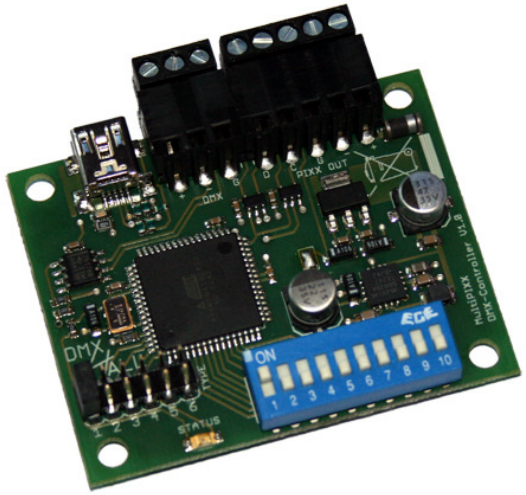
# MultiPixx DMX-Controller

User Manual




DMX4ALL®

# Description

The **MultiPixx DMX-Controller** is especially designed for controlling digital LED Stripes or Pixel Stripes whereas each single LED is individually controllable.

By controlling via DMX the interface can controll 170 individually pixels (RGB).

So, running lights, gradients up to rainbow effects can be created.

The output is construed for connecting several digital LED Stripe types.
Due to the adjustable output-protocol this controller is applicable universal.

The MultiPixx DMX controller supports pixel groups with an adjustable length. Each pixelgroup is controlled by 3 dmx channels on the same way as a single pixel. Thus, longer digital LED Stripes with more than 170 pixels can be controlled.<br>

An integrated update possibility allows controlling prospective LED Stripes.

# Data sheet

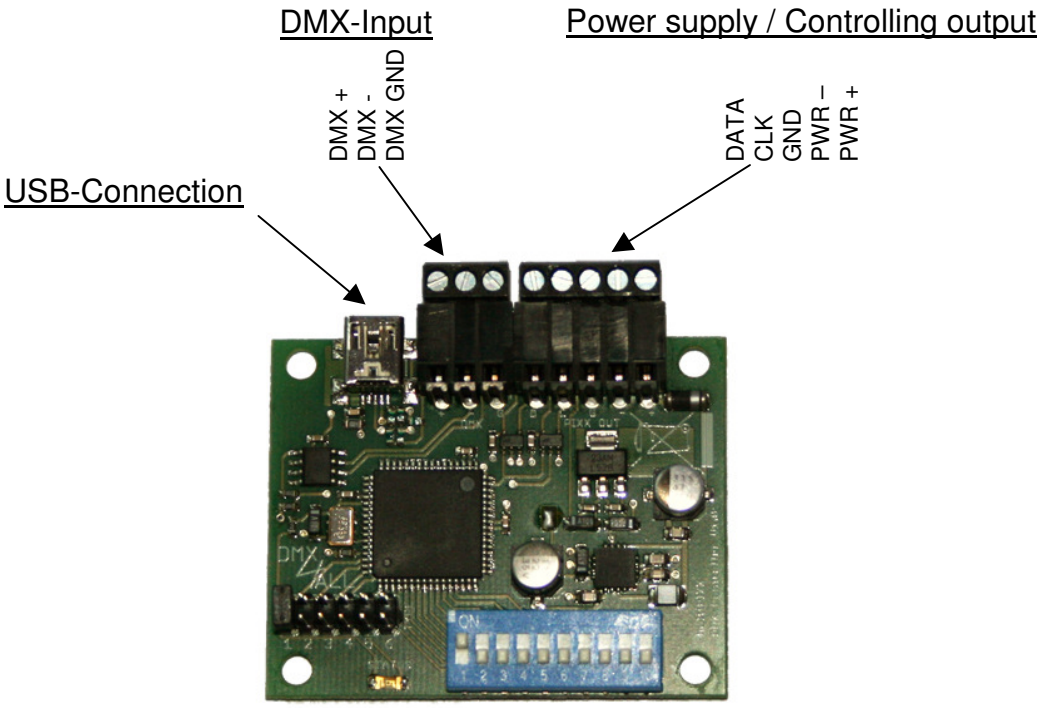
| | |
|---|---|
| **Power supply:** | 5 - 12V DC / 100mA or via an USB-connection |
| **DMX-IN:** | up to 512 DMX-channels |
| **Output:** | Digital controlling signal for up to 170 RGB-Pixel individually |
| **Output protocol:**<br>(Adjustable via jumper) | MagiarLED III flex, TM1804, TM1812, TM1829, WS2801, LPD8803, DycoLED, UCS1903, UCS9812, WS2811, WS2812, WS2812B, INK1002, INK1003, APA-101, APA-102, APA-104, LPD6803, LPD1886 8Bit, LPD1886 12Bit, UCS2912 RGBW |
| **Color sequence:** | Adjustable |
| **Pixelgroups:** | Adjustable (1 – 25 pixel) |

