SCHNICK
SCHNACK
SYSTEMS

DPB Pixel-Router Pro

User Guide

GENERATION 3

Situation at July 2017: All technical data as well as the weight and dimension information were carefully created – errors reserved. Any colour deviations are printing-related.

We reserve the right to make changes that serve further improvement

Table of Contents

Overview

The DPB Pixel-Router Pro provides Schnick-Schnack-Systems' series L, B, C and M products with power and data.

The DPB Pixel-Router Pro has four LED outputs and can be controlled by either Ethernet (Art-Net, sACN) or DMX512 data and is therefore compatible with most lighting consoles and media servers. The control signal can be freely patched across the four outputs. It is also possible to use the DPB Pixel-Router Pro as a standalone unit, without a DMX or Art-Net control signal.

The addressing of the components takes place directly on the power supply via Smart Link.

The DPB Pixel-Router Pro belongs to Generation 3 and in addition to DMX can also read the Dynamic-Pixel-Bus protocol (DPB) in order to control LED components. By using the DPB more LED tiles or other elements per output of a DPB Pixel-Router Pro are possible – up to 3.072 channels. Switching between DPB and DMX is possible at all times.

The Generation 3 LED components firmware can be updated from a central point via the network with the DPB Pixel-Router Pro.

Thanks to integrated HTML 5.0 webservers, the Router can be completely controlled remotely.

Connectivity

The following connectors are located at the rear of the unit:

DMX in- and output	Neutrik XLR-5pin	**LED output 1-4**	System connector red, maximum 2 × 3A
Ethernet input	Neutrik Ethercon	**Power connection**	600W, 2 × 24V
Mini USB input	reserved for future use		
2 × USB output	reserved for future use		
SD card slot	used for software update		

Installation

Check the device for any damage incurred during transit immediately after unpacking. A damaged unit should not be used.

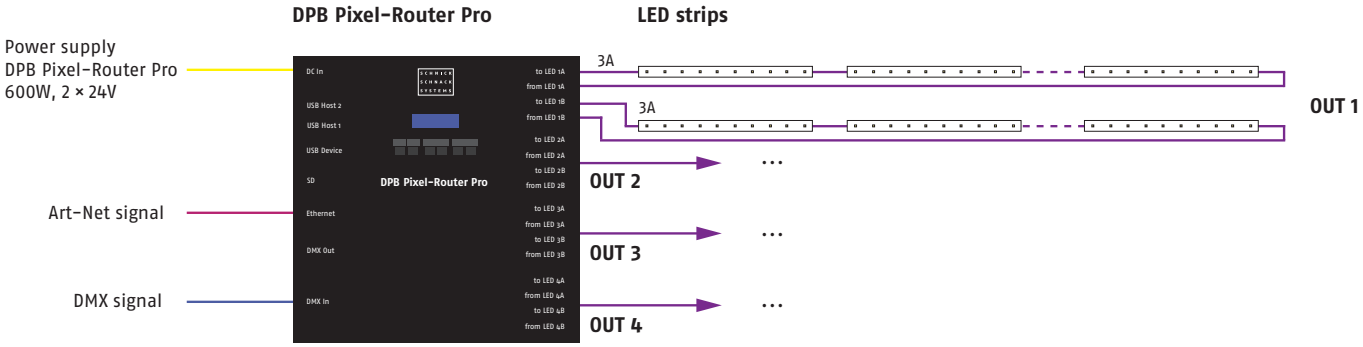
If the DPB Pixel-Router Pro has been taken from a cold environment into a warm interior, allow at least three hours for it to warm up before it is put into operation. This allows possibly formed condensation to evaporate and therefor the electronics are not endangered. The supply air temperature should not exceed 35°C.

Be sure to successively lock the cable connections for the DMX in- and output as well as the necessary LED outputs, when connecting cables. After all connections are made, turn on the device, ensuring that any power is also turned on at the sub-distribution. After approximately one second the DPB Pixel-Router Pro is ready for use.

Keep the unit out of direct sunlight at all times. Never clean the device with aggressive cleaners. For cleaning purposes, the wiping of the device with a moist cloth is sufficient.

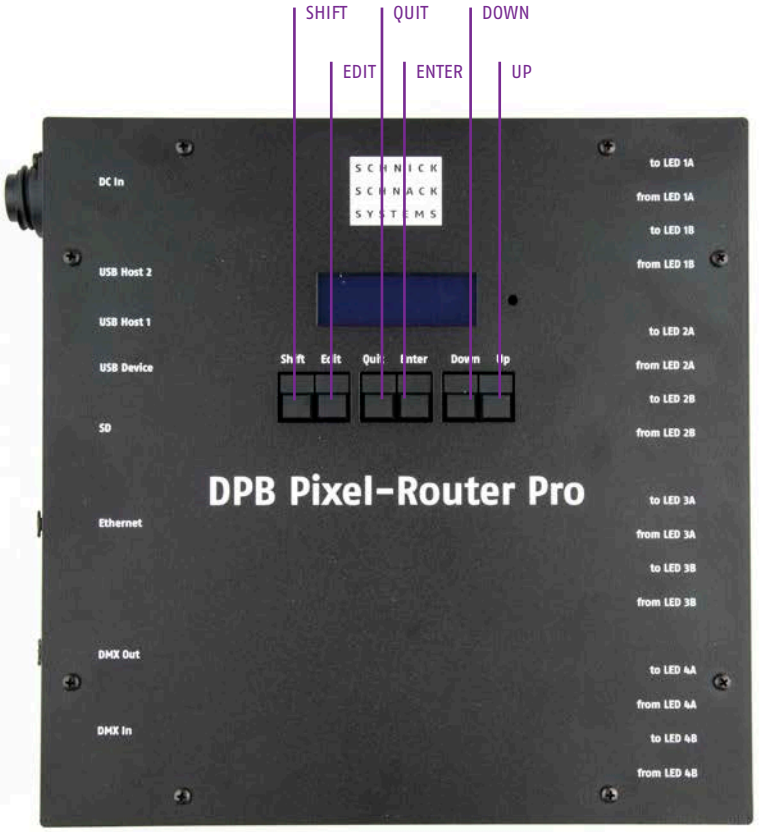
In the case of stubborn dirt, a mild cleaner can be used on the moistened cloth.

System Cabling



Menu

The following connectors are located at the unit:



SHIFT+		used in conjunction with...
	EDIT	to move backwards through the data fields
	ENTER	to confirm certain actions
EDIT		moves through the data fields
QUIT		exits the currently-selected mode or the sub menu
ENTER		to confirm certain actions e. g. mode changes
UP		moves upward through the mode list. Increases the value in the selected data field
DOWN		moves downwards through the mode list. Decreases the value in the selected data field

Menu Order

t: ...
Welcome to Systemnetzteil 4E
IP: ... v: 3.2. ...

