

## Introduction

'Pixie' is a Wifi ArtNet to WS2811/12 (NRZ) Driver interface, and is capable of receiving one DMX universe (512 channels) and converting to a continuous NRZ data stream that will appear on the JST output connection. Network connection can be made by utilising a special Access-Point Mode. Device IP, ArtNet, and LED Test are available directly from a second browser interface once the Wireless network connection has been made. Pixie can also be unlocked if a special unlock code is purchased which will allow access to an additional 3 configurable universes, sACN(E1.31) receive, and the ability to name the device on an ArtNet network

## Specifications

Browser Configuration Server and UDP Client mode  
Single Universe ArtNet II & III and sACN E1.31 decoding DMX512 data to WS2811/12 in NRZ Format  
Radio Module : Wireless standard 802.11 b/g/n, Frequency range 2.4-2.5 GHz  
Power input : 5V USB Powered, or **MAX 5V** external power applied to RED wire of 3-Pin JST Connector

## Parts Supplied

Pixie Interface 1 x 3 pin JST Cable

## Status LEDs

**Network Select** : Slow single flash RED=APMode, not connected – Slow double flash RED=APMode, connected

**Network Connect** : Medium single flash RED=ClientMode, not connected – Solid BLUE=ClientMode, connected

**Data Streaming** : BLUE OFF=streaming/data being received that matches universe selection group

**Unsuccessful network Connection** : Equal On/Off slow flashing RED (after 60 seconds of failed attempts)

## Access-Point Connection

On first power-up (when the device has not been set up before), it will appear as an Access Point. If you check your list of wireless network connections you will find the device in the list as 'Pixie xxyy' (where xxyy are the last two octets of the device mac). The device's LED will be slowly flashing RED. On your PC, select the device from the list of wireless network connections and enter 'smartshow' for the password. Once connected the device's LED will do a repeating slow double flash.

```
[Laptop/PC] <--- direct wifi connection ---> [Pixie in APMode : 192.168.4.1]
```

## 'Join A Network' Configuration Page

To access the 'Join A Network' configuration page, type into the URL bar '192.168.4.1' and press return, the configuration interface should appear as follows:

### **Network SSID & Password Settings**

**Network SSID:** Enter the name (SSID) of the wireless router for the network you wish to join

**Network PASS:** Enter the password (PASS) for the above network.

**[Save SSID & Password]** The above SSID and Password will be saved so that next time the device reboots, the connection will be made automatically (unless the Network/Pass cannot be verified)

**[Connect to Network] \*READ DEVICE SETTINGS BELOW BEFORE PRESSING CONNECT\*** This will allow the device to connect to the Network as specified above, the device will close down its Access-Point ('Join-A-Network') connection and restart as a network client/node. While the device is making the network connection the LED will show a medium RED flash. When the device's LED changes to a solid BLUE it confirms the connection to your chosen wireless Network.

### **Device Settings & IP Configuration**

**Device IP Address:** It is possible to set the IP Address of the Pixie to almost any value. Many ArtNet 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.

*Note : If you change this IP address, the new IP address will be the one that will allow you access to this configuration page next time you reboot. Also take care to only change to an IP address that you actually have access to.*

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

**[Save Device Settings]** Saving the configuration will write the Device IP and SubNetMask values to the Pixie's internal memory, so on next power-up the new settings will be used.

## Resuming Network Connection

Once the device has connected to your chosen Network (Solid BLUE LED), then you should disconnect your Laptop/PC from the Pixie's AP-Mode (it might automatically do this anyway), and then manually connect your Laptop/PC back to your existing Network (Same SSID as above)

```
[Laptop/PC] <--- wifi ---> [ROUTER] <--- wifi ---> [Pixie in ClientMode : 192.168.1.200]
```

**Note :** If the device's LED stays flashing medium speed RED then you have not been able to connect to your desired network (you may have entered the SSID & PASS incorrectly). If you cycle the power to the device you will start in AP mode once again, the device will do this until a confirmed network connection has been made.

## Browser Configuration Mode

To access the browser configuration page, type into the URL bar the Network IP Address (this will be default value '192.168.1.200' unless you have changed it from within the 'Join-a-Network' page) and press return. *Note : Access to the Browser Configuration page is only available when ArtNet data is NOT streaming to the device over the network, therefore access can only be granted when the Device's LED is SOLID BLUE.* The configuration interface should appear as follows:

### **Device Settings & IP Configuration**

**Network:** The page should announce the currently connected network name as 'Connected to..'

**IP Address:** It is possible to set the IP Address of the Pixie to almost any value. Many ArtNet 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. *Note : If you change this IP address, the new IP address will be the one that will allow you access to this configuration page next time you reboot. Also take care to only change to an IP address that you actually have network access to.*

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

**MAC Address:** This is not adjustable and is a unique number created when the device was manufactured.

**[Save]** New IP configuration will not take place until the Pixie has its power cycled (or by pressing [Reboot]). Saving the configuration will write the Device IP and SubNetMask values to the Pixie's internal memory. On the next power-up the new settings will be used.

