resolution which you have set up is now listed. Upon clicking on the resolution, a frame appears in the workspace as well as an additional selection menu on the left-hand side.

Options for adjusting the video resolution

If a video resolution is selected, the following options become available in the **Source Resolution** window on the left-hand side:

Colour

Changes to frame colour, according to the preference of the user

Scale

Manages the logical connection between the pixels of the video image and the metric LED arrangement of your installation

For example:

Value x=25mm: two adjoining pixels of the video signal are assigned a metric spacing of 25mm in the LED installation

Offset

Offset to the zero point on x- and y-axes

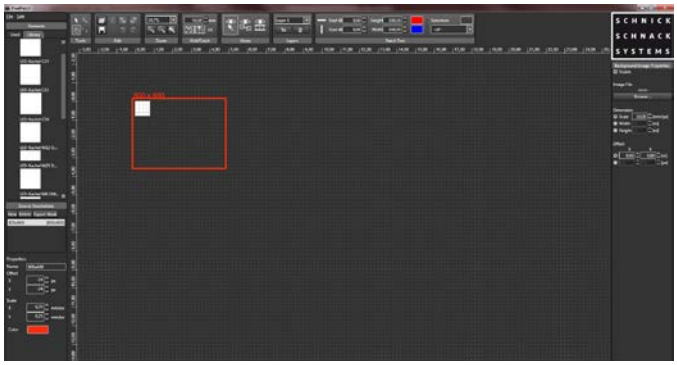
For example:

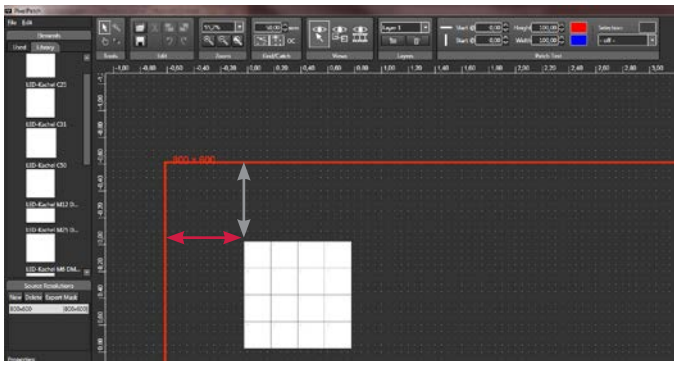
With a scale of 25mm per pixel and an offset on the x-axis of -24, the video frame at the position -0.60m can be seen in the ruler (-24px x 25mm/px= -600mm). The offset of the metric ruler in the workspace is dependent upon the values which you entered for scale!

Exporting the mask of the LED array to assist in the adjustment and configuration of video files

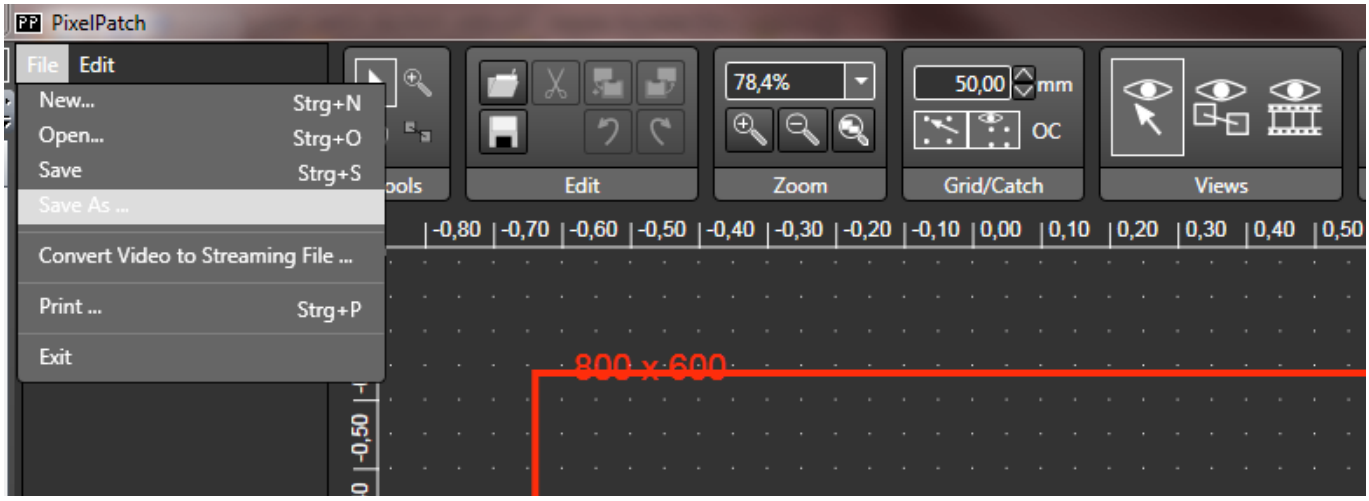
The software PixelPatch offers the option of exporting a black and white mask of the LED array as a *.png file for use in other software to assist in the creation of matching video content.

