

PIXELATOR MINI PX1-8D

DIN-RAIL MOUNTABLE 8 PORT PIXEL CONTROLLER USER MANUAL



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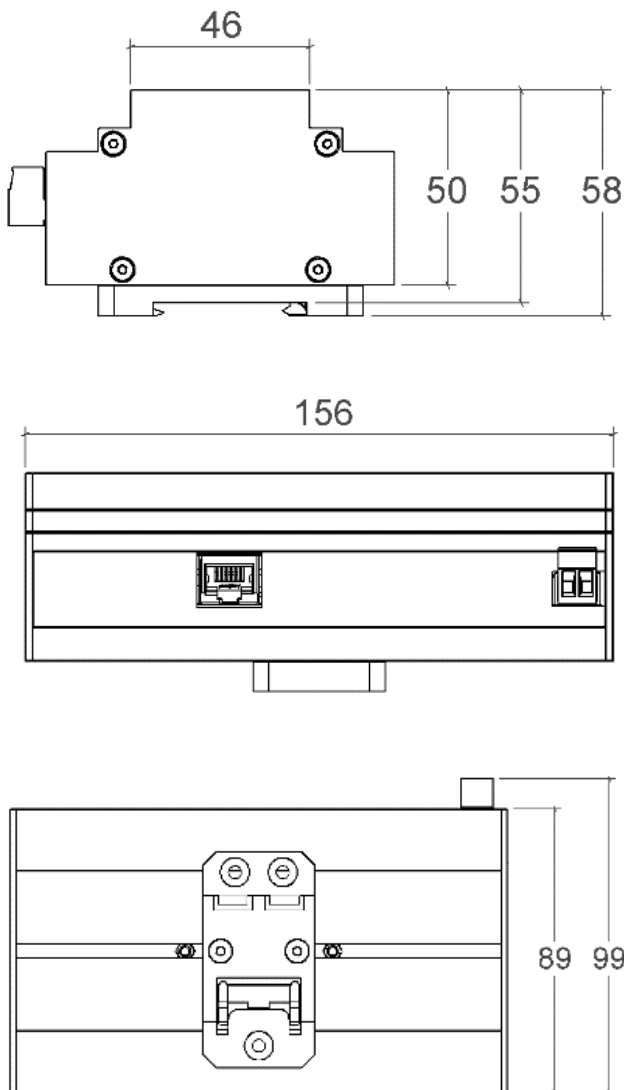
Box Contents

- Pixelator Mini (PX1-8D)
- Straight connect Ethernet lead (pn:79102)
- This user manual

Naming

Pixelator Mini will be referred to as PX1-8D throughout this manual.

Physical Dimensions



Note:

All dimensions are in millimetres unless specified otherwise

Safety

- This unit is intended for indoor use only.
- Do not expose this device to rain or moisture, doing this will void the warranty.
- Power off the unit, before making any connections
- Do not remove the cover, there are no user serviceable components inside.
- Do not plug this unit in to a dimmer pack

LED Protocols Supported

- 9PDOT-8bit and 9PDOT-16bit
- WS2811, WS2812, WS2813, WS2812B
- APA-104 LEDs
- SK6812 – use WS2812B
- TM1804 – use WS2812B
- TM1812 – use WS2812B
- UCS2903 – use WS2812b
- UCS2904 – use WS2812B
- TLC5973-8bit and TLC5973-16bit

Notes:

- There might be other led protocols similar, to the ones supported by PX1-8D. WE cannot claim to support all. If you happen to find one that works, and is not listed, please let us know, so we can update our documentation