Main Menu:
Info

Main Menu:
Manual Patch

Main Menu:
QuickPatch DMX

Main Menu:
QuickPatch Network

Main Menu:
Setup Menu

Main Menu:
Test Menu

Main Menu:
Factory Defaults

Menu Selection

To change mode, press the **QUIT** button. The display will show **CHANGE MODE?**.

Use the **UP/DOWN** button to select the desired mode and confirm the action by pressing the **ENTER** button or cancel by pressing the **QUIT** button again.

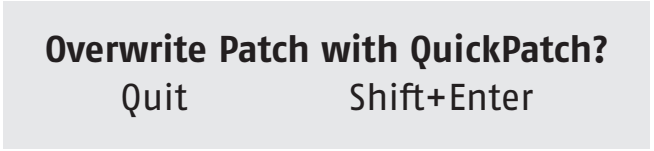
In most of the modes, for example QuickPatch Network and QuickPatch DMX, the configured settings will automatically be taken over. Input on the device is only necessary when changing set-up settings or switching within a new mode.

Info

This mode displays the installed software version, the IP address of the unit and its temperature.

Manual Patch

When changing from the **QuickPatch** mode into the **Manual Patch** mode the following display is shown:



In this case it's possible to apply the QuickPatch values with the manual patch. This step is irreversible. That's why you must hit the **SHIFT**-Key and the **ENTER**-Key to confirm. If you don't want to proceed with this step, you can exit with **QUIT**.

Setting values in Manual Patch Mode

To select the section you wish to work in – press the **EDIT**-Key.

To select the desired XLR output (1-4) use **OUTPUT** (OUT). To select the desired channel use **CHANNEL** (CH).

With **Type: Int** can allocate this channel a fixed, unchangeable intensity via value.

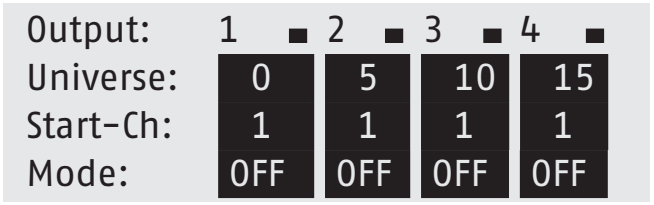
With **Type: DMX** will assign a DMX input channel to this DMX output channel.

QuickPatch Network

For every output there are three fields. The uppermost field displays the universe as a decimal number. The lower fields defines the first DMX channel of the universe (when the universe information should be routed to several outputs).

A checkmark in the box shows that all necessary data for this output will be received. The first valid universe is 0.

The QuickPatch Network mode makes it possible to control more LEDs with fewer channels.



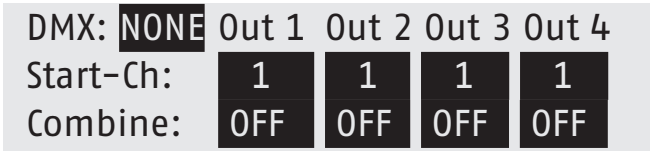
QuickPatch DMX

For each output two data fields are shown on the display.

Use the **EDIT** button to select the required field. The **DMX** field shows the status of the DMX signal. **NONE** shows that no DMX signal is being received. **GOOD** shows that a valid DMX signal is being received.

The upper field shows the **DMX start channel (start CH:)** for that output. The lower field offers the various repeat and combine options of the channels.

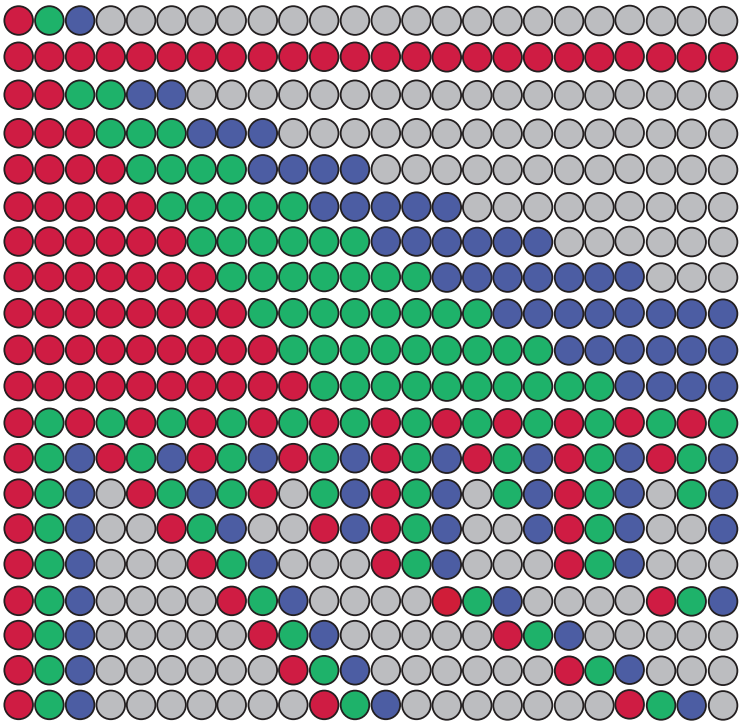
This function offers the possibility to control several LEDs with a few DMX channels.



The table on the following page offers the various repeat and combine options for the modes QuickPatch Network and QuickPatch DMX.

Combine and Repeat Modes for QuickPatch Network Mode/DMX Combine

OFF:	no combine
ALL:	all LEDs are steered by three DMX channels
C2:	always two LEDs are interconnected
C3:	always three LEDs are interconnected
C4:	always four LEDs are interconnected
C5:	always five LEDs are interconnected
C6:	always six LEDs are interconnected
C7:	always seven LEDs are interconnected
C8:	always eight LEDs are interconnected
C9:	always nine LEDs are interconnected
C10:	always ten LEDs are interconnected
R2:	each second LED is interconnected
R3:	each third LED is interconnected
R4:	each fourth LED is interconnected
R5:	each fifth LED is interconnected
R6:	each sixth LED is interconnected
R7:	each seventh LED is interconnected
R8:	each eighth LED is interconnected
R9:	each ninth LED is interconnected
R10:	each tenth LED is interconnected