In the **Source Resolution** window:
According to previously arranged and selected video resolution: Click on **Export Mask** and a window for saving the *.png file will open.





Save and print patch



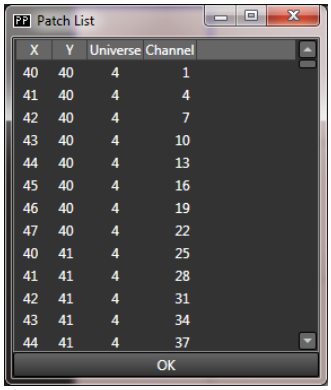
- click on the **file**

- save the patch under **save as**

- you can copy the saved *.sp3 file to an SD card and play it back on the Pixel-Gate or use it with our software QuickTicker as the basis for the creation of a ticker

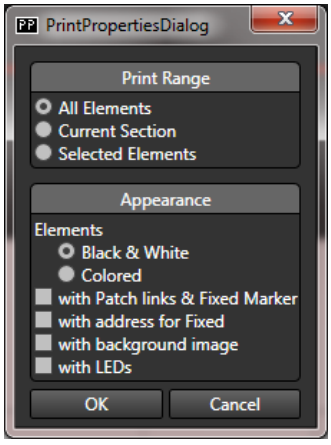
Advice: *If you right-click the resolution arranged by you, you will find in the opening sub-menu the option View Patch.*

By clicking on this command, an additional window will open, in which the assignment of the individual pixels to the universes and respective start-addresses will be presented as a table.

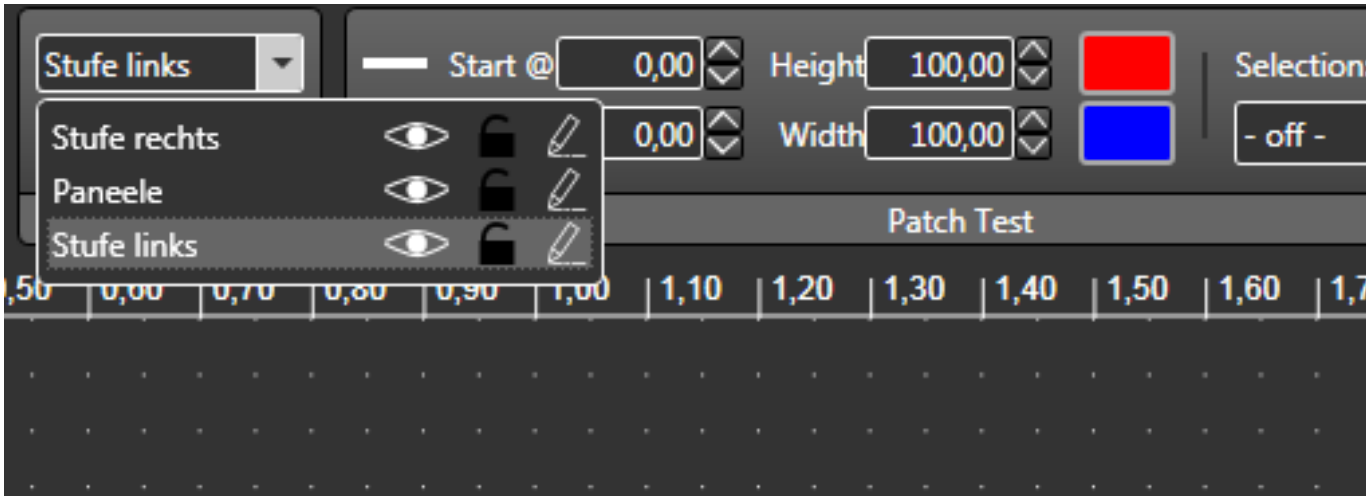


Print patch

In the **File** menu, you will likewise find the command **Print**. After clicking, a window will open in which the different options for the printed view can be adjusted.



