Electron-design

Components on board:

- 10/100 Ethernet connector
- SDmicro flash card
- Control button «RESET»
- Art-Net LED activity («Art-net»)
- File system LED activity («SD»)
- Power LED («LED»)
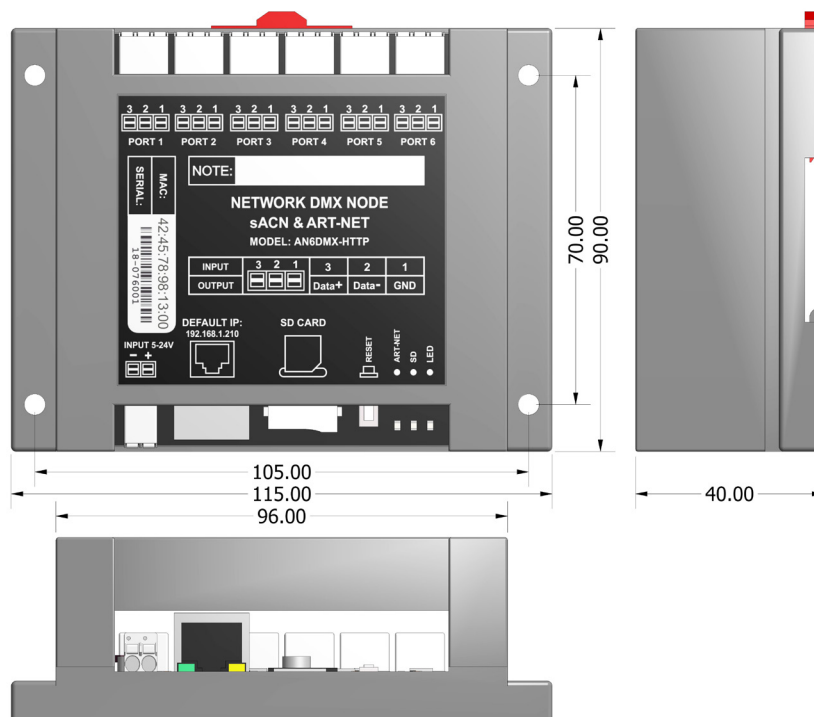- Six connectors for DMX input/output

Electrical:

- Supply voltage 5V - 24V
- Supply current of the controller 500 mA (5V) 200mA - 12V
- DMX lines have overload protection
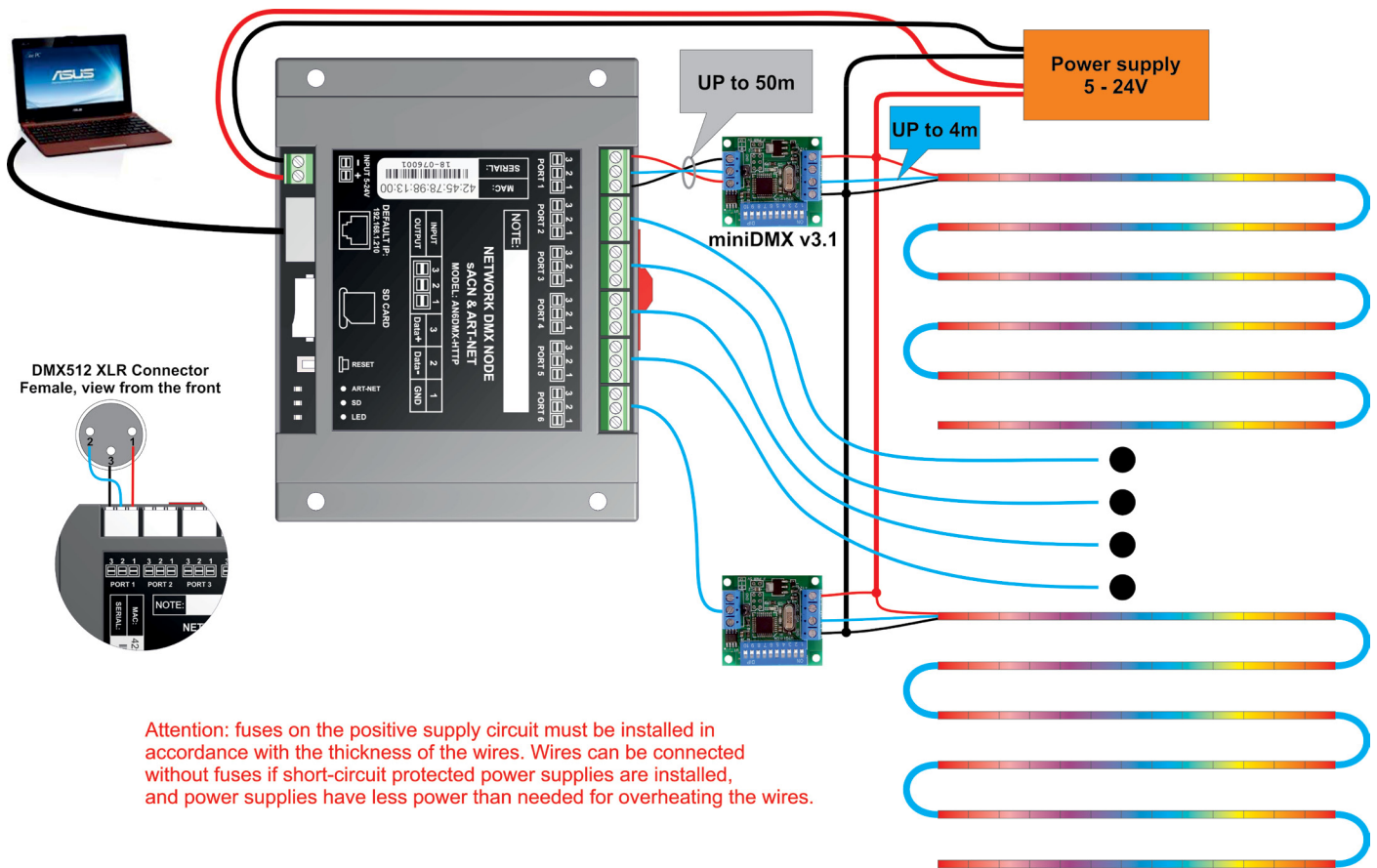- Operation Range -20°C to 50°C

