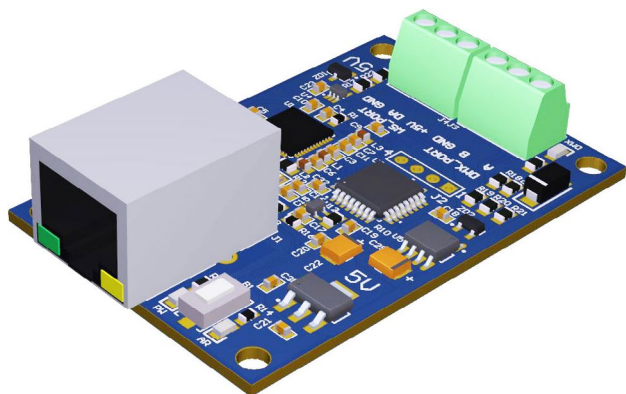


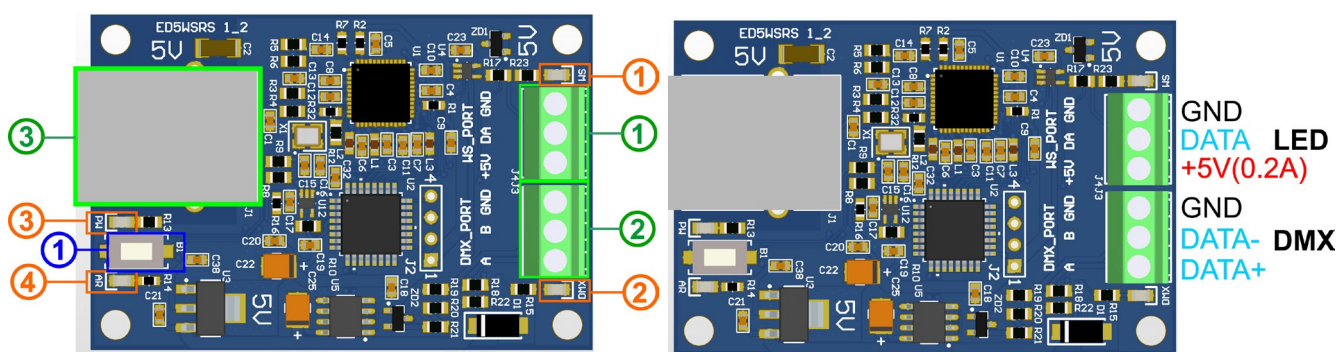


## User manual 04.09.24



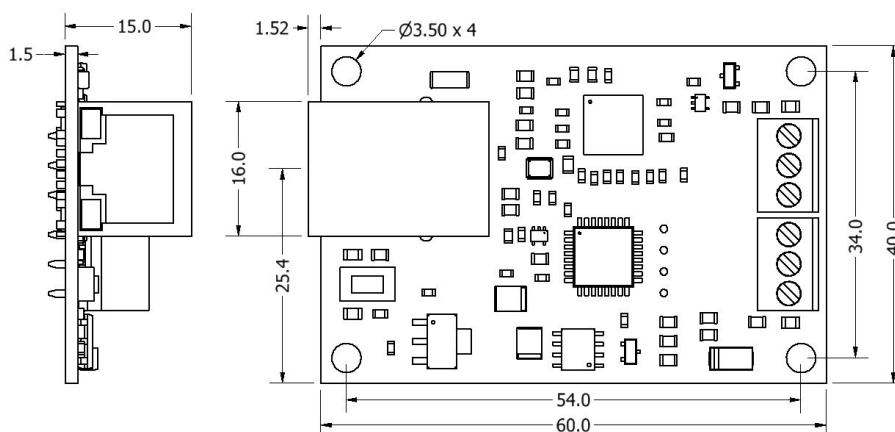
- **5V DC power** (5-24V version available)
- **LED port** output data for up to 9520 leds in repeat mode. Output up to 8 universe, 1360 LED's FPS 25Hz in normal mode. Supported chips: WS281X, TM1814, SK6812, SM16703..... RGB and RGBW.
- **DMX512 output/input port** for use with standard DMX devices or DMX LED chips. Output: 40, 33, 25, 10, 1 Hz or «By input». Input mode to ART-NET or to sACN network.
- Firmware updates can be performed via the network.

## CONNECTION



| Ref. | Connector                              | Led  | Button   |
|------|--|--|--|
| 1    | <b>LED port.</b><br>LED's data + power | Data sent to LED chip                            | Switch to bootloader with default network parameters. Press and turn on power. |
| 2    | <b>DMX512 output/input port</b>        | DMX data sent to port or received from port      |  |
| 3    | RJ45 network                           | Firmware update, power, blink on the packet loss |  |
| 4    |  | Data received from network                       |  |

## DIMENSIONS(mm)





## Configuration

### Default network

IP: 192.168.1.210  
MASK: 255.255.255.0  
Gateway IP: 192.168.1.1

### Net control page

The controller is configured using a built-in web page accessible via the controller's IP address. The default IP browser string is: «http://192.168.1.210». Rebooting the controller is necessary if parameters are changed on the «Net Control» page.

