MADRIX LIGHTING CONTROL

MADRIX NEBULA

The flexible pixel tape driver to directly control a wide range of digital LEDs.

Made in Germany

Key Features

5th Edition – 11/2019

The MADRIX® NEBULA directly connects to your LED pixels.
This advanced SPI decoder receives control data over Ethernet network or USB and is built to provide excellent image quality.

SPI Converter & Direct Connection

Directly connect to a wide range of supported LEDs via two 4-pin screw terminals. A signal frequency of up to 24 MHz is available. Supply power over USB or 5 V to 24 V over a 2-pin screw terminal.

Art-Net / Streaming ACN / USB

Network data is directly converted to SPI without the need for an additional interface. Reliably distribute data from any compatible software or hardware controller. In addition, simply connect to MADRIX® 5 over USB.

Supported LEDs

- APA101
- APA102
- APA104
- APA106
- GS8207
- GW6201
- GW6205
- LPD1882S
- LPD6803
- LPD8806
- MBI6120
- P9883
- SJ1221
- SK6812
- SK6822
- SM16703
- SM16716
- TLS3001
- TLS3008
- TM1804
- TM1809
- TM1812
- TM1814
- TM1829
- UCS1903
- UCS2903
- UCS512B3
- UCS8904
- UCS9812S
- WS2801
- WS2803
- WS2811
- WS2811S
- WS2812
- WS2812B
- WS2813
- WS2815
- WS2818
- WS2822S
- WS2822S Addressing

Additional LED types will be supported with future firmware updates.

Quality Output Of 8 Universes

Each device drives up to 1,360 RGB pixels while ensuring responsive delivery of high-quality signals to each individual LED. You can choose the output protocol separately for each of the two ports.

Sync Mode & Daisy-Chain Support

MADRIX® 5 and MADRIX® hardware allow you to fully synchronize Art-Net data for all ports and across devices to get an optimal image on the LEDs without visual interruptions. 2 Ethernet ports allow linearly daisy-chaining several devices together.

Designed For DIN Rails Or Walls

Its non-conductive enclosure and standardized design for 35 mm top-hat rails make mounting quick, easy, and safe. 2 extra brackets are provided for optional wall mounting. 9 indicators quickly show the device status with the option to turn them off.

Invaluable Features

The device is ready within seconds after startup.
HTP merging is automatically available for two Ethernet sources.
Its firmware is upgradable. Access and change specific device settings using the built-in web configuration page.

Package Contents

- MADRIX® NEBULA
- Set of screw terminals (2x 4-pin and 1x 2-pin)
- USB 2.0 cable (certified)
- 2x Wall-mount brackets
- Quick start guide / technical manual

More Information

Find all the latest user manuals, drivers, firmware updates, and more at www.madrix.com

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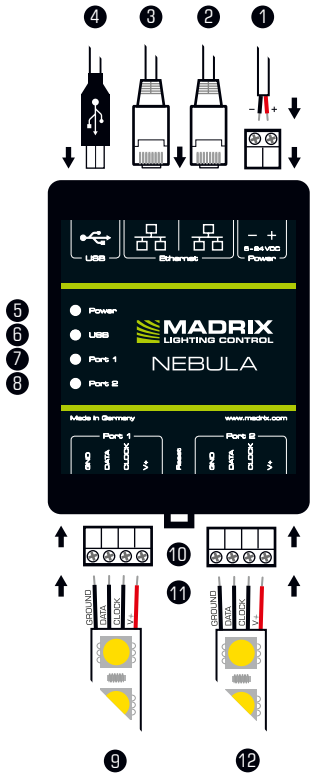
Technical Specifications

Power Supply	DC 5 V – 24 V, **A)** via 2-pin screw terminal (12 A max.), **B)** via 5 V USB, **C)** via Port 1 or 2 sourced from LEDs; 6 A max. load per port when supplying through to LEDs
Power Consumption	< 1.5 W during normal operation (300 mA max.)
USB	USB 2.0, type B port
Data Output	8x 512 channels SPI TTL (Maximum output per port: 680 RGB LEDs / 512 RGBW LEDs / 2048 1-channel LEDs)
Ports	2x ports (via 2x 4-pin, pluggable screw terminals)
Ethernet	2x RJ45, Auto MDI-X, 10/100 MBit/s (compatible with 1 GBit/s)
Supported LEDs *As of March 2019.* *See www.madrix.com for the latest information.*	APA101, APA102, APA104, APA106, GS8207, GW6201, GW6205, LPD1882S, LPD6803, LPD8806, MBI6120, P9883, SJ1221, SK6812, SK6822, SM16703, SM16716, TLS3001, TLS3008, TM1804, TM1809, TM1812, TM1814, TM1829, UCS1903, UCS2903, UCS512B3, UCS8904, UCS9812S, WS2801, WS2803, WS2811, WS2811S, WS2812, WS2812B, WS2813, WS2815, WS2818, WS2822S, WS2822S Addressing
Dimensions (L x W x H)	90 mm x 70 mm x 46 mm
Weight	110 g | 132 g incl. screw terminals and wall mounts
Operating Temp.	-10 °C to 70 °C
Storage Temp.	-20 °C to 85 °C
Relative Humidity	5 % to 80 %, non-condensing (Operating / Storage)
Case	Non-conductive, IP20, UL94 V-0 flammability rating, designed for 35 mm DIN-rails or wall mounting
IP Rating	IP20
Certificates	CE, FCC, RoHS

Connectivity



1) Power
2) Right Ethernet port, incl. 2 status LEDs
3) Left Ethernet port, incl. 2 status LEDs
4) USB port
5) Status LED for Power
6) Status LED for USB
7) Status LED for Port 1
8) Status LED for Port 2
9) Port 1
10) Reset button
11) DIN-rail unlocking clip
12) Port 2

CE FC RoHS compliant

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