



# Pixelator User Manual

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# User Manual



## Pixelator

### Box Contents

- Pixelator (Part #:70060)
- Straight connect Ethernet lead (Part #: 79102)
- IEC power cord (country dependent plug)

### Supported LED Protocols

For the latest list of supported pixel protocols of the PLink and Pixelator system, please refer to ENTTEC's support page: <https://www.enttec.com/support/supported-led-pixelprotocols/>

### Note:

- ENTTEC cannot claim to support protocols similar to those supported by Pixelator. If you happen to find one that works, and is not listed, please let us know, so we can investigate and update our documentation

### Features

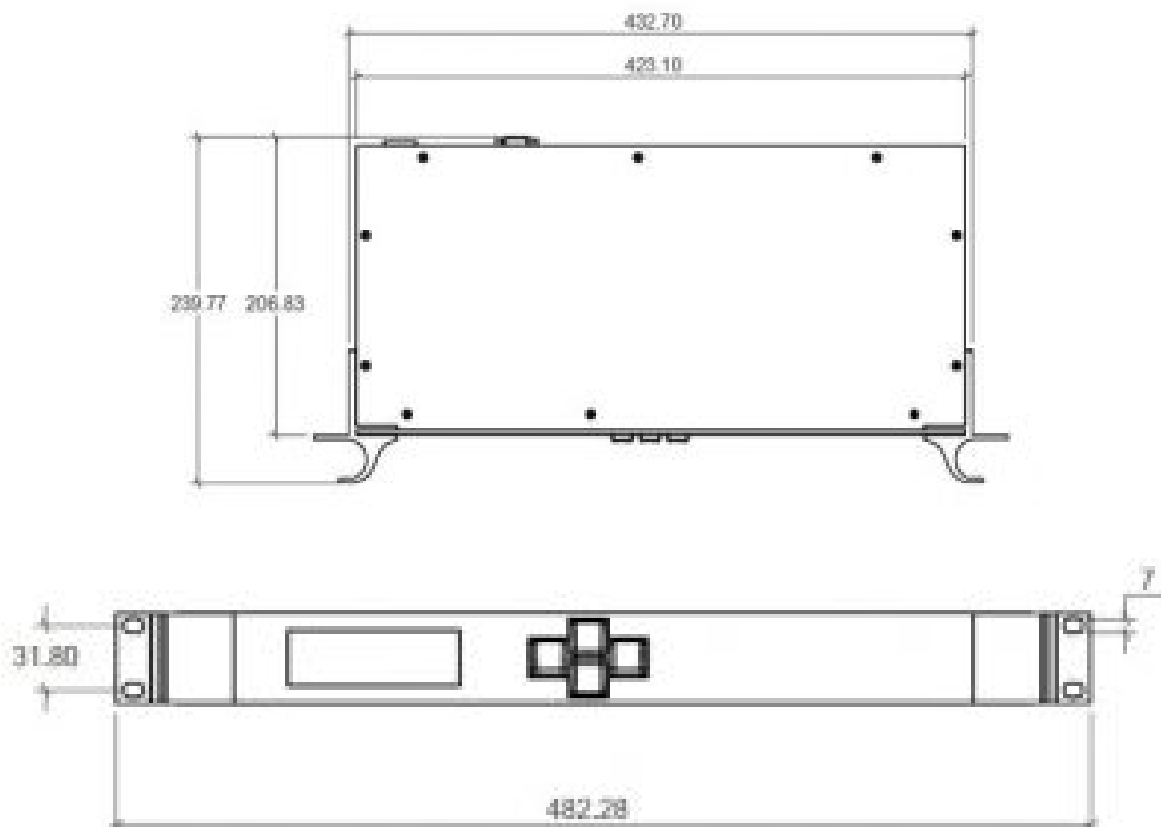
- 24 Pixel Link (RJ-45) ports (data output only)
- Gigabit ethernet connection
- Dual core CPU, with a clock speed of 2GHz – provides an efficient and reliable output
- 1GB DDR3 RAM – allows best utilization of the system.
- Pixel Grouping is configurable for each Pixel Link port
- Pixel Ordering is configurable for each Pixel Link port (RGB and RGBW modes)
- Each Pixel Link can be assigned up to 2 Ethernet Universes. (allowing 340 individual LEDs to be assigned from each port in RGB modes)
- Each port outputs at 40 frames per second

