ArtNet TwinPixx 16

User manual

Description

The **ArtNet TwinPixx 16** is a compact ArtNet (DMX via Ethernet) Interface, which converts ArtNet directly to two independent control signals for several LED-Stripes.

With a Standard RJ45-Network connection occurs the connection to ArtNet-Network.

Two independent outputs with selectable LED-Controller
The ArtNet TwinPixx 16 provides two independent configurable outputs. The used LED-Controller of the connected LED-Stripe as well as the further parameters are selectable for each output.

Adjustable color reproduction
The color sequence is adjustable which allows a universal application. Furthermore a SingleColor-Option can be selected. This means that each pixel only uses one channel.

Adjustabel pixel groups
The ArtNet TwinPixx 16 supports pixel groups with adjustable lengths. Each pixel group behaves like a single pixel which is controlled by 3 DMX-Channels. So for longer installations channels can be economized.

Disengageable LED-Display
The LED-Display on the ArtNet TwinPixx 16 is disengageable via ArtNet-Command (AcLedMute) or via time control. This is very helpful on stages to avoid disturbing "light points".

Easy Configuration
A user friendly configuration via a web browser allows a fast and uncomplicated setting of all parameters. No special software is necessary, a standard web browser is enough. So, the configuration is possible any time by PC, Smartphone or tablet. For an easy setting of the IP we provide the IP-Configurator as PC-Tool or Android-App for free. The network settings can be leaved unchanged and the IP can be configured without any problems.

High quality and compact design
The ArtNet TwinPixx 16 is manufactured and integrated in a compact aluminium housing.

Combinable with WiFi-Components
In connection with a WLAN-Bridge the ArtNet TwinPixx 16 can be integrated in a WLAN-Network.

Firmware-Update-Function
To use future functions the ArtNet TwinPixx 16 provides a Firmware-Update-Function. This can be started from a web browser, so no direct access to the device is necessary!

Data sheet

Power supply:	5V DC via delivered power supply
Connection:	RJ45 Ethernet / Art-Net™ 2x 3 pin screw clamps USB Mini-B (power supply connection)

Output protocol:

APA-102, SK9822, MagiarLED III flex
max. 2720 Pixel for each output

APA-101, APA-104,
GS8208,
DycoLED PB3, DycoLED PB5,
INK1002, INK1003,
LPD1101, LPD8803, LPD6803,
LPD1886 8Bit, LPD1886 12Bit (8Bit controlled)
SK6812, TM1804, TM1812, TM1814, TM1829,
UCS1903, UCS2912,
WS2801, WS2811, WS2812, WS2812B,
WS2813, WS2815, WS2818, WS2821
max. 1360 Pixel for each output

LPD1886 12Bit (12Bit controlled),
UCS9812 (8Bit controlled), UCS9812 (16Bit controlled)
max. 680 Pixel for each output

DMX512

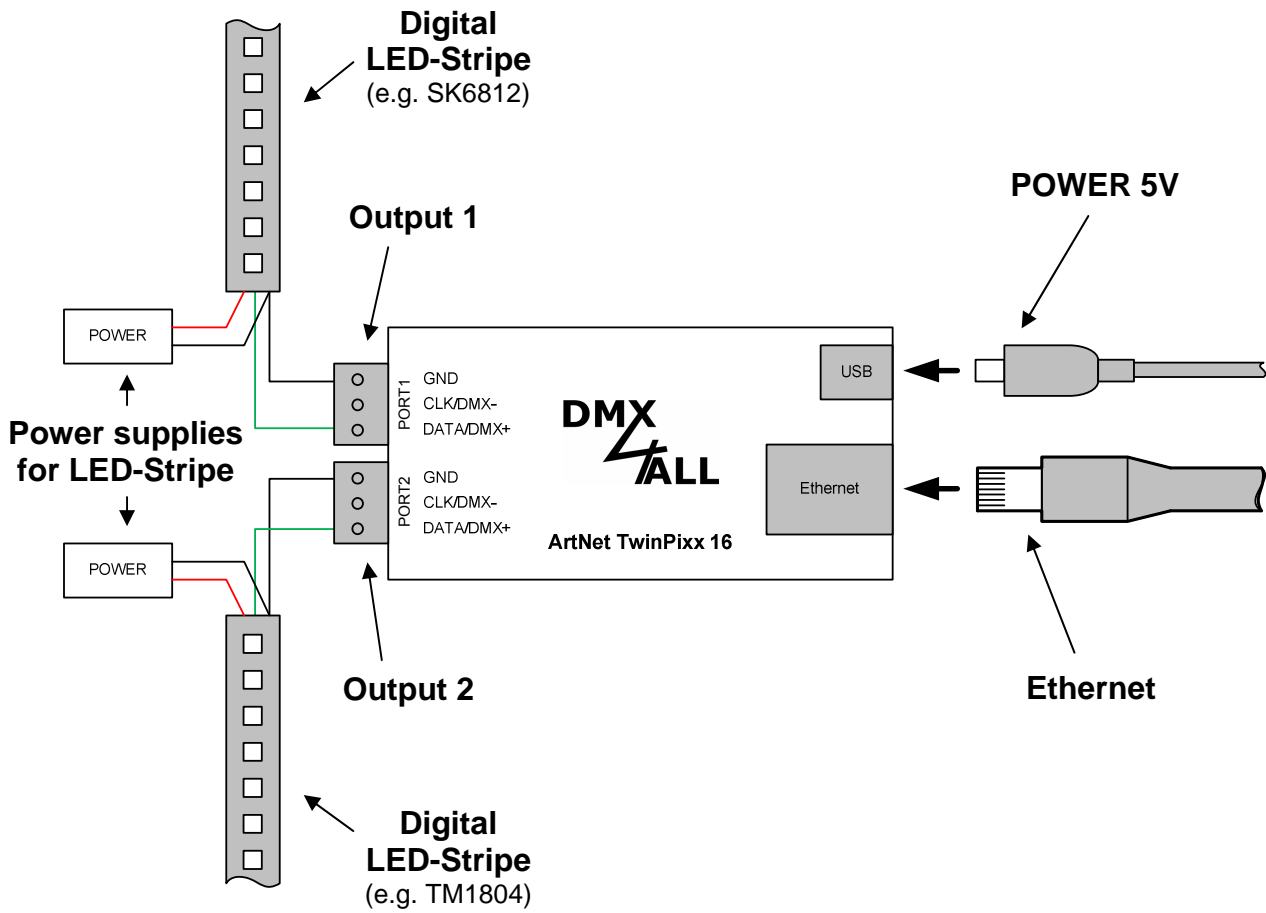|	
Color sequence:	RGB / RGBW adjustable SingleColor white, red, green, blue
Pixel groups:	1 up to 25 Pixel / All
Gamma correction:	Adjustable for LPD1886 12Bit (8Bit controlled),UCS9812 (8Bit controlled)
LED-Display:	Green: Ethernet-Connection available Yellow: Data are transferred
Dimensions:	85 mm x 43 mm x 23 mm (without screw clamps)

