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LED Effects Technology for professionals.



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Introduction

The Pixel-Gate is a hardware interface designed to convert digital video signals (DVI or SDI) into ArtNet data.

Pixel or video data can be patched directly by using the built-in QuickPatch mode or created with Schnick-Schnack-Systems' PixelPatch software.

The Pixel-Gate is available in the following versions:

- Light
- Plus
- Pro

Video inputs

The Pixel-Gate can accept the following digital video signals as inputs:

DVI (progressive, 50-60Hz)

640 x 480px
768 x 576px (576p)
800 x 600px

1024 x 768px
1152 x 864px
1280 x 720px (720p)
1280 x 960px
1280 x 1024px
1368 x 768px

} Drop Frame OFF

SDI

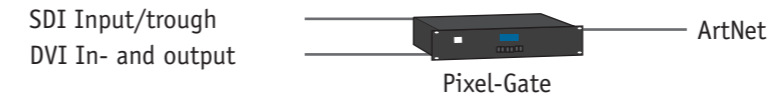
720 x 576px (PAL, 25Hz interlaced)
720 x 486px (NTSC, 29Hz interlaced)

ArtNet Outputs

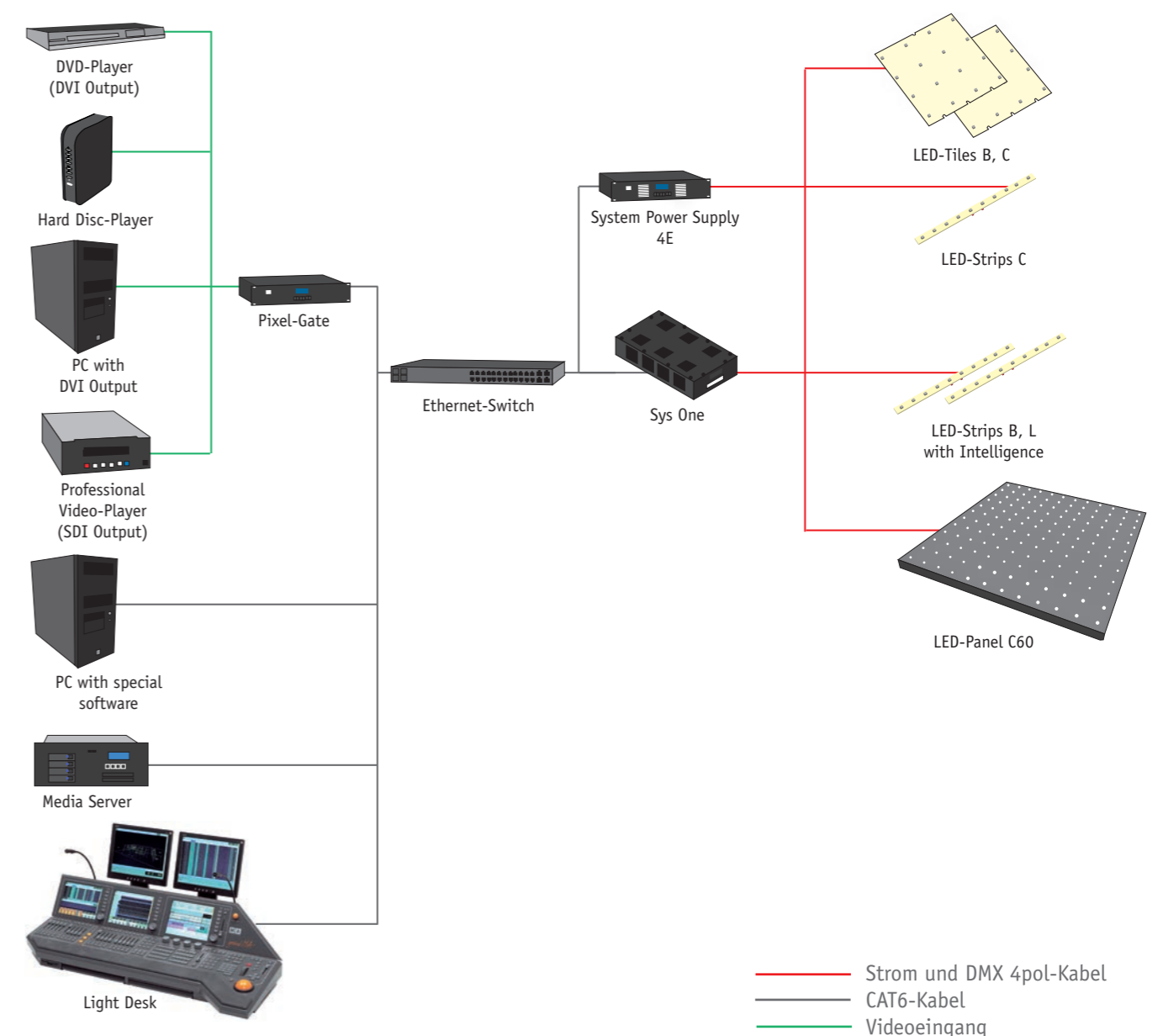
- minimum 150 universes
- unicast if supported
- 10/100 Mbit

