

### **Introduction**

Drive up to 170 WS2811/12/12b RGB NRZ-type, and/or 170 WS2801/03 RGB SPI-type Pixel-LEDs directly from your PC's USB port using the SmartShow USB-WS-170. This is perfect for testing small strips of Pixel-LEDs in the workshop or as part of a pixel-strip/matrix installation or mobile DJ lightshow. Easily mountable using the supplied clip.

### **Specifications**

USB1.1 & USB2.0 compliant.

Drivers available for Win98/2000/XP/Vista/7/8/9/10

FTDI-FT232RL USB to serial driver, masquerading as an 'openEnttec' device

DMX-RDM not supported.

### **Parts Supplied**

USB-WS-170      USBA-USBMini cable      3-Pin & 4-pin JST Plug/Cable      Mounting Clip

### **USB Connection & Driver Installation**

Connect the USB-WS-170 to your USB port using the USBA-USBMini cable supplied. Once connected the RED power LED will show on the device. Your PC will automatically search and install the FDTI driver required for the product. If you want to download the Windows driver separately visit :

[http://www.ftdichip.com/Drivers/CDM/CDM20828\\_Setup.exe](http://www.ftdichip.com/Drivers/CDM/CDM20828_Setup.exe)

Your USB-WS-170 masquerades as an 'openEnttec' style device, which is currently supported in just about every lighting design application available.

### **Pixel Connection**

Connect a strip of WS2811 or WS2812 (NRZ) RGB LEDs to the 3-pin JST connector, or a strip of WS2801/03 (SPI) LEDs to the 4-pin connector. Most Pixel-LED strips come with these connector already supplied, if not then a female 3-pin JST and 4-pin JST connectors are supplied with the kit.

**3-Pin NRZ Connector : White=0V, Green=Data**

**4-Pin SPI Connector : Blue=0v, Red=Data, Green=Clock**

### **Power Connection**

Power your PixelLEDs from a 5V external power supply (The USB-WS does NOT supply power to LEDS, just Data). To calculate the power supply required, multiply the number of LEDs by 0.25 (each Pixel-LED draws 0.25W). For example 170 Pixel-LEDs will require  $170 \times 0.25W = 42.5W$ , therefore a 50W/5V power supply should be perfectly adequate.

### **Lets Animate !**

Open your LED animation application, we suggest Jinx as a good starting point, this can be downloaded free of charge from <http://www.live-leds.de/>

1. Configure your SmartShow USB-WS driver, by selecting it as 'openEnttec DMX' from the '*SetUp>OutputDevices*' menu.
2. Design your matrix size and shape within '*SetUp>MatrixOptions*'
3. Patch your matrix to the Driver within '*SetUp>OutputPatch*'. Be careful to select the correct colour order for your LEDs, WS2812 are GRB, and NOT RGB, starting a channel zero.
4. '*SetUp>StartOutput*' to start the show.
5. Once DMX data is being received the LED will flash GREEN/RED at a steady rate.
6. Select the effect you want to see from the Channel Effects

### **Multiple USB connections**

If you have more than one USB-WS-170 (connected via separate USB ports or perhaps a small powered USB hub), you can add them from the *OutputDevices* menu and patch them from the *OutputPatch* menu. Make sure you patch different device outputs to different areas of the overall design. For example, if you have two USB-WS-170 devices you can create a 26 wide by 13 high matrix, patch one USB device to the left 13\*13 array, and another USB device to the right 13\*13 array. Each USB-WS-170 is capable of driving one DMX universe (510 channels). each Pixel-LED takes 3 channels (one for each R,G & B) giving a total of 170 Pixel-LEDs that can be driven at a typical refresh rate of 25-30Hz

### **Dimensions**

Length : 65mm (plus JST cable) – Width 22mm – Height 12mm

### **Technical Support**

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