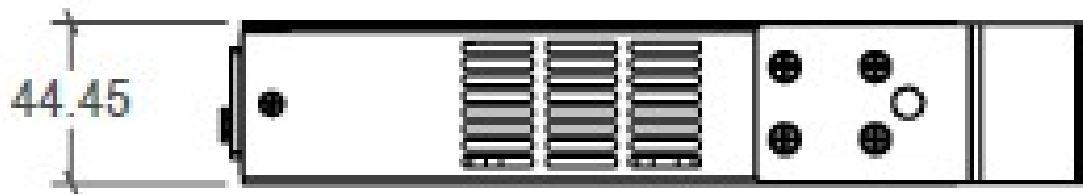
- The following DMX over ethernet protocols are supported:
  - Streaming ACN (sACN) ESP
  - Art-Net Kinet
- ArtSync support to ensure all outputs are in synchronization with each other.
- All configuration is made through the web browser.
- Graphical User Interface for creating and editing ports is flow-chart oriented and documents data flow as you configure it.
- Clock module to sync multiple universes output
- DMX Generator and Stream snapshot (web).
- LCD display to provide status information on system and data flow
- Recommended to be used with ELM (industry award winning LED Mapper software)

## Safety

- This unit is intended for indoor use only
- Do not expose the unit to rain or moisture, doing this will void the warranty
- Do not remove the cover, there are no serviceable parts inside
- Do not block any ventilation apertures on this device.
- Ensure proper earth connections
- Always be sure to mount this unit in an area that will allow proper ventilation. Allow about 6" (20 cm) between this device and a wall.

## Physical Dimensions





**Note:**

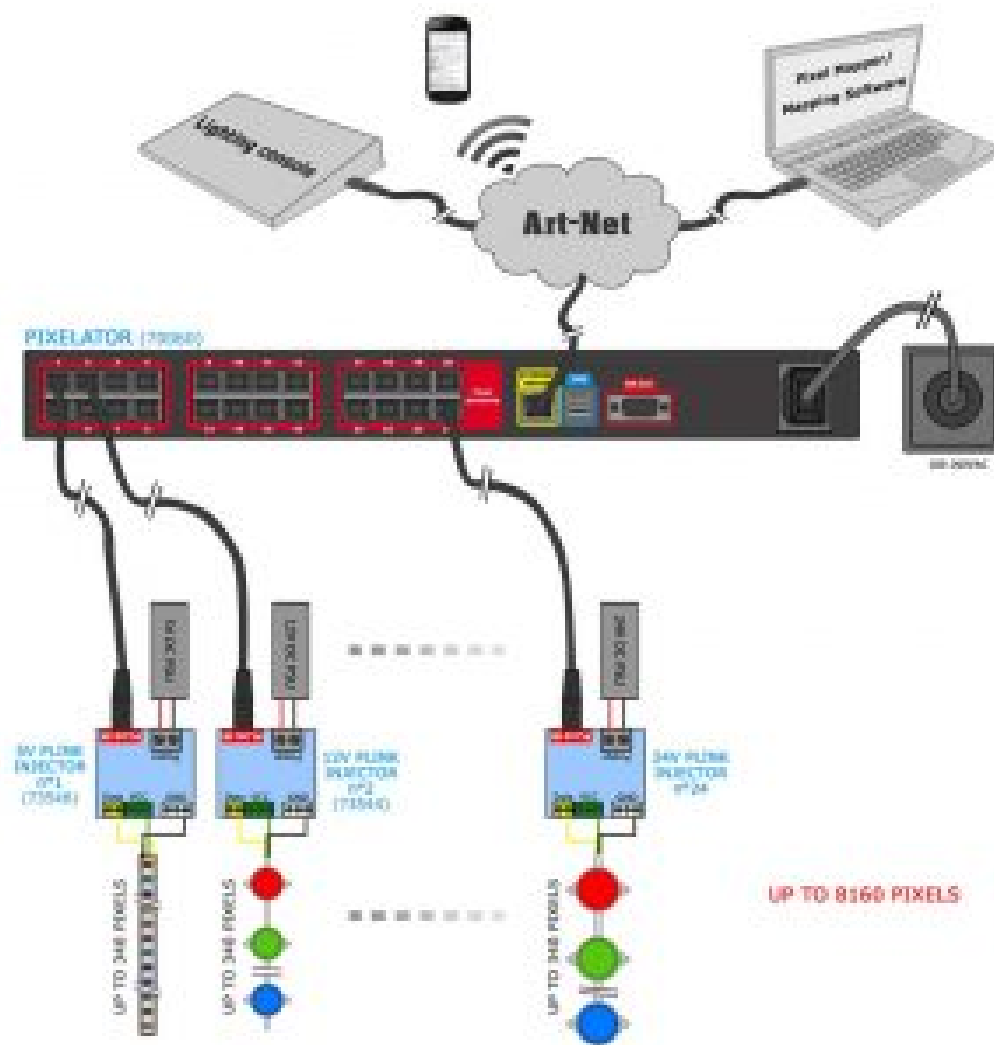
All dimensions are in millimetres unless specified otherwise

