User Manual

pde DMX Generator V3

Ethernet to DMX Interface

Product# 102030

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Item Description & Possible Uses

DMX Generator, Revision 3, is a intelligent and comfortable converter from any IP based control system via LAN to DMX512. All commands are ASCII based or doable by HTTP:// requests and orientated to control light/channels in a easy way including fade times, presets and fades over all. All in All are the auto fade commands and group fades for reducing the lan traffic enormously and all will be internally calculated in DMX native resolution of 40 Hz.

Typical uses are controllers from KNX Home Server, Crestron, AMX, RTI, Control4, Shelly, Flic and many more

Tender text:

pde DMX Generator V3, Product#: 102030

Ethernet to DMX converter with independent fade automations and two independently amplified DMX outputs in a common DMX universe. In DIN rail housing, 4TE, with POE supply, bidirectional control via HTTP requests, TCP/IP clients or unidirectional via UDP using the transparent pde ASCII protocol. Fade commands integrated in the protocol cause a unique reduction in data traffic in the network and make control much easier. For fade processes, the dimming values are automatically calculated in the native resolution of the DMX signal 40x per second for all 512 DMX channels in real time. This results in a unique reduction of the "stair step effects" in fade processes. Different channels can be controlled simultaneously with individual fade times. "Sum commands" enable complete "black-outs" and "black-ins". Optimized management of presets for individual channels or related areas optimizes the saving and retrieval of presets.

The pde DMX generator is an ideal control of DMX lighting by control systems such as Crestron, KNX, Control4 and many more. in which the best possible and most comfortable dimming processes are to be implemented with little effort.

Technical Specification:

Source:	POE, Power Over Ethernet,
Power :	typical 1,5 - 2,0 Watt
Connector:	LAN 100MBit, incl. POE on RJ45 female connector 2 x DMX out on 3 pin. Phoenix Contact® connector 2 x Ground/Earth
Size:	69 mm x 68 mm x 90 mm, (W x H x D)
DIN Rail Mount:	4 Register
Weight:	150 g

Conditions:

Temperature Range:	+5°C to +40°C
Humidity:	10% to 70%, non-condensing
Product#:	102030, pde, DMX Generator V3
Manufacture:	pde Medientechnik Schwengelgasse 8-10 61184 Karben Germany www.pde-medientechnik.de mail@pde-medientechnik.de

Installation

The installation of the DMX Generator V3 is intended for distribution cabinets with DIN rail mounting. The device occupies 4TE and the data and POE supply is fed in via the RJ45 plug and has the standard assignment IEEE 802.3 Ethernet and for supply through a POE switch.

The outputs to the DMX bus are led out on screw terminals, both outputs can each control 16 own DMX participants and are driven independently of each other, i. H. Short circuits on one port do not affect the other port. Internal 120 ohm resistors terminate both bus lines, but can also be removed individually for each bus out using jumpers in the housing.

The protective conductor terminals are intended for grounding the ground potential and can also be used to wire the shielding. Both terminals are connected in parallel.

Abbildung Bus Schirmung folgt!!!!!!!!!!

First Contact

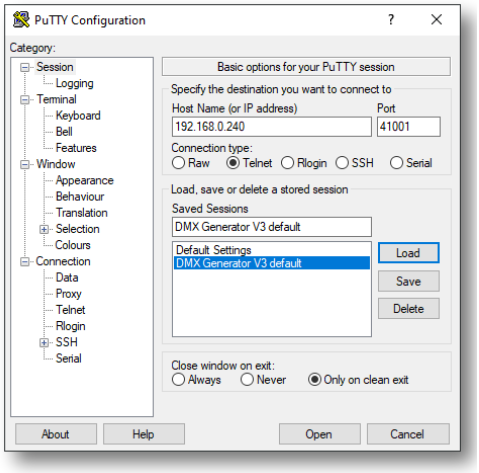
With the power supply via POE and LAN, the DMX generator starts working immediately, there are no switches or other mechanisms. Typical boot times are 1-2 seconds.