**Maximum Pixel / Pixelgroups:**

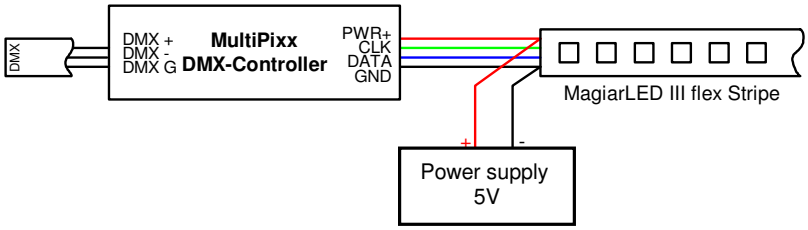
| | | |
|---|---|---|
| Demo programs: | 170 Pixel | |
| DMX-Mode: | 170 Pixel | (RGB-Stripe) |
| | 512 Pixel | (SingleColor-Stripe) |

| | |
|---|---|
| **Dimensions:** | 58 x 54 x 14mm |

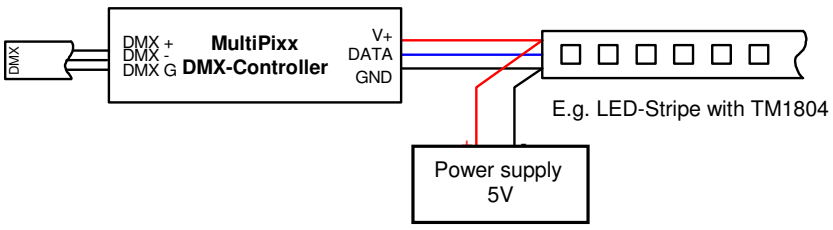
# Connection




## Example for connecting Stripes with two controlling signals (CLK+DATA)




## Example for connecting Stripes with one controlling signal (DATA)

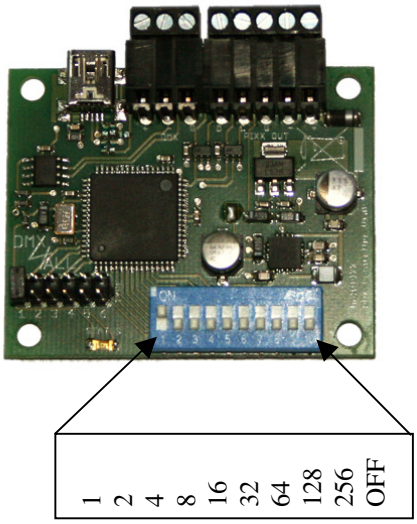


# DMX-Addressing

The DMX-Starting address is adjustable via button 1 to 9.

Thereby switch 1 has the valency $2^0$ (=1), switch 2 the valency $2^1$ (=2) and so on until switch 9 has the valency $2^8$ (=256). The switches showing ON represent in sum the starting address.

Switch 10 is reserved for the demo programs and must show OFF during the DMX-operation.




# LED-Display-Codes

The integrated LED is a multifunctional display.

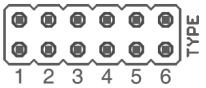
During the DMX-operation the LED lights permanently.