Delivery

|	
1x	ArtNet TwinPixx 16
2x	Screw connection clamps 3 pin
1x	5V power supply
1x	Quick guide german / english

Connection

Connection for Stripes with one control signal (DATA)

For digital LED-Stripes with 1 control signal only DATA and GND must be connected,
e.g. for WS2811 / SK6812 / APA-104 / TM1804

**Digital
LED-Stripe**
(e.g. SK6812)

Output 1

POWER 5V

POWER

**Power supplies
for LED-Stripe**

POWER

USB

PORT1   GND
         CLK/DMX-
         DATA/DMX+

PORT2   GND
         CLK/DMX-
         DATA/DMX+

Ethernet

**DMX
4ALL**

ArtNet TwinPixx 16

Ethernet

Output 2

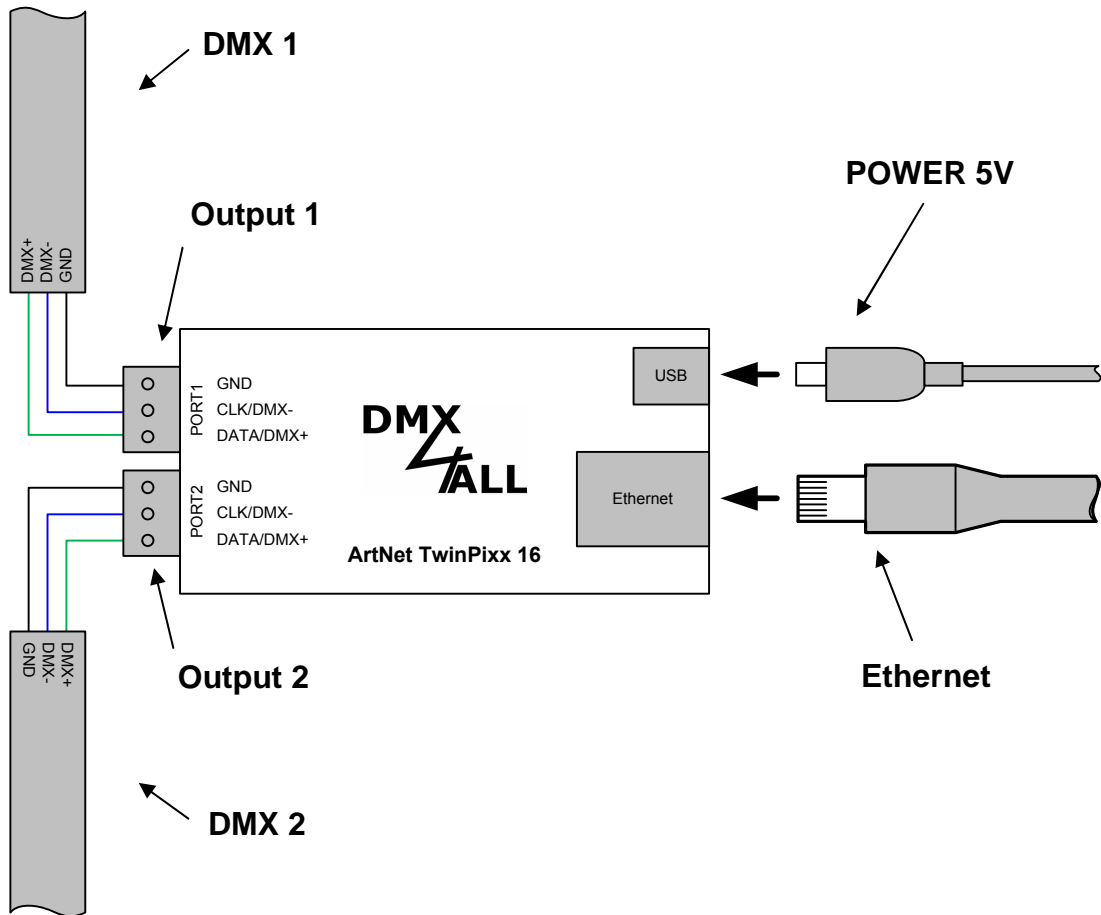**Digital
LED-Stripe**
(e.g. TM1804)

Connection for Stripes with two control signals (CLK+DATA)