Features

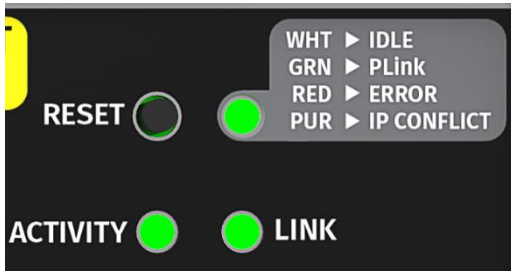
- 8 Pixel Link (RJ-45) data output ports
- 1 RJ45 Ethercon connector (10/100 Mbps)
- DIN Rail mount (attached)
- 2pin Terminal connector for power input
- Each Plink output can be mapped to 2 Ethernet Universes.
- 16 Universe Ethernet to Plink
- Control a maximum of 2,720 RGB pixels.
- Easy to configure through any web browser
- Supports following DMX over Ethernet protocols:
 - Art-Net 1/2/3
 - Streaming ACN (sACN)
 - Kling-net
 - ESP
- Compatible with ENTTEC Plink Injectors and PSAT
- Static or Dynamic (DHCP) IP configuration (DHCP by default)
- Pixel Grouping is configurable for each Pixel Link port. (1 to 340) for RGB and (1 to 256) for RGBW
- Pixel Ordering is configurable for each Pixel Link port.

Specifications

Item		Value
Input Voltage		9V – 48 V DC
Input Current Required	9V DC	400 mA
	48V DC	75 mA
Unit Weight		0.357 kg / 0.787 lb
Shipped weight		0.517 kg / 1.140 lb
Length		156 mm / 6.14 inches
Width		99mm / 3.90 inches
Height		58 mm / 2.28 inches
Output Protocols		9PDOT-8bit 9PDOT-16bit WS2812B and others APA-104 TLC5973-8bit TLC5973-16bit
Input Protocol		Art-Net, sACN, Kling-net or ESP
Op Environment		-15°C to 75°C
Storage temperature		-20°C to 80°C
Humidity		5% to 95%
IP Rating		IP20
Connectors		8x RJ45 Plink output 1x 2 pin screw terminal 1x RJ45 Ethercon connector

Due to continuous improvements and innovations of all ENTTEC products, specifications and features are subject to change without notice.

LED Status



PX1-8D comes with one RGB status LED and two green network LED indicators located on top of the product

RGB Status LED:

COOL WHITE: idle, signifies that PX1-8D is operating normally.

GREEN (Blinking): Pixel Link Data is being output. The led blinks green and white.

RED: Error State. Requires a firmware update or needs to be rebooted. A reset might be required, if it stays in error-mode on reboot.

PURPLE: IP Address Conflict. Please change the IP address manually or enable DHCP.

Ethernet Link Speed: is ON when there is an active Ethernet Link @ 100 Mbps. It will stay OFF @ 10 Mbps.

Ethernet Activity: This LED blinks when there is activity on the Ethernet network.

Default IP

Right out of the box, the PX1-8D is factory configured to be a DHCP node, so you can plug it into your existing router, and it's good to go.

If router is unable to assign an IP address to the unit, default static IP Address is used.

Default static IP address is mentioned on the outer label of the box. However, one can easily calculate the IP address, using the following:

10.(Octet1).(Octet2).(Octet3)

Note

Where the three octets are the last three octets of the mac address in decimal.

For e.g.:

- If mac address is 0050C207C8A8 where last three octets are 07, C8 and A8 default static IP for the above mac 10.7.200.168
- Where Octet1 07 in 7 in decimal
- Where Octet2 C8 is 200 in decimal
- Where Octet3 A8 is 168 in decimal

Using the IP address, one can access the built-in web-interface via any modern web-browser. The web-interface allows the settings of the unit to be changed.

DHCP is enabled by default. When enabled, the router on your network is expected to automatically provide the IP address to the unit. If no DHCP router/server is present on the network, the manual IP address will be used.

If for some reason, your unit does not get an IP address via DHCP, please restart the unit with the Ethernet cable connected. It will listen for DHCP on start-up and wait for a few seconds, before giving up.

IP Address and Netmask are only used if DHCP is disabled or is unavailable on your network. PX1-8D web-page will warn you, if non-standard IP address or netmask is used.

If ever you manage to use an IP Address that can't be connected to later, please perform the reset procedure (as described later). The reset will re-enable DHCP on PX1-8D.

Basic Setup

Right out of the box, the PX1-8D is factory configured to be a standard Art-Net node, listening to the first 16 Art-Net Universes (0 to 15).

To make any changes to the configuration, you will need the IP address of the unit. ENTTEC provides a free App (available for Windows and Mac) called NMU, which will find the PX1-8D on your network and display its IP address.

