

SCHNICK  
SCHNACK  
SYSTEMS

# System Power Supply 4E

User Guide



valid from release number 3.2.x



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Situation at May 2016: 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.

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# Overview

The System Power Supply 4E provides Schnick-Schnack-Systems' series L, B, C and M products with power and data.

The System Power Supply 4E 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 System Power Supply 4E as a standalone unit, without a DMX or Art-Net control signal.

The addressing of the components takes place directly on the System Power Supply via Smart Link.

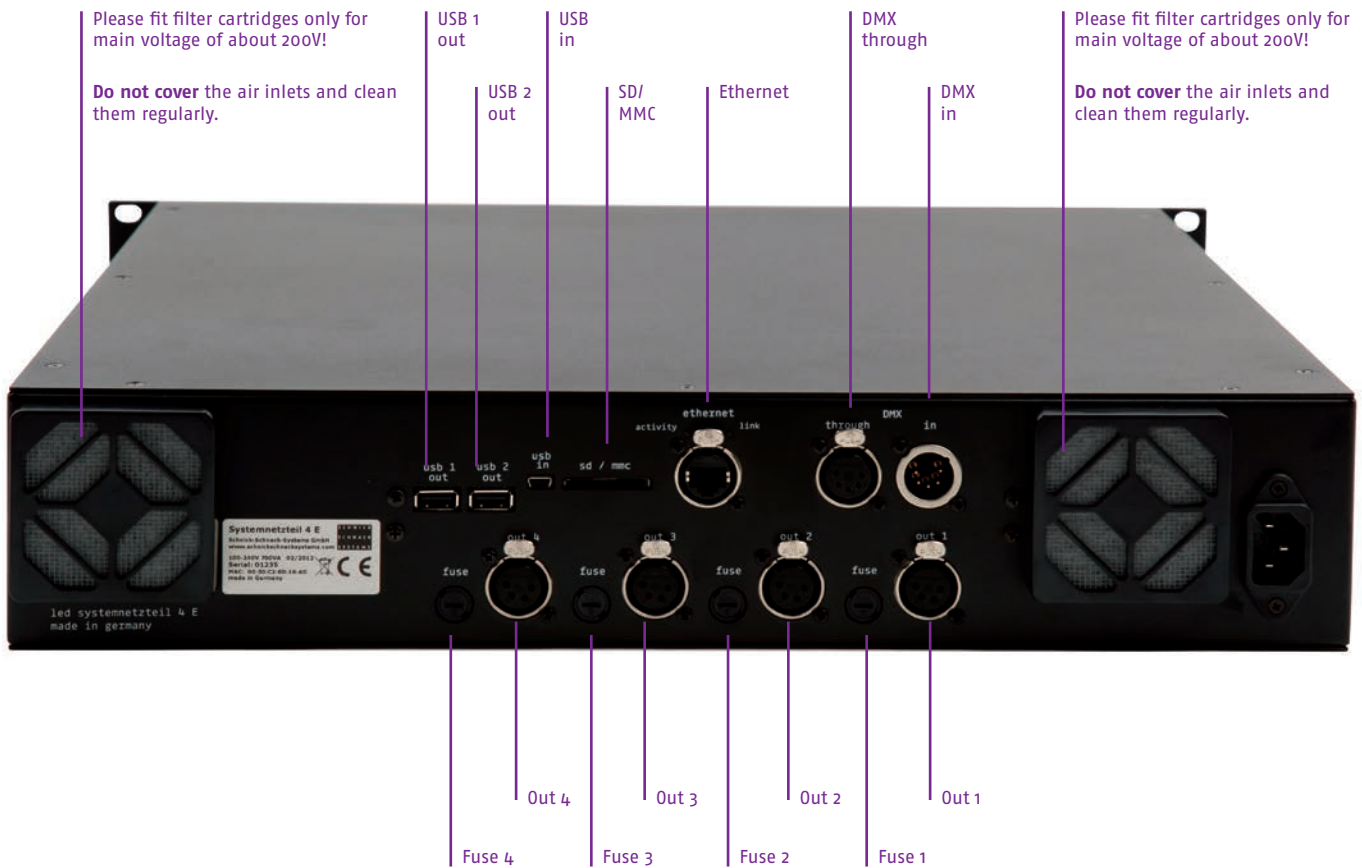
The System Power Supply 4E belongs to Generation 3 and in addition to DMX can also read the Dynamic-Pixel-Bus protocol (DPB) in order to control LED components. By using the DPB more LED-Panels or other elements per output of a system power supply are possible – up to 3.072 channels. Switching between 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 System Power Supply 4E.

Thanks to integrated HTML 5.0 webservers, the System Power Supply can be completely controlled remotely.