Supported resolutions in firmware version 2.2.
Further resolutions are forthcoming.

System Architecture



Cabling example



Installation

Examine the Pixel-Gate immediately after unpacking for any damage which may have occurred during transit. A damaged unit should not be used under any circumstances.

If the Pixel-Gate is moved from a cold to a warm environment then a period of three hours should be result of the temperature change.

If the Pixel-Gate is to be installed in a rack care must be taken to ensure that there is sufficient airflow around both the front and back of the unit. The temperature of the surrounding air should not exceed 35°C. The use of rails is recommended for rack-mounting to relieve strain on the front panel. Connect the video input and ArtNet output cables.

Power-up the Pixel-Gate by connecting the mains input connector. After a few seconds the Pixel-Gate is ready for use.

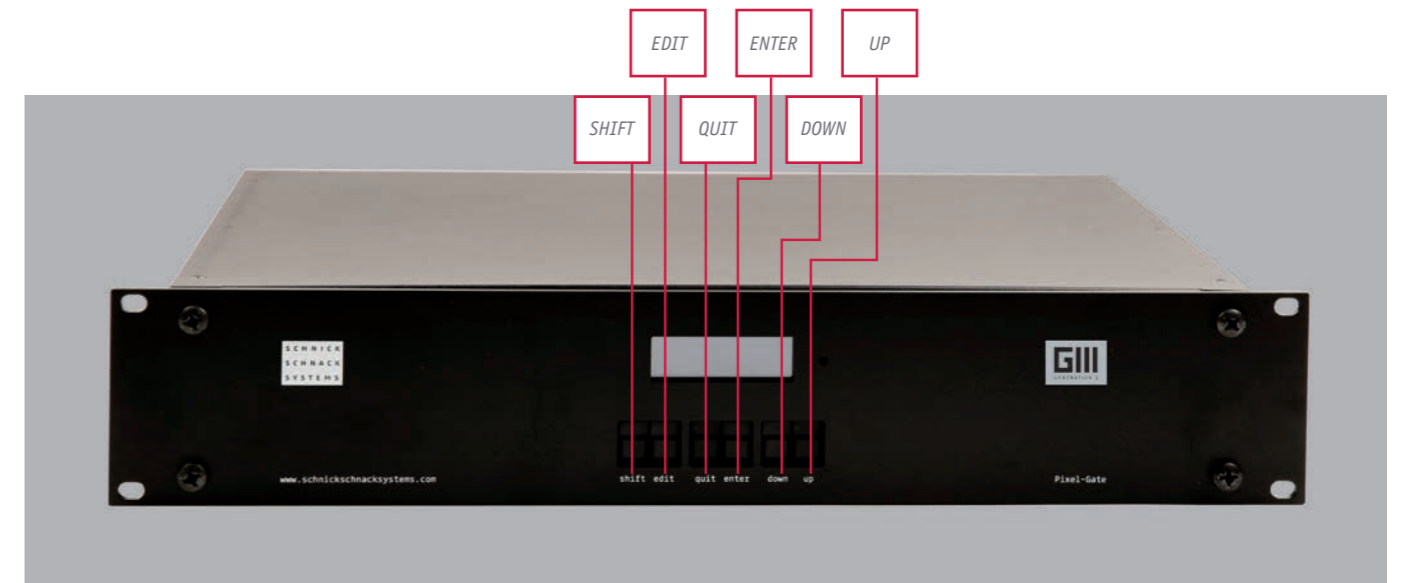
Do not operate the Pixel-Gate in direct sunlight.