For digital LED-Stripes with two control signals DATA, CLK and GND must be connected, e.g. WS2801 / APA-102 / MagiarLED flex
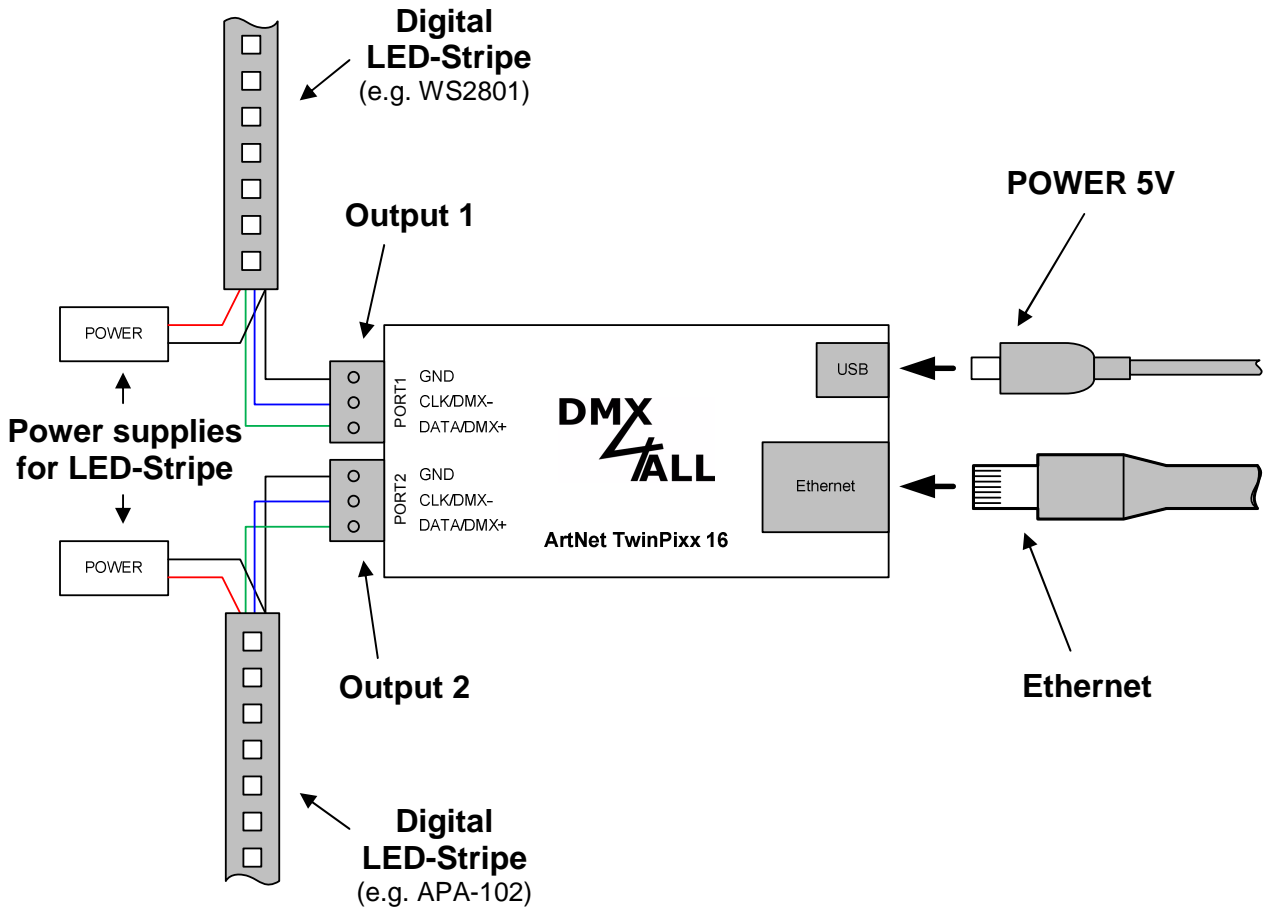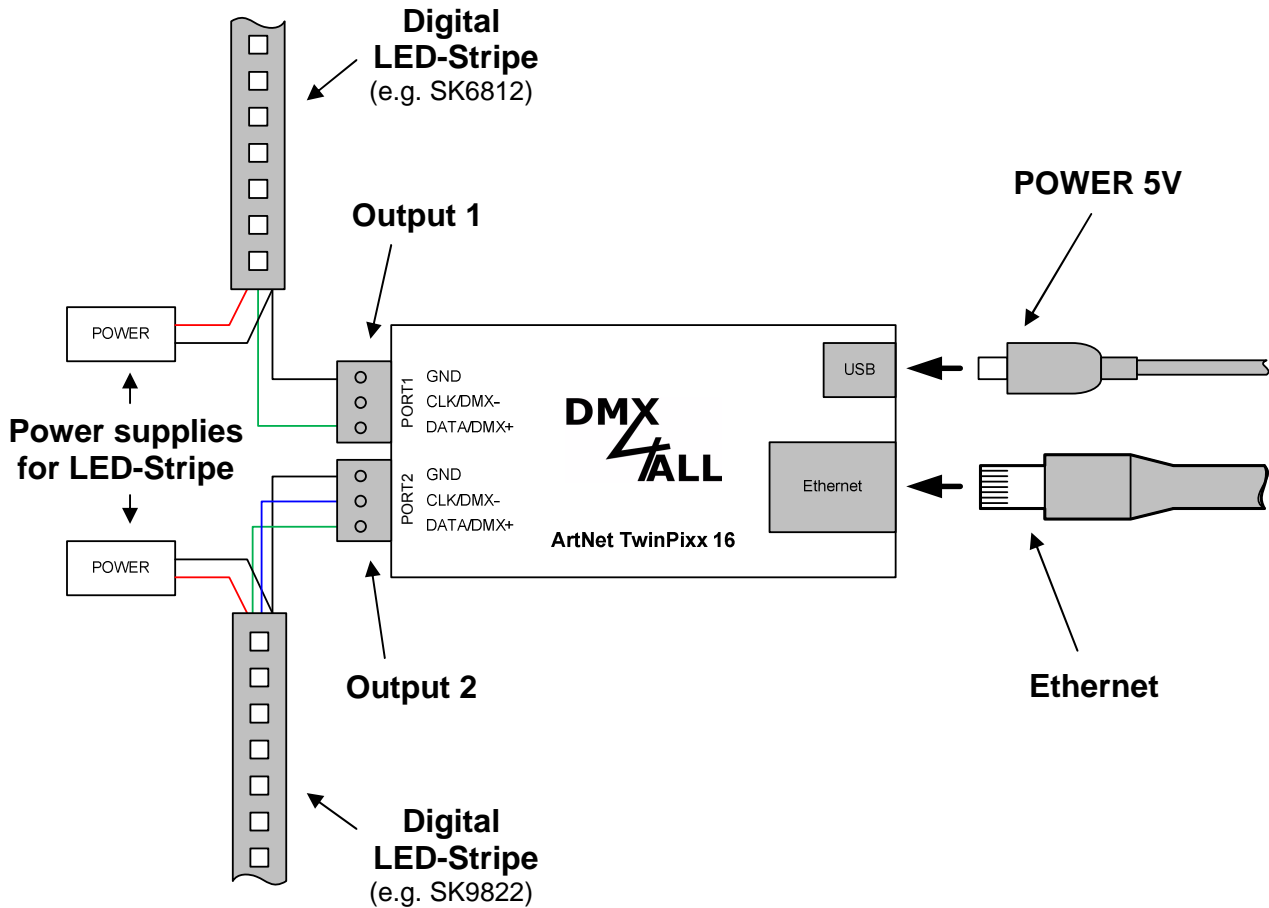
Connection of DMX-Devices