Features of firmware:

- Ethernet to DMX 512/1990
- Ethernet protocol Art-Net III, sACN (E1.31) multicast and unicast
- Up to six DMX 512 ports output or input
- Web server for controller configuration
- HTTP channel control protocol
- 44 fps. for each universe

Mechanical:

Weight: 150 grams. Installation on DIN rail 35 mm.

1. Connection, default settings, firmware upgrade.

Attention: fuses on the positive supply circuit must be installed in accordance with the thickness of the wires. Wires can be connected without fuses if short-circuit protected power supplies are installed, and power supplies have less power than needed for overheating the wires.

1.1 Controller default network configuration:

IP: 192.168.1.210
MASK: 255.255.255.0
Gateway IP: 192.168.1.1

1.2 Restart controller and reset to default settings:

To physicall controller reset, press the «RESET» button.
To reset the controller to the factory settings, press and hold the «RESET» button for more than 8 seconds. Controller must be powered ON.

1.3 Firmware upgrade:
        a. Power controller OFF.
        b. Unpack and copy file «an12_00.img» to miniSD card, in the main directory . Insert the microSD card to controller's microSD slot.
        c. Push «RESET» button. Hold down the button.
        d. Power controller ON.
        e. Wait 4 seconds.
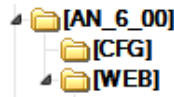1.4 Firmware replacing does not change settings.

2. microSD card

2.1 This controller can work without microSD card.

2.2 The card is used to update the firmware and to startup the controller with an alternate configuration (SD loading mode).

2.3 The microSD must be formatted as FAT32 before use.

2.4 The directory structure is:

You can't change this structure. You can modify files in a web directory to get your own web pages.

«CFG» directory contains «AN_6_20.CFG» file. This file contains all the settings of the controller for the SD loading mode. You can always turn the controller ON without using microSD cards.

2.4 All the «AN_6_20.GFG» file attributes must be turned OFF.

2.5 In SD loading mode, file «AN_6_20.GFG» replacement by the firmware file, sets controller's configuration as a default.