Extract of the Combine and Repeat Modes as Overview – Switchable to C99 and R99

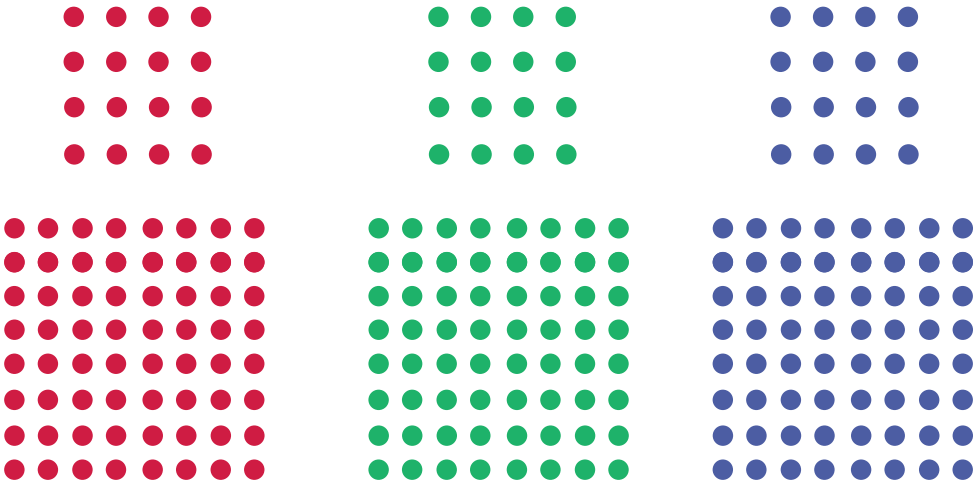
Combine and Repeat Modes C16 and C64

C16

- for LED-Tile C50
- for LED-Panels C60-50

C64

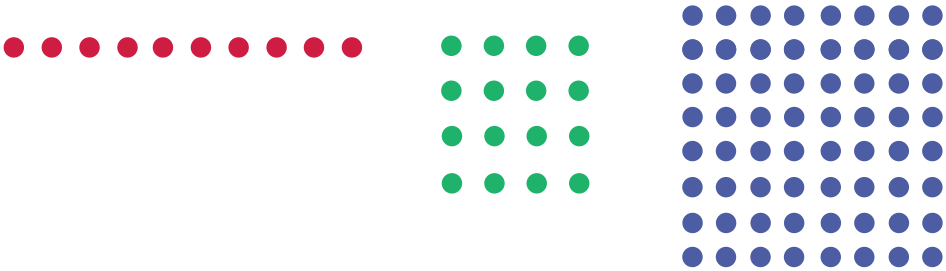
- for LED-Tile C25
- for LED-Panels C60-25



Combine and Repeat Modes Combine Device (CD)

Only for DPB

The Combine Mode CD allows you to combine different DPB Products, because it realizes how much channels a LED product requires: for example, the LED-Tile C25 (64 LEDs) and the LED-Strip C25-250 (10 LEDs). The products are controlled like the **Combine Mode ALL** (all LEDs are controlled by three DMX channels).



Setup Menu

Setup Menu:
Output

Setup Menu:
Gain

Display Auto Off

Output Type

Switching the transmission protocol to an output between DMX512, S3-DMX and DPB.

Like the other modes, use the **EDIT** button to select the required field and the **UP/DOWN** buttons to set the required values.

For each output modes can be chosen freely. There are three modes available:

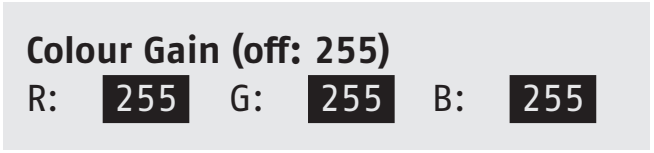
- S3-DMX
- DMX 512
- DPB

After setting the modes and confirming the changes with **SHIFT+ENTER**, the DPB Pixel-Router Pro restarts in order to take on the new settings.

Colour Gain

With this function the colour channels red, green and blue can be made darker. Thus, colour shifts can be compensated or created. The function is deactivated with 255.

As a standard, the values of the Color Gain are set to maximum intensity with R: 255, G: 255 and B: 255. These values can be dimmed in steps.



Display Auto Off

When in ongoing operation, the display goes off automatically after 60 seconds. As soon as the device is operated again, the display goes back on.

Test Menu

Test Menu:
Manual RGB

Test Menu:
S3Net

Test Menu:
Update

Test Menu:
DMX Rig Check

Test Menu:
Output Rig Check

Test Menu:
ArtNet Monitor

Test Menu:
ArtNet Test TX

Test Menu:
Demo Slow

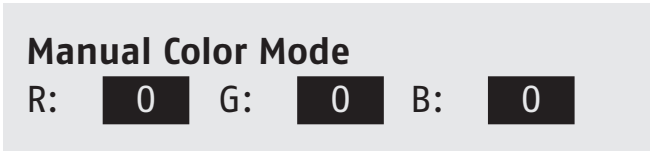
Test Menu:
Demo Fast

Manual RGB

In this menu option, it's possible to set a colour for all output channels in a very easy way by using the DPB Pixel-Router Pro.

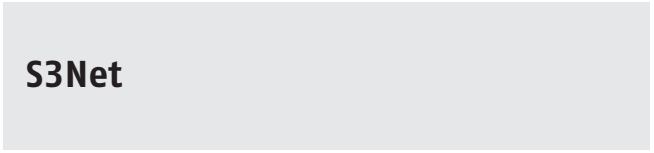
By default, the values of the Manual RGB are set to maximum intensity with R: 255, G: 255 and B: 255. These values can be dimmed in steps.

Like the other modes, use the **EDIT** button to select the required field and the **UP/DOWN** buttons to set the required values.



S3Net

Own protocol of Schnick-Schnack-Systems (e.g. for service purposes).

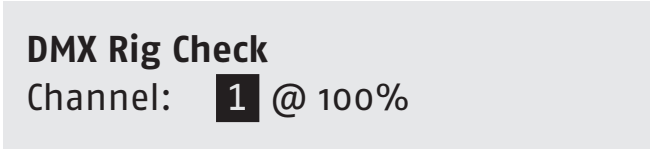


Update

To update the DPB Pixel-Router Pro's firmware or the firmware from connected C and M products, this menu option must be activated. The firmware update of the DPB Pixel-Router Pro takes place via network.

DMX Rig Check

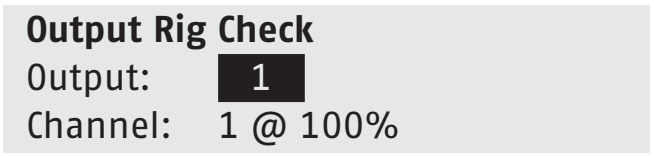
Simulate a received DMX signal. The signal will be allocated to the outputs according to the selected mode and patch and is used to test settings.



Output Rig Check

Works as a DMX transmitter. Each separate DMX channel can be individually controlled and dimmed.

Test and error detection functions in existing installations.



ArtNet Monitor

Monitor indicates, with which frequency the adjusted universe sends. This feature allows to test the frame rate of the respective Art-Net signal.

ArtNet Test Mode

In this mode, the DPB Pixel-Router Pro perates as an Art-Net data transmitter.

With this function you can check the performance of the Art-Net cabling and Ethernet switches used in a system without the need for an external Art-Net data source.

In this mode, the Router performs no other functions. There is also no LED control.
The DPB Pixel-Router Pro ssends a strobe signal over Art-Net, switching all channels on and off simultaneously.