Each port of the ArtNet TwinPixx 16 can be configured as DMX-Output, too.
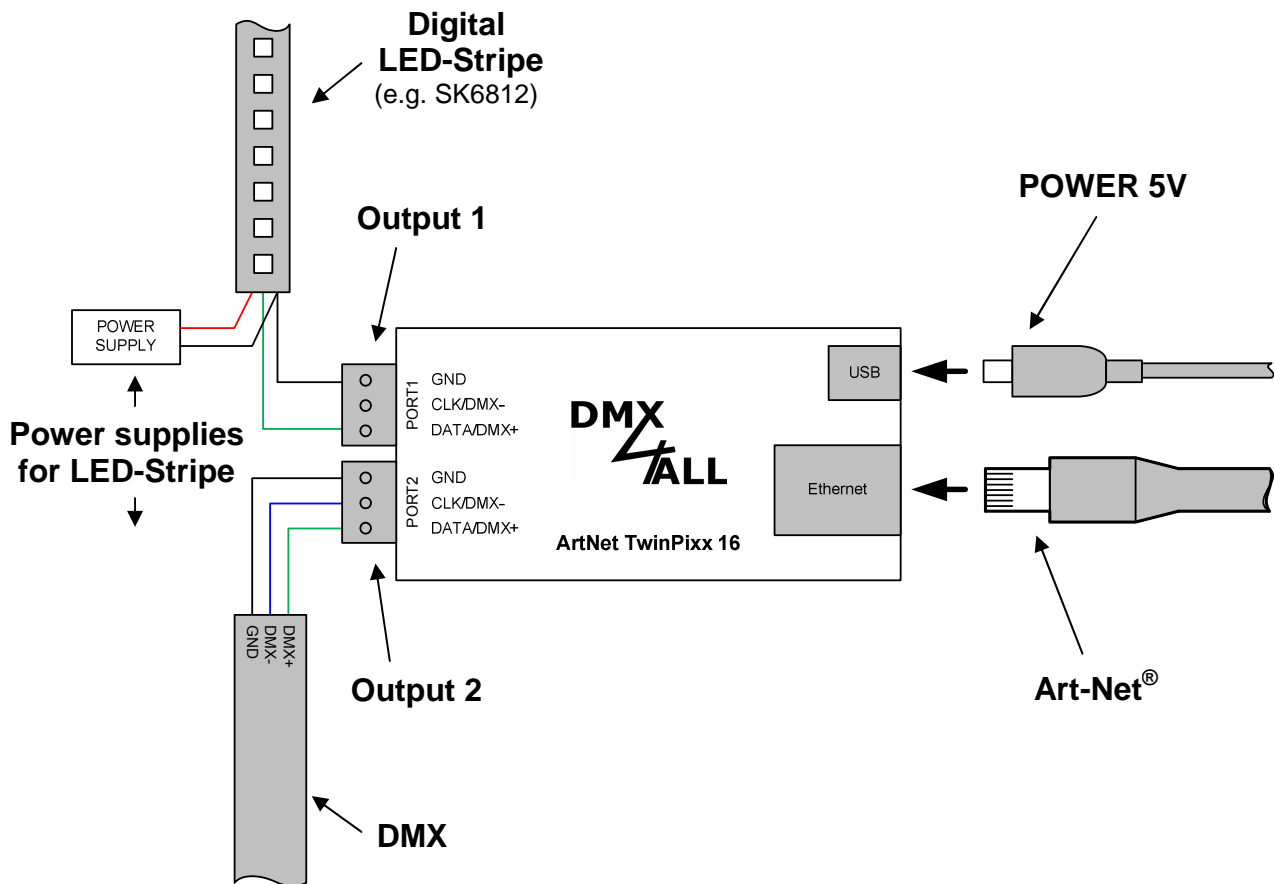So, two DMX-Universes can be outputted via ArtNet.

Connection of several LED-Stripes

Each port is individually adjustable at the ArtNet TwinPixx 16. Therefore it is also possible to connect two different LED-Stripe types.