## Basic Setup

ENTTEC Pixelator is a standard Art-Net node. Because of this, you can use the device with applications, consoles, desks, or controllers that are compatible with Art-Net to distribute Art-Net data via Ethernet network.

With the default profile, each Pixel Link port is mapped to its respective Art-Net Universe, allowing you to directly plug-in your Pixelator without the need for configuration.

Pixel Tape needs to be connected to the Pixel Link port



using a PLink Injector (sold separately). The injector takes external DC power and has appropriate terminals to connect the tape.

## Getting Started

To begin your installation please follow these steps.

1. Unpack the unit from the box. Inspect the Pixelator for any damage that might have occurred in shipping and verify that it looks to be in good condition before plugging it in to power.
2. The Pixelator occupies a single unit (1U) in a 19 inch rack. You may attach it to the rack either at this time or later after configuring it, if desired.
3. Attach a power cord with mains voltage to the IEC input on the back.
4. Using an Ethernet Cat5, Cat5E or Cat6 cable, connect the Pixelator to an Ethernet Network.
5. When the unit turns on, you will be able to see its initial IP address on the LCD panel which looks like W.X.Y.Z, where each letter is a number between 0 and 255. Note that IP address down for later use.
6. The LCD displays the IP address of the unit at all times (except when it's booting), but if not possible to check the LCD, NMU App (available for Windows & Mac) can be used to detect the Pixelator on your network. NMU can be downloaded for free from the ENTTEC website.

### Profiles

Profiles are essential to the operational philosophy of the Pixelator. With a profile selected, the device knows how to utilize the many resources it can make use of to perform lighting control tasks.

Each Profile contains configuration information for some or all of the following items:

### Pixel Link (PLink)

These are the physical PIXEL Link ports (1-24)

### Ethernet Streams

These are the DMX over Ethernet universes. (Art-Net, ESP, Kinet, sACN)

### Routing Diagram

The routing diagram is the visual representation of the Profile itself and it tells the Pixelator how frames are moved or routed inside the routing engine, as well as what to do with multiple sources of data that need to be merged, when that option is engaged. Other special operations can be part of a diagram as well, such as Channel Shifter, Output Switch, etc.

## Factory Profiles

The Pixelator has a set of factory profiles, to start you off. You're likely to see 2 or more of the following:

- Artnet24->Pixel24: This profile will take 24 Art-Net universes and convert them to 24 Pixel-Link signal on ports 1 to 24.
- Artnet48->Pixel24: This profile will take 48 Art-Net universes and convert them to 24 Pixel-Link signal on ports 1 to 24. (Each Port will be mapped to 2 Art-Net Universes consecutively)

These profiles are just an example of what can be done with the Pixelator, you can modify the factory profiles to

accommodate your specific need, or create your own profile from scratch.