# Connectivity

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



<b>DMX in- and output</b>	Neutrik XLR 5-pin	<b>LED output 1-4</b>	Neutrik 4-pin XLR, maximum 6A*
<b>Ethernet input</b>	Neutrik Ethercon	<b>Power connection</b>	IEC plug
<b>Mini USB input</b>	reserved for future use	<b>Fuse</b>	safety 5mm × 20mm, slow, 6,3A*
<b>2 × USB output</b>	reserved for future use		
<b>SD card slot</b>	used for software updates		

\* Note: american version only 4 × 4A at 110V with UL label

# Installation

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

If the System Power Supply 4E 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 therefore the electronics are not endangered.

When installing into a rack, ensure that there is sufficient circulating air supply to the front and rear sides. The supply air temperature should not exceed 35°C.

The System Power Supply 4E is to be fitted into the rack installation using the appropriate rails so that the rack-bars take the load off the front panel of the System Power Supply and the unit is clearly accessible for maintenance. 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 hour the System Power Supply 4E 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.

## Cleaning of air filters

No tools are necessary in order to clean the air filters.

The fan guard can be removed easily by hand. After that the filter cartridge can be removed and cleaned using compressed air for example. The filter cartridge can then be replaced before refitting the fan guard. Please only use original filters.

**Please fit filter cartridges only for main voltage of about 200V!**

# System Cabling

Cabling of system is very simple although the following points should be considered:

Schnick-Schnack-Systems' LED illuminants connect to each other using four pin PCB connectors, which are small, lightweight and ideal for this purpose. The conductor cross-section and the mechanical quality of these cables are not suitable for long and durable leads.

Therefore, rugged XLR4-pin cables are to be used, that have two wires with large cross-section as well as a shielded twisted pair for data connection. The interface between both cable types serves as a cost-effective adapter board. Decorative features can be fitted with LED panels internally and fed externally with XLR cables.

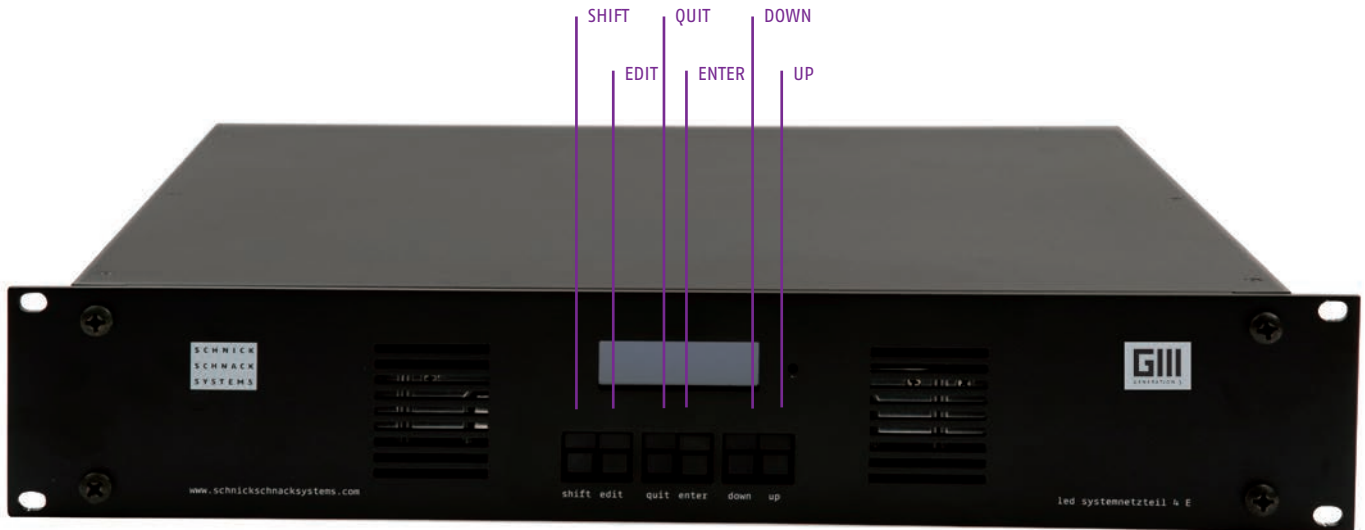
**Please note:** The length of the XLR4-pin cable between the System Power Supply and the adapterboard should not be longer than 20m. The total length of system PCB cable run from the System Power Supply should not exceed 6m.