Helpful functions –Layers and background

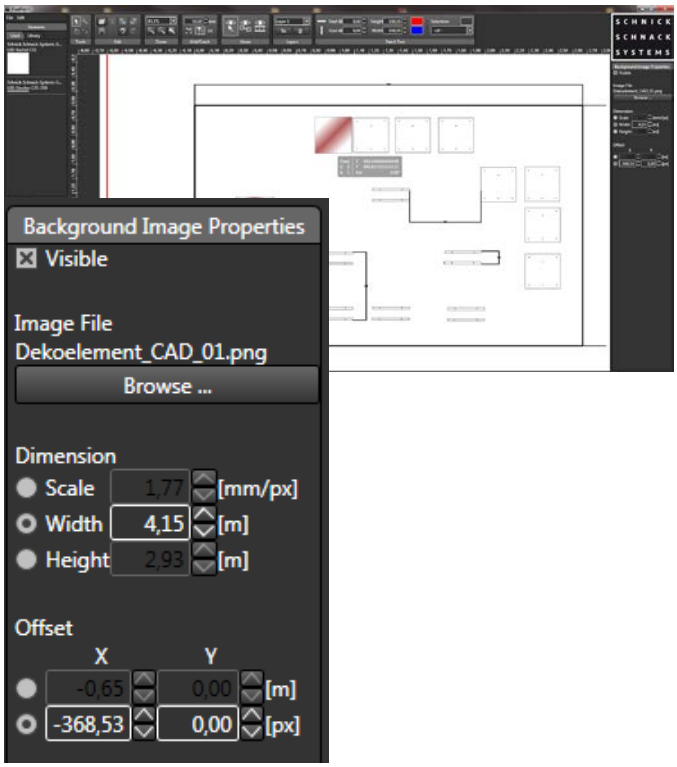


Working with layers

The software PixelPatch offers you the option to work with layers, as you may already be familiar with from working with CAD- or graphics software.

In the menu list in the top area, the field **Layer** gives you the option to **create and delete layers.** The selected layers can be renamed (pencil), saved (key symbol) and shown or hidden (eye symbol) with a mouse click on the list of the field.

Show background



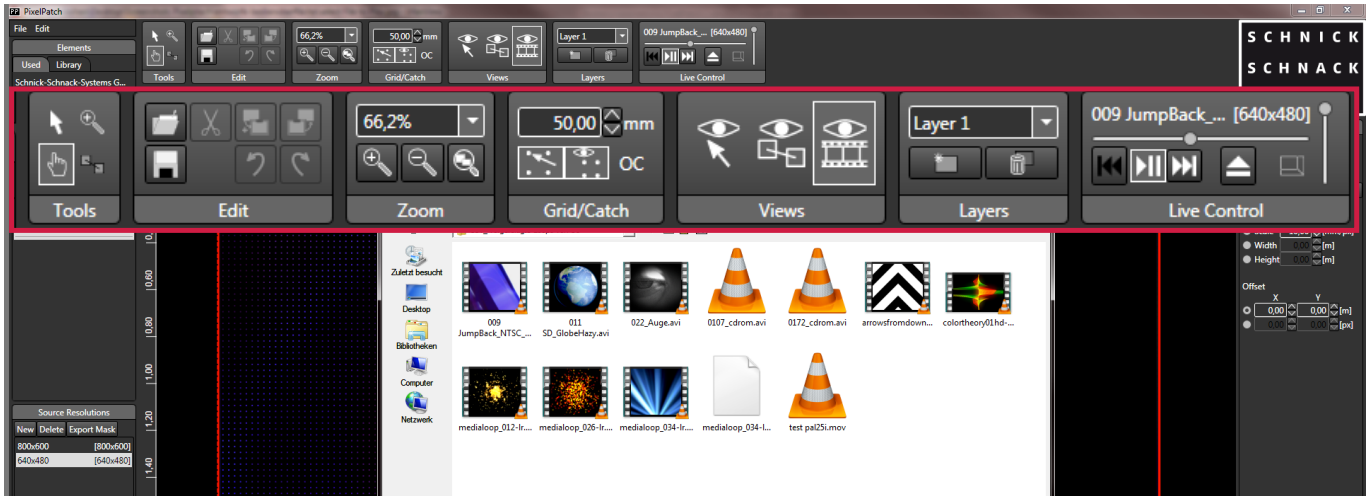
In the metric workspace of the PixelPatch software it is possible to lay an existing design in the background and adjust the LED elements to it.

In the options palette on the right side of the window, you can select images in either *.jpeg or *.png format as the background with the browser button and set them as the background of your patch.*

With the option **Dimensions**, you can adjust the uploaded image to fit the metric dimension in the PixelPatch or move the zero point on the x and y axes with offset.

****Advice:** *The sub menu for the background is shown if there is no LED element selected in the workspace.*

Preview function: view a video through the LED-Pitch



Checking the effect of your video on the software page

PixelPatch offers you a preview function by way of the **Live View**, in order to view and verify video files which you want to play back later on via the Pixel-Gate on your LED installation.