Furthermore the events will be signalled via the LED. In this case the LED lights up in short pitches and hold off for a longer time. The number of flashing lights corresponds to the event number:

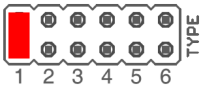
| Event number | Error | Description |
|---|---|---|
| 1 | No DMX-Signal | There is no DMX signal detected |
| 2 | Addressing error | Please check, if a valid DMX-starting address is adjusted via the DIP-switch |
| 3 | DMX-Signal error | An unvalid DMX-input signal is detected. Interchange the signal circuit at the pin 2 and 3 or use w twisted connecting wire. |

# Adjust the LED Stripe type

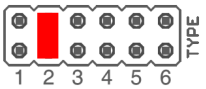
The type of the used digital LED stripes is adjustable as follows via a jumper:



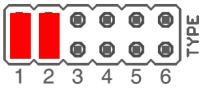

Extended Settings are used



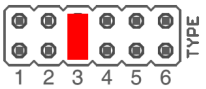

MagiarLED III flex



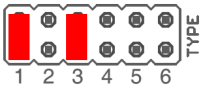

LPD1886 12 Bit



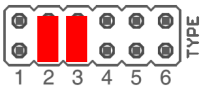

LPD1886 8 Bit



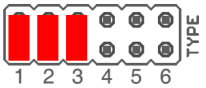

LPD1886 12 Bit – SingleColor



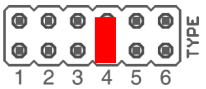

DycoLED / APA-101 / LPD6803



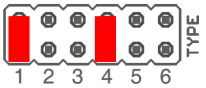

TM1804



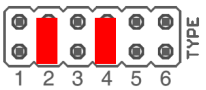

WS2801



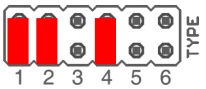

WS2811 / WS2812 / WS2812B / APA-104
INK1002 / INK1003



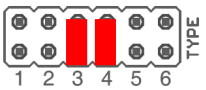

LPD8806



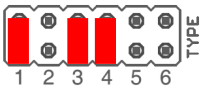

UCS1903



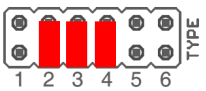

APA 102



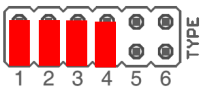

TM1812



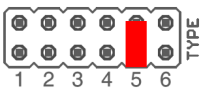

TM1829




UCS9812 (8-Bit Ctrl)




UCS9812 (16-Bit Ctrl)



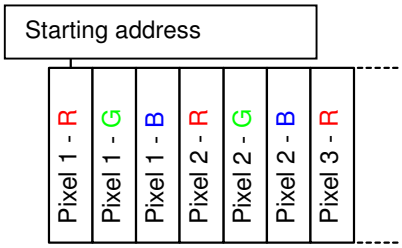

UCS2912 – RGBW

# Pixel Controlling via DMX

The **MultiPixx DMX-Controller** controls each RGB-Pixel with 3 DMX-channels.

Each single DMX-channel will be used for red, green and blue.

Beginning with the starting address the DMX-channels will be automatically assigned to the Pixel:

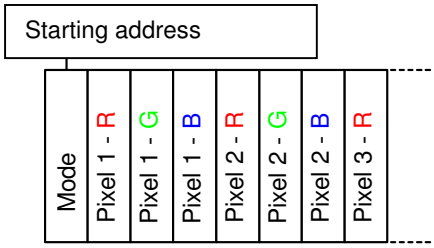



### DMX MODE-channel

An additional MODE-channel can be activated to constitute Pixel-groups (pixel sections) and to call up the demo programs via DMX.

Activate the MODE-channel via the *Extended Settings* (☑ Enable Mode-Channel).
Please take further details from chapter *Extended settings*

With the activated MODE-channel determines the DMX-channel 1 the pixel sections length with the same color (DMX-value 1-127), thereby the maximum length is 127 pixels. The following DMX-addresses are meant for the color-settings. Thereby every single DMX-channel exists for red, green and blue.




| Channel | Function | Value | |
|---|---|---|---|
| 1 | Mode | 0 | Pixel sections length = all pixel |
| | | 1-127 | DMX-value = pixel sections length |
| | | 128-255 | See demo program via DMX |
| 2 | Color | 0-255 | Pixel 1 red |
| 3 | | 0-255 | Pixel 1 green |
| 4 | | 0-255 | Pixel 1 blue |
| ::: | | ::: | ::: red/green/blue for each pixel |

# Extended Settings

For the *Extended Settings* a USB-connection to a PC with the program DMX-Configurator is necessary.