The DMX generator is factory set to the following values:

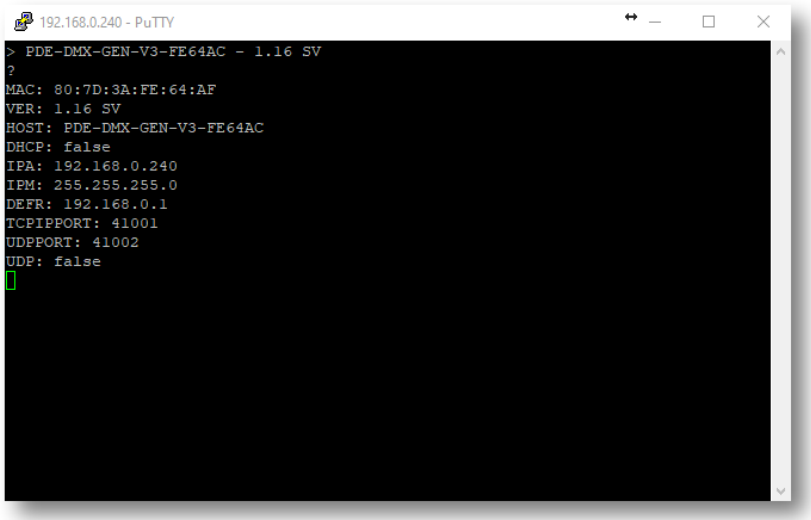
IP Address:	*192.168.0.240*
Mask:	*255.255.255.0*
Router:	*192.168.0.1*
TCP/IP Port:	*41001*

These settings can be changed and controlled via the TCP/IP protocol, details about all commands in the next chapter.

Connections are also now possible by Putty & Co:



Putty, Settings of a connection



Successful connection via Putty and the following command: ?[CR]

LEDs

Two LEDs are integrated on the labeling field, which indicate the status of the device.

„connected“ = green

LED off:	no power over POE > check POE
LED flashes:	waiting for TCP/IP connection
LED on:	TCPIP Client(s) connected

„DATA in“ = blue

LED off:	no DATA in
LED flash:	receives one package of DATA

„RESTORE“ Factory Defaults with hidden button

The recessed "RESTORE" button resets the device to the above-mentioned delivery status. Carefully press the recessed button in the screw opening below the "Restore" label until you hear the click for about one second, until the blue LED lights up continuously. Shortly thereafter, the DMX Generator loads its factory defaults and restarts. After the device has restarted itself, it now waits again for potential TCPIP clients with a flashing green LED

ASCII Commands:

The protocol via the TCP/IP or UDP port is ASCII-based and can be easily implemented with fixed and dynamic commands using control and automation systems or further programming languages. Each ASCII command set is terminated with a CR [CR = Carriage Return = 0x0D = 0Dh], shown below with [CR] as a single character. When programming, e.g. with Crestron, CR & LF is represented as "\x0D\0A", i.e. 2 bytes in hexadecimal.

With a successful TCPIP connection via client on port 41001, whereby the DMX generator is a TCPIP server, e.g. B. Command lines can be entered using Putty via the keyboard. The DMX generator responds with the desired answers or with unclear commands with "NAK".

Control values, preset calls, dimming stops commands and Q = commands for querying control values respond with the target control value.

Important Information:

Commands where Tz, Rz und Sx Commands are additional features will be repeated automatically

Commands to configure LAN settings of the DMX Generator

Command	Value Range	Desription
?[CR]	-	shows IP Settings of the unit
UP? [CR]	-	Time since power up or reboot
HELP[CR]	-	list all commands
IPA:192.168.0.240[CR]	IPv4	set IP Adress, additional STORE & REBOOT necessary
IPM:255.255.255.0[CR]	IPv4	set IP-Mask additional STORE & REBOOT necessary
DEFR:192.168.0.1 [CR]	IPv4	set Router address additional STORE & REBOOT necessary
DHCP[CR]	-	force DHCP to on additional STORE & REBOOT necessary
STORE[CR]	-	Writes configuration into the flash memory
REBOOT[CR]	-	reboots DMX Generator
INITIALIZE[CR]	-	bring all settings into the factory default

Settings single DMX Channels:

Commad	Value Range	Description
S1V255[CR]	S = 1-512 V = 0-255	S= Slot = DMX Channel V = Value DMX Channel
T5.5[CR]	T = 0.1 - 600	T= fading time in seconds
R10[CR]	R = 0.1 - 600	R = ramp time sets continuous fade time
+20[CR]	V = 0-255	last channel up + v, ex. = 20
-10[CR]	V = 0-255	last channel down - v, ex. = 10
S1! [CR]	S = 1-512	stops active dim process on channel
! [CR]	-	stops all dim processes on all 512 channels
BON[CR]	-	Blackout on, dims all Channels to 0d
BOFF[CR]		recalls all 512 Values to the value before last BON command
Q[CR]		Quest all 512 DMX channels
Qx[CR]	x = 1-512	Quest one channel
QTx[CR]	x = 1-512	Quest target value of one channel
Mv[CR]	v = 0-200	Master Fader = 100% = 100d
STRxPv[CR]	x = 1-512 v = 1-10	store preset “v” on Channel “x”
STRa-bPv[CR]	a = 1-511 b = 2- 512 v = 1-10	store preset “v” on all channels from “a-b”
RCLxPv[CR]	x = 1-512 v = 1-10	recalls preset v on channel x
RCLa-bPv[CR]	a = 1-511 b = 2- 512 v = 1-10	recalls preset “v” on all channels from “a-b”