You can gain a first impression of the effect of the video on the LED elements and make further adjustments to the patch as required.

Example:

Live-View of an example of 16 LED-Panels C60-25 of the Schick-Schnack-Systems GmbH (four on x-axis, four on y-axis):

- switch to the **Live View** mode
- in the top menu bar the **Live Control** sub-menu appears
- select one of the resolutions in the **Source Resolution** window
- open the video file with the button **Open** (1)
- press the **Play** button (2)
- with the **Mask Opacity** slider, you can set the opacity of the videos

Of course, you can also adjust the size or position of your video signal in **Live Mode** in the **Source Resolution** menu on the left-hand side of the program.

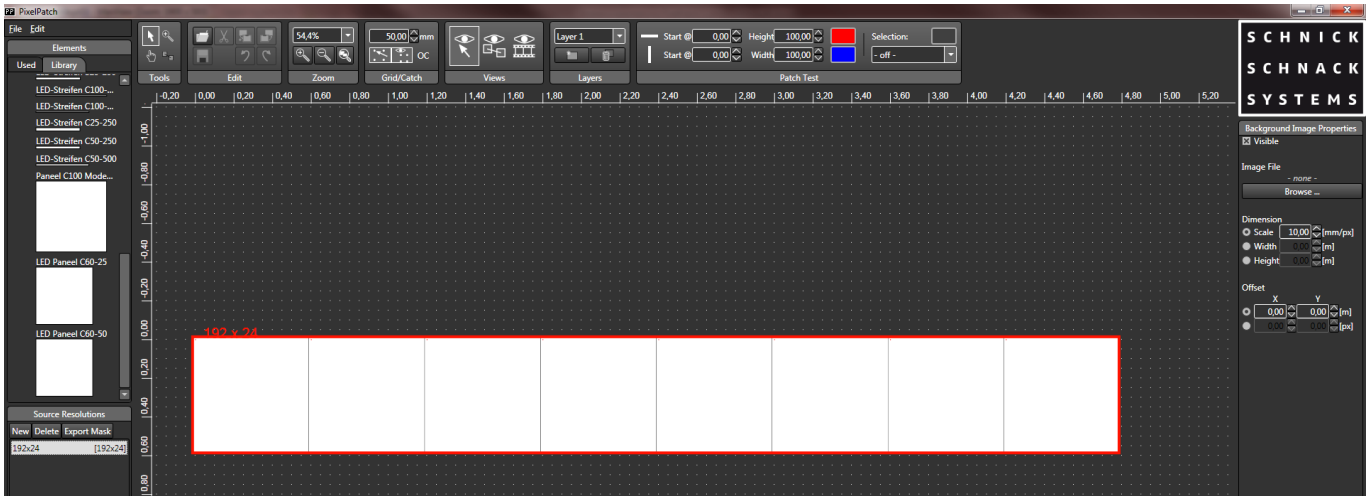
Please observe:
the resolution applied by you in the PixelPatch must match the resolution of the video file. If this is not the case, an error message will advise you of the mismatch.

*With **Allow Scaling (3)**, a scaled presentation of the video is possible.*

Info

In the **Live View** mode, you can play back all videos which can be played back by your Windows Media Player.

Prepare LED array for the QuickTicker



The software QuickTicker assists you to easily create tickers. To display these correctly, you must give QuickTicker information about your LED installation in the form of a patch file.

Firstly, arrange your LED elements. In the above image, a ticker should be presented on eight adjoining LED-Panels C60-25.

Assignment of a resolution

In order to provide correct recognition of your patch file by QuickTicker, you must assign a resolution to your ordered LED elements.

In contrast to the work with video files, there is a limitation for the preparation of a patch for the QuickTicker:

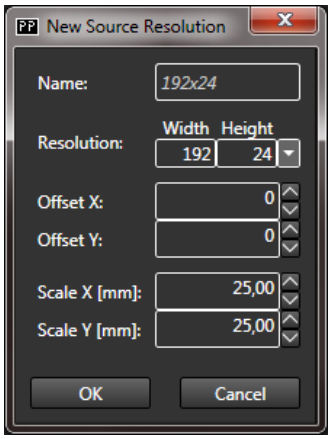
The resolution assigned in the field **Source Resolution** cannot be arbitrary, but rather must correspond to the maximum number of LEDs on the x- and y-axes in the patch.

The **Scale Value** corresponds to the smallest spacing of used LEDs (e.g. 25mm for an LED-Panel C60-25 or 6.25mm for an LED-Tile M6).