Do not use water or aggressive solvents to clean the Pixel-Gate wiping with a damp cloth should be sufficient.

Heavy soiling may be removed using a mild detergent.

Menu

The following connectors are located to the front of the unit:



SHIFT+

use in conjunction with...

EDIT

to scroll the cursor backwards through data entry fields

ENTER

to confirm certain operations

EDIT

to scroll the cursor backwards through data entry fields

QUIT

used to exit the currently selected mode

ENTER

used to confirm operations e. g. mode changes

UP

scrolls up through list of modes. Increases the value in the currently highlighted data field

DOWN

scrolls down through list of modes. Decreases the value in the currently highlighted data field

Basic operation

To change modes press **QUIT** to exit the current mode then **ENTER** to select the mode menu list.

Alternatively press **QUIT** a second time to cancel the change and return to the currently selected mode.

Use **UP/DOWN** to scroll through the mode menu list until the desired mode is displayed then press **ENTER** to select it.

Use the **EDIT** button to scroll through available data entry fields. Use **SHIFT+EDIT** to scroll through the data entry fields in reverse order.

Use **UP/DOWN** to change the value in the selected (highlighted) data entry field. Use **Shift+UP/DOWN** to change the value in larger jumps.

If the selected mode has a sub-menu (e.g. setup) press **ENTER**, then use **UP/DOWN** to scroll through it. When the desired sub-menu parameter has been reached use **EDIT** to select scroll through its data entry fields (even if there is only one).

When the desired data entry field has been selected use **UP/DOWN** to change the value.

When the desired value has been set press **ENTER** to return to the sub-menu and use **UP/DOWN** to scroll through it.

Press **ENTER** again to return to the mode menu list.

Detailed operation

On power-up the Pixel-Gate will initially display its info menu and software version for a few seconds.

Following this the Pixel-Gate will go to the last-set patch mode: QuickPatch or PixelPatch.



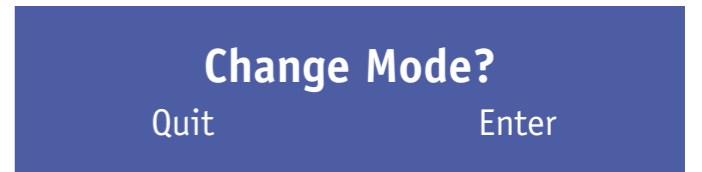
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v2.2.1729

Changing Mode

To change mode press the **QUIT** button. The LCD will display the following message:

Press **QUIT** again to cancel the change or **ENTER** to confirm.

If **ENTER** is chosen the mode menu will be displayed –use the **UP/DOWN** buttons to scroll through it.



QuickPatch Mode

QuickPatch Mode is used to create simple PixelPatches which use just one type of LED-Panel C60-50 or C60-25 directly from the Pixel-Gate menu.

Use **EDIT** to move the cursor through the data entry fields.

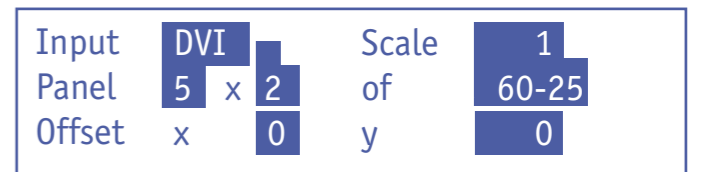
Use the **INPUT** field to select the type of input signal –DVI or SDI.

A check mark (tick) in the small blue square to the right of this field indicates that a valid input signal is being received by the Pixel-Gate.