Further commands and functions are already being worked on, we are always open to suggestions and requests, please send them to mail@pde-medientechnik.de

More detailed examples

Function: ask all IP Settings of DMX Generator V3 Unit
Command: **?[CR]**
Answer:

MAC: 24:6F:28:93:6C:87
VER: 1.15 SV
HOST: PDE-DMX-GEN-V3-936C84
DHCP: false
IPA: 192.168.0.241
IPM: 255.255.255.0
DEFR: 192.168.0.1
TCPIPPORT: 41001
UDPPORT: 41002
UDP: false

Function: List of all Commands
Command: **HELP[CR]**
Outputs a complete list of all DMX Generator V3 commands in the text console

Function: Set Value of a DMX Channel
Command: **S1V255[CR]**

S = Slot = 1 belongs to DMX Channel 1
V = Value = 255, Setpoint of DMX Channel, here: 100%

Function: Set Value of a DMX Channel in a total fading time
Command: **T2.6S4V127[CR]**

T = fade time = 2.6 seconds, this means: next setpoint will be reached in 2,6 seconds.
S = Slot = 4, = DMX Channel 4
V = Value = 127, here 50%

Function: Set Value of a DMX Channel with a continious Rampingtime
Command: **R10S4V255[CR]**

R = ramp time = 10 seconds, the target value will be reached in 10% per second. This means, 0 to 100% = 10 seconds or 50% to 80% = 3 seconds.
S = Slot = 4, = DMX channel 4
V = Value = 255, here 100%

Function: Dim one Channel to Maximum with a continuous ramp speed
Command: **R10S1V255[CR]**

Function: Dim one Channel to Off with a continuous ramp speed
Command: **R10S10[CR]**

Function: stop dimming a Channel
Command: **S!1[CR]**

Function: step up
Command: **S1+12[CR]**

S = Slot = 1, = DMX Kanal 1
V = Value = 12, step width, here ca. 5%

Function: step down
Command: **S2-3[CR]**

S = Slot = 2, = DMX Channel 2
V = Value = 3, step width, here ca. 1%

Function: complete universe off = BlackOut ON for all 512 channel
Command: **BON[CR]**
hint: **T10[CR]** before **BON[CR]** set fading time to 10 seconds

Function: complete Universe back to all values before last BON Command
Command: **BOFF[CR]**
Hint: **T1[CR]** before **BON[CR]** sets fading time to 1 second

Function: Store actual Value of Channel 1 to Preset 2
Command: **STR1P2[CR]**

Function: Store actual Value of Channels 10-30 to Preset 2
Command: **STR10-30P2[CR]**

Function: Recall Values of Channels 1-512 from Preset 2
Command: **RCL1-512P2[CR]**

Hint: **T2[CR]** vor dem **RCLxxxyyy[CR]** setzt die Fadezeit für den Presetabruf auf 2 Sekunden

Weiter Beispiele folgen

http Requests für Shelly Buttons, Flic Buttons & Co

From firmware version 1.12 it is also possible to trigger functions in the DMX Generator V3 via http requests. All commands from the TCP/IP protocol can be included in the URL and can therefore be triggered via any browser.

Example 1:
Function: Recall Values of Channel 1-10 from Preset 2
Command TCPIP: **RCL1-10P2[CR]**
Call via URL: http://192.168.0.240/dmx?cmd=RCL1-10P2

Example 2:
Function: step up
Command TCPIP: **S1+12[CR]**
Call via URL: http://192.168.0.240/dmx?cmd=S1+12

Example 3:
Function: Dim Channel 101 off in 4 Seconds
Command TCPIP: **T4S101V0[CR]**
Call via URL: http://192.168.0.240/dmx?cmd=T4S101V0

As of firmware version 1.17, multiple commands are also possible with one http request.

Example 1:
Function: Recall Values of Channel 1-10 from Preset 2 with a time of 5 Seconds
Command TCPIP: **T5[CR]RCL1-10P2[CR]**
Call via URL: http://192.168.0.240/dmx?cmd1=T5&cmd2=RCL1-10P2

Example 2:
Function: Set channel 1 to value 100, channel 2 to value 0 and channel 3 to value 100
Befehl TCPIP: **S1V100[CR]S2V0[CR]S3V100[CR]**
Call via URL: http://192.168.0.240/dmx?cmd1=S1V100&cmd2=S2V0&cmd3=S3V100

Firmware updates via web interface

Firmware updates can be easily uploaded and activated via the web interface.