If you don't see any of the above, please contact [support@enttec.com](mailto:support@enttec.com) and we can send them to you. After that, you're on your own to make and edit profiles to suit your application!

You may select between existing profiles via the menu, but to edit them and make new ones, you'll need to access the Pixelator's web page. The sections that follow will provide more information about each of the ways to interact with the Pixelator.

Changing from one profile to another can be done in a web browser window, or with the touch of a few buttons on the front panel (LCD menu).

## LCD Menu

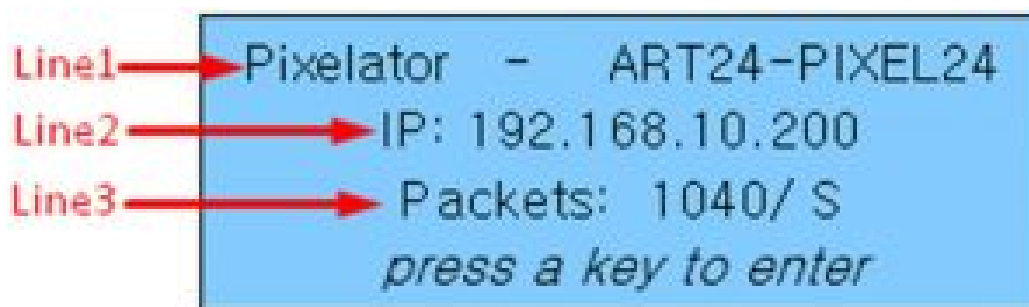
The LCD Menu is navigated through the four panel buttons on the front of the unit.

The Menu button acts as the "Back" button, which takes you to the previous Menu/screen.

The Enter button goes into the selected option on the screen, and activating the option.

The Top & Bottom button are used to navigate/scroll through the options on any screen. The currently selected option is highlighted with a white background on the screen.

## Main Menu



**Line1:** displays the System Name and currently Selected Profile.

**Line2:** displays either the current IP address / DHCP Failed / disconnected, highlighting the current status of the network interface. The IP address is where the web interface can be accessed.

**Line3:** displays the number of packets currently passing through the Pixelator. This number of packets per second, can be used as an indicator of the activity of DMX on your network.

Pressing any of the panel buttons/keys will activate the next screen on the LCD Menu.

## Selection Menu

A blue rectangular screen with a black border displaying a list of five menu items: 1-load profile, 2-Setup, 3-Status, 4-Lock Unit, and 5-Restart.


1-load profile  
2-Setup  
3-Status  
4-Lock Unit  
5-Restart

### 1-Load Profile

Lists all available profiles on the Pixelator, list can be scrolled using up & down keys. Scrolling indicator is visible when the list allows scrolling.

Pressing Enter at the selected profile will activate the profile

### 2-Setup

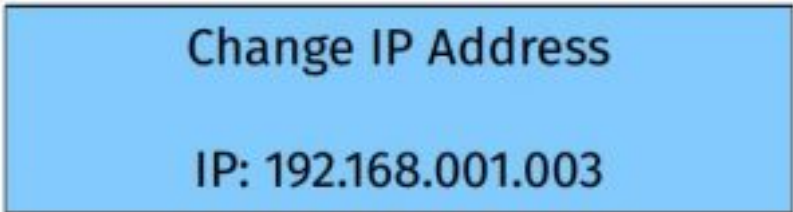
A blue rectangular screen with a black border displaying two menu items: 1-Change IP and 2-Factory Reset.

1-Change IP  
2-Factory Reset

Setup screen allows changing the IP address of the unit via “Change IP” or doing Factory Reset.

### Change IP

This screen further gives two options DHCP or Static IP. When Static IP is selected, the screen allows you to change the IP address using the top and bottom button to scroll the digits and the menu & enter buttons to select the segment. Once you are on the last segment of the IP address, pressing the Enter button, will activate the IP address. It will take a few seconds for the change to go through, please wait 30 seconds, before attempting to try again.