The following parameters can be adjusted:

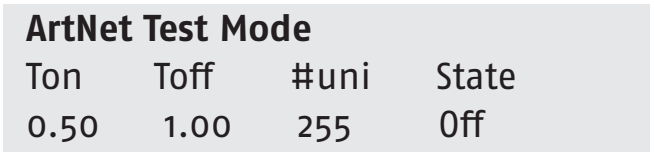
Ton
The duration of the On-pulse of the strobe impulse in seconds.

Toff
The duration of the Off-pulse of the strobe impulse in seconds.

#uni
The number of the Art-Net universe, over which data is being sent. In this mode, the DPB Pixel-Router Pro will default to the last-used universe.

The **STATE** field display, in real time, wheter an **ON** or **OFF** pulse is being sent.

While the DPB Pixel-Router Pro works in this mode only as an Art-Net transmitter the strobe signal on the separate output is not play.

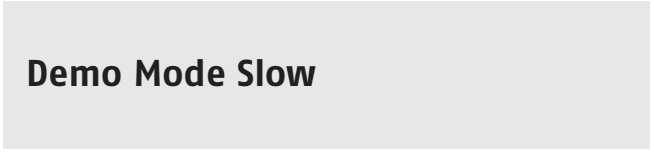


Demo Fast/Slow

In this mode, all connected RGB luminaries show a repetitive predetermined colour change.

The two modes differ only in the throughput speed.

The modes are only suitable for testing the connected RGB lights. Attractive and individual colour sequences can be created easily and quickly with the free software QuickColour.



Factory Defaults

If you push **SHIFT+ENTER**, the device resets to factory default settings.

Restore Factory Defaults?
Quit Enter

Software-Update

The DPB Pixel-Router Pro system software can be updated easily with the latest version using an SD Card.

New software versions keep products up to date with the latest features and are available on request. Please read the readme. txt file for details of how to format the software correctly onto an SD Card.

To update the software version

- Turn off the unit
- Insert the SD card carrying the software version to be uploaded into the SD card slot on the rear of the unit
- Turn on the unit
- The DPB Pixel-Router Pro recognizes the firmware on the card and updates the firmware to this version. The software update is shown in the display
- The DPB Pixel-Router Pro restarts once the installation is complete
- The DPB Pixel-Router Pro is now ready to use again
- Please remove the SD card, otherwise an update is performed when switching on the device

BootSys4E 1.3.1045
Updating to version 3.2.706 ...

To access the webserver

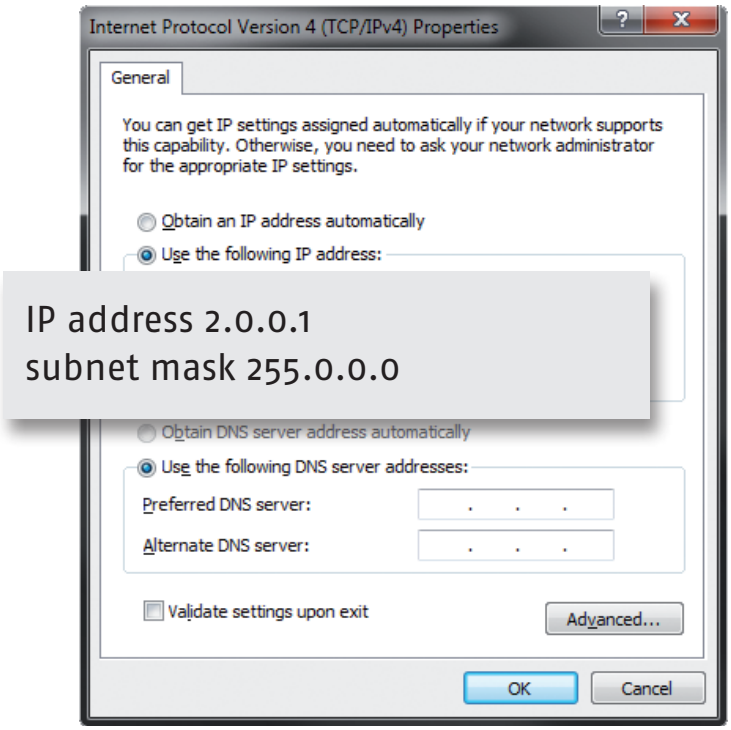
Step 1

Connect the PC to the Power Supply with a network cable.

Step 2

Configure the network card for Art-Net.

Caution: please note previous settings so they can be entered again later.

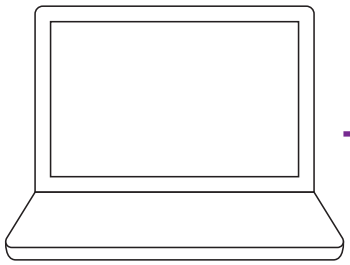


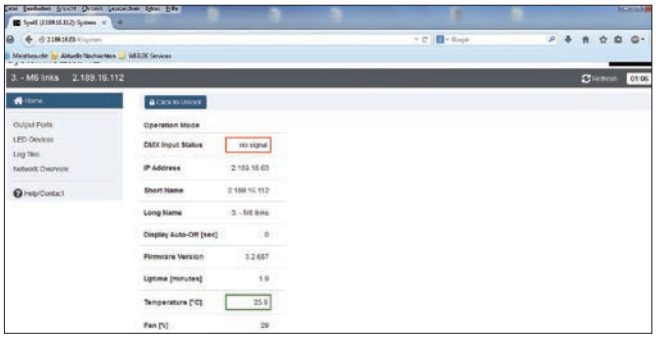
Step 3

View Power Supply IP address via Info.

Step 4

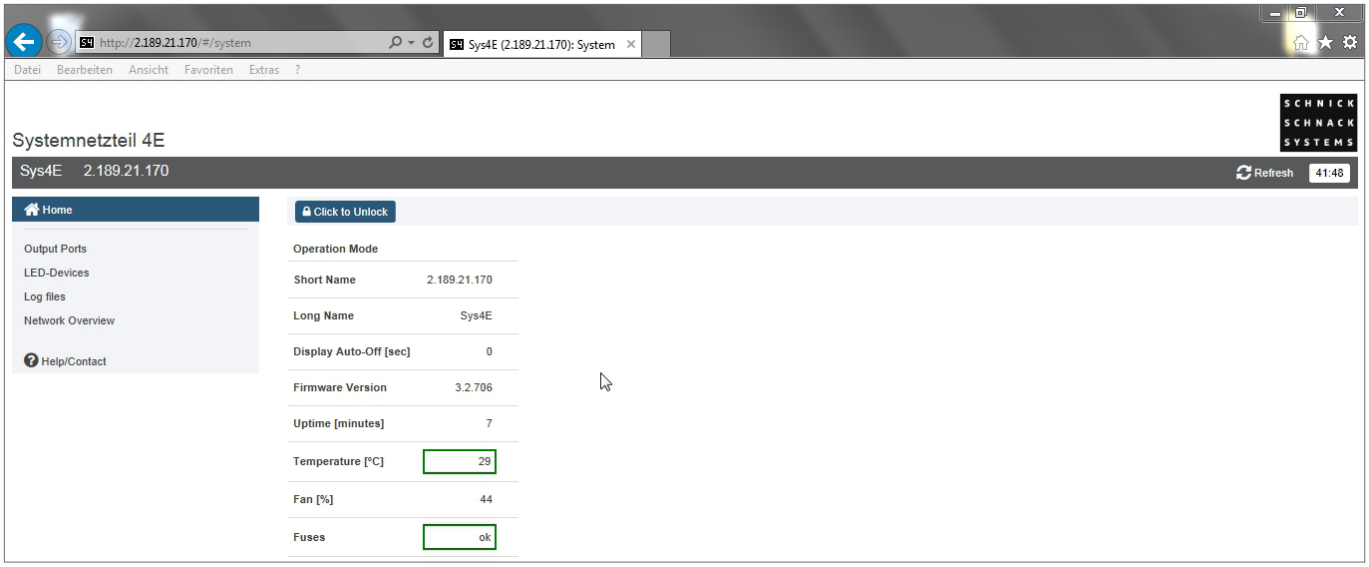
Enter IP address in the browser.