Digital LED-Stripe
(e.g. SK6812)

Output 1

POWER 5V

POWER

USB

GND
PORT1 CLK/DMX-
DATA/DMX+

DMX4ALL

GND
PORT2 CLK/DMX-
DATA/DMX+

Ethernet

ArtNet TwinPixx 16

Power supplies for LED-Stripe

POWER

Output 2

Ethernet

Digital LED-Stripe
(e.g. SK9822)

Connect LED-Stripe and DMX

Each port is individually adjustable at the ArtNet TwinPixx 16. Therefore it is possible to connect a LED-Stripe to one output and DMX to the other one.

Digital LED-Stripe
(e.g. SK6812)

POWER 5V

POWER SUPPLY

Output 1

USB

Power supplies for LED-Stripe

PORT1 GND
       CLK/DMX-
       DATA/DMX+

Ethernet

PORT2 GND
       CLK/DMX-
       DATA/DMX+

ArtNet TwinPixx 16

DMX+
DMX-
GND

Output 2

Art-Net®

DMX

Power supply for digital LED-Stripes

Usually, digital LED-Stripes operate with a voltage of 5V.
This results in comparatively high currents for the whole installation.

On the digital LED-Stripe occurs a voltage drop, so the brightness decreases.
Furthermore it results in a divergent color reproduction in use of RGB/RGBW-Stripes.
Therefore it is necessary to regularly supply the voltage again.

The power-/current supply is possible with several decentralized or with one central power supply unit. The supplies cross-sections to the digital LED-Stripe must be dimensioned adequate !

Connect LED-Stripes with several LED-Stripes

If several power supply units are used, these can be installed decentralize.
So the supplies can be shorter.
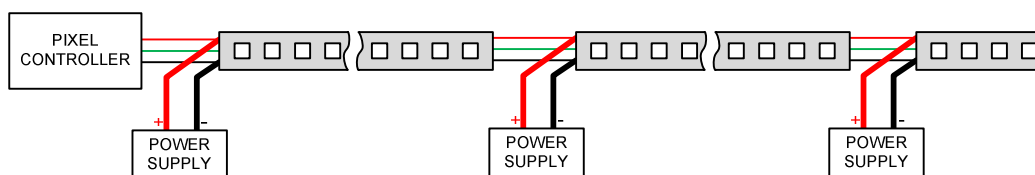
Connect LED-Stripes with one Power supply unit

If one power supply is provided with enough high power, so the supplies must be dimensioned adequate. This is the only way to ensure the voltage drop is less as possible on the cable path.
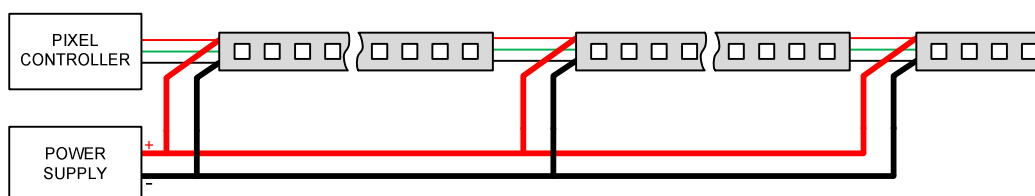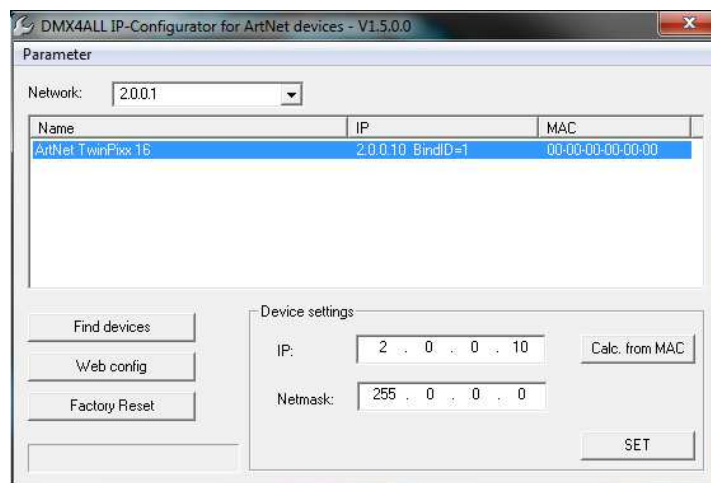
Configuration

The Configuration of the **ArtNet TwinPixx 16** occurs via a web interface, which can be called via any web browser.

Set the IP with IP-Configurator

The **IP-Configurator** allows setting the IP-Address and the netmask also, if the net work settings of the PC are not in the range of the ArtNet TwinPixx 16.

- Install the program IP-Configurator
- Connect the ArtNet TwinPixx 16 with the net work and switch it on
- Start the program IP-Configurator

- The ArtNet TwinPixx 16 is shown in the list
- Select the entry „ArtNet TwinPixx 16" (click)
- Please enter the new IP and netmask
- Click SET

Set the IP with web browser

The **ArtNet TwinPixx 16** has 4 ArtNet Nodes (A-D). Each is individually configurable. Call up the web interface via the IP of the first Node.

The assigned **IP-Address** in the delivery status is **2.0.0.10** . It can also be used for the web interface as well as for the ArtNet.

Set the network card of your PC to this range, to call the IP-Address 2.0.0.10 via the web browser.