---

**The exact number of the to be controlled LED products, cabling- and calculating examples can be found in the data sheets for each LED components.**

# Menu

The following connectors are located at the front of 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**

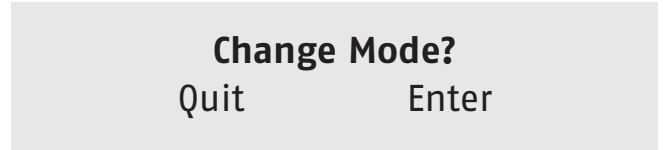
Main Menu:  
**Factory Defaults**

# Menu Selection

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

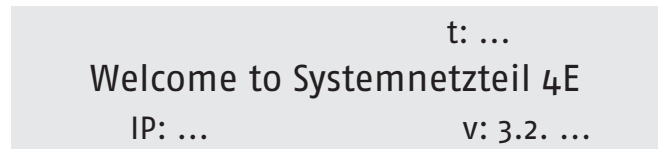
Use the **UP/DOWN** button to select the desired mode and confirm the action by pressing the **ENTER** button or cancel by pressing the **QUIT** button again.

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**.

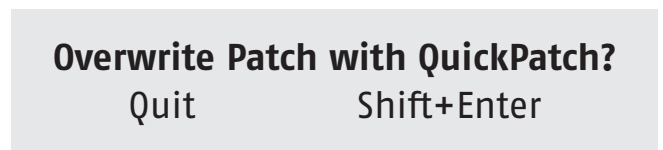
### Setting values in Manual Patch Mode

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.

Output:	1	2	3	4
Universe:	0	5	10	15
Start-Ch:	1	1	1	1
Mode:	OFF	OFF	OFF	OFF

# 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.

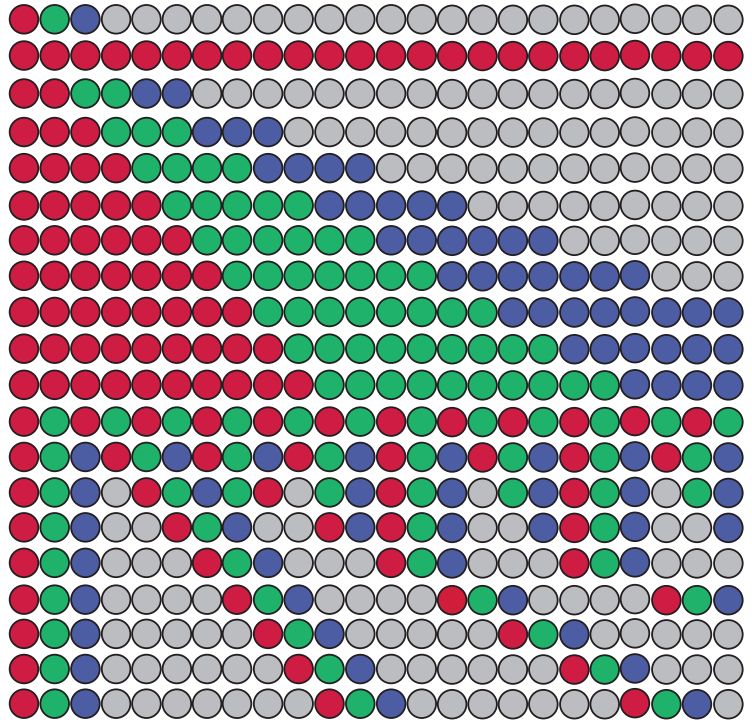
The upper field shows the **DMX start channel (start CH:)** for that output. The lower field offers the various repeat and combine options of the channels.

The table on the following page offers the various repeat and combine options for the system.

DMX:	NONE	Out 1	Out 2	Out 3	Out 4
Start-Ch:	1	1	1	1	1
Combine:	OFF	OFF	OFF	OFF	OFF

## 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

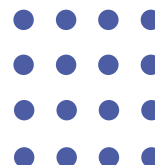


Extract of the Combine and Repeat Modes as Overview – Switchable to C99 and R99

### Combine and Repeat Modes C16 and C64

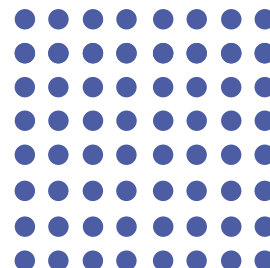
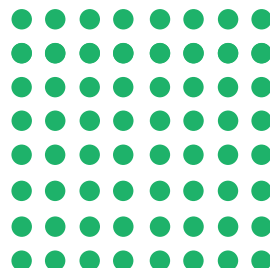
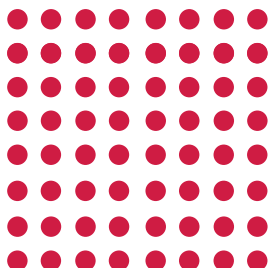
#### C16

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



#### C64

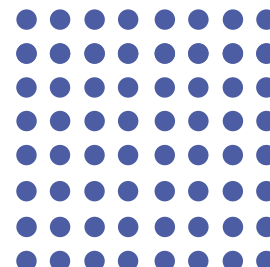
- for LED-Tile C25
- for LED-Panels C60-25



### 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 System Power Supply restarts in order to take on the new settings.