Web Server Settings

Homepage

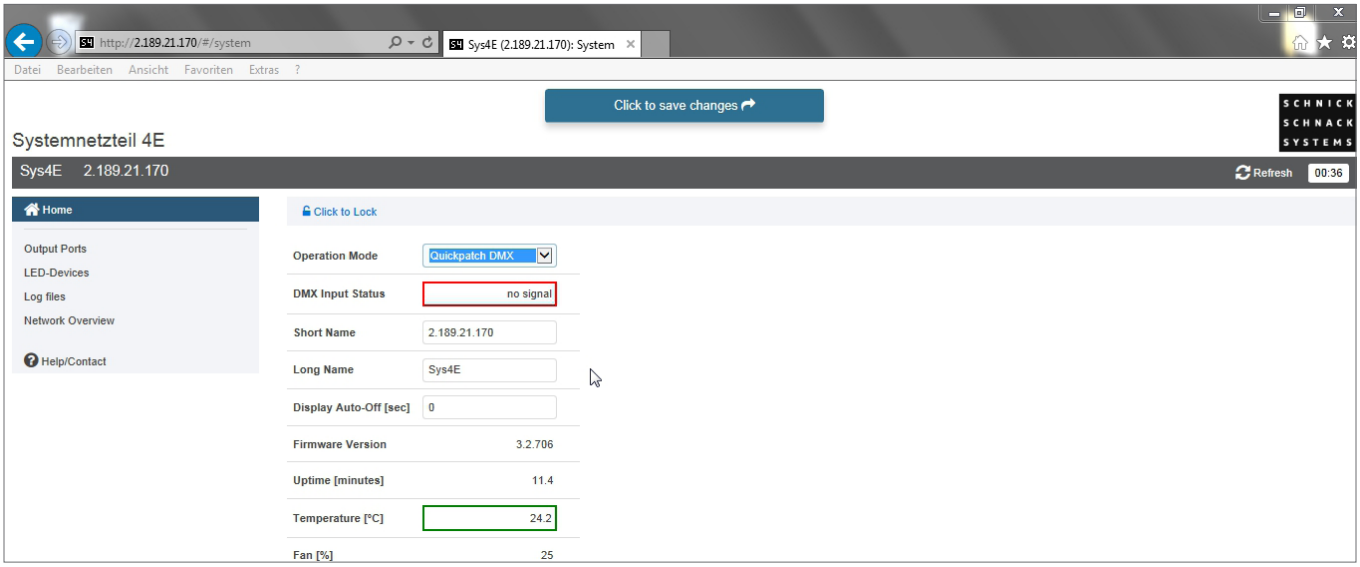


This is where the basic data for the DPB Pixel-Router Pro is displayed.

By clicking on **"click to unlock"** you can change the **Operation Mode** as well as the **name of the Router**.

The Fan [%] field is displayed but is not functional with the DPB Pixel-Router Pro.

Please note: since the complete firmware of the System Power Supply 4E has been taken over to the DPB Pixel-Router Pro, the product name System Power Supply 4E is also displayed when the web server is called.



Operation Mode

The following modes are available for your use:

QuickPatch Network (Page 11)
QuickPatch DMX (Page 11)
Manual RGB (Page 17)
Demo Fast (Page 19)
Demo Slow (Page 19)
Update (Page 17)

Press **"Click to save changes"** to save changes.

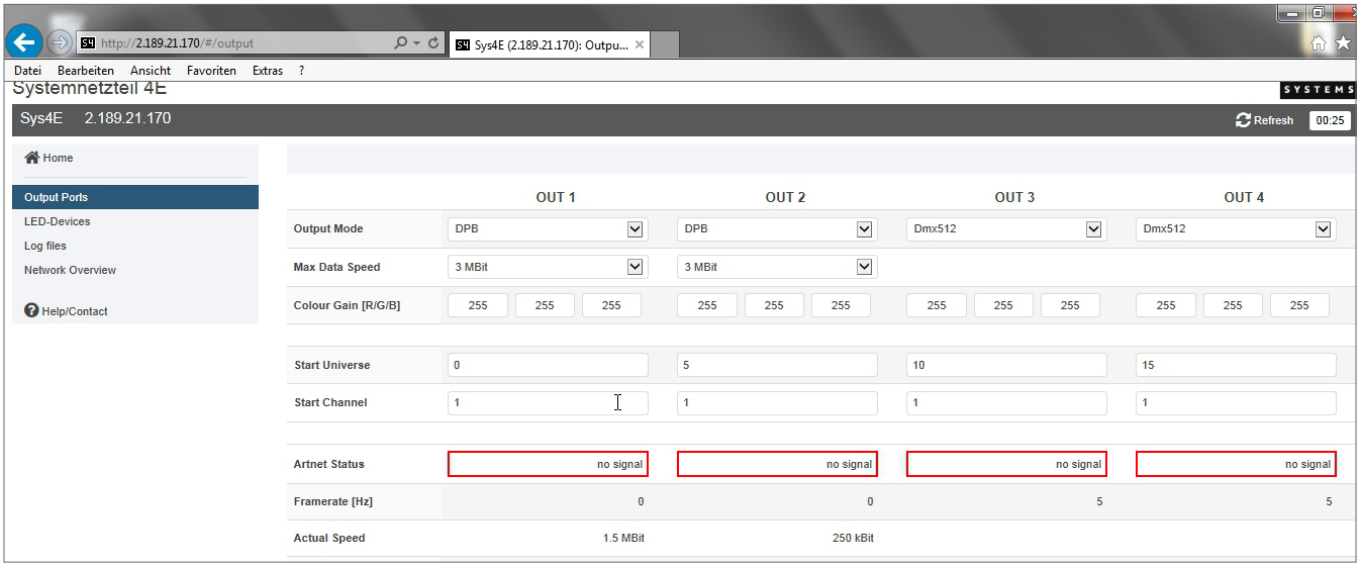
Short Name/Long Name

In this field, you can give the Router an individual name.