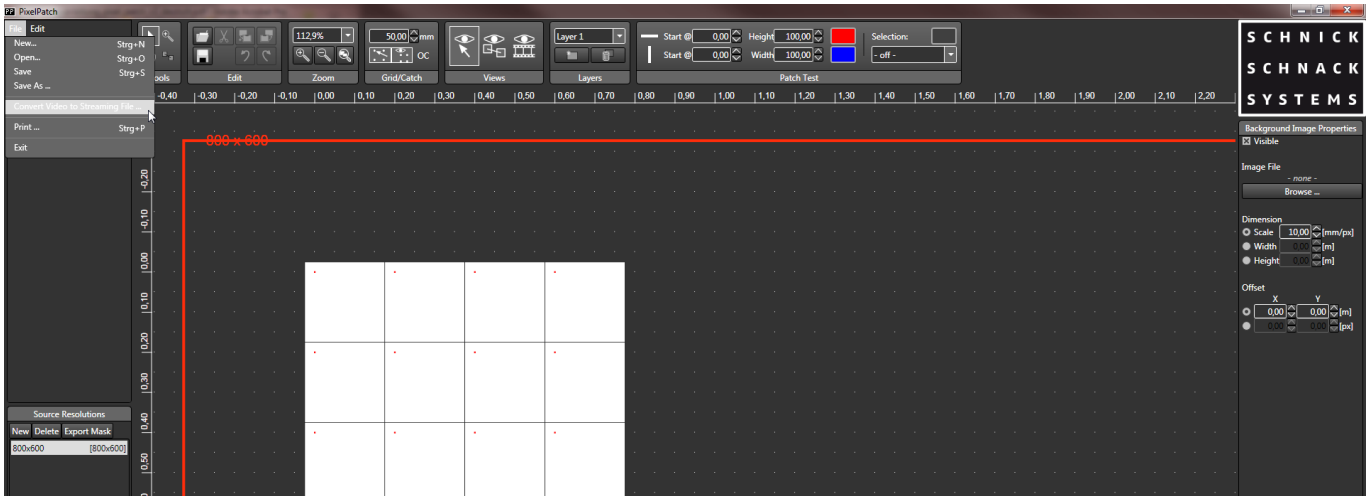
For example:

Should there be, as in the above image, eight LED-Panels C60-25 (pixel spacing of 25mm and 24 LEDs per page) ordered adjoiningly, the **Source Resolution** which the QuickTicker requires would amount to 8px x 24px= 192 on the x-axis and 24 on the y-axis, i.e. 192px x 24px (Scale: 25mm/px).

Following this, save the patch under the menu entry **File** or by clicking the floppy disc icon in the edit window.
The *.s3p file is now prepared for use in the QuickTicker.



Convert video to Schnick-Schnack-Streamfile (*.s3s file)



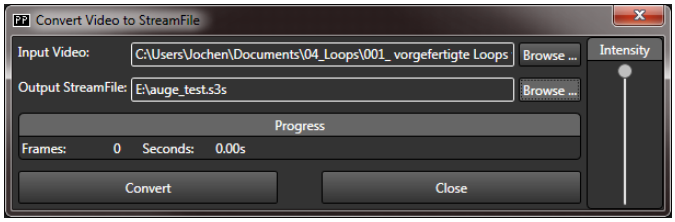
Particularly for smaller applications, the use of a media server or a Pixel-Gate is usually superfluous.

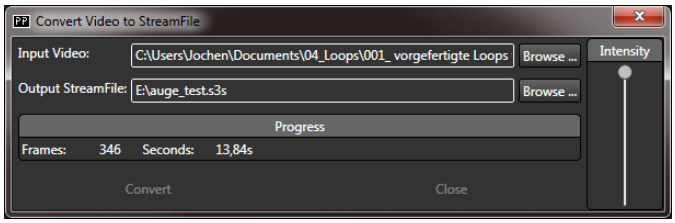
The PixelPatch offers you the option to convert a video file to a DMX streamfile which can then be played back with a DMX-Player from Schnick-Schnack-Systems GmbH.
With the free software NetworkPlayer, your PC becomes a powerful output device with which you can render *.s3s converted videos via ArtNet without problems, even for larger installations.