### Firmware update

Firmware update is done via the built-in web bootloader. There are two ways to start in bootloader:

1: Check the «Boot startup» checkbox on the «Net Control» page. After saving the configuration and rebooting, the bootloader will start with the current network configuration.

2: Turn off the controller's power -> Press and hold the button -> Turn on the controller's power. The bootloader will start with the default network configuration.

On the boot loader page, you can modify the network configuration, reset all settings to default, and update the firmware to the required version. However, in the boot loader, you can only alter the network configuration.

Write operations are indicated by colors to denote success or failure. A green field indicates success, while a red field indicates an error or the need to reset to default settings. The controller will always start in boot mode if the image file has errors or if the configuration has been corrupted.

## DESCRIPTION

### Port control page

The controller can convert 8 universes of Art-Net or sACN network into a single-wire protocol for controlling LED chips and one universe for DMX 512 output/input. Both ports can work simultaneously and independently.

The «SPI Port Control» section modifies LED Port settings:

- **Number universe (1-8):** Defines the number of universes waiting to be received from the network and sent to the port. Output to the port will occur only after all universes have been received and distributed.
- **Un (0-32767):** Address of the universe.
- **Start:** The channel number from which this universe will be added to the output.
- **Chip and Color :** Parameters of the connected tape.
- **Repeat:** Number of LED repeats (pixel repeat). This setting allows up to 9520 LEDs to be output regardless of the number of universes used.
- **Leds:** Limits the number of LEDs in the output.
- **Speed:** 800 KHz, 1 Mhz, 1.2 MHz data transmission speed select.

| Net control      |          | Port control             |       |
|------------------|----------|--------------------------|-------|
| SPI port control |          |                          |       |
| Number universe: |          | 1                        |       |
| Un               | Start    |                          |       |
| 0                | 1        |                          |       |
| Chip             | Color    | Repeat                   | Leds  |
| WS2812           | GRB      | 4                        | 680   |
| Speed            |          |                          |       |
| 0.8 MHz          |          |                          |       |
| Save SPI control |          |                          |       |
| DMX port control |          |                          |       |
| Un               | Channels | Merge                    | Mode  |
| 20               | 512      | HTP                      | Input |
| Time             |          | By input                 |       |
| Input to IP      |          | Broadcast                |       |
| 192.168.1.210    |          | <input type="checkbox"/> |       |
| Save DMX control |          |                          |       |

Adjustment of the current for TM1814 LED tape is available.

| Chip             | Color | Repeat | Leds | Speed   |
|------------------|-------|--------|------|---------|
| TM1814           | GRB   | 4      | 680  | 0.8 MHz |
| Current 0-63     |       |        |      |         |
| W-0              | R-0   | G-0    | B-0  |         |
| Save SPI control |       |        |      |         |

«DMX port control» section changes of DMX Port settings.

- **Un (0-32767):** address of the universe
  - **Channels:** number of input and output channels at the DMX Port.
  - **Merge:** HTP or LTP merge settings
  - **Mode:** Input, Output, Disable mode of the Port
  - **Time:** refresh rate settings in output mode. 40Hz, 33Hz, 25Hz, 10Hz, 1Hz or «By input».
- In the «By input» mode, the data on the DMX port will be updated after receiving data from the network.
- **Input to IP and Broadcast** -The address to send the input universe. The controller will slow down if a non-existent unicast address is set. Packets are sent to the network in Art-Net or sACN format in accordance with the protocol settings.

### DMX port and HTP/LTP Merge

The controller can convert 1 universe of Art-Net or sACN network into DMX512-A protocol. The output DMX signal has a Break time of 100µs and a Mark After Break (MAB) time of 23µs, with an adjustable length of the input and output DMX512 packet within 16-512 channels. Ports are protected from overvoltage and impulse noise.