The names are shown in the grey list making it easier to identify the DPB Pixel-Router Pro.

They will also be shown in the network overview as well as in some Art-Net capable devices or software tools.

Output Ports



In the menu item **"Output Ports"** you can see an overview of the power supply's outputs. Here you can set the **Output Mode**, the **Maximum Data Transmission Speed** and the **Colour Gain**.

Output Mode

Switching the transfer protocol between DMX 512, S3-DMX and DPB. The mode can be freely selected for each output.

Max. Data Speed

The following transmission speeds are available for you: 250kBit, 500kBit, 1 MBit, 1.5 MBit, 3MBit.

This setting has only one implication in the DPB mode. The maximum speed at one port can be reduced with this setting in order to enable a better transmission on poor lines. Please note that because the data transfer rate is reduced and depending on the number of connected devices, not all of the data received can be transferred in its amount and rate.

Colour Gain

With this function, the colour channels red, green and blue can be set darker. With 255, this function is deactivated.

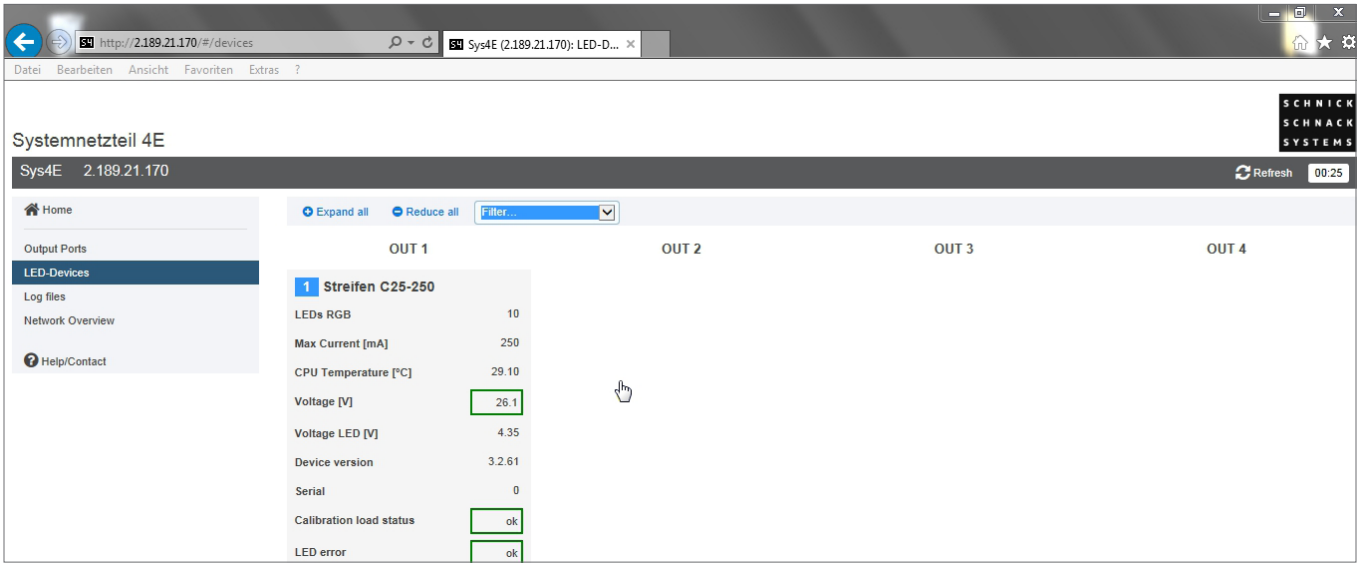
As a standard, the values of the Color Gain are set to maximum intensity with R: 255, G: 255 and B: 255. These values can be dimmed in steps.

Note: The Colour Gain for each output can be defined separately via the web server; all outputs receive the same value about the device.

Refresh

Page is reloaded, unsaved changes will be lost.

LED-Devices

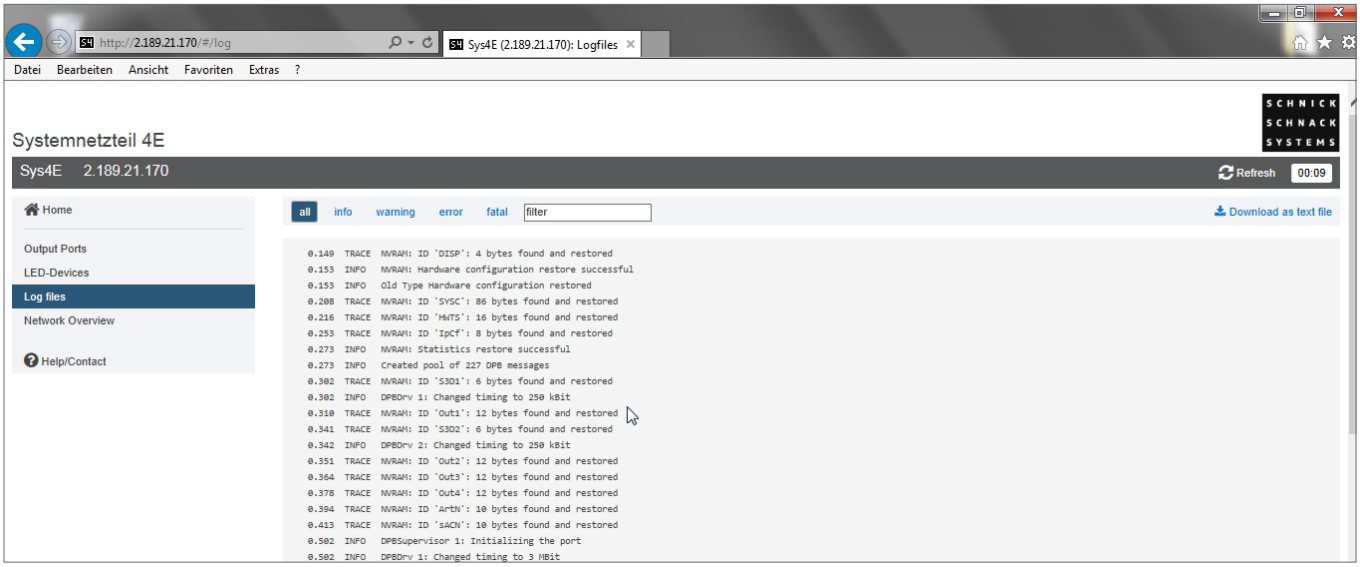


All connected, Generation 3-capable, LED Products can be found on this page. Available information for individual products is also shown. This includes, among other things, type and nature of the products as well as status information like temperature and voltage.

If the Output Mode of the output is set to DMX, no information will be available.

