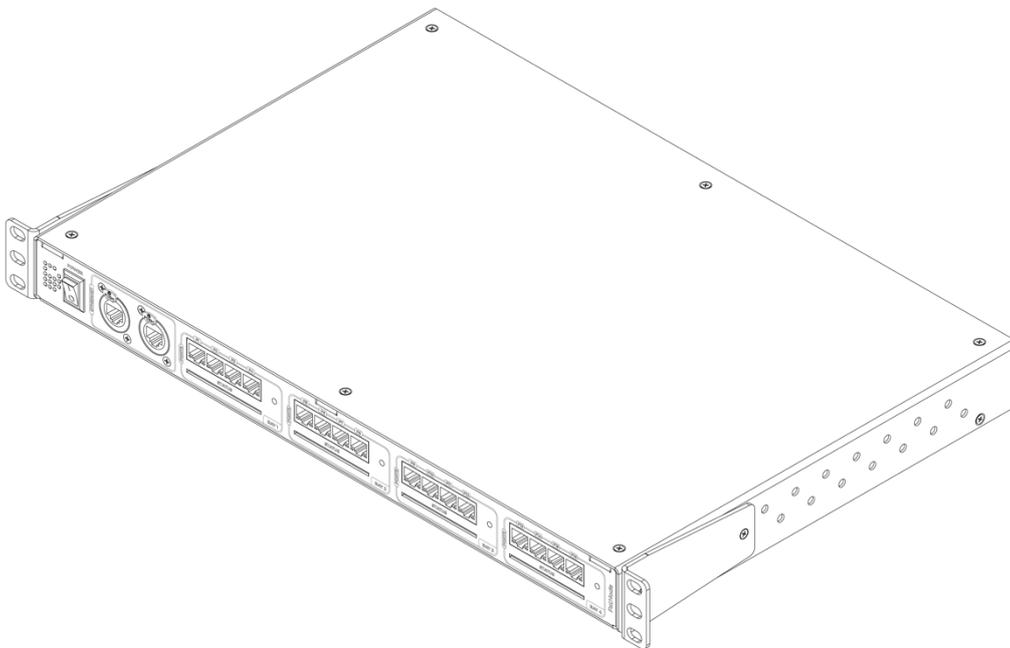# DiGidot

PUSHING CONTROL BOUNDARIES

PXLNET NODE MANUAL

THANK YOU FOR CHOOSING DIGIDOT!

We strive to offer you the latest technology in LED lighting control and we're constantly innovating and expanding our control platform.
We're convinced that you have everything you need to create a truly mesmerizing and innovative piece of light art.
Are you proud of your end result? Then please share it with us, we love to see what you can do with our products!

Your DiGidot Team

TABLE OF CONTENTS

INTRODUCTION

The DiGidot PxLNet Node is the most powerful rackmount pixel control system of its kind.
A built in Gigabit ethernet switch for Art-Net and sACN and 16 DMX or PxLNet output ports built-in a professional 19" housing guarantee optimal flexibility and performance for all demanding Projects.
The PxLNet Node converts Art-Net or sACN to SPI or DMX and is able to output a staggering amount of either 48 or 96 universes (4 or 8 per port) in total. Please refer to our DiGidot Performance Guide to check what the maximum number of universes you can configure per port .
A built-in web-based user interface allows the PxLNet Node to be configured and managed by any computer with a web browser. Multiple PxLNet Nodes can be linked together to control large scale projects and the PxLNet output ports allow for long range SPI data up to 250 meters.

PRODUCT INFORMATION

Box contents

1 x DiGidot PxLNet Node U48 or U96
1 x Powercable
1 x Spare fuse

> **NOTE**
> We put great care in our products and have a high quality control standard. Nonetheless we advise to double check for missing or damaged items.
> In case of any missing or damaged items, please contact your supplier immediately. Never use damaged products!

> **NOTE**
> PxLNet Transceivers are sold separately!