2.6 Pages that were downloaded from the microSD card have form:
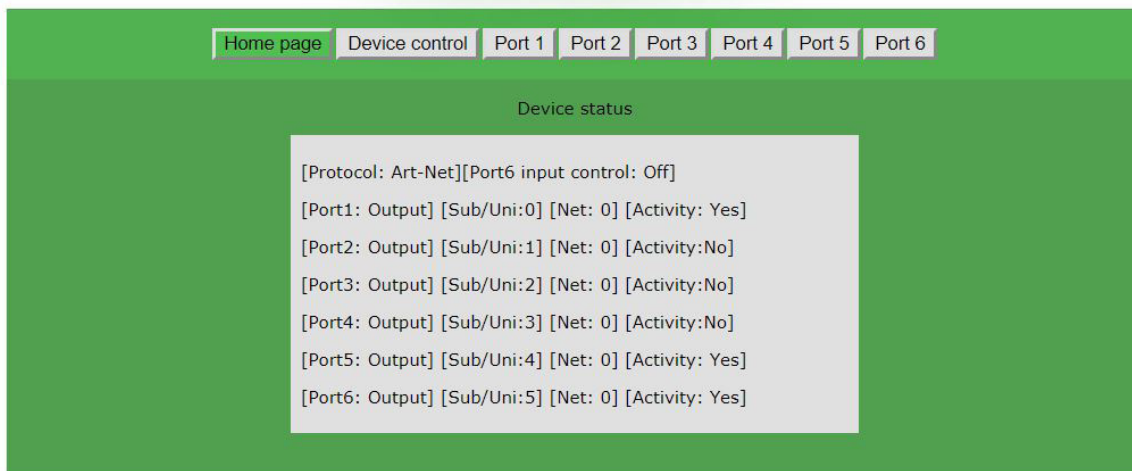

3. ART-NET led activity

3.1 Art-Net led blinks when controller receive Art-Net or sACN packets.

3.2 Art-Net led also blinks when the flash memory operations in process.

4. File system SD led activity

4.1 Displays requests to the file system.

5. Home page

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5.1 In order to access controller, you must enter controller's IP address in the browser search line.
For example: http://192.168.1.210
5.2 Controller home page contains information about controller settings. This page will automatically reload every 5 seconds.

6. Device control page
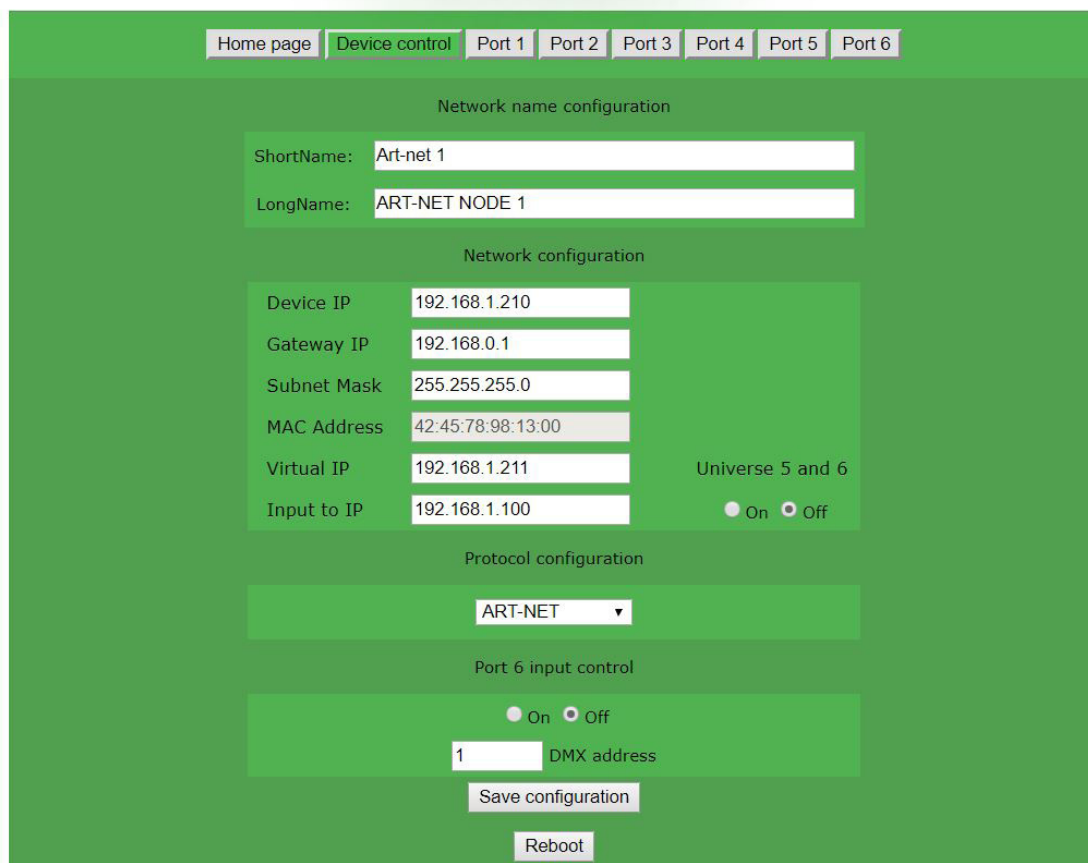
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6.2 «ShortName» and «LongName» - used in Art-Net mode.