Using the IP address, one can access the built-in web-interface inside the PX1-8D via any modern web-browser. The web-interface allows the settings of the unit to be changed.

Pixel Tape/Dots are to be connected to the Pixel Link port using a PLink Injector or PSAT (sold separately).

Once setup, any Art-Net/sACN/ Kling-net/ESP enabled software/app or a lighting control desk can be used to drive the Pixel Link outputs on the PX1-8D. For a list of recommended apps, please check the website

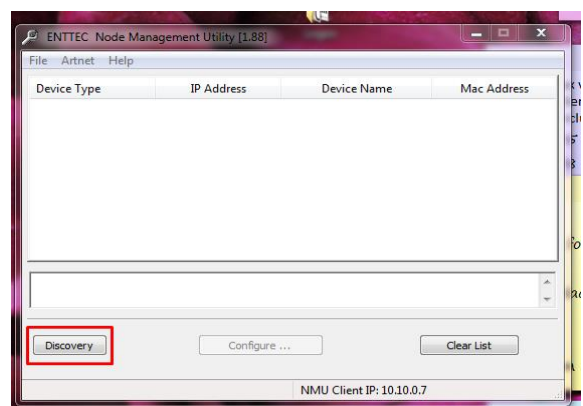
NMU

NMU (Node Management Utility) is a free Windows and Mac application that is used to manage compatible ENTTEC DMX over Ethernet nodes.

NMU will help you find your unit's IP address and then open a browser window to access the web-interface.

Please follow these steps:

1. Download NMU from <https://www.enttec.com/nmu>
2. PX1-8D should be connected physically by an Ethernet cable to the same physical network (or router) as the computer on which you will run NMU.
3. Open NMU. If prompted with multiple networks, select the correct network. (identified by the IP address of your computer on that network)
4. Press the Discovery button, and wait till NMU finds all supported ENTTEC devices



5. Once found, select the device and use the IP address to access the web interface via your web browser

Device Type	IP Address	Device Name	Mac Address
Pixelator Mini	10.10.1.4	Pixelator	0050C207DE28

Firmware Version 1.7
Please point your web browser to <http://10.10.1.4> to configure Pixelator Mini

Web Configuration

PX1-8D can be configured and controlled through a web browser, running on a computer system, located on the same Local Area Network. Any modern web browser, such as Chrome, Firefox, Internet Explorer, Safari or Opera, running under any operating system, including Windows XP/7/8/10, Mac OS X or Linux can be used.

Home page



The home tab displays the following information:

- Device Name
- Firmware Version on device
- Serial number of device - this is unique to this unit and can be used to identify it
- DHCP status – whether enabled
- IP address
- Netmask
- Gateway
- MAC address

- Link Speed
- Input protocol set on device
- Output LED protocol set on device

To change any of the displayed settings, you must use the Settings page.

Settings

The Settings tab allows an end user to do the following:

- Change a device name for identification
- Enable/disable DHCP
- Set a specific Static IP address
- Set a specific Static Netmask
- Set the input DMX Protocol
- Set the output LED Protocol
- Set the number of universes per output (max 2)
- Map universes to the output
- Configure how colours are mapped to pixel
- Pixel grouping settings
- Reset to factory defaults
- Reboot device

Plink Settings

Plink Outputs								
Options	Out 1	Out 2	Out 3	Out 4	Out 5	Out 6	Out 7	Out 8
Universe/Output: (0 - 2)	2	2	2	2	2	2	2	2
First Universe: Art-Net Universe: (0 - 15)	0	2	4	6	8	10	12	14
Second Universe: Art-Net Universe: (0 - 15)	1	3	5	7	9	11	13	15
Pixel Order: correct color order	GRB	GRB	GRB	GRB	GRB	GRB	GRB	GRB
Pixel Group:	1	1	1	1	1	1	1	1
DMX Start Add: (0 - 511)	0	0	0	0	0	0	0	0
Max. Pixels / Port:	340	340	340	340	340	340	340	340
Total Pixels:								2720

The Plink Outputs table allows all settings to be individually changed for each Plink Port. The options available for each Port are as follows:

Universe / Output

Select the number of universe to drive the outputs. Available options are:

None: No output.