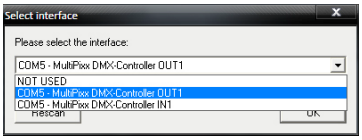
The *Extended Settings* allow using further functions of the MultiPixx DMX-Controller. These settings will be not performed via a jumper or button but via the software DMX-Configurator.

Please proceed as follows to perform the *Extended Settings*:

- Connect the MultiPixx DMX-Controller via USB to PC
  ⇨ A USB-cable with a MiniB-male is necessary (not included in delivery)
  ⇨ Install the driver if it exists not yet

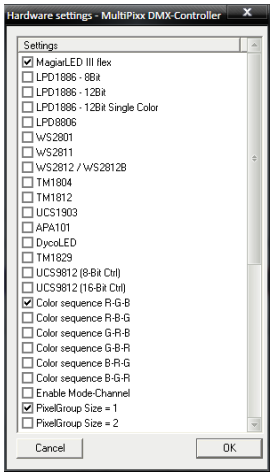
- Start the program DMX-Configurator
  ⇨ This is available as download www.dmx4all.de

- Establish a connection with the MultiPixx DMX-Controller within DMX-Configurator




- Call up the menu item *Settings→Hardware Settings*

- Here, the *Extended Settings* can be carried out




- Via clicking OK the settings will be transferred to and stored within the MultiPixx DMX-Controller

- Remove all jumpers for adjusting the LED-Stripe type to use the extended settings.

To use the saved settings **no** jumper may be stick for the LED-Stripe type.

# Pixelgroups

Pixelgroups are supported in the firmware V1.03 or higher.
If necessary, make a firmware update.

For the configuration the DMX-Configurator V2.0.7 or higher is needed !

The **MultiPixx DMX-Controller** support pixelgroups with a adjustable length. The length is set by usiong the extended settings.

Each pixelgroup is controlled by 3 dmx channels on the same way as a single pixel.

The maximum pixel count which can be connected depends on the selected LED protocol:

| **LED-Protocol** | **max. Pixel/Pixelgroups** | **max. connected Pixel** |
|---|---|---|
| MagiarLED III | 170 | 2048 |
| MagiarLED II | 170 | 4098 |
| Dyco LED / APA-101 | 170 | 4098 |
| TM1804 | 170 | 683 |
| TM1812 | 170 | 683 |
| TM1829 | 170 | 683 |
| WS2801 | 170 | 2733 |
| LPD8803 | 170 | 2733 |
| LPD6803 | 170 | 4098 |
| UCS1903 | 170 | 341 |
| APA-102 | 170 | 2048 |
| WS2811 | 170 | 683 |
| WS2812 / WS2812B | 170 | 683 |
| UCS9812 (8Bit Ctrl.) | 170 | 390 |
| UCS9812 (16Bit Ctrl.) | 170 | 390 |
| LPD1886 8Bit | 170 | 911 |
| LPD1886 12Bit | 170 | 683 |
| LPD1886 12Bit SingleColor | 512 | 683 |
| UCS2912 - RGBW | 128 | 512 |

# Demo programs via DMX

Activate the MODE-channel in the *Extended Settings* to use this function (☑ Enable Mode-Channel).
Please take further details from chapter *Extended Settings.*

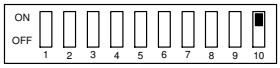
The predefined demo programs in the **MultiPixx DMX-Controller** can be called up via the DMX-channel 1 (MODE-channel) from a DMX-value 128. The speed is adjustable via DMX-channel 2.

| Channel | Function | Value | |
|---|---|---|---|
| 1 | Mode | 0-127 | See *Pixel Controlling via DMX* |
| | | 128-135 | 8 color mix |
| | | 136-143 | R-G-B |
| | | 144-151 | RGB color star |
| | | 152-165 | Single color star |
| | | 166-177 | Wave 1 |
| | | 178-189 | Wave 2 |
| | | 190-203 | Snake |
| | | 204-217 | Fecher |
| | | 218-231 | Running Point 1 |
| | | 232-239 | Running point 2 |
| | | 240-246 | Blink |
| | | 247-255 | Rainbow |
| 2 | Color | 0-31 | White |
| | | 32-63 | Red |
| 3 | | 64-95 | Green |
| 3 | | 96-127 | Blue |
| 3 | | 128-159 | Yellow |
| 3 | | 160-191 | Pink |
| 3 | | 192-223 | Cyan |
| 3 | | 224-255 | (Off) |
| 3 | Speed | 0-255 | Fast → Slow |

# Demo programs without DMX

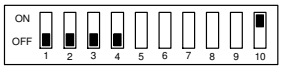
The existing demo programs in the MultiPixx DMX-Controller can be called up via the switches and without DMX.