6.3 «Source IP» - the main address of the controller. All Art-Net packets must be sent to this address.

6.4 «Gateway IP» - is not used in LAN connection.

6.5 «Subnet Mask»

6.6 «MAC address»

6.7 «Virtual IP» - see «Universe 5 and 6 connection».

6.8 «Input to IP» - if in OFF state: input stream will be sent to BROADTSAST address,

if in ON state: then the input stream will be sent to the address specified in this field.

It only affects ports, that configured as input.

6.9 «Protocol configuration» - «ART-NET», «sACN-multicast», «sACN-unicast».

6.10 «Port 6 input control» - See «10. Port 6 input conrol»

6.11 «Save configuration» -writing settings to flash memory.

6.12 <u>If you use ArtNet and you have more then 12 universes, you must configure the software for sending data as UNICAST (to controller's «Devce IP»).</u>

7. Port configuration

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7.1 Each port can be configured as output or input in Art-Net mode.

7.2 sACN mode works as output only, and you can not set Net/Subnet/Universe as 0.

7.3 Each port can operate in its own «Net».

7.4 Each port has 256 «Subnet/Universes» addresses. «Subnet/Universes» configuration examples:
- «Subnet/Universes» =0(0x00), Madrix universe =1(0x00) Madrix does not have a universe 0
- «Subnet/Universes» =20(0x14), Madrix universe =21(0x14) does not have a universe 0
- «Subnet/Universes» =20(0x14), DMX-WorkShop =20(0x14)

7.5 «Output/Input length»- This parameter is necessary for some consoles connected to controller's input port that have a smaller number of DMX channels. If your console has 190 DMX channels, you need to set this value in this field. You can also change the number of channels to output if necessary.

8. Universe 5 and 6 connection

8.1 Art-Net protocol has a single IP address for 4 universes. Universes 5 and 6 have a virtual IP address. This address is required for the automatic universe 5 and 6 detection.

8.2 Universes 5 and 6 always get messages to the IP address of the controller (to the «Device IP»). If there are more than one controller in the system, then a UNICAST data transmission is necessary. In this case, you must manually configure the universe 5 and 6.

9. HTTP command interface

9.1 «HTTP command interface» - control protocol through a browser or through an application to change the state of the controller or DMX channels.

9.2 Link to description : OpenRemote DMX Scene Setter (Art Net).

9.3 Direct commands for pixels:

http://192.168.1.210/pixel.api?uni=0&ordercolour=BGR&onecolour=4488FF00&start=1&end=20

- «uni» - number of universe
- «ordercolour» - RGB, BGR, BRG
- «onecolour» - colour in hex[RRGGBBWW], order - 1.2.3.4(R.G.B.W)
  correct «onecolour» writing: RR; RRGG; RRGGBB;RRGGBBWW;
- «start» - number of start pixel*, it should be - 1...170
- «end» - number of last pixel*, it should be - 1...170

*pixel - is 3 or 4 channels depending on the port mode - RGB or RGBW.

9.4 Direct commands for channel:

http://192.168.1.210/channel.api?uni=0&onecolour=FF&start=1&end=512

- «uni» - number of universe
- «onecolour»= colour in hex (00-FF) or in decimal (d0-d255)
- «start» - number of start channel, it should be - 1...512
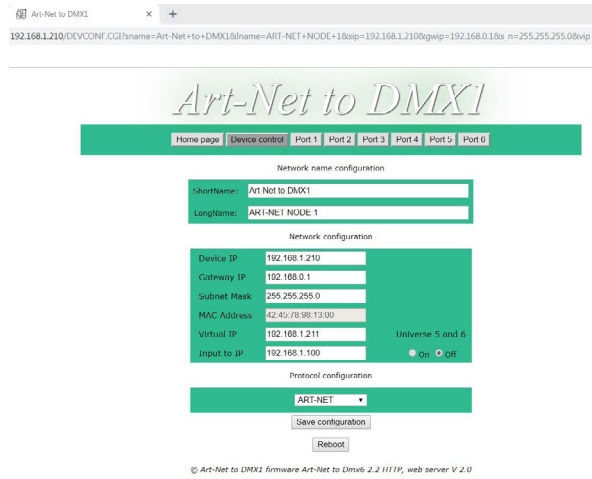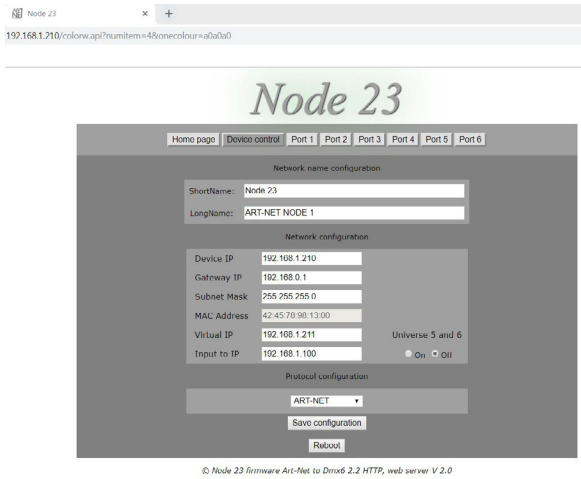- «end» - number of last channel, it should be - 1...512