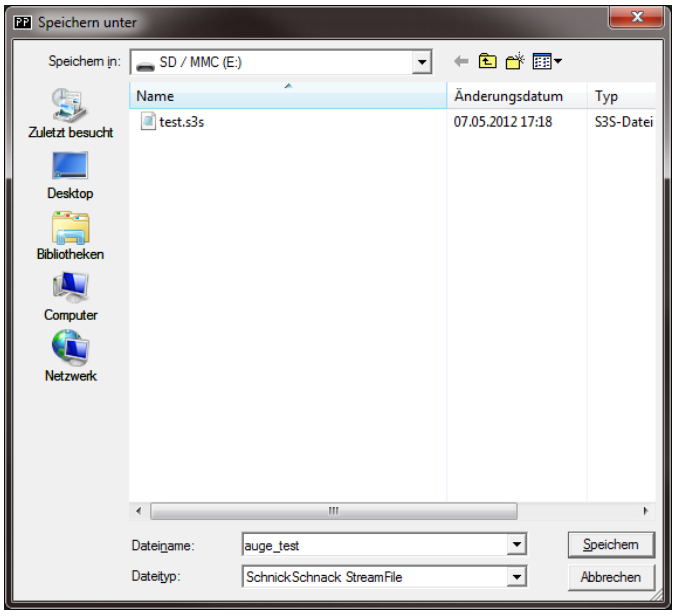
To convert your video to a streamfile, you initially require a patch with an assigned video resolution. The individual steps are described in the chapter „create LED array for the Pixel-Gate“.

Please observe that the **Source Resolution** selected and applied by you in PixelPatch matches the resolution of your video file.

Click on the **File** menu in the upper left corner and select **convert video to streamfile** –a dialogue window will open.







Input video

By clicking on the **Browse** button you can select which video file you wish to convert to a Schnick-Schnack-Streamfile.

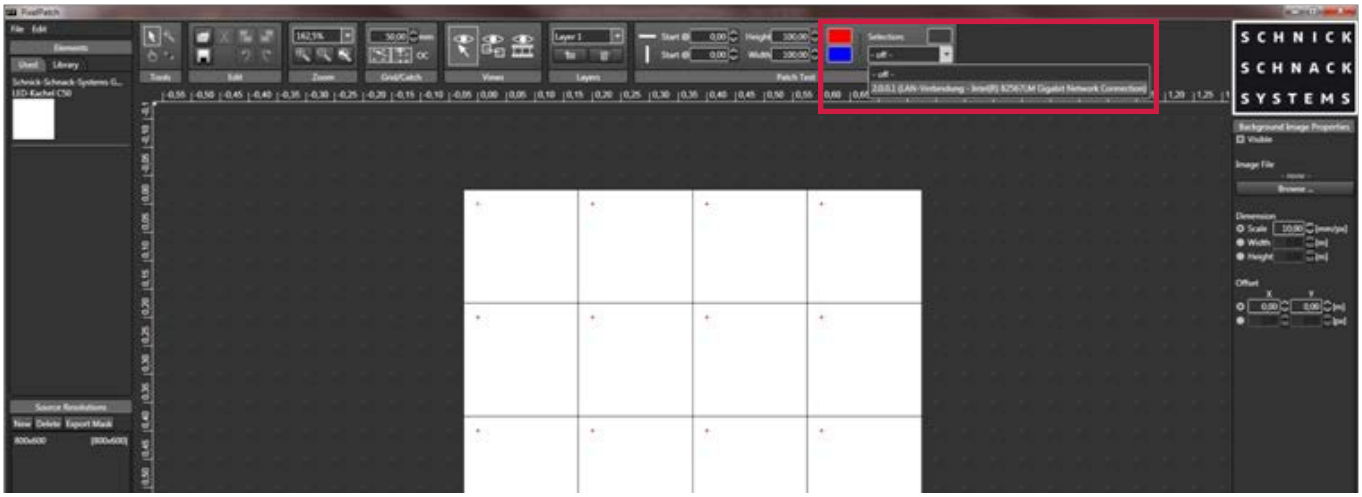
Output streamfile

By clicking on the **Browse** button you can open a dialog, in which you can set where you wish to save the DMX-Streamfile and its name.

Intensity

With the adjuster you can set the opacity of the video.
Click on the button **convert**. The software will now convert the videofile to a DMX stream. Under the heading **Progress**, the status of the conversion will be displayed to you.

Patch Test: Check live the addressing and wiring of an LED installation



With version 2.0, the PixelPatch offers a new test function, which makes it much easier for you to identify errors in the patch:

Whilst you connect your PC to the LED installation, you can verify, live, the sequencing and addressing of the elements in the software which you compiled and remove errors straight away.

To do this, the PC sends data to adaptors over its network card.

Advice: *Before you start the PixelPatch software, your network card must be configured to the IP address area of ArtNet and your PC must be connected to the network. This is the only way for the software to recognize the ArtNet connection.*

You can find instructions for how to change the relevant settings of the network card for Windows in the appendix under „configuration of IP addresses".