⚠️ The network setting of the computer has to set up to the **IP-Address 2.0.0.1** and the **Subnet mask 255.0.0.0.**

Please take further details from the ArtNet specifications.
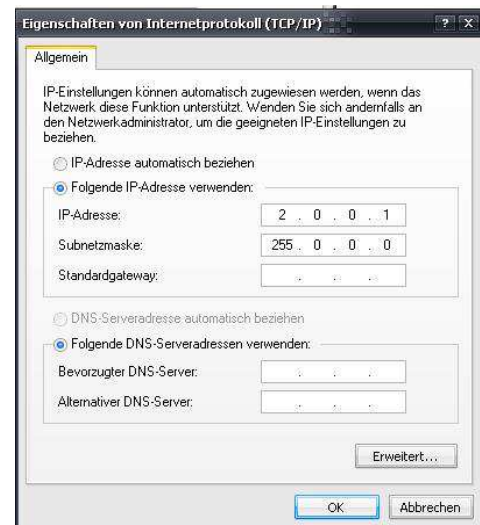
Each node needs an own **IP-Address** so the assignment can occur clearly. Use in accordance to the ArtNet specifications the IP-Address 2.x.x.x or 10.x.x.x

Any other IP-Address can also be used e.g. 192.168.1.10 . In this case the netmask has to be fitted to 255.255.255.0 !

Device Configuration

Call the IP of the ArtNet TwinPixx 16 in the web browser and within the address bar (delivery status: 2.0.0.10) to get the following configuration page:

⚠️ Each device (ArtNet-Node) needs an own **IP-Address** so the assignment can occur clearly within the network. Use in accordance to the ArtNet-Specifications the IP-Address 2.x.x.x or 10.x.x.x together with the **Subnet Mask** 255.0.0.0 .

Any other IP-Address y other IP-Address can also be used e.g. 192.168.1.10 . In this case the netmask has to be fitted to 255.255.255.0 !

For a better distinction you can give every device (ArtNet-Node) any name.

The **Short-name** is limited to 18 marks and the **Long-name** is limited to 64 marks.

Furthermore the Port is to set in a range of 0-15 for each Universe.
Each of the 4 Universe uses the common **SubNet** and **Net**.

The ArtNet-Parameter *SubNet, Net* and *Port must be set in accordance to the ArtNet-Specifications and specify the goal for the DMX-Data.*

If the option **LED auto off** is activated the device LEDs are switched off after 10 minutes operation with permanent network connection.

SAVE stores the configuration.

Configure the output

The settings for output 1 and output 2 can be done on the pages **Port 1** and **Port 2**.
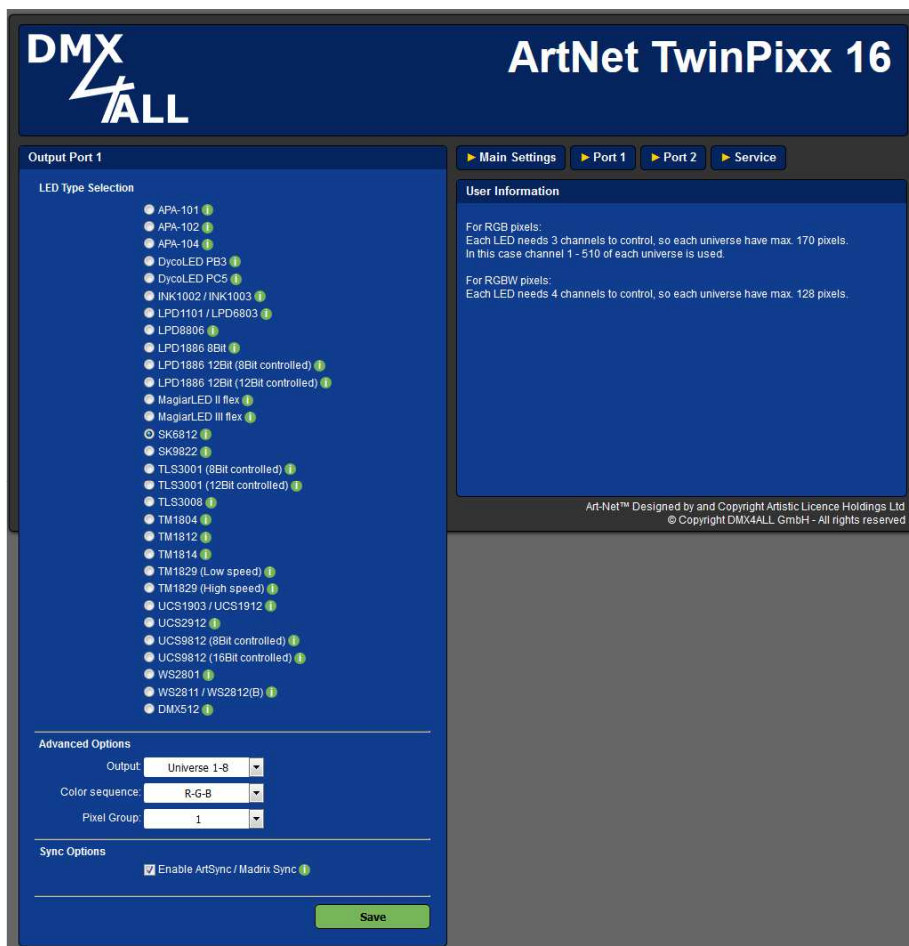
LED Type Selection specifies which LED-Type is connected to the output.

The **Advanced Options** are available in accordance to the connected LED-Type:

Output shows which universes are outputted. For output 1 the universes 1 up to 8 and for output 2 the universes 9 up to 16 are selectable.

Color sequence fixes the color settings. RGB, RGBW-Color sequence or control a one color (SingleColor) is available. SingleColor uses only one channel per pixel for control. According to the color selection the control of the single colors occurs (e.g. for running light in blue) or white for all colors.

Pixel Group specifies the length of each pixel group. Each pixel group behaves like a single pixel, all pixel of a group are controlled in the same way.

Speed Factor is a setting for the transferring speed of the digital LEDs with separated Clock- and Data-line.