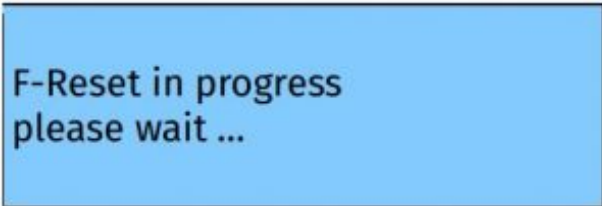
A blue rectangular screen with a black border displaying the title 'Change IP Address' and the IP address 'IP: 192.168.001.003'.

Change IP Address

IP: 192.168.001.003

### Factory Reset

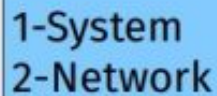
Activating Factory Reset, leads to a simple prompt confirming your action. Once confirmed, the Factory Reset will take a few seconds to run. It will end up deleting all your user created profiles, as well as any saved settings. Please use this only when needed, or as directed by ENTTEC support team.

A blue rectangular screen with a black border displaying the text 'F-Reset in progress' and 'please wait ...'.

F-Reset in progress  
please wait ...

### 3-Status

Status Screen, allows the following two options:



1-System  
2-Network

Both the Status screens are read-only and provide information about the system and Networking. These require no user-input and serve as a way of checking the performance of the unit.

#### **4-Lock Unit**

The option to lock your device by disabling the web interface has been added to provide a level of security to your installation and is available on RevB models. By locking your device, the web server becomes inactive meaning that your configuration cannot be modified. To lock and unlock your device follow these simple steps on the devices LCD menu.

1. press enter on the units LCD menu
2. Navigate to option 4-Lock Unit and press Enter
3. Select Yes to lock or No to unlock.
4. Wait 10 seconds for this to take effect.
5. Done!

ENTTEC strongly recommend you secure your network with relevant and. Do not connect devices carrying DMX or ArtNet data to the outside world unless absolutely necessary and with relevant precautions in place. If unsure consult a specialist within this field.

**Note:** Factory resetting a device will not unlock the device. This must be done using the LCD menu.

#### **5-Restart**

Restart Screen, when activated, prompts for the user to confirm the selection.

Once confirmed, Pixelator will stop the output engine and restart the system. While rebooting the LCD screen will change between a couple of screens, and the LCD Main Menu will only be visible, once the system is fully ready. (usually takes a minute)

### **Web Interface**

The Pixelator is configured, controlled and programmed through a web browser interface 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 or Vista, Mac OS X or Linux can be used.

Type the IP address (shown on the LCD Menu) into your web browser to access the Pixelator Web Interface.

Throughout the Web Interface, helpful hints are displayed when a user hovers the mouse over the “Help” icon?



# ENTTEC

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[Settings](#)

[Backup+Restore](#)

[Stream Auditor](#)

User Manual

10.10.0.116

## PIXELATOR - HOME PAGE

### Network Information

IP Address :	10.10.0.116	(Speed: 100Mbps)
Subnet Mask:	255.255.0	
Broadcast Address:	10.255.255.255	
Max. B Address:	80.80.212.0 (64K)	
Hardware ID:	105765c105c104c1	
AUT-NOO 2 Net:	0 (universe range 0 - 255)	

### System Information

System Status:	<span style="color: green;">✔</span> Active	<a href="#">Stop/Restart</a>
Active Profile:	<span style="color: blue;">2U-PLink34(GRB)</span>	
System Name:	Pixelator	
Packets per sec:	146	

### License Information

PIXELATOR (PLINK OUTPUT)	<span style="color: green;">✔</span>
TOTAL (25 MIN, TIMEOUT)	<span style="color: green;">✔</span>

### Firmware Information

System Version:	10.1.0-0440 (rev6) (updated: 28Oct2016)
IC-Driver Version:	Pixelator driver V1.2
IC-Firmware Version:	Pixelator Firmware V3.3
IC-Board Version:	Pixelator Board V0.2