### **Art-Net Starting Universe**

These values can be configured to match the requirements of your system. There are a total of 32,768 universes for ArtNet III

**ArtNet Mode: Net:** Range 0-127 **SubNet:** Range 0-15 **Universe:** Range 0-15

**[SAVE]:** New ArtNet settings will take immediate effect after they are saved.

### **Pixel Test**

Connected Pixel colours can be tested by pressing buttons for either RGB or RGBW, clear ALL using OFF.

### **Starting Channel**

Enter the first Channel that you require the pixels to start from, leave as zero to start at channel zero

## Unlock Code

If an unlock code has been purchased, you can enter it into this box, and once [SAVE] has been pressed it will unlock the following features :

### DMX Protocol

Select either ArtNet or sACN (E1.31) to match the DMX Data Protocol coming from the host application  
[SAVE] New DMX Protocol settings will take immediate effect after they are saved to the Pixie.

### ArtNet Node Name

The device can be named (up to 8 characters) so that it can be identified on an ArtNet network

### Universe Sizes & Pixel Order

**Uni Size:** If your application is unable to set the size of the Universe, then the universe size can be entered into the boxes, one for each of the four universes. **Pixel Order:** If your application sends data out as RGB, then select RGB, otherwise default is GRB, also RGBW (4 colour) selection is available

### Output Power (Divisor)

The device can be set so that it can output full power (100%), half (50%) or a quarter power (25%)

## Reboot

Pressing [Reboot] will restart the Pixie Device

## Delete Connection

Pressing [Delete Connection] will remove the details of the currently connected network from the device, this may be required if you want to move from one wireless router to another. The next time you power up the device it will go into Access-Point mode again which will allow a new SSID & PASS to be entered (see Join-A-Network)

## Recovery Mode : Resetting Network Connection

If you have previously connected to a network (wireless router) and you want to delete the network connection so you can join a different network, you can do this in one of two ways:

**A.** Follow the instructions in the Browser configuration Mode, by accessing the page and press the [DELETE CONNECTION] button, this will instantly remove the current network SSID and Password, and the device will reboot automatically in AP mode waiting for you to connect to it directly and Join-a-Network

**B.** If the previous router doesn't exist anymore (it has been removed, the device has been moved to another location, or perhaps the router has died) then you won't be able to access the Browser Configuration Mode (above), instead you will have to use the special RECOVERY MODE. Once the Recovery Mode procedure is complete, the device will have removed its previous SSID and Password and will reboot in AP mode.

Here are the steps :

1. Without the original wireless router switched on (or visible on networks), power up the Pixie
2. The LED will be flashing a medium speed single RED (searching for network)
3. Allow 60 seconds to elapse (fail to connect), the LED will now be flashing RED with Equal on and off times
5. Disconnect the power to the Pixie
6. Repeat the steps from 1 to 5 TEN TIMES
7. Once the TENTH unsuccessful connection elapses over 60-seconds the device will reset

If at any time during the 10 power-up cycles the device happens to find the old wireless connection, this whole procedure will be ignored and the device will reconnect to the existing network as usual.

## Product Connections

The 3-wire Pixie JST cable has the following connections:

**BLACK** : Ground - **WHITE** : Data Out - **RED** : **5V ONLY** (5V power into the Pixie)

## Lets Animate !

Open your LED animation application, Jinx is recommended and can be downloaded free of charge from <http://www.live-leds.de/>

1. Configure Jinx to use your Pixie device, by selecting it as an 'ArtNet' device type from the 'SetUp>OutputDevices' menu
2. Universes/Devices can be added manually (see below) or automatically using 'SCAN' (only available for ArtNet). If a scan is done and 1 universe will be automatically added, you may need to edit the entry with the specific requirement of your set-up.
3. Ensure the Broadcast check box is not checked
4. Enter the IP number of your Pixie interface (as you have set in Pixie config)
5. Select the number of data channels required for this universe, and set Net, SubNet and Starting Universe (as you have set in Pixie config)
6. Click OK to save changes
7. Design your matrix size and shape within 'SetUp>MatrixOptions'
8. Patch your matrix to the Pixies universe within 'SetUp>OutputPatch'. Be careful to select the correct colour order for your LEDs, WS2812 are GRB, and NOT RGB, starting at channel zero.
9. 'SetUp>StartOutput' to start the show.
10. If you have configured and patched everything correctly the Devices BLUE LED will extinguish.
11. Ensure your WS2812 LED strip/matrix is connected to the JST outputs, following the correct connections.
12. Select the effect you want to see from the Channel Effects and have fun !

## ArtNet/sACN Unicast, Multicast & Broadcast mode

It is recommended that Unicast mode is used when sending ArtNet/sACN data to Pixie. Broadcast mode should be avoided.

## ArtNet Device Discovery & DHCP

There is limited 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 for ArtNet and 5568 for sACN.

## Dimensions

Length : 45mm (plus JST cable) – Width 16mm – Height 10mm

## Software Compatibility

Pixie works with all free and commercial Art-Net/sACN compatible software. For free software, Jinx! is highly recommended, visit <http://www.live-leds.de/> for more information.

**IMPORTANT : Please note that this is a 5V Device only, if the power input exceeds 5V the Pixie could be damaged internally**

## Technical Support

email : [bob.lynas@btinternet.com](mailto:bob.lynas@btinternet.com) or [sales@smartshow.lighting](mailto:sales@smartshow.lighting)

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