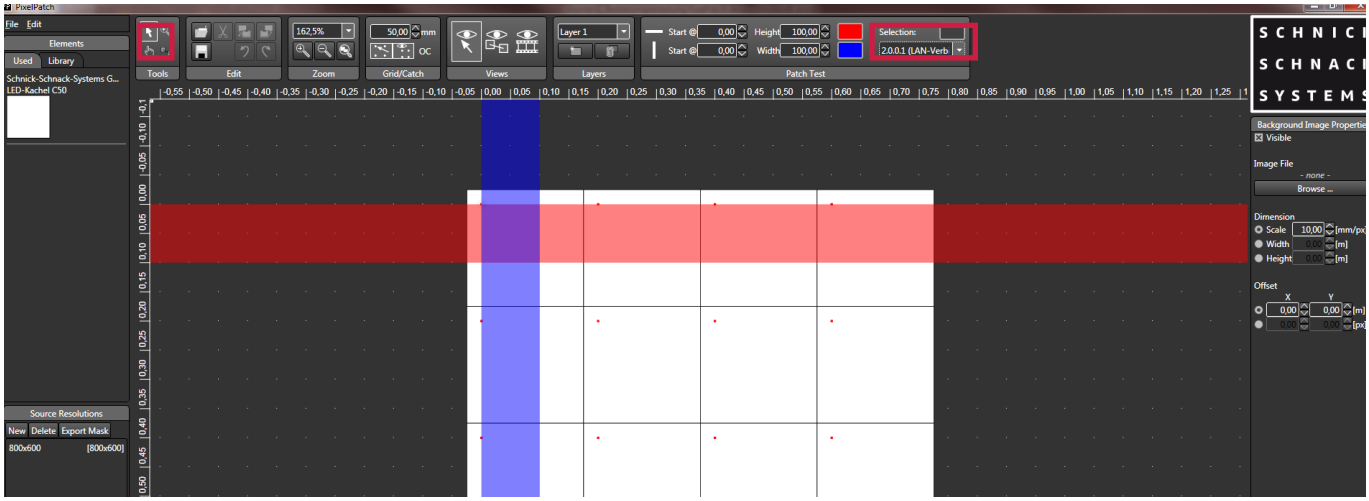
Start the PixelPatch software. If the patch which is to be verified already exists, load it by clicking **File** and then **Open**.

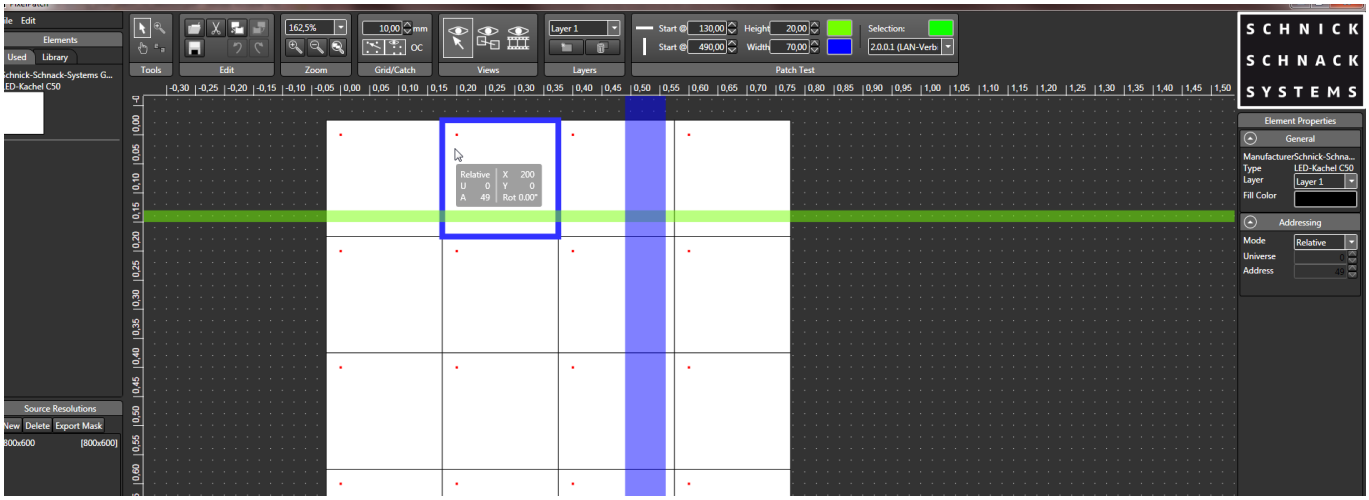
If you want to create a new array, follow the steps from page 7:

Create an LED array. To continue with the installation, select the network card with the pre-assigned ArtNet IP.

Once the network card has been assigned, the Live **Patch Test** function is active and two bars appear in the workspace. To turn the function off, select OFF in the menu.