9.5 Direct commands for changing a Web page view:
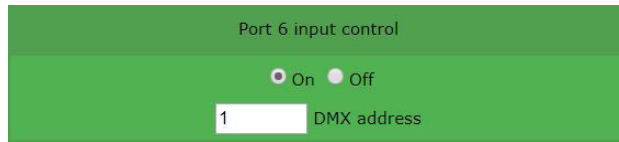
http://192.168.1.210/colorw.api?numitem=0&onecolour=50B250

- «numitem» - number of web page element, it should be - 0...4
- «onecolour» - colour in hex, order - 1.2.3(R.G.B.)
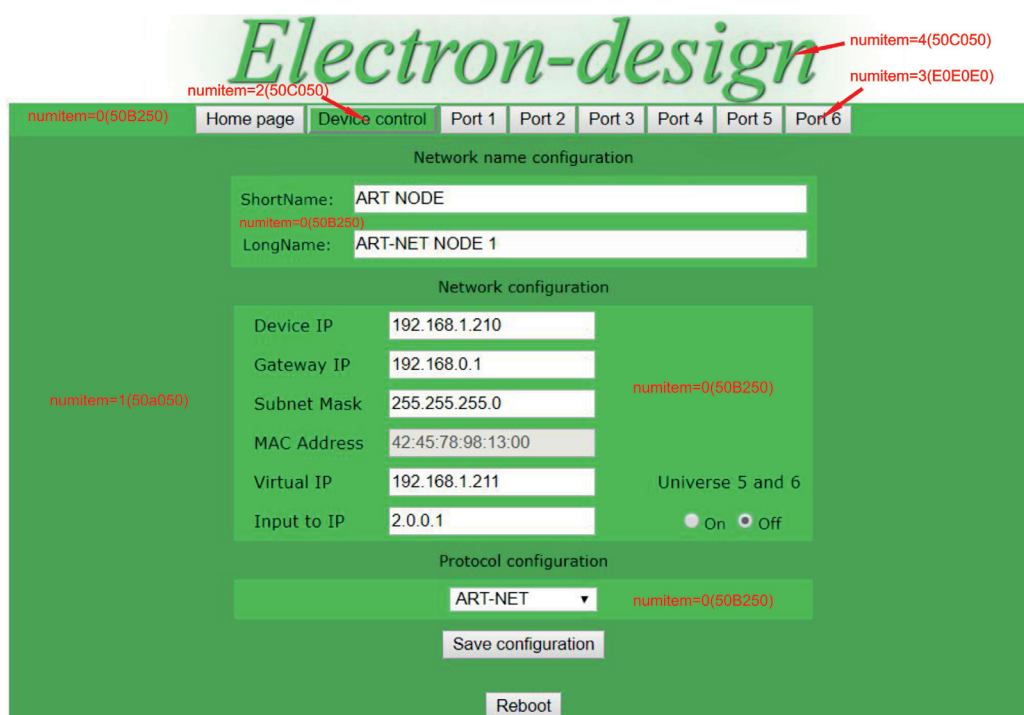
9.6 Web design examples:

10. Port 6 input control

10.1 This mode is used for taking control of all the ports and channels of the controller through the Port 6.

10.2 Capture occurs at non-zero values on the Port 6 used channels.

10.3 3 or 4 channels of Port 6 are used according to the DMX address that is set.

10.4 All channels of the Port1-Port5 will be set to values from the Port 6 as RGB or RGBW depending on Port 1 - Port 5 RGB/RGBW mode.

10.5 The Art-Net protocol output to Ports 1-5 gets terminated. All channels of Ports 1-5 get output data from Port 6.

10.6 Port 6 may be able to input and output. If the port is in the «Input» state, then the control will be from the Port 6 input, through the DMX signal. If Port 6 is in the «Output» state, then the control will be through the universe related to Port 6.

10.7 Example for home lighting and light shows:
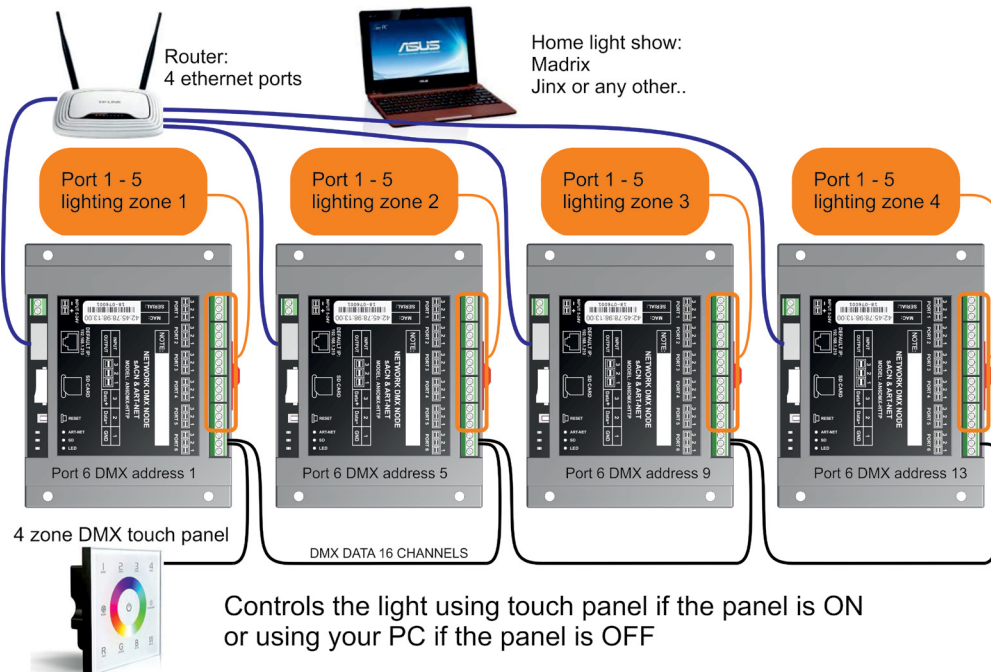
11. You can order this controller with push connectors
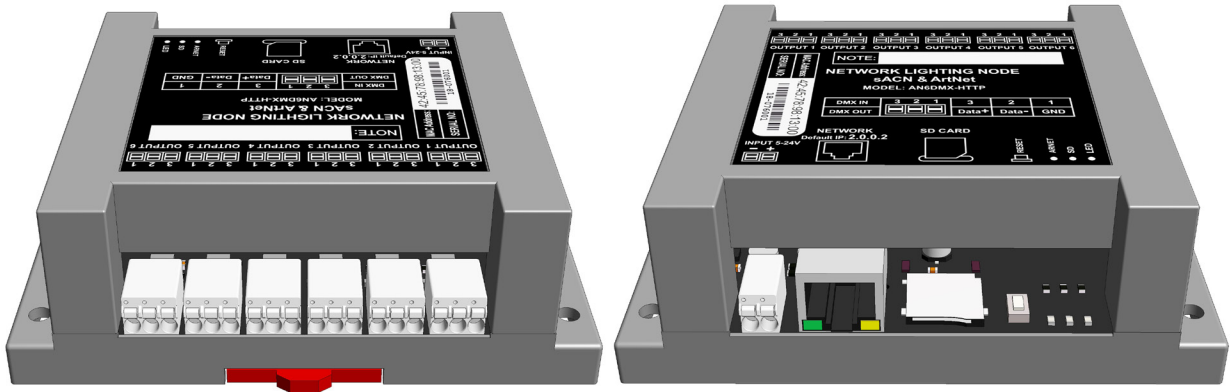
12. Firmware.

12.1 Procedure: watch on YouTube.

12.2 Download the latest firmware.

12.3 This firmware is not compatible with previous versions of Art-Net DMX controllers.

Links:

YouTube examples.

Art-Net protocol.

DMX decoder.

DMX to WS2801 converter.

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.