Master-Brightness specifies the master brightness. It is from 1/31 up to 31/31adjustable or on channel 512 in universe 1 respectively 9 (U1C512 respectively U9C512).
Available for MagiarLED III flex, APA-102, LPD8806, LPD1101, SK9822 .

Master-Brightness Red/Green/Blue/White specifies the master brightness separate for red, green, blue and white.
Available for TM1814 .

Gamma fixes the curve for the output characteristics. The following values are possible: 1,0 / 1,2 / 1,4 / 1,8 / 2,0 / 2,2 . The higher the gamma value the output characteristics is curved:

Gamma = 1.0   Gamma =2.0
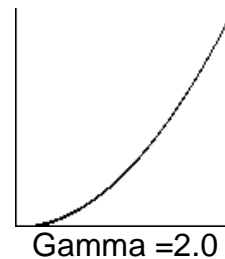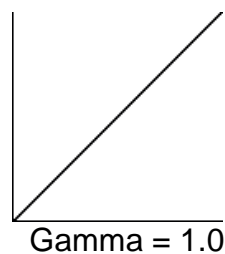
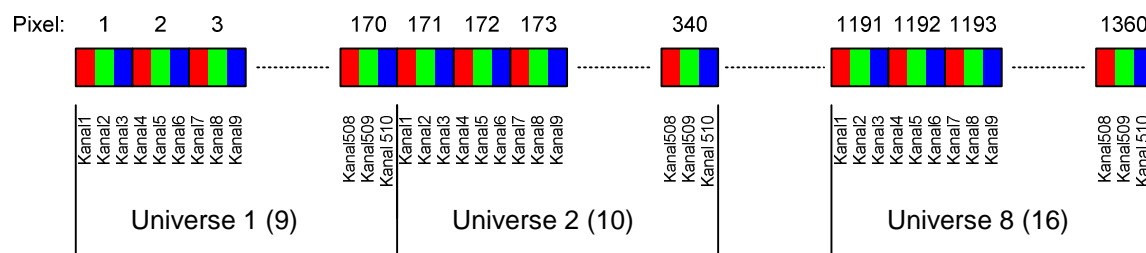Available for LPD1886 12 Bit (8Bit controlled), UCS9812 (8Bit controlled), TLS3001 (8Bit controlled).

By using the option **Enable ArtSync / Madrix Sync** the output of more than one ArtNet devices will be synchronized if a software with ArtSync support or software MADRIX® is used.

Pixel assignment

8-Bit Control

The **ArtNet TwinPixx 16** controls up to 1360 RGB-Pixel per output. Therefore up to 8 ArtNet universes are used. With an 8-Bit control one channel is used for R, one channel for G and one channel for B. This means 170 RGB-Pixel for one universe.

The single pixels are assigned to the universes as follows:
Details in parenthesis () refer to output 2:
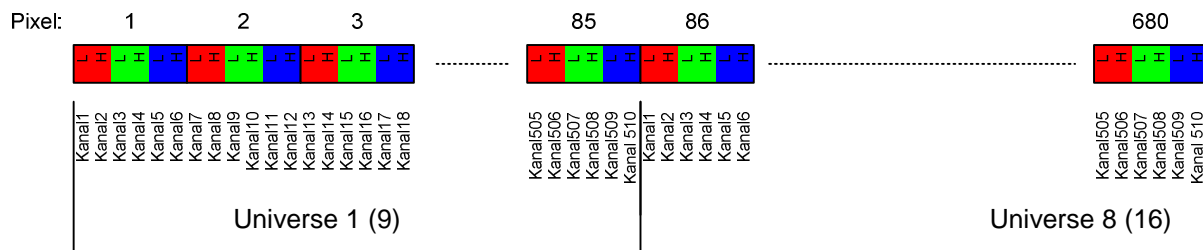

(Color sequence RGB)

Universe	Pixel
1 (9)	1-170
2 (10)	171-340
3 (11)	341-510
4 (12)	511-680
5 (13)	681-850
6 (14)	851-1020
7 (15)	1021-1190
8 (16)	1191-1360

16-Bit Control

The 16-Bit control is available for every LED-Type with more than 8 Bit.
These are LPD1886 with 12 Bit and UCS9812 with 16 Bit.

Within the 16-Bit control 2 DMX-Channels are used for control one color.
As a result, for each universe up to 85 RGB-Pixel can be controlled.

The single pixels are assigned to the universes as follows:
Details in parenthesis () refer to output 2:


(Color sequence RGB)

Universe	Pixel
1 (9)	1-85
2 (10)	86-170
3 (11)	171-255
4 (12)	256-340
5 (13)	341-425
6 (14)	426-510
7 (15)	511-595
8 (16)	596-680

Check the connected LEDs

The ArtNet TwinPixx 16 provides a test output to check the connected LEDs easily.

The service page shows under Test Output Port1 respectively Test Output Port2 the buttons OFF, RED, GREEN, BLUE and WHITE.