## Web: Profiles

PIXELATOR - PROFILES				
Active	ID	Profile Name	Description	Remarks
<input checked="" type="radio"/>	001	24U-PLink34	24 Art-Net Universe to 24 PLink Ports (1U each)	Read-Only
<input type="radio"/>	002	48U-PLink34	48 Art-Net Universe to 24 PLink Ports (2U each)	Read-Only
<input type="radio"/>	003	2U-PLink34(GRB)	2U to 24 Ports (All Ports connected to same 2U)	
<input type="radio"/>	004	COLOR-LED-TEST	Static Colors to each Port - useful to test led strips	
<input type="radio"/>	005	SYNCED-24U	Sync output to Universe 24 (Art-Net)	
<input type="radio"/>	006	SYNCED-48U	Sync output to Universe 48 (Art-Net)	
<div> <a href="#">Activate &gt;</a> <a href="#">Create New ^</a> <a href="#">Copy As ...</a> <a href="#">Delete ?</a> </div>				

From this screen you can manage your profiles.

As you will notice in the “Remarks” column, the factory default profiles are read only. If you wish to modify one of them, you will first need to copy the profile to some other name. Once the profile has been copied you can modify it to fit your particular needs.

Clicking on the Profile name will launch the profile in the profile-editor window.

## Web: Profile Editor

Create a new profile or edit an existing one using the profile-editor. Profile Editor opens in a new page in your web browser. Select a module on the left and the right panel will provide help about that panel. Connect a module to another using wires from one point to another. The direction of the wire (arrow) is important, the arrow signifies

output, and reflects the flow of data.

### Web: Profile Modules

Each profile is made up of two or more connected Modules or Actions. The relationship between them forms the layout of the data flow within the profile.

The following modules are available:

The PLink 1U module represents one of the physical ports on the rear of this unit, and maps to 1 Universe.

- Protocol: select the led protocol that the pixel tape conforms to.
- Ordering: RGB or RGBW mapping that the pixel tape conforms to. RGB modes use 3 DMX slots per LED pixel, and RGBW modes use 4 DMX slots.
- Grouping: it allows one DMX pixel to drive multiple physical LED pixels
- Start-Ch: DMX Start Channel for the 1st pixel can be changed as needed.

**Limitation:** Same PLink port# cannot be re-used within the same profile

The PLink 2U module represents one of the physical ports on the rear of this unit, and maps to 2 Universe.

- Each PLink 2U module has 2 input nodes that can be connected to two Ethernet streams. Top one (U1) is mapped to the First universe and Bottom one (U2) is mapped to the Second universe relative to the pixeltape.
- Protocol: select the led protocol that the pixel tape conforms to.
- Ordering: RGB or RGBW mapping that the pixel tape conforms to.

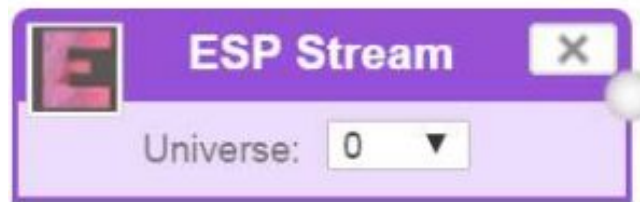
**Limitation:** The same PLink port number cannot be re-used more than once within the same profile.



Art-Net Stream: "Send IP address": is the destination address used when the stream is sending data only.



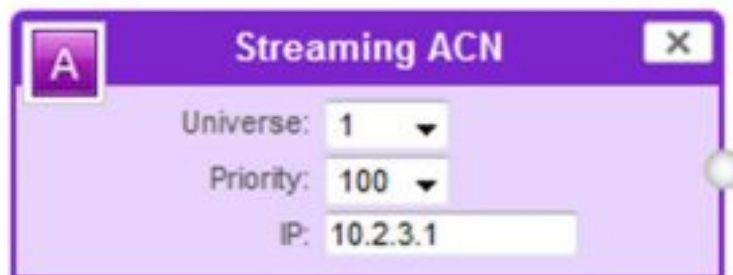
**ESP Stream:** ENTTEC Show protocol DMX over Ethernet stream (ESP).  
IP address is the destination address used when the stream is sending data only.