Set switch 10 on ON:

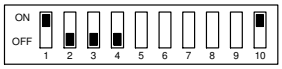



With switches 1 to 4 you can select the demo program.

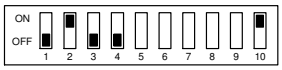
8-Color Mix



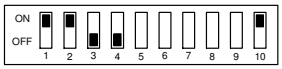

R-G-B



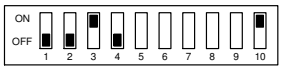

Stars RGB



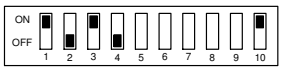

Stars single color



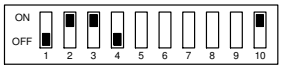

Wave 1



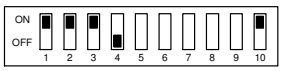

Wave 2



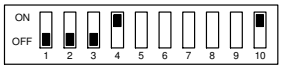

Snake



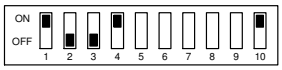

Fecher



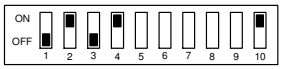

Running Point 1



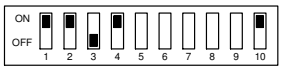

Running Point 2



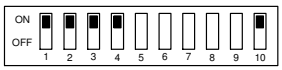

Blink




Color change

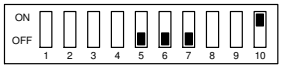



Rainbow

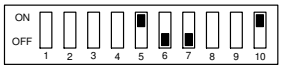


With switch 5, 6 and 7 the color will be selected.

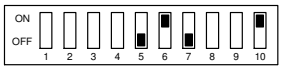
White



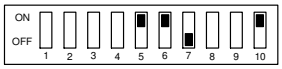

Red




Green

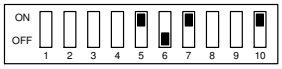



Blue

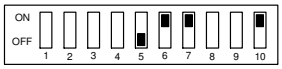



Yellow

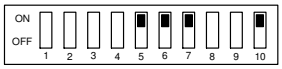

Pink




Cyan

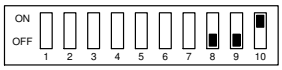


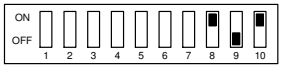

Black

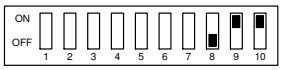



With switch 8 and 9 the speed will be adjusted.

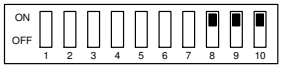
Slow




Fast

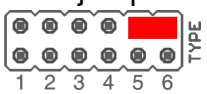


# Execute the Firmware update

The **MultiPixx DMX-Controller** has an update-function which allows transferring prospective Firmware-versions**.**

Please proceed as follows:

- Turn off device
- Stick jumper as shown




- Turn on device
- Establish USB-connection to PC
- Start the update-software **DMX4ALL USB-Updater**
- Select the MultiPixx DMX-Controller Interface from the list
- Click *Firmware-Update*
- Select and confirm the Firmware-file (.bin)
- Please wait until the update is finished.

If an error occurs during the update you can begin from the start any time.

# Accessory

**Digital LED Stripes / Pixel Stripes**
- MagiarLED III flex Stripe 72
- MagiarLED III flex Stripe 144
- Digital LED Stripe WS2811
- Digital LED Stripe WS2812
- Digital LED Stripe LPD1886

**Power supply 5 V / 6A**

**USB-cable A-male MiniB-male**

## CE-conformity

This assembly (board) is controlled by a microprocessor and uses high frequency (8MHz). To get the characteristics of the assembly in relation to the CE-conformity, an installation in a compact metal casing 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.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