

## Introduction

NetBuddy is dual purpose device, it can be an Art-Net-to-DMX interface, or it can reverse the data direction and become a DMX-to-Art-Net interface. In Art-Net-to-DMX mode, it is capable of creating a single universe differential DMX output from Art-Net over a wired Ethernet network. In DMX-to-Art-Net mode it can take an existing differential DMX universe and send it as Art-Net data to a selected IP address. In either mode Device IP and Universe settings are adjustable directly from your Browser interface, or from a USB/Serial Application. Additionally, in DMX-to-Art-Net mode, a Target IP Address is settable. A single 3-pin DMX output connector is provided to connect directly to your target DMX system, and a DMX gender reverser is supplied when the DMX is required to be an input.

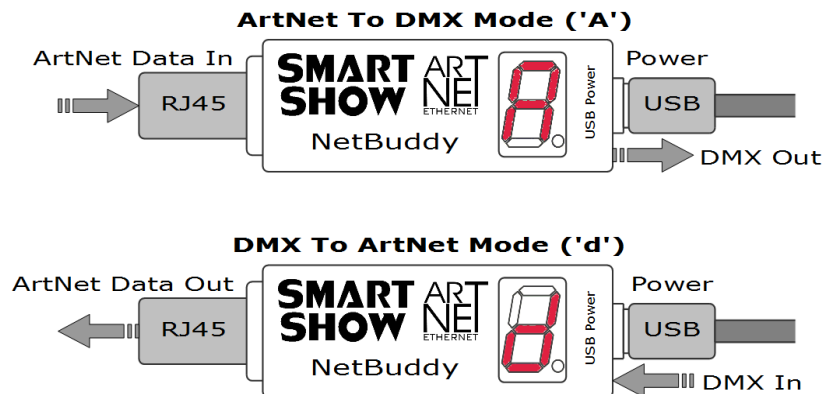
## Specifications

- 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 decoding DMX512 data, outputting @ 40fps typical
- Single Universe DMX512 encoding to Art-Net II & III, outputting @ 40fps typical

## Parts Supplied

NetBuddy Interface, 1 x USB-MiniUSB cable (power, config & firmware upload), 1 x Ethernet Cable, 1 x DMX Gender Reverser

## Product Connections



## LAN Ethernet Connection

The NetBuddy can be configured for almost any IP setting, although a default IP of 192.168.1.202 is supplied with the unit. In general this will be a similar IP to your home router/hub, therefore the NetBuddy 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 NetBuddy must be put into CONFIGURATION mode. Configuration mode is available for the first 8 seconds after power up, during this time the devices IP address will be shown in the display. To activate Configuration mode you should open your PC browser (most browsers are supported) and type into the URL bar 192.168.1.202 and press return, hitting the return within the 8 second window will activate Configuration mode and will show a 'C' on the display (If you allow the 8 seconds to elapse without any user intervention then the NetBuddy will go directly into its main mode of operation 'A' or 'd'). As long as the PC and NetBuddy are connected to the same network at 192.168.1.202 the configuration interface should appear as follows:

### Interface Data Direction

Select either 'Art-Net->DMX' or 'DMX->Art-Net' depending on how you want the device to act.

**[SAVE]** New Data Direction settings will take immediate effect after they are saved to the NetBuddy.

### Ethernet Settings & IP Configuration

**MAC Address:** This is not adjustable and is a unique number of the supplied unit

**Device IP:** It is possible to set the IP Address of the NetBuddy 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 be used, 255 is not allowed.

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

**Target IP:** (available only in DMX-to-Art-Net mode) This is the IP of where you want to Art-Net data to be sent. Only the last digit is editable, the rest of the IP should match the Device IP as the target should also be on the same network.

**Target IP - Broadcast Mode:** Setting '255' for the value will allow the device to Broadcast

**[SAVE Configuration]** New IP Setting will not work until NetBuddy has its power cycled or a Reboot (below)

### Art-Net Settings

**Universe:** Set to any value in the range 0-15

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

### REBOOT DEVICE

Pressing [REBOOT DEVICE] will restart the NetBuddy interface (a bit like cycling the power)

## Serial Configuration Mode - Set-Up

Firstly, you will need to install the correct CH340 serial driver for all 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 NetBuddy 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 NetBuddy 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 Configurator, the NetBuddy must be put into Configuration mode. Configuration mode is available for the first 8 seconds after power up, this is shown as the devices IP address on the LED display. To activate Configuration mode you should type '?' in the HTComm chat window and press return, hitting the return within the 8 second window will activate Configuration mode and will show a 'C' on the display (If you allow 8 seconds to elapse without any user intervention then the NetBuddy will go directly into its normal streaming mode 'A' or 'd'). 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:22:34
Device IP        192.168.1.202
SubNetMask       255.255.255.0
Target IP        192.168.1.67      ← only available in DMX-to-Art-Net mode
Starting Uni     (Net)0 (Subnet)0 (Uni)0
Data Direction  DMX->ARTNET
***** FUNCTION GUIDE *****
'i192.168.1.201<CR>' Change local IP
's255.255.255.0<CR>' Change SubNetMask
't100<CR>'         Change Target IP
'u0<CR>'           Change Start Uni
'a<CR>'            Change to Art-Net->DMX Mode
'd<CR>'            Change to DMX->Art-Net Mode
'r<CR>'            Reboot device
'?<CR>'           Display settings & help
'$RESET<CR>'      Reset Defaults & Reboot
***<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  
When setting Target IP (DMX->Art-Net mode) only the last IP number should be entered (tNNN)

## **Private Wired Network Connection**

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

To move NetBuddy 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 SubNet Address entered here MUST match the NetBuddy IP subnet for communications to work

Leave the DNS Settings blank, click OK then click Close

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

## **Multiple Device Connections**

If required you can add several NetBuddy devices to your network and have them controlled from the same application. Each NetBuddy 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 switch.

## **Art-Net Unicast & Broadcast mode**

It is recommended that Unicast mode is used when sending Art-Net data to the NetBuddy.

ArtNet Broadcasts are also accepted, but not recommended

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

There is the ability to discover IP addressing and device Information using ArtPoll, 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.

## **Dimensions**

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

## **Software Compatibility**

NetBuddy works with all free and commercial Art-Net 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 NetBuddy 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.

## **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

## **Technical Support**

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

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