Use the **PANEL** and **OFF** fields to select the number of LED-Panels in the x and y planes along with the LED-Panels type.

Use the **SCALE** and **OFFSET** fields to adjust the video to fit the installation.

For more complex installations using multiple Panel and/or PCB illuminants the PixelPatch mode is used.



PixelPatch Mode

The **PixelPatch Mode** accesses a patch which has been pre-prepared using Schnick-Schnack-Systems' PixelPatch software and stored on a standard SD card.

Use the **EDIT** key to scroll through the three data entry fields on the left of the display.

The **Input field** is used to choose between a DVI or SDI input signal. **File** is used to load a PixelPatch file from the SD card.

PATCH selects an output patch to suit the input resolution.

The patch must be reloaded using the **EDIT** and **ENTER** buttons if the file or input settings are altered.

If everything is working correctly then the **STATUS** field on the display will read **RUNNING**.

In the case of an error, a message will be displayed. Possible error messages are shown on the next page.

Input	DVI No Input
File	<no set>
Patch	<no set>
Status	no input

Error Messages

Display Menu	Error Message	Description	Solution
Input	No Input	No input signal is being received	Check that the input cable connection is secure
File	No set/ no patch has been loaded	No patch has been loaded	Check that an SD Card with a valid patch file has been loaded
Patch	No set/ no output data has been loaded	No output data has been loaded	Select an output patch
Status	Resolution error	The output patch has a different resolution from the input	Choose another output patch per patch file. Change the resolution of the source or create a new patch file.
	Resolution error/ Patch overflow	The output patch is trying to access accesses with a pixel which does not lie in the memory range	Switch off the Drop Frame in the setup menu. Build a new patch file with the Schnick-Schnack-Systems' Pixel-Patch software and choose another resolution or shift the desired part of the content towards the upper part of the picture area

Factory Defaults

Pressing **SHIFT+ENTER** together when in this mode will restore the factory default settings to the Pixel-Gate interface.

Warning:
This action cannot be undone!

Restore Factory Defaults?

Quit

Shift+Enter

Info

Displays the type of unit and currently installed software version.

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Pixel-Gate

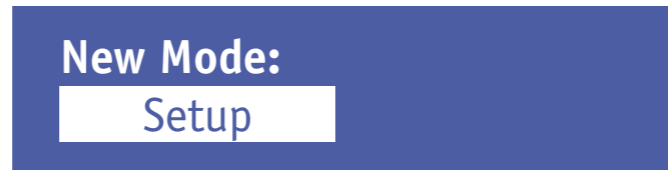
v2.2.1729

Setup

The following attributes can be adjusted using this menu:

1. Black Level
2. Gamma Correction
3. ArtNet
4. Save Patch internally
5. Drop Frame
6. DVI-/DDC-Framerate
7. General offset

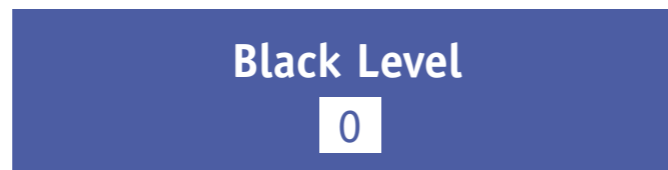
Press the **ENTER** button to access the setup sub-menu.



Black Level

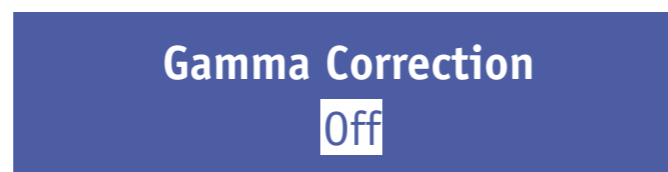
Use the **EDIT** button to select the data entry field. With a **Black Level** greater than zero any pixels which fall below the adjusted threshold value are faded out.

Adjustment of this attribute can be helpful if the content originated from an analogue source.



Gamma Correction

Without a function at the moment.