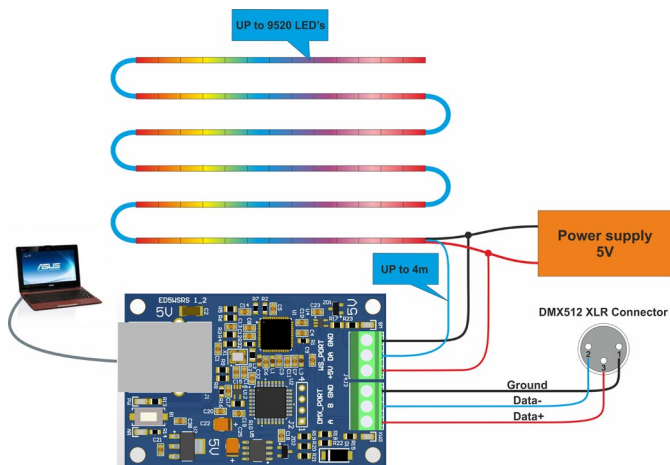
Merging occurs when two streams from different IP addresses are directed to the same universe port address. If multiple streams are directed to the same Port-Universe, they will be ignored. If one of the sources of ArtDmx stops (but not both), the failed source is held in the merge buffer for 10 seconds. During this 10-second timeout, if the failed source resumes, the Merge mode continues. However, if the failed source does not recover by the end of the timeout period, the Node port exits from Merge mode.



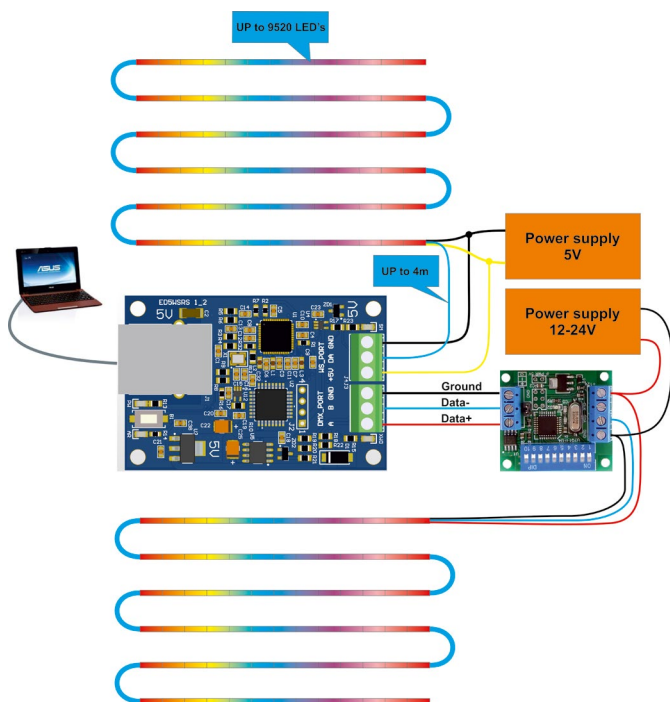


## ADDITIONAL

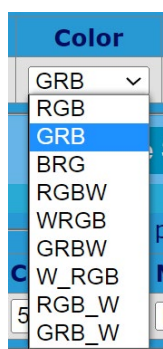
Connect to a 5V power supply.



Connect to both a 5V and a 12-24V powersupply.



RGBW strips can be set to RGB emulation mode.



To do this, select one of the underline modes. In this mode, white color will be disabled.

8 universes to the LED port and 1 universe to the DMX port.

Net control

Port control

SPI port control

Number universe: 8

| Un | Start |
|----|-------|
| 0  | 1     |
| 1  | 511   |
| 2  | 1021  |
| 3  | 1531  |
| 4  | 2041  |
| 5  | 2551  |
| 6  | 3061  |
| 7  | 3571  |

| Chip   | Color | Repeat | Leds | Speed   |
|--------|-------|--------|------|---------|
| TM1814 | GRB   | 10     | 9520 | 1.2 MHz |

Current 0-63

W-15 R-0 G-0 B-0

Save SPI control

DMX port control

| Un | Channels | Merge | Mode   | Time  |
|----|----------|-------|--------|-------|
| 20 | 512      | HTP   | Output | 40 Hz |

Save DMX control

**Led port refresh rate.** The controller supports increased data transfer rates to the tape. All tested tapes can operate at 1 MHz, however, you must reduce the length of the data wire to 1 meter.

| 0.8 MHz     |     | 1 MHz       |     | 1.2 MHz     |     |
|-------------|-----|-------------|-----|-------------|-----|
| LED's (RGB) | FPS | LED's (RGB) | FPS | LED's (RGB) | FPS |
| 340         | 90  | 340         | >90 | 340         | >90 |
| 680         | 45  | 680         | 60  | 680         | 70  |
| 1360        | 23  | 1360        | 30  | 1360        | 35  |
| 9520        | 3.5 | 9520        | 4.5 | 9520        | 6   |



## Links:

[YouTube examples.](#)

[Art-Net protocol.](#)

[DMX to UCS1903,WS2811,WS2812\(B\) converter.](#)

[DMX converter to RGB RGBW pixel combination for WS2811 - WS2815 SK6812 GS8208.](#)

[Art-Net DMX to SPI controller.](#)

[FreeStyler.](#)

[Madrix.](#)

[Jinx.](#)

[eBay store.](#)