### Output Type

1:	DPB	2:	DPB
3:	DMX 512	4:	DMX 512

## 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.

### Colour Gain (off: 255)

R:	<b>255</b>	G:	<b>255</b>	B:	<b>255</b>
----	------------	----	------------	----	------------

## 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.

### Display Auto Off

# 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 System Power Supply 4E.

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

### Manual Color Mode

R: **0** G: **0** G: **0**

## S3Net

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

### S3Net

## Update

To update the System Power Supply 4E's firmware or the firmware from connected C and M products, this menu option must be activated. The firmware update of the System Power Supply 4E takes place via network.

### Update enabled

## 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.

### DMX Rig Check

#### DMX Rig Check

Channel: **1** @ 100%

## 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.

### Output Rig Check

### Output Rig Check

Output: **1**  
 Channel: 1 @ 100%

## 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 Monitor 0.0Hz  
 Monitor **0** 0.0Hz

## ArtNet Test Mode

In this mode, the System Power Supply 4E operates 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 System Power Supply 4E performs no other functions. There is also no LED control.

The System Power Supply 4E sends 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 System Power Supply 4E 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 System Power Supply 4E works in this mode only as an Art-Net transmitter the strobe signal on the separate output is not play.

### ArtNet Test Mode

Ton	Toff	#uni	State
0.50	1.00	255	Off

## 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.

### Demo Mode Fast

### Demo Mode Slow

## Factory Defaults

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

**Restore Factory Defaults?**

Quit

Enter

## Error Messages

If one of the fuses that protects the outputs from overload is blown, the display flashes and shows the message seen to the right.

In the example output 1 is failed. The other outputs function further. In this case please change the safety of the relevant output.

**Output Error**

	Out 1	Out 2	Out 3	Out 4
Fuse:	<b>BAD</b>	<b>OK</b>	<b>OK</b>	<b>OK</b>

# Software-Update

The System Power Supply 4E 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.

For updating with firmware 3.2. ... with Dynamic-Pixel-Bus please contact our technical support.

## 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 System Power Supply 4E recognizes the firmware on the card and updates the firmware to this version. The software update is shown in the display
- The System Power Supply 4E restarts once the installation is complete
- The System Power Supply 4E 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 ...**

S4

http://2.189.21.170

# User Guide Webserver

Systemnetzteil 4E

Sys4E

2.189.21.170



Home

Output Ports

lines

# To access the webserver

## Step 1

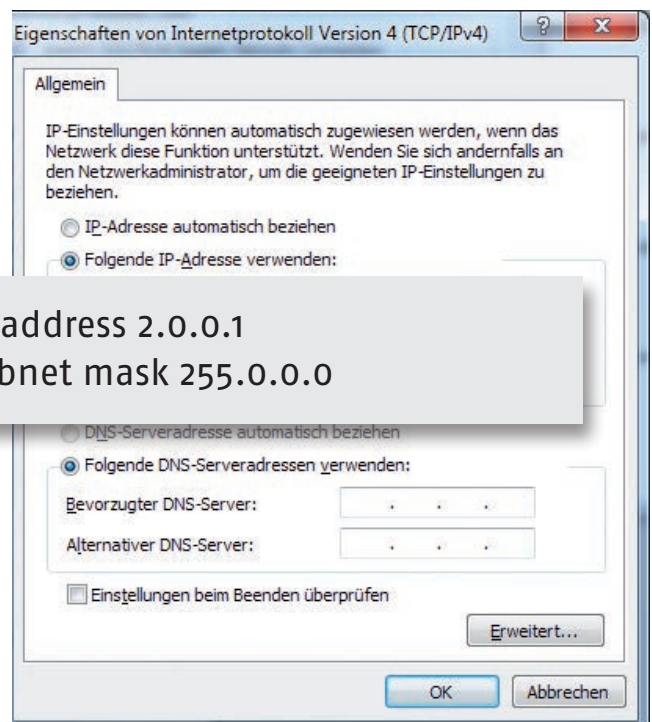
Connect the PC to the Power Supply with a network cable.



## Step 2

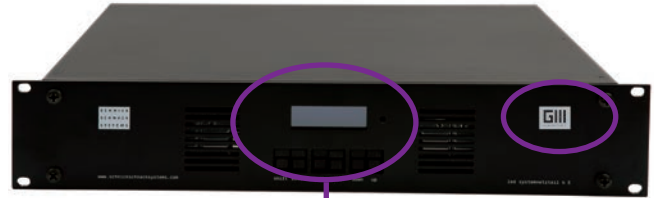
Configure the network card for Art-Net.