Note: Products belonging to Series L and B, as well as LED components named MKI cannot be displayed.

Log files

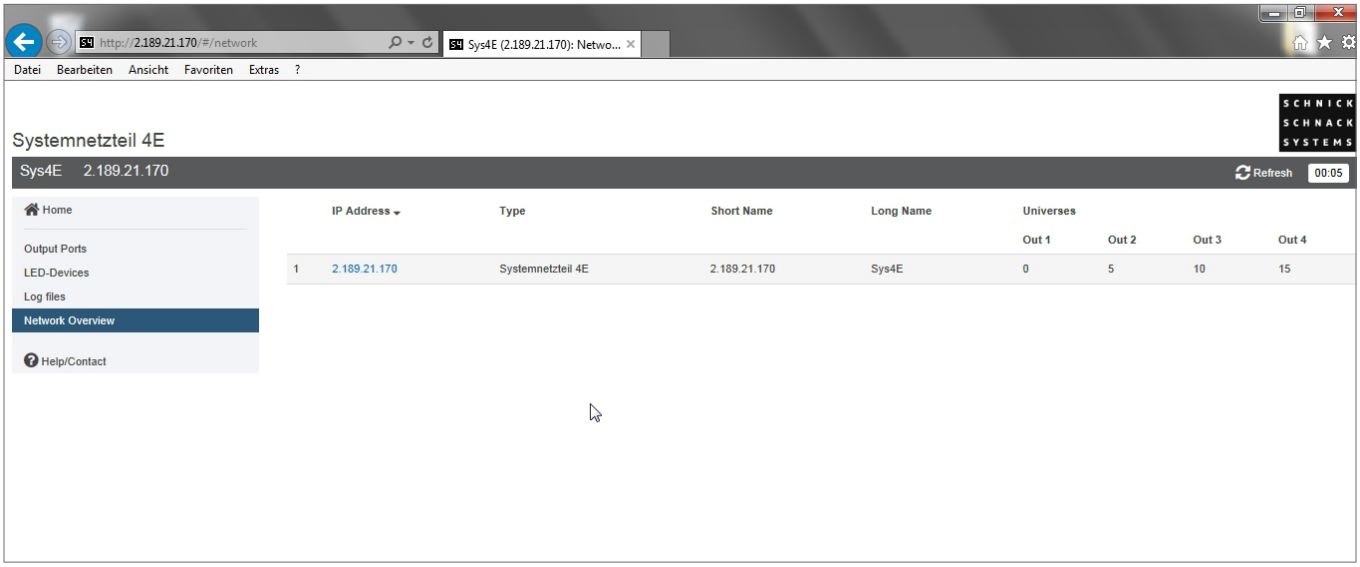


Service page for error analysis (internal).

The processes in the Power Supply are logged and if applicable make error analysis easier.

If needed, the log files can be downloaded as a TXT File with **“Download as”**. Log files will be lost in the event of re-starting or power loss and will be re-logged from that moment on.

Network Overview

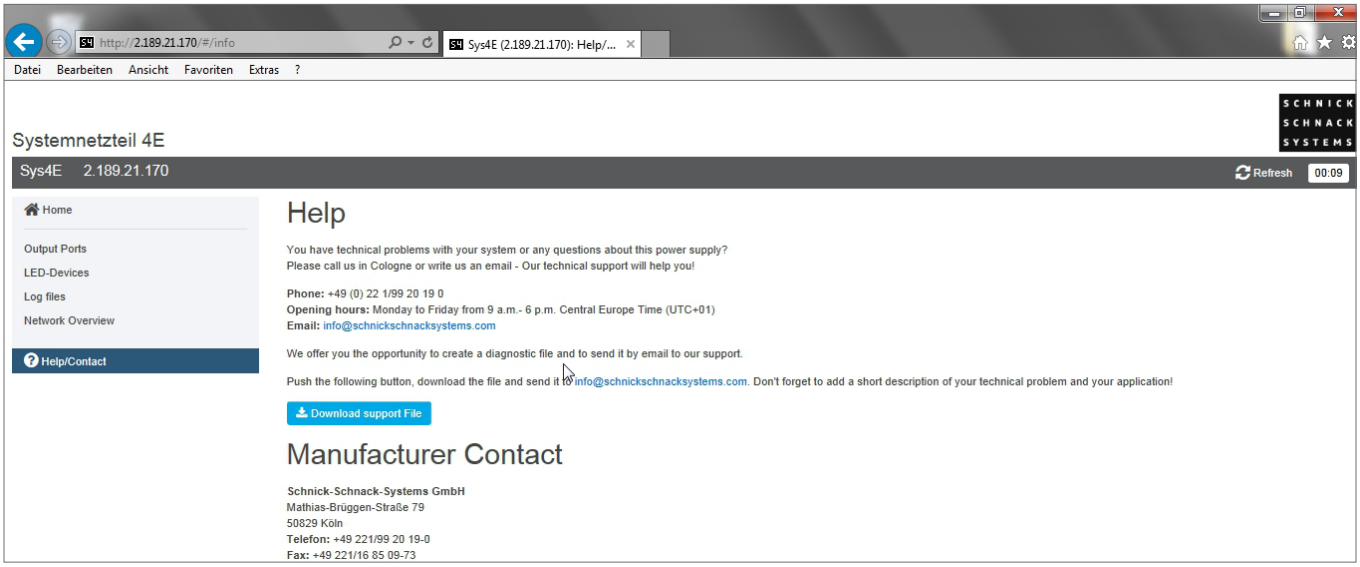


This page clearly lists all System Power Supply 4E, DPB Pixel-Router, DPB Pixel-Router Pro and Pixel-Gates found in the same network.

Clicking on the IP address takes you to the website of the respective device.

The list can be sorted according to for example IP address or Short Name by clicking on the relevant column headings.

Help/Contact



Press **"Download Support"** to download **log files** that help with error analysis.

Technical data

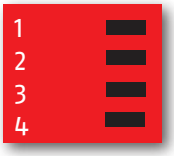
Dimensions	250 × 50 × 250mm (W × H × D)
Power consumption	maximum 6A per channel
Main connector	2 × 24V, 12A
DMX protocol	DMX 512 A-1990 USITT
DMX input	Neutrik XLR-5pin
DMX output	Neutrik XLR-5pin
Network input	Neutrik Ethercon socket, maximum 100MBit Full Duplex Ethernet
Network protocol	Art-Net™ V2 und V3 sACN (ANSII...)
LED outputs 1-4	System connector red
Weight	1,3kg

Pin Connection

DMX

1	2	3	4	5	Case
Data GND	Data-	Data+	n/a	n/a	n/a

System connector red



GND
DMX -
DMX +
24 V

Declaration of Conformity

EU-Declaration of conformity

I hereby declare that the product

DPB Pixel-Router Pro

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

meets the essential requirements of 2014/30/EU.