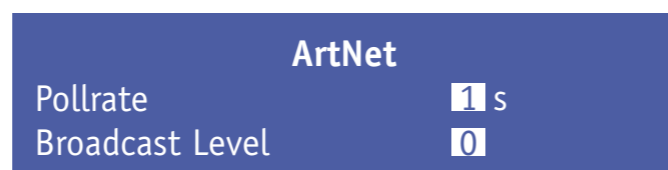


ArtNet

The **ArtNet** menu is used to select either unicast or broadcast output. The unicast parameter indicates the number of System Power Supplies requesting the same universe and can be switched off if desired.

The polling rate indicates the rate at which new devices/system power packs in the network are searched for by the Pixel-Gate.

If **Pollrate** is switched off then the unit will check only once on power-up. This action is not recommended.



Save patch internally

By switching this attribute on the currently loaded patch is stored internally.



Drop Frame

Switches **Drop Frame** on or off.

Drop Frame is necessary in order to be able to play the full desired framerate over ArtNet (see **Drop Frame** information).

Is **Drop Frame** activated (ON), every second frame is dropped, so that a 60Hz DVI source will only be reproduced at 30Hz on the ArtNet side.



DVI-/DDC Framerate

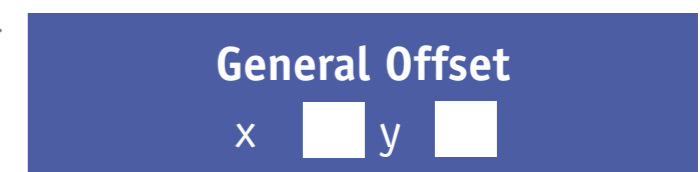
Use the Edit button to select the data entry field. Setting the preferred the framerate does not actually specify the framerate either for the in- or output.

It merely serves Extended Display Identification Data (EDIT) the information to the Display Data Channel (DDC) of the source PC graphic card or DVD-Player in order to match the resolution with Pixel-Gate.



General Offset

With the **General Offset** can be freely positioned in the frame.



Function Drop Frame

The maximum number of pixels that can be stored in a patch is limited to approximately one million. Therefore all pixels can be patched for resolutions of up to e.g. 1152 x 864px.

Above the one megapixel limit the later lines are not stored e.g. at a resolution of 1280 x 1024px the last 205 lines of the picture cannot be patched.

Furthermore **Drop Frame** requires twice the memory and therefore reduces the highest resolution that can be patched up to the latest pixel in the video e.g. a resolution of 1024 x 768px can be only be patched to line 512 if **Drop Frame** is activated.

If a pixel cannot be patched because it lies outside this range then an error message will be shown in the display. If this occurs the content should then be shifted using the Offset functions or the resolution reduced.

Without **Drop Frame** only every other frame is sent so a 60Hz DVI source will be reproduced at just 30Hz on the ArtNet output side.

Table Overview Drop Frame

Input Resolution	Drop Frame OFF	Drop Frame ON
640 x 480px	+	+
720 x 486px (NTSC)	+	+
720 x 576px (PAL)	+	+
800 x 600px	+	+
1024 x 768px	Cropped at line 512	+
1152 x 864px	Cropped at line 455	+
1368 x 768px	Cropped at line 383	+
1280 x 960px	Cropped at line 409	+
1280 x 1024px	Cropped at line 409	+

Interlaced formats

Interlaced DVI is not supported.

SDI is interlaced by definition and is therefore supported.

EC declaration of conformity

EC-Declaration of conformity

I hereby declare that the product

Pixel-Gate -Light, -Plus, -Pro

(Name of product, type or model, batch or serial number)

meets the essential requirements referred to in Article 3 of the Council Directive 99/5/EC.