1: Maps to One universe, and drives first 170 pixels in RGB modes, or First 128 Pixels in RGBW modes.

2: Maps the output to two universes, and drives first 340 pixels in RGB modes, or First 256 Pixels in RGBW modes.

First Universe

Allows selections of the First universe that the output will be mapped to. Drives the first 170 Pixels in RGB modes, or the first 128 Pixels in RGBW modes.

For Art-net universe, please change Net/Subnet to increase combined universe beyond 15. (Combined

universe is shown under the selection).

Second Universe

Allows selections of the Second universe that the output will be mapped to. Drives pixels 171-340 in RGB modes, or the pixels 129-256 in RGBW modes.

For Art-net universe, please change Net/Subnet to increase combined universe beyond 15. Combined universe is shown under the selection.

Pixel Order

Ordering controls, how the DMX slots are mapped to the LED pixel color on each LED pixel. The ordering selected here should match the ordering on the Pixel Tape or Dots being used. The Pixel ordering selected, will also determine the number of Pixels being driven on the output.

RGB options: uses 3 DMX channels per pixel.

RGBW options: uses 4 DMX channels per pixel.

Pixel Group

Pixel Grouping allows one DMX pixel to drive multiple physical LED pixels. This option is only available when One Universe/Output is selected. Defaults to 1.

The max. Group will depend on the Pixel order selected.

DMX Start Address

Selects DMX slot number for the first pixel to output.

This option is only available when One Universe/Output is selected. Defaults to 0.

Update Firmware

PIXELATOR-MINI - UPDATE FIRMWARE	
Current System Information	
Boot Version:	ENTTEC Pixelator Mini Boot V1.3
Firmware Version:	ENTTEC Pixelator Mini Firmware V1.7
Mac Address:	00:50:c2:07:de:26
Serial No:	c207de26
Link Speed:	100 Mbps
Current Network Settings	
DHCP:	enabled
IP Address:	10.10.1.3
Update Firmware	
Select firmware file:	<input type="button" value="Choose file"/> No file chosen <input type="button" value="Update Firmware"/>
Update progress:	Please do not interrupt while the firmware is being updated. Unit will restart once firmware update is complete

From this page you can update PX1-8D to the latest firmware. Latest firmware file is available at www.enttec.com/PX1-8D

Choose or browse the firmware file (as per your browser) and click on Update firmware to start the process. The update progress is shown in real-time, and will take a few seconds for the update to complete

When the update is complete, the page will refresh, and you will be taken to the home page, where you can verify the firmware version. If the update fails for any reason, please try the same process again.

The firmware update is a two-step process.

1. The firmware used is verified.
2. The verified firmware is used to update device

Firmware verification

Firmware Verified

The following screen is displayed if the firmware is verified successfully

Update Firmware	
Select firmware file:	<input type="button" value="Choose file"/> firmware_1.7.bin <input type="button" value="Update Firmware"/>
Update progress:	Firmware Verified ... Uploading now ..

Firmware Not Verified

The following screen is displayed if the firmware cannot be verified

Update Firmware	
Select firmware file:	<input type="button" value="Choose file"/> pr1_firmware_12.bin <input type="button" value="Update Firmware"/>
Update progress:	error: Firmware File was corrupt... Please try again

Firmware updated

Update Firmware	
Select firmware file:	<input type="button" value="Choose file"/> firmware_1.7.bin <input type="button" value="Update Firmware"/>
Update progress:	Firmware updated successfully ... Rebooting unit now ...

PX1-8D will reboot after a firmware update, please allow a few seconds for it to be refreshed in the browser. Please wait until the update process is complete.