**Kinet Stream:** For example: You can connect Kinet Stream to an Art-Net Stream to convert and output as Art-Net. (Kinet stream is supported as input only).



**Streaming ACN:** "IP address" is the destination address used when the stream is sending data only (default is disabled = 0.0.0.0)



**DMX Generator:** Define your own custom DMX Channel values and assign the selected ones. Snapshot feature can be used to capture values from an input stream. All modifications can be done using the DMX Grid Page.



**Clock:** Allows you to synchronize ALL Pixel Link output only when the connected Input Stream is received.

- Auto-repeat allows user to repeat the output once every “number of seconds” regardless of Synced Stream
- Default behavior [Auto-repeat = Never]: Will only refresh Pixe Link when Synced Stream is received

The Clock module can be used to make sure the output is always synced to the “latest universe” – especially if the source adds a delay to each universe.



## Firmware Update

You can update the firmware on the Datagate Mk2, via the web browser. Firmware files are available on the ENTTEC website.

Always check your Pixelator’s hardware revision, (Rev A, B or C on the device homepage, to ensure you are downloading firmware that is compatible with your device).

Download the firmware to your desktop and then follow instructions on the Pixelator’s Settings page.

**Note:** While the firmware is being updated, please do not power off the unit, please wait until the web-page is processing. (up-to 5 minutes)

If the web-page does not refresh automatically, please open the home page on the browser manually, and verify that the update has succeeded.

## 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 not directly allow you to configure the Pixelator itself, but it can help you find your unit’s IP address and then open a browser window to access Pixelator. Follow these steps:

1. Download NMU from the ENTTEC website.

2. Ensure that your Pixelator is hooked up physically by Ethernet cable to the same physical network as the computer on which you will run the NMU.
3. Press the Discovery button.
4. Once found, select Pixelator and use the IP address to access the web interface via your web browser.

### Connector Pin Out

Pixel Link pinout (RJ-45):

Pin1:	Data +
Pin2:	Data -
Pin7:	Ground
All other pins:	Not Connected

### RS232:

Note: RS232 is not supported by the Pixelator.

### PLink System



- Each PLink port can drive up to 340 RGB individual pixels (2 DMX universes) – PLink 2U module must be used in Pixelator Profile
- PLink Injector sold separately (73546 / 73544)
- 1 PLink Injector needs to be used per PLink port on the Pixelator
- 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
- Supports pixel tape and dots with compatible protocols, refer to support page <https://www.enttec.com/support/supported-ledpixel-protocols/>
- Small, light and easy to hide design
- High power screw terminal connectors
- Easy wiring using straight Cat5/Cat6 standard connections

**Note:** The P-Link system only works with CAT5/6 straightthrough cables, do not use crossover cables.

## Pixelator Specifications

Item		Value
Input Voltage		85 - 264V AC
Input Frequency		47 - 63Hz
Power Consumption		20W
Heat dissipation		19W
Unit Weight		3kg/6.7lbs
Shipped Weight		3.6kg/8lbs
Length	With rack ears	483 mm/19.1 inches
	Without rack ears	424 mm/16.7 inches

Width	With rack ears	240 mm/9.5 inches
	Without rack ears	207 mm/8.2 inches
Height		32 mm/1.26 inches
Operating Environment Temperature		0 - 50° Celsius
Relative humidity		5% - 95% non-condensing environment
Certification		CE, FCC certified

Connectors	24 x PLink Output Ports (RJ-45)
	1 x Ethernet Connector
	1 x RS232 Connector (un-used)
	2 x USB Host Connectors (un-used)

## Ordering Information

To order Pixelator and related products from our website or through an ENTTEC dealer using the following part numbers.

Part Number	Description
70060	Pixelator
73546	Plink Injector 5V
73544	Plink Injector 12-24V
73920	CVC3

### Accessories and Related Products:

Part Number	Description
70581	ENTTEC LED Mapper Software (ELM)

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