By clicking the buttons the LEDs are controlled on output 1 respectively output 2 with the according color.
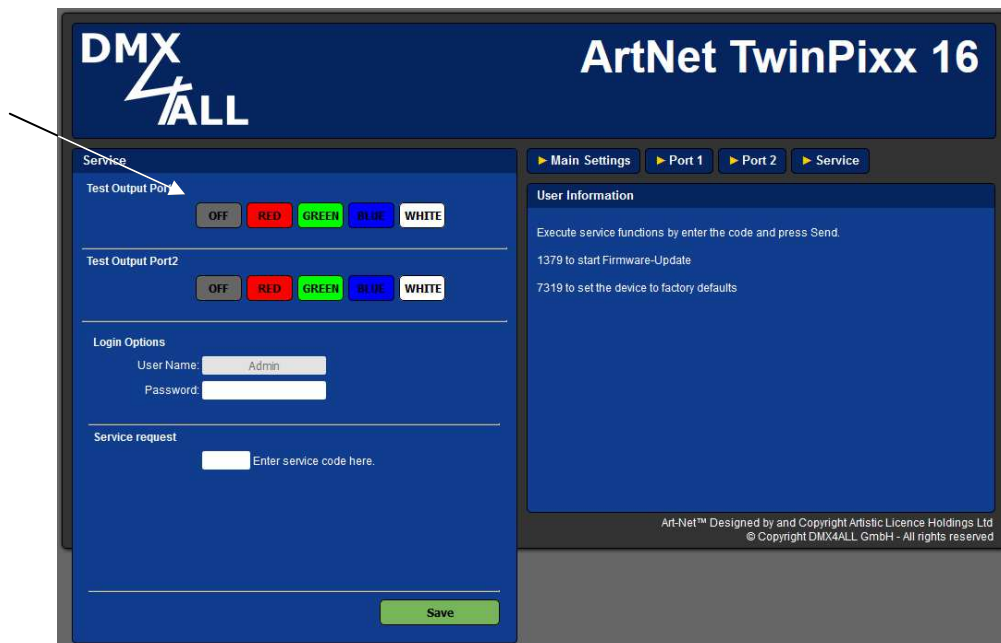
⚠️ For the test output no control signal may be sent to the ArtNet TwinPixx 16 !
An external control signal always has priority to the test output.
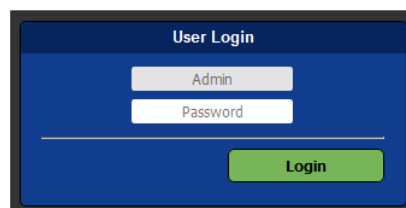
Login for web surface

The ArtNet TwinPixx 16 allows fixing a login for the web surface.

Under Login Options on the service page it is possible to enter a **password**.
An empty password allows access without password query.

It is not possible to change the **User Name**. It is always „Admin".

If a password is assigned, so it will be requested to get access to the web surface.

⚠ If a password is assigned and is no longer known a Factory Reset must be carried out to reset the password. In this case all settings are also reset into the delivery status!

Factory Reset

To reset the **ArtNet TwinPixx 16** into the delivery status please proceed as follows:

Execute delivery status via **web browser**:

- Open the service page within the web browser
- Enter „7319" in the input field
- Click *Save*
- Following wait minimum 10 seconds

⚠ If a Factory-Reset occurs via a web page so the IP-Address as well as the Subnet Mask is reset. A return is not always possible. If necessary please set the IP again (see *Set IP with IP-Configurator* or *Set the IP with the web browser*).

Execute delivery status via **DMX4ALL LAN-Updater**:

- Turn on the device
- Start Software **DMX4ALL LAN-Updater**
- Click *FIND*
- Select the **ArtNet TwinPixx16** from list
- Click **FACTORY RESET**
- Now the reset is executed

Execute delivery status via **DMX4ALL IP-Configurator**:

- Turn on the device
- Start software **DMX4ALL IP-Configurator**
- Click *FIND*
- Select the **ArtNet TwinPixx16** from list
- Click **FACTORY RESET**
- Now the reset is executed

Execute Update

The **ArtNet TwinPixx 16** has an Update-Function, which allows the transfer of future Firmware-Versions.

Please proceed as follows:

- Turn of the device
- Start the Update-Software **DMX4ALL LAN-Updater**
- Generate a Network connection to PC
- Turn on the device
- Click *FIND* within 3 seconds
- Select **ArtNet TwinPixx 16** from list
- Click *Firmware-Update*
- Select and confirm Firmware-File (.bin)
- Wait until the update has finished

⚠️ If an error occurs during the update you can start again anytime.

Alternatively you can activate the Firmware Update with a web browser:

- Open the service page in the web browser
- Enter the service code "1379" in the input field and click *Save*
- Start the Update-Software **DMX4ALL LAN-Updater**
- Select **ArtNet TwinPixx 16** from list
- Click *Firmware-Update*
- Select and confirm Firmware-File (.bin)
- Wait until the update has finished
- Click *Back* within the web browser

Accessory

Digital LED Stripes / Pixel Stripes
- Digital LED Stripe SK6812
- Digital LED Stripe SK9822
- Digital LED Stripe WS2811
- Digital LED Stripe WS2812(B)
- Digital LED Stripe LPD1886
- Digital LED Stripe INK1003
- Digital LED Stripe APA-102
- Digital LED Stripe APA-104
- Digital LED Stripe UCS9812
- MagiarLED III flex Stripe

Network cable

USB-Cable A-Male / MiniB-Male

CE-Conformity

This assembly is controlled by a microprocessor and uses high frequency. In order to maintain the properties of the module with regard to CE conformity, installation into a closed metal housing in accordance with the EMC directive 2014/30/EU is necessary.

Risk-Notes

You purchased a technical product. Conformable to the best available technology the following risks should not excluded:

Failure risk: The device can drop out partially or completely at any time without warning. To reduce the probability of a failure a redundant system structure is necessary.

Initiation risk: For the installation of the board, the board must be connected and adjusted to foreign components according to the device paperwork. This work can only be done by qualified personnel, which read the full device paperwork and understand it.

Operating risk: The Change or the operation under special conditions of the installed systems/components could as well as hidden defects cause to breakdown within the running time.

Misusage risk: Any nonstandard use could cause incalculable risks and is not allowed.

Warning: It is not allowed to use the device in an operation, where the safety of persons depend on this device.

Disposal

Electronical and electronic products must not be disposed in domestic waste. Dispose the product at the end of its service life in accordance with applicable legal regulations.
Information on this can be obtained from your local waste disposal company.

DMX4ALL

®

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