Link for uploading firmware **before** version 1.12

http://192.168.0.240
Username: *pde* Password: *DMX*

Link for firmware updates **from** firmware versions 1.12

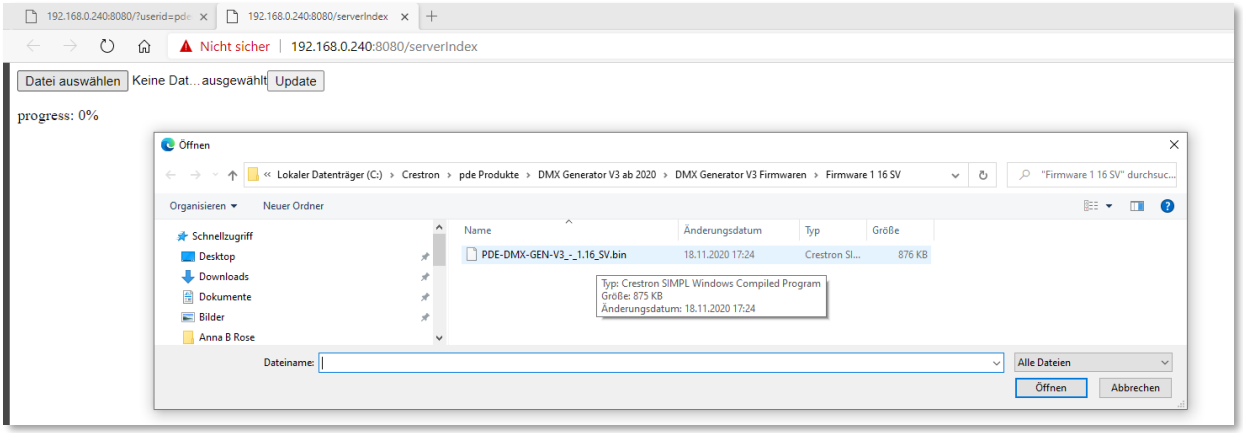
http://192.168.0.24:8080
Username: *pde* Password: *DMX*

Select file: browse to the received firmware version on your hard disk and select it

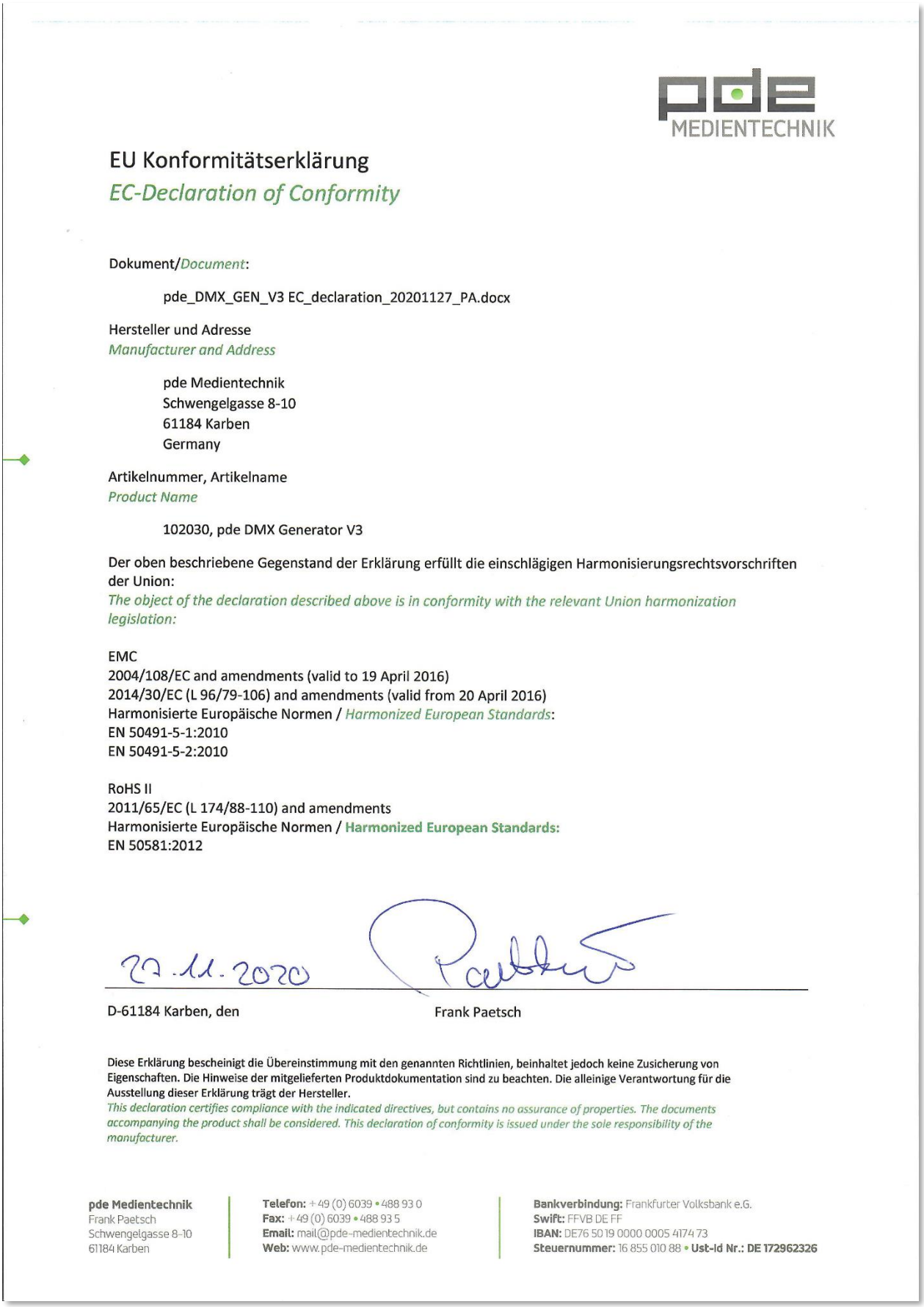
Update: after you have selected the *.bin file, press Update, the progress takes about 30 seconds and is also displayed on the web interface.