The following harmonized standards have been applied:

EN 60950

EN 55022

EN 55024

MANUFACTURER or AUTHORISED REPRESENTATIVE:

Address: Schnick-Schnack-Systems GmbH
Mathias Brueggen Str. 79
50829 Koeln
Germany

Tel.: +49 221 992 019 - 0 Fax.: +49 221 168 509 73

Koeln, 30th. June 2017

(Place, Date of issue)

(Signature)

Dipl. Ing. (FH) Erhard Lehmann

(Name in block letters)

Conversion table Art-Net Universes

Art-Net™ Standard (Hexadecimal Numbering)		**Schnick-Schnack-Systems (Decimal Numbering)**	**MA-Lighting Numbering**
Subnet	Universe		
0	0	0	1
0	1	1	2
0	2	2	3
0	3	3	4
0	4	4	5
0	5	5	6
0	6	6	7
0	7	7	8
0	8	8	9
0	9	9	10
0	A	10	11
0	B	11	12
0	C	12	13
0	D	13	14
0	E	14	15
0	F	15	16
1	0	16	17
1	1	17	18
1	2	18	19
1	3	19	20
1	4	20	21
1	5	21	22
1	6	22	23
1	7	23	24
1	8	24	25
1	9	25	26
1	A	26	27
1	B	27	28
1	C	28	29
1	D	29	30
1	E	30	31
1	F	31	32
2	0	32	33
2	1	33	34
2	2	34	35
2	3	35	36
2	4	36	37
2	5	37	38
2	6	38	39

Art-Net™ Standard (Hexadecimal Numbering)		**Schnick-Schnack-Systems (Decimal Numbering)**	**MA-Lighting Numbering**
Subnet	Universe		
2	7	39	40
2	8	40	41
2	9	41	42
2	A	42	43
2	B	43	44
2	C	44	45
2	D	45	46
2	E	46	47
2	F	47	48
3	0	48	49
3	1	49	50
3	2	50	51
3	3	51	52
3	4	52	53
3	5	53	54
3	6	54	55
3	7	55	56
3	8	56	57
3	9	57	58
3	A	58	59
3	B	59	60
3	C	60	61
3	D	61	62
3	E	62	63
3	F	63	64
4	0	64	65
4	1	65	66
4	2	66	67
4	3	67	68
4	4	68	69
4	5	69	70
4	6	70	71
4	7	71	72
4	8	72	73
4	9	73	74
4	A	74	75
4	B	75	76
4	C	76	77
4	D	77	78

Art-Net™ Standard (Hexadecimal Numbering)		**Schnick-Schnack-Systems (Decimal Numbering)**	**MA-Lighting Numbering**
Subnet	Universe		
4	E	78	79
4	F	79	80
5	0	80	81
5	1	81	82
5	2	82	83
5	3	83	84
5	4	84	85
5	5	85	86
5	6	86	87
5	7	87	88
5	8	88	89
5	9	89	90
5	A	90	91
5	B	91	92
5	C	92	93
5	D	93	94
5	E	94	95
5	F	95	96
6	0	96	97
6	1	97	98
6	2	98	99
6	3	99	100
6	4	100	101
6	5	101	102
6	6	102	103
6	7	103	104
6	8	104	105
6	9	105	106
6	A	106	107
6	B	107	108
6	C	108	109
6	D	109	110
6	E	110	111
6	F	111	112
7	0	112	113
7	1	113	114
7	2	114	115
7	3	115	116
7	4	116	117

Art-Net™ Standard (Hexadecimal Numbering)		Schnick-Schnack-Systems (Decimal Numbering)	MA-Lighting Numbering
Subnet	Universe		
7	5	117	118
7	6	118	119
7	7	119	120
7	8	120	121
7	9	121	122
7	A	122	123
7	B	123	124
7	C	124	125
7	D	125	126
7	E	126	127
7	F	127	128
8	0	128	129
8	1	129	130
8	2	130	131
8	3	131	132
8	4	132	133
8	5	133	134
8	6	134	135
8	7	135	136
8	8	136	137
8	9	137	138
8	A	138	139
8	B	139	140
8	C	140	141
8	D	141	142
8	E	142	143
8	F	143	144
9	0	144	145
9	1	145	146
9	2	146	147
9	3	147	148
9	4	148	149
9	5	149	150
9	6	150	151
9	7	151	152
9	8	152	153
9	9	153	154
9	A	154	155
9	B	155	156

Art-Net™ Standard (Hexadecimal Numbering)		Schnick-Schnack-Systems (Decimal Numbering)	MA-Lighting Numbering
Subnet	Universe		
9	C	156	157
9	D	157	158
9	E	158	159
9	F	159	160
A	0	160	161
A	1	161	162
A	2	162	163
A	3	163	164
A	4	164	165
A	5	165	166
A	6	166	167
A	7	167	168
A	8	168	169
A	9	169	170
A	A	170	171
A	B	171	172
A	C	172	173
A	D	173	174
A	E	174	175
A	F	175	176
B	0	176	177
B	1	177	178
B	2	178	179
B	3	179	180
B	4	180	181
B	5	181	182
B	6	182	183
B	7	183	184
B	8	184	185
B	9	185	186
B	A	186	187
B	B	187	188
B	C	188	189
B	D	189	190
B	E	190	191
B	F	191	192
C	0	192	193
C	1	193	194
C	2	194	195

Art-Net™ Standard (Hexadecimal Numbering)		Schnick-Schnack-Systems (Decimal Numbering)	MA-Lighting Numbering
Subnet	Universe		
C	3	195	196
C	4	196	197
C	5	197	198
C	6	198	199
C	7	199	200
C	8	200	201
C	9	201	202
C	A	202	203
C	B	203	204
C	C	204	205
C	D	205	206
C	E	206	207
C	F	207	208
D	0	208	209
D	1	209	210
D	2	210	211
D	3	211	212
D	4	212	213
D	5	213	214
D	6	214	215
D	7	215	216
D	8	216	217
D	9	217	218
D	A	218	219
D	B	219	220
D	C	220	221
D	D	221	222
D	E	222	223
D	F	223	224
E	0	224	225
E	1	225	226
E	2	226	227
E	3	227	228
E	4	228	229
E	5	229	230
E	6	230	231
E	7	231	232
E	8	232	233
E	9	233	234

Art-Net™ Standard (Hexadecimal Numbering)		**Schnick-Schnack-Systems (Decimal Numbering)**	**MA-Lighting Numbering**
Subnet	Universe		
E	A	234	235
E	B	235	236
E	C	236	237
E	D	237	238
E	E	238	239
E	F	239	240
F	0	240	241
F	1	241	242
F	2	242	243
F	3	243	244
F	4	244	245
F	5	245	246
F	6	246	247
F	7	247	248
F	8	248	249
F	9	249	250
F	A	250	251
F	B	251	252
F	C	252	253
F	D	253	254
F	E	254	255
F	F	255	256

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 also simple to operate and service.

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