TECHNICAL SPECIFICATIONS

Electrical

Input Voltage:	100-250 VAC, 50-60 Hz
Max. power consumption:	45W

Mechanical

Housing material:	Aluminium
Dimensions:	441 x 300 x 43 mm | 17.36 x 11.81 x 1.69" (L x W x H)
(with 19-inch brackets)	484 x 300 x 43 mm | 19.06 x 11.81 x 1.69" (L x W x H)
Net device weight:	2450 gr | 86.42oz
PxLNet Node package weight:	2800 gr | 98.77oz
Mounting:	19 inch Rack mounted

Environmental

Operation Temperature (Tc):	0 to 50°C | 32 to 122°F
Max. ambient Temp. (Ta^{max}):	40°C | 104°F
Storage temperature:	-20 to 50°C | -4 to 122°F
Max. operating relative humidity:	90% (indoor use only)

Protection

IP rating:	IP20

Control

|	
Input Protocols:	Art-Net 1,2,3 & 4 sACN
Output Protocols:	Art-Net 1, 2, 3 & 4 (out/through) DMX (16 outputs) 60+ SPI protocols (check supported IC's list online)
Output channels (16 PxLNet ports):	U48: Up to 24.576 Art-Net / sACN channels (48 universes) U96: Up to 49.152 Art-Net / sACN channels (96 universes)
Ethernet:	RJ45 compatible, for 100/1000 Base-TX Ethernet
Programming & control:	DiGidot PxLNet Node web-based user interface DiGidot PxLNet Node app Any type of Art-Net or sACN Software/Device (visit our website: digidot.eu for a complete list of supported software)

Connectivity

Connectors:	Power: C13, C14 (100-264 VAC) Network: 2 x RJ45 bus IO port: 16 x RJ45 bus (PxLNet) Trigger input: D-Sub and GPIO switch

Quality

Warranty:	5 years carry in factory warranty
Compliances:	CE RoHs

Product drawings

Front

Back

Top

Bottom
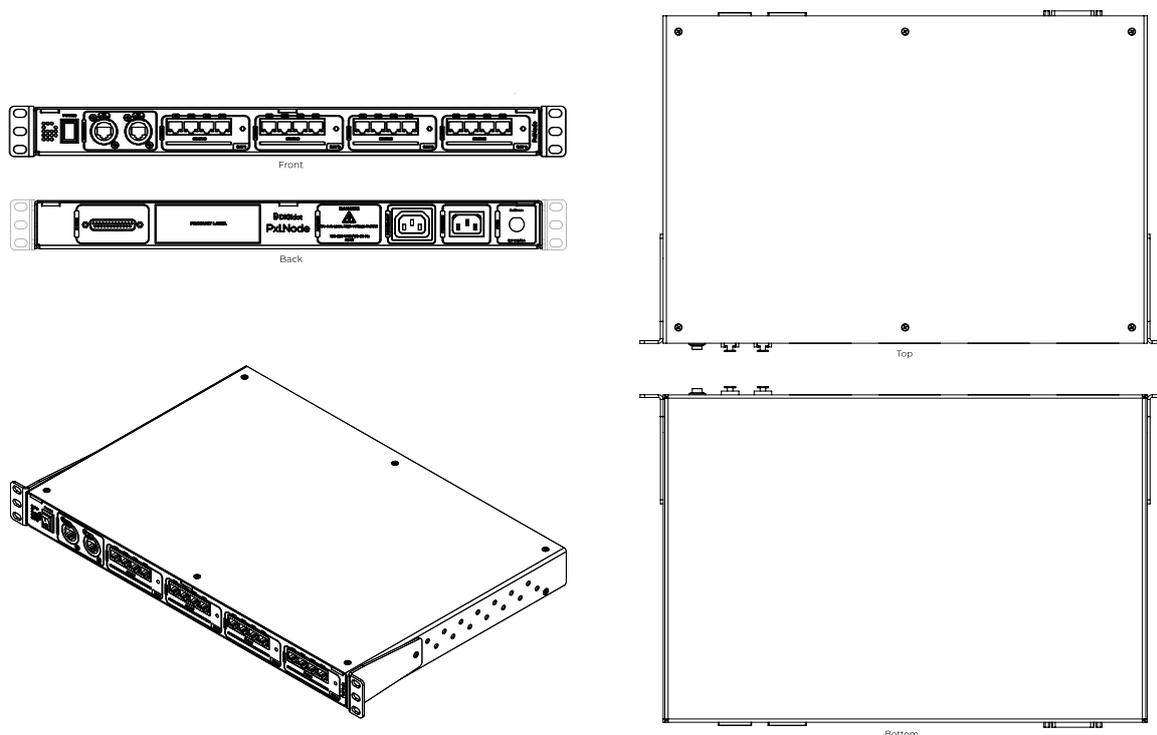
The DiGidot PxLNet Node explained