The device then boots through and the website can be closed. Test the upgrade with Putty, log in via Telnet/TCPIP and the device will respond with its Welcome line and a query can be made with: ?[CR].

Login Webinterface from firmware 1.12



Select firmware file *.bin



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EU Konformitätserklärung
EC-Declaration of Conformity

Dokument/*Document*:

pde_DMX_GEN_V3 EC_declaration_20201127_PA.docx

Hersteller und Adresse
Manufacturer and Address

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61184 Karben
Germany

Artikelnummer, Artikelname
Product Name

102030, pde DMX Generator V3

Der oben beschriebene Gegenstand der Erklärung erfüllt die einschlägigen Harmonisierungsrechtsvorschriften der Union:
The object of the declaration described above is in conformity with the relevant Union harmonization legislation:

EMC
2004/108/EC and amendments (valid to 19 April 2016)
2014/30/EC (L 96/79-106) and amendments (valid from 20 April 2016)
Harmonisierte Europäische Normen / *Harmonized European Standards*:
EN 50491-5-1:2010
EN 50491-5-2:2010

RoHS II
2011/65/EC (L 174/88-110) and amendments
Harmonisierte Europäische Normen / **Harmonized European Standards:**
EN 50581:2012

22.11.2020

D-61184 Karben, den — Frank Paetsch

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, beinhaltet jedoch keine Zusicherung von Eigenschaften. Die Hinweise der mitgelieferten Produktdokumentation sind zu beachten. Die alleinige Verantwortung für die Ausstellung dieser Erklärung trägt der Hersteller.
This declaration certifies compliance with the indicated directives, but contains no assurance of properties. The documents accompanying the product shall be considered. This declaration of conformity is issued under the sole responsibility of the manufacturer.

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Abb: pde_DMX_GEN_V3_EC_declaratoion_20201127_PA_scan.pdf

Legal Provisions

The DMX Generator V3 must not be used in connection with devices that serve directly or indirectly human, health or life-saving purposes. Furthermore, the devices described may not be used if their use could endanger people, animals or property.

Do not leave the packaging material lying around, plastic films/bags etc. can become dangerous toys for children.

All manufacturers and products referred to in this manual are registered trademarks of their manufacturers.

Disposal

Do not throw old devices in the household waste. The device contains electrical components that must be disposed of as electronic waste. The housing is made of recyclable plastic.

Danger to life from electric current:

All work on the device may only be carried out by qualified electricians. Country-specific regulations and applicable guidelines must be observed.

Service

If you have any questions about how the device works, returns or if you are surprised at the disturbing behavior of the device, please contact us at

mail@pde-medientechnik.de

To return goods, please use the above Apply for an RMA number and send it via secured shipping to:

pde Medientechnik
Schwengelgasse 8-10
D-61184 Karben
Germany

Anhänge:

folgen