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



### Step 3

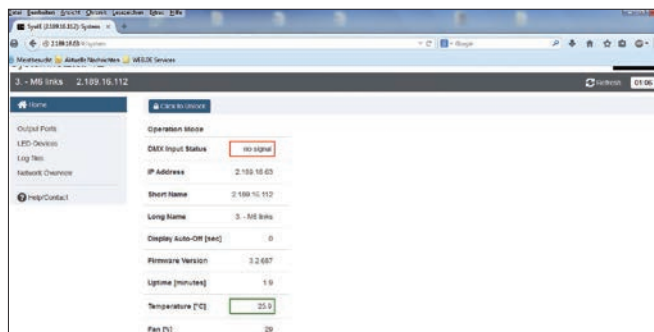
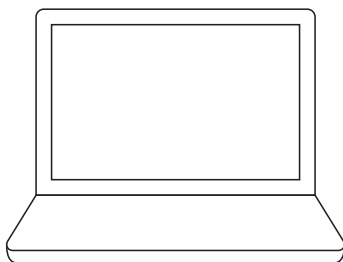
View Power Supply IP address via Info.



Systemnetzteil 4E  
IP 2.189.25.112

### Step 4

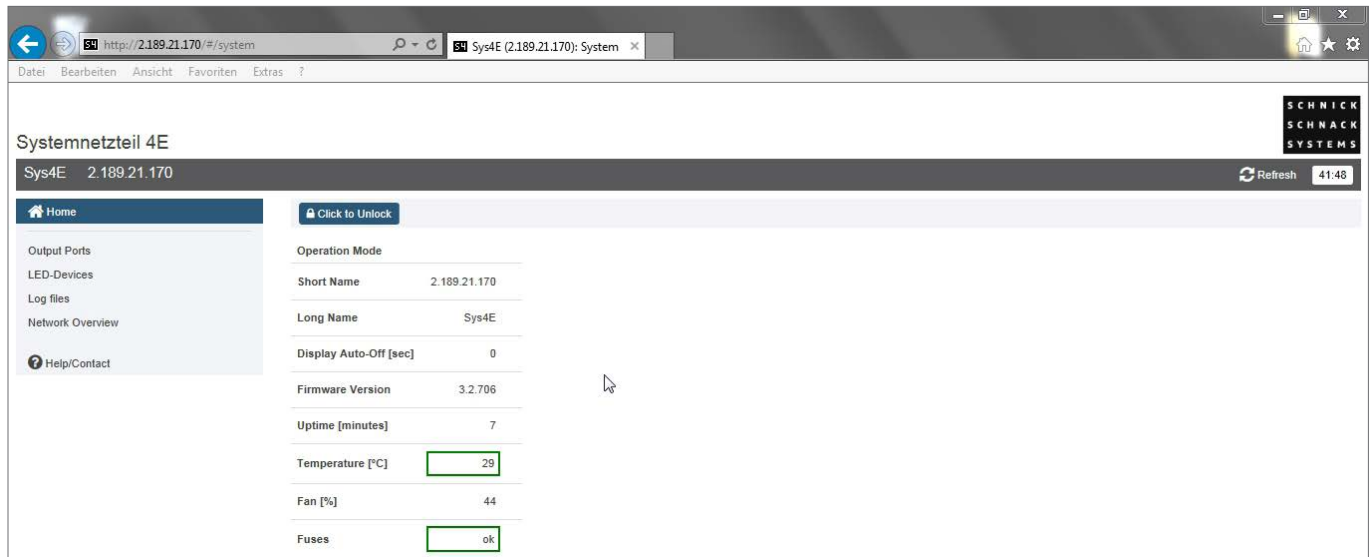
Enter IP address in the browser.





# Web Server Settings

## Homepage



The screenshot shows a web browser window displaying the homepage of the System Power Supply 4E. The browser address bar shows the URL `http://2.189.21.170/#/system`. The page title is "Systemnetzteil 4E". The browser's address bar also shows "Sys4E (2.189.21.170): System". The page features a navigation menu on the left with options: Home, Output Ports, LED-Devices, Log files, Network Overview, and Help/Contact. The main content area displays the "Operation Mode" section, which includes a "Click to Unlock" button and a table of system parameters:

Operation Mode	
Short Name	2.189.21.170
Long Name	Sys4E
Display Auto-Off [sec]	0
Firmware Version	3.2.706
Uptime [minutes]	7
Temperature [°C]	29
Fan [%]	44
Fuses	ok

This is where the basic data for the System Power Supply 4E is displayed.

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

Systemnetzteil 4E

Sys4E 2.189.21.170

Click to Lock

Operation Mode	Quickpatch DMX
DMX Input Status	no signal
Short Name	2.189.21.170
Long Name	Sys4E
Display Auto-Off [sec]	0
Firmware Version	3.2.706
Uptime [minutes]	11.4
Temperature [°C]	24.2
Fan [%]	25

## 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 Power Supply an individual name.

The names are shown in the grey list making it easier to identify the System Power Supplies.