Art-Net or sACN controller required

In order for the DiGidot PxLNet Node to work in a live system setup, a third-party Art-Net or sACN software or console is required. The DiGidot PxLNet Node controllers are known to be working with various professional grade softwares and consoles, such as: MADRIX, Pharos, ArKaos, Resolume Arena, MadMapper, POET, grandMA and many more. As long as the control software or console uses industry standard Art-Net or sACN protocol, you can control the DiGidot PxLNet Node controller.

Control software Art-Net or sACN control platforms

When the setup process has been completed, the DiGidot PxLNet Node is ready to be used with any type of Art-Net or sACN software or console.
The DiGidot PxLNet Node can automatically be detected as an Art-Net or sACN device, depending on the software or console. In order to do so, an Input/output configuration must be completed first.
Each DiGidot PxLNet Node needs to be configured with a unique IP address for unicasting. Assign a device name to the DiGidot PxLNet Node, for easier recognition (see the chapter Configuring the DiGidot PxLNet Node).

Supported protocols (ICs)

The DiGidot PxLNet Node supports more than 60 protocols which include both 'Data' and 'Data-Clock' variants.
All supported protocols can be found in the DiGidot PxLNet Node user interface. Go to Home > Settings > In/out configuration > Select a port drop down menu to open the protocol list.

Please visit our website digidot.eu/support/documentation for latest overview of all supported protocols/IC's. For a more technical protocol overview and their performances, please check our Performance Guide at the documentation page.

Key features explained

The DiGidot PxLNet Node has many powerful features, in this chapter we will explain what these key features are.

More than 60 supported protocols
The DiGidot PxLNet Node supports more than 60 different control protocols and new IC's are added frequently with software updates.

Up to 96 universes to SPI conversion*
Depending on your DiGidot PxLNet Node version and license, you can output up to 96 universes, which is equivalent of 49'152 control channels.

Onboard Gigabit switch
The onboard Gigabit switch allows a fast Art-Net or sACN input and output signal.

DMX Out
The I/O ports can also be configured as 16x DMX.

IP address filter
With this feature you can configure the DiGidot PxLNet Node to only listen to a specific IP address when using Art-Net as input protocol. Signals from other IP addresses will be ignored.

Art-Net routing
You can route any of the incoming Art-Net universes to Art-Net outputs or SPI.

HTP merge signal inputs
It is possible to merge various input signals such according to the HTP (Highest Takes Precedence) principal.

Incoming and outgoing signal Monitor
The Monitor is a powerful tool where all incoming and outgoing data as well as frame rate and network status can be monitored.

Create segments
Create simple chase effects for large number of pixels by creating segments of channels or LED's and reduce the amount of input channels.

Daisy-chainable
The two port ethernet switch with RJ45 connectors, allow the DiGidot PxLNet Node to be daisy chained. Daisy chaining more than 8 devices can cause network delays. Therefore, we recommend using a professional grade Gigabit network switch to split the network load.

Gamma correction
This is a function to correct the brightness of the input. This amount of gamma correction changes not only the brightness, