

## Introduction

NetDMX is an Art-Net/sACN(E1.31) to DMX512 interface. It is capable of driving a single universe differential DMX output from Art-Net/sACN over a wired Ethernet network. Device IP, Art-Net/sACN and DMX Speed Settings are adjustable directly from your Browser interface, or from a USB/Serial Application. A single 3-pin DMX output plug is provided to connect directly to your target DMX system. Operational Mode is indicated by a simple 7 segment display.

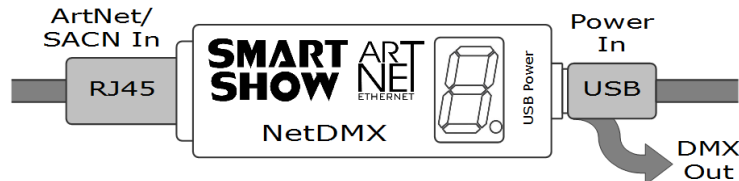
## Specifications

IEEE 802.3 compatible Ethernet Controller, Integrated MAC and 10BASE-T  
Browser Configuration Server and UDP Client modes  
Isolated RJ45 Ethernet Connection  
Single Universe Art-Net II & III and sACN E1.31 decoding DMX512 data, outputting @ 44Hz/35Hz/25Hz (selectable)

## Parts Supplied

NetDMX Interface    1 x USB-MiniUSB cable (for power, configuration & firmware upload)    1 x Ethernet Cable

## Product Connections



## LAN Ethernet Connection

The NetDMX can be configured for almost any IP setting, although a default IP of 192.168.1.201 is supplied with the unit. In general this will be a similar IP to your home router/hub, therefore the NetDMX can be connected directly to one of your router LAN Ports. Once connected it can be accessed from a PC that is also connected to that same Network.

## Device Configuration

It is possible to configure your device in one of two ways, either directly from your PC Browser (if you are on a 192.168.1.x network) or via a Serial Configurator using the USB connection, this is useful for directly setting to an alternative network.

## Browser Configuration Mode

To access the Browser Configuration, the NetDMX must be put into CONFIGURATION mode. Configuration mode is only available while the NetDMX is not receiving ArtNet or sACN data. To activate Configuration mode you should open your PC browser (most browsers are supported) and type into the URL bar 192.168.1.201 and press return. Configuration mode will be shown by a 'C' on the display. As long as the PC and NetDMX are connected to the same network at 192.168.1.201 the configuration interface should appear as follows:

### Ethernet Settings & IP Configuration

**Device IP:** It is possible to set the IP Address of the NetDMX to almost any value. Many Art-Net devices will use standard IP addresses of 10.x.x.x or 2.x.x.x, only values of 0-254 can used, 255 is not allowed.

**SubNet Mask:** Normally this should be left at 255.255.255.0, which will cover most applications.

**Gateway IP:** You can set the last value of the IP to match your router/switch IP

**MAC Address:** This is not adjustable and is a unique number created in conjunction with the serial number of the supplied unit

**[SAVE]** New IP configuration will not take place until NetDMX has its power cycled (or by pressing REBOOT). Saving the configuration will write the Device IP and SubNetMask values to the NetDMX internal memory, so on next power-up the new settings will be used.

### DMX Protocol

Select either Art-Net or sACN (E1.31) to match the DMX Data Protocol coming from the host

**[SAVE]** New DMX Protocol settings will take immediate effect after they are saved to the NetDMX.

### Art-Net/sACN Settings

These values can be configured to match the requirements of your system. There is a total of 256 Universe values for Art-Net II and 32,768 for Art-Net III, and 63,999 for sACN

**Net:** (Art-Net only) any value in the range 0-127

**SubNet:** (Art-Net only) any value in the range 0-15

**Universe:** Art-Net : any value in the range 0-15 – sACN : any value in the range 1-32767

**Art-Net Node Name** (*Art-net mode only*): each NetDMX can be numbered (0-255) so it can be identified easily with ArtPoll

**[SAVE]:** New Art-Net/sACN settings will take immediate effect after they are saved.

### DMX Speed

Select between MAX (fastest, 44Hz), 35Hz and 25Hz (slowest) to adjust for your fixture needs

**[SAVE]** Saves this setting which will take immediate effect

### REBOOT DEVICE

Pressing [REBOOT DEVICE] will restart the NetDMX interface (a bit like cycling the power) and display the Devices IP address before entering Art-Net streaming mode (indicated by 'A') or sACN streaming mode (indicated by 'S'). All newly saved settings (including IP values) will be used after reboot.

## Private Wired Network Connection

It is highly recommended that you move the NetDMX away from your home network and onto a private wired network connected directly between your PC and the NetDMX device. Generally your home network (192.168.1.x) could have lots of traffic that could affect the consistency of Art-Net/sACN data, and may cause disturbances within your DMX data.

To move NetDMX to a direct-wired network follow these instructions (MS Windows):

Go to Control Panel, select Network and Internet, then select Network and Sharing Center

In the left hand column, click on 'Change Adapter Settings'

'Local Area Connection' should be shown, double click on it

Under the 'Networking' tab, select the line that says 'Internet Protocol Version 4 (TCP/IPv4)'

Then click 'Properties'

Click the radio button beside 'Use the following IP address'

Enter your required IP address & Subnet mask (255.255.255.0) in the fields provided

**NOTE :** The IP Address entered here MUST match the NetDMX IP subnet for communications to work

Leave the DNS Settings blank, click OK then click Close

Plug in the NetDMX (if you haven't already done so)

## **Serial Configuration Mode - Set-Up**

Firstly, you will need to install the correct CH340 serial driver for the NetXX devices these can be found at :  
Windows 7 - <http://www.arduined.eu/tag/windows-7/>  
Windows 8 - <http://www.arduined.eu/ch340-windows-8-driver-download/>  
Once installed, connect the NetDMX via the USB connection and allow the driver install to complete.  
Make a note of the serial port number for the device (see Device manager/Com Ports/CH340 device)  
If you haven't already got a Serial Communications application, we recommend HTComm for simplicity.  
You can find HTComm at <http://www.hobbytronics.co.uk/ht-comm>  
Set the **PORT number** to the ComPort that the NetDMX is connected to  
The serial communications use serial settings of 9600 N/8/1, so set **Baud to 9600**  
Ensure that the **checkbox for [CR] is set**, to allow a carriage return to be sent after any communications

## **Serial Configuration Mode - Use**

To access the Serial Configuration, the NetDMX must be put into Configuration mode. Configuration mode is only available while the NetDMX is not receiving ArtNet or sACN data. To activate Configuration mode you should type '?' in the HTComm chat window and press return. Configuration mode will be shown by a 'C' on the display. In response to sending a '?' the device will respond with its Device Settings, and a Function Guide:

```
***** DEVICE SETTINGS *****
MAC Address   CA:EF:FF:1E:12:34
Device IP     192.168.1.201
SubNetMask    255.255.255.0
***** FUNCTION GUIDE *****
'i192.168.1.201<CR>' Change local IP
's255.255.255.0<CR>' Change SubNetMask
'r<CR>'          Reboot device
'?<CR>'         Display settings & help
'$RESET<CR>'   Reset Defaults & Reboot
*** (ensure <CR> is enabled on send) ***
```

For example, pressing 'i2.0.0.1' and pressing return will change the device IP to 2.0.0.1  
Changes can be made to IP & SubNetMask only, for more options see 'Browser Configuration'

**NOTE :** It is recommended that you DO NOT have your DMX lights connected while operating the Serial Configuration since the DMX and Serial communications use the same data, ignoring this may result in unexpected results on your DMX lighting.

## **Power Supply**

It is recommended that you use a quality USB power source with this product, a mains plug-in variety is best, and it is good to avoid using a phone charger type as these generally have weak current supply

## **Multiple Device Connections**

If required you can add several NetDMX to your network and have them controlled from the same application. Each NetDMX would need to have a different IP address (x.x.x.1, x.x.x.2, x.x.x.3 etc) and be added to your application as a new device and patched accordingly. Your Ethernet connection can be split into several outputs using a simple and inexpensive Ethernet 4 or 8 way switch.

## **Art-Net/sACN Unicast, Multicast & Broadcast mode**

It is recommended that Unicast mode is used when sending Art-Net/sACN data to the NetDMX.  
Art-Net Broadcasts are also accepted, but not recommended.

## **Art-Net Device Discovery & DHCP**

There is the ability to discover IP addressing and device Information using ArtNetPoll, IP Scan is available on most software, if unavailable addressing can be done manually as described above. There is no DHCP function as IP addressing is Static, utilising client port 6454.

## **DMX Data Output**

The NetDMX will only start outputting DMX data once it has received a valid Art-Net or sACN packet destined for the device

## **Dimensions**

Length : 68mm (plus DMX cable) - Width 24mm - Height 24mm

## **Software Compatibility**

NetDMX works with all free and commercial Art-Net/sACN(E1.31) compatible software.

## **Firmware Upgrades**

From time to time we may issue revised firmware for our products. The latest firmware can be uploaded to any of our products using the XLoader tool plus the latest HEX file for the product. Please ensure that the firmware file matches the product you are downloading to.

XLoader can be provided on request or downloaded from our website [www.smartshow.lighting](http://www.smartshow.lighting)  
Unpack the zip file and run the XLoader executable  
Select the '...' browse button and navigate to the hex file, and select it  
Select the device as 'NetWS/SPI/DMX Art-Net Interface'  
Select the COM port which the NetDMX is connected to (see Device manager/Com Ports/CH340 device)  
Leave the BaudRate as 57600 and press UPLOAD  
Once the upload is complete, there will be a notification

**NOTE :** Do not attempt to run XLoader and HTComm simultaneously.

## **Technical Support**

email : [sales@smartshow.lighting](mailto:sales@smartshow.lighting)

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