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

## Output Ports

	OUT 1	OUT 2	OUT 3	OUT 4
Output Mode	DPB	DPB	Dmx512	Dmx512
Max Data Speed	3 MBit	3 MBit		
Colour Gain [R/G/B]	255 255 255	255 255 255	255 255 255	255 255 255
Start Universe	0	5	10	15
Start Channel	1	1	1	1
Artnet Status	no signal	no signal	no signal	no signal
Framerate [Hz]	0	0	5	5
Actual Speed	1.5 MBit	250 kBit		

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.

**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

The screenshot shows a web browser window displaying the SCHNICK-SCHNACK-SYSTEMS interface. The page title is 'Systemnetzteil 4E' and the URL is 'http://2.189.21.170/#/devices'. The interface includes a sidebar with navigation options: Home, Output Ports, LED-Devices (selected), Log files, Network Overview, and Help/Contact. The main content area shows a table of LED products. The first row is expanded, showing details for '1 Streifen C25-250' under 'OUT 1'. The table has columns for OUT 1, OUT 2, OUT 3, and OUT 4. The 'Voltage [V]' value of 26.1 is highlighted with a green box. Other values include LEDs RGB: 10, Max Current [mA]: 250, CPU Temperature [°C]: 29.10, Voltage LED [V]: 4.35, Device version: 3.2.61, Serial: 0, Calibration load status: ok, and LED error: ok.

	OUT 1	OUT 2	OUT 3	OUT 4
1 Streifen C25-250				
LEDs RGB	10			
Max Current [mA]	250			
CPU Temperature [°C]	29.10			
Voltage [V]	26.1			
Voltage LED [V]	4.35			
Device version	3.2.61			
Serial	0			
Calibration load status	ok			
LED error	ok			

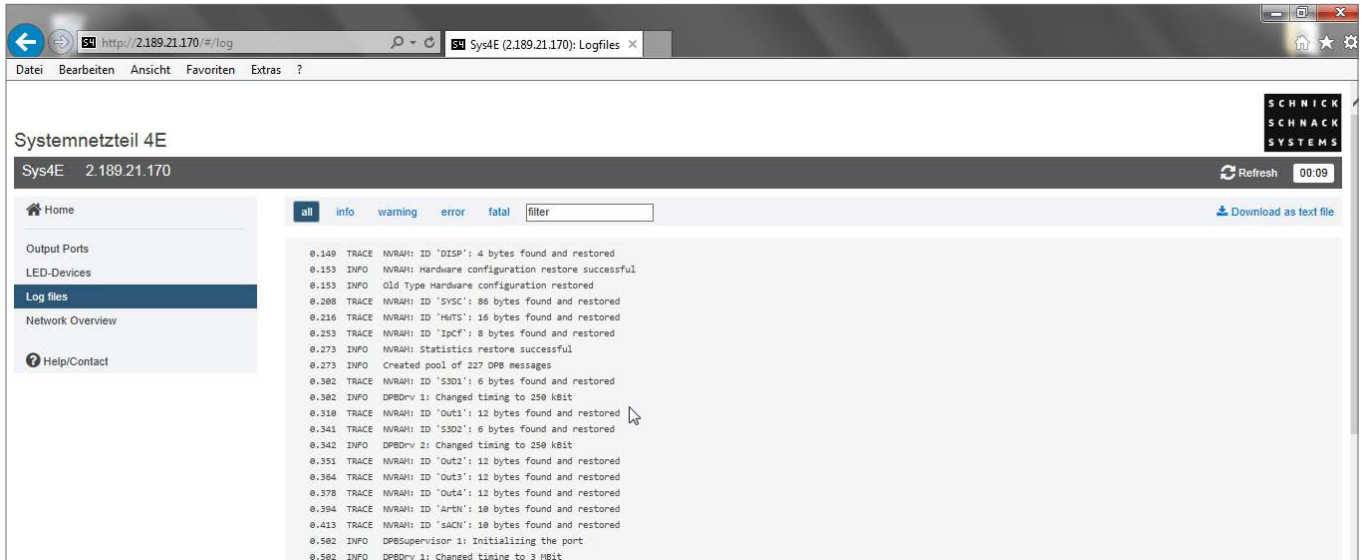
All connected, Generation 3-capable, LED Products can be found on this page. Available information for individual products is also shown. This includes, among other things, type and nature of the products as well as status information like temperature and voltage.

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

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

## Log files

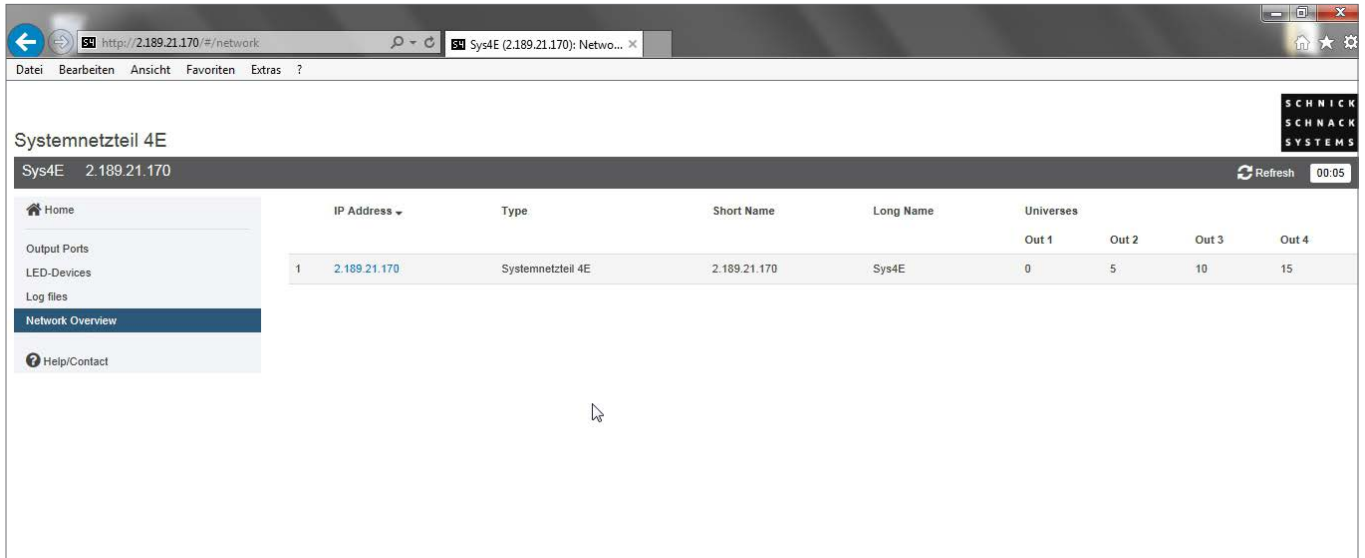


Service page for error analysis (internal).

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



The screenshot shows a web browser window with the URL <http://2.189.21.170/#/network>. The page title is "Systemnetzteil 4E" and the breadcrumb is "Sys4E 2.189.21.170". The page features a sidebar with navigation options: Home, Output Ports, LED-Devices, Log files, Network Overview (selected), and Help/Contact. The main content area displays a table with the following data:

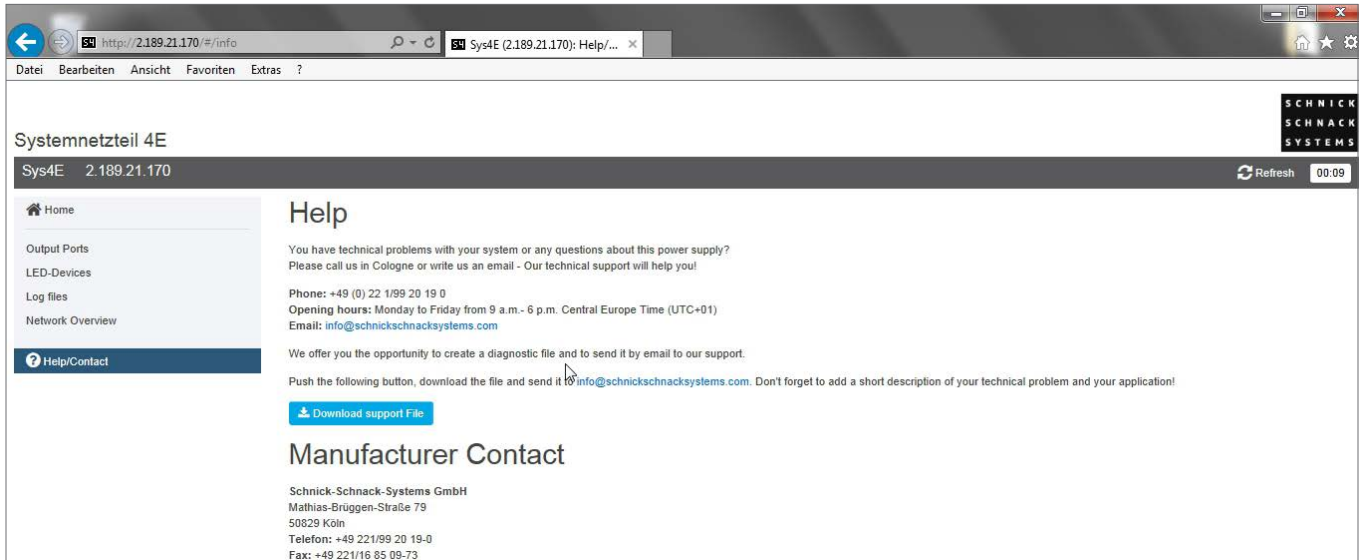
	IP Address	Type	Short Name	Long Name	Universes			
					Out 1	Out 2	Out 3	Out 4
1	<a href="#">2.189.21.170</a>	Systemnetzteil 4E	2.189.21.170	Sys4E	0	5	10	15

This page clearly lists all System Power Supply 4Es 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



The screenshot shows a web browser window with the address bar displaying `http://2.189.21.170/#/info`. The browser's menu bar includes "Datei", "Bearbeiten", "Ansicht", "Favoriten", and "Extras". The page title is "Systemnetzteil 4E" and the URL is "Sys4E 2.189.21.170". A "Refresh" button and a timer showing "00:09" are visible in the top right corner. The page content is organized into a sidebar and a main area. The sidebar on the left contains navigation links: "Home", "Output Ports", "LED-Devices", "Log files", "Network Overview", and "Help/Contact" (which is highlighted). The main area features a "Help" section with the following text: "You have technical problems with your system or any questions about this power supply? Please call us in Cologne or write us an email - Our technical support will help you!". Contact information is provided: "Phone: +49 (0) 22 1/99 20 19 0", "Opening hours: Monday to Friday from 9 a.m. - 6 p.m. Central Europe Time (UTC+01)", and "Email: [info@schnickschnacksystems.com](mailto:info@schnickschnacksystems.com)". A paragraph follows: "We offer you the opportunity to create a diagnostic file and to send it by email to our support. Push the following button, download the file and send it to [info@schnickschnacksystems.com](mailto:info@schnickschnacksystems.com). Don't forget to add a short description of your technical problem and your application!". Below this text is a blue button labeled "Download support File". The "Manufacturer Contact" section provides the following details: "Schnick-Schnack-Systems GmbH", "Mathias-Brüggen-Straße 79", "50829 Köln", "Telefon: +49 221/99 20 19-0", and "Fax: +49 221/16 85 09-73". The Schnick-Schnack-Systems logo is located in the top right corner of the page.

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

# Technical data

Case	19 inch, two height unit
Dimensions	483 × 88 × 430mm (W × H × D)
Input voltage	115–230V AC, 50–60Hz
Input current	800VA
Power consumption	maximum 6A per channel (at 110V maximum 4A per output)
Main connector	IEC plug, lockable
DMX protocol	DMX 512 A-1990 USITT
DMX input	Neutrik XLR5-pin
DMX output	Neutrik XLR5-pin
Network input	Neutrik Ethercon socket, maximum 100MBit Full Duplex Ethernet
Network protocol	Art-Net™ V2 and V3 sACN (ANSI...)
LED outputs 1–4	4 × Neutrik XLR4-pin, maximum 6A
Weight	9,5kg

## Pin Connection

### DMX

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

### XLR4-pin output

1	2	3	4	Case
GND	Data-	Data+	+24V	n/a



# Declaration of Conformity

I hereby declare that the product

LED-Beleuchtungssystem bestehend aus „LED-Systemnetzteil 4E“, „LED-Kachel C“, „LED Streifen C25“, „LED-Paneel C60“, „LED-Band C100“, „LED Streifen B“ mit „Intelligenz“ und Verkabelung nach Bedienungsanleitung

(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 55015:2000

## MANUFACTURER or AUTHORIZED REPRESENTATIVE:

Schnick-Schnack-Systems GmbH  
Heinrich-Pesch-Strasse 14  
50739 Koeln  
Germany

Tel: +49 221 992019-0  
Fax: +49 221 992019-22

Koeln, January 2nd 2008  
(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

<b>Art-Net™ Standard (Hexadecimal Numbering)</b>		<b>Schnick-Schnack-Systems (Decimal Numbering)</b>	<b>MA-Lighting Numbering</b>
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

<b>Art-Net™ Standard (Hexadecimal Numbering)</b>		<b>Schnick-Schnack-Systems (Decimal Numbering)</b>	<b>MA-Lighting Numbering</b>
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





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## **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.

## **Schnick-Schnack-Systems GmbH**

Mathias-Brüggen-Straße 79  
50829 Cologne (Germany)

Phone +49 (0) 221/99 2019-0  
Fax +49 (0) 221/16 85 09-73

[info@schnickschnacksystems.com](mailto:info@schnickschnacksystems.com)  
[www.schnickschnacksystems.com](http://www.schnickschnacksystems.com)