Reset button

The reset button restores the configuration of the PX1-8D to factory defaults:

- DHCP is set to enabled
- Static IP address is mapped to the Serial number of the unit (used if DHCP is unavailable).
- Netmask is set to 255.0.0.0

To successfully reset to factory defaults the following procedure must be performed:

- Power off the unit
- Press and hold the Reset button.
- While holding the Reset button, power up the unit, and keep holding the button for 3 seconds.
- Release the Reset button once the status led starts blinking red.
- Wait 3 seconds and cycle power

Connector pin out

Pixel Link pinout (RJ-45):

Pin 1: Data +

Pin 2: Data -

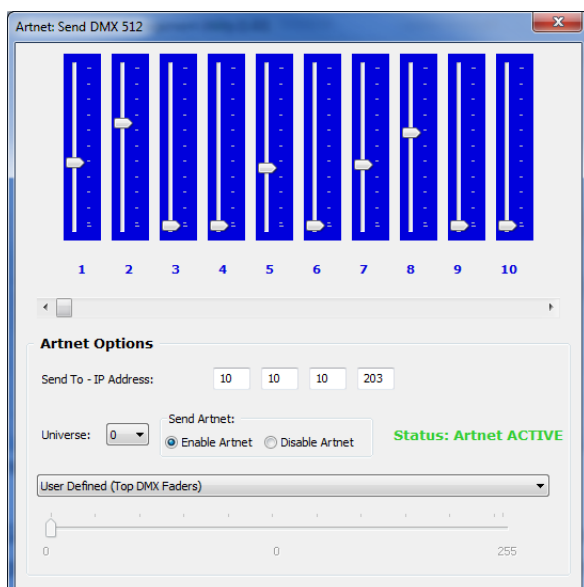
Pin 7: Ground

Art-Net Send Test

NMU can also be used to troubleshoot the PLink output on the PX1-8D. Art-Net Test can be accessed from the top menu: Art-net → **Art-net Test**

When first opened, the Art-Net is set to Disabled, please set it to Enabled, and then you can use either the DMX faders to test one or more DMX channels, or use the test-patterns from the options available.

Please set the PX1-8D to be Art-Net output and on the same universe as the NMU.



PLink system



- Each PLink port can drive up to 340 RGB individual pixels (2 DMX universes)
- PLink Injector sold separately (73546 / 73544)
- 1 PLink Injector needs to be used per PLink port on PX1-8D
- External DC power supply
- Maximum distance between PLink Injector and Tape/dots should not exceed 3m
- Data extensions can be up to 300m over Cat6 cable
- Small, light and easy to hide design
- High power screw terminal connectors
- Easy wiring using straight Cat5/Cat6 standard connections

Notes:

- PLink system only works with CAT5/6 straight-through cables, do not use crossover cables.

Ordering Information

The ENTTEC PX1-8D and compatible products can be ordered from our website or through your ENTTEC dealer.

Part Number	Description
71066	Pixelator Mini PX1-8D
70581-ARC	ENTTEC LED Mapper Software (ELM) Architectural (512 Universes)
70581-PRO	ENTTEC LED Mapper Software (ELM) Professional (96 Universes)
70581-STU	ENTTEC LED Mapper Software (ELM) Standard (16 Universes)
9PDOT (1-8)	HI-RES SMART RGB PIXEL DOTS

Ordering Information

The ENTTEC PX1-8D and compatible products can be ordered from our website or through your ENTTEC dealer.

Part Number	Description
8PL60-F-12	RGB PIXEL TAPE 60 LEDS/METER 12V - 5M Roll
8PL30-F	RGB PIXEL TAPE 30 LEDS/METER 5V - 5M Roll
8PL60-F	RGB PIXEL TAPE 60 LEDS/METER 5V - 5M Roll
8PL144-2	RGB PIXEL TAPE 144 LEDS/METER 5V - 2M Roll
8PX60-4	RGBW PIXEL TAPE 60 LEDS/METER 5V - 4M Roll
8PXW60-4-B	RGBW PIXEL TAPE 60 LEDS/METER 5V - 4M Roll Black No Coating
8PX30-F	RGBW PIXEL TAPE 30 LEDS/METER 5V - 5M Roll
8PW60-F	WWA (CTA+AMBER) PIXEL TAPE 60 LEDS/METER 5V - 5M Roll
8PW30-F	WWA (CTA+AMBER) PIXEL TAPE 30 LEDS/METER 5V - 5M Roll
8P60-5-B	Pixel tape 60 LEDS/METER 5V - 5M Roll Black No Coating