The following harmonized standards have been applied:

EN 60950-1:2003

EN 55022:2006

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Koeln, 9th. April 2009

(Place, Date of issue)



(Signature)

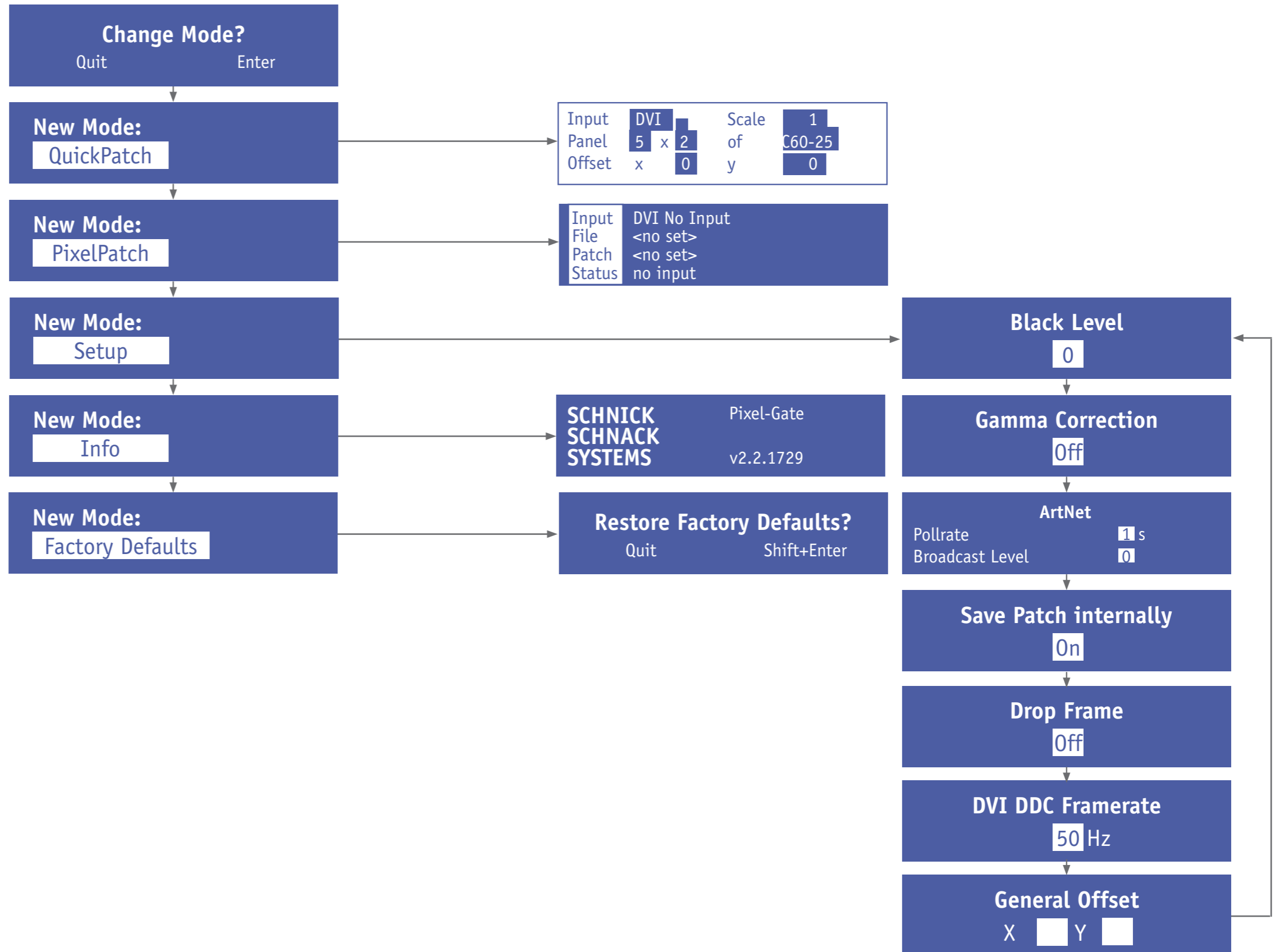
Dipl. Ing. (FH) Erhard Lehmann

(Name in block letters)

Menu overview (v2.2.1729)

Press **QUIT** to change mode.

Press **QUIT** again to restore previous mode.



Why Schnick Schnack Systems?

As installation times become increasingly shorter the complexity of systems simultaneously increases as do the requirements of customers.

We are a supplier who delivers high-quality reliable systems –under tight deadline constraints that are not only quick to install but simple to operate and service also.

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