Patch Test: Check live the addressing and wiring of an LED installation





The options which are available to you for testing are:

Horizontal and vertical bars:

You can apply an arbitrary colour to the bars using the colour fields. Under **Height** and **Width** you can specify the thickness of the bars.

You can manually position the bars under **start@**.
To move the bar through your installation LED by LED, use the arrow keys next to the window with the **start@** values (the bar position and new measurements always skip the value which is configured in the upper area of the software under **Grid**).

With the bars, you can verify that the sequence and addressing in the Patch corresponds to that in the installation. If the bars are displayed correctly at all positions in the installation, then the patch matches the installed LEDs.

Should you discover a discrepancy, this can be further investigated using the selection tool:

- select an arbitrary colour in the **selection** colour window, in which the LEDs in your installation shall glow

- now select the **Selection-Tool** in the **tool menu** (top left)

- in the workspace, click on an LED element with the left mouse button, thus selecting it.
  In your LED installation the selected element will now glow in the previously assigned colour

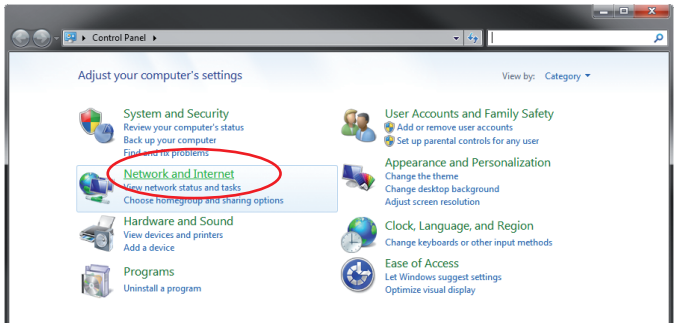
Please observe for the M-Series:

For an optimal presentation during the patch test, use the colour white (or a bright green or yellow) for the bars as well as for the selection.

Appendix: Configuration ArtNet-/IP-Adresses under WIN 7

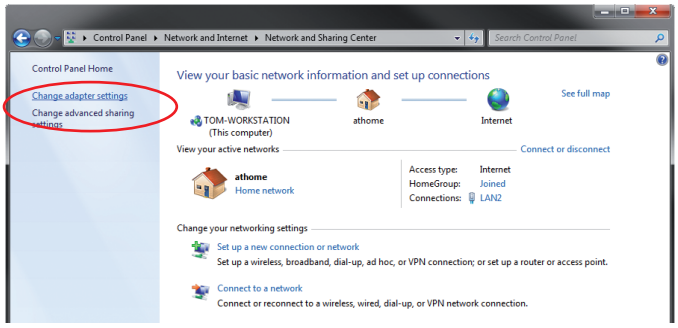
Step 1:

Click on **Control Panel** and bring up the network and sharing center.



Step 2:

Click on **Change Adaptor Settings**.

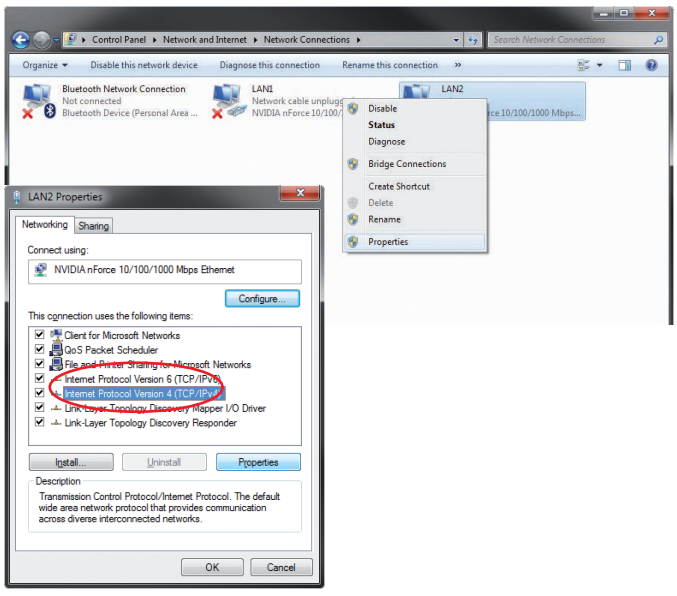


Step 3:

Right-click on the network card which should display your ArtNet interface.

Select **Properties**.

Click on **Internet Protocol Version 4 (TCP/IPv4)** and select **Properties**.



Step 4:

Select **use the following IP-address** and set IP-address to **2.0.0.1** and the subnet mask to **255.0.0.0**.

Warning: note the pre-existing configurations, so that they can be re-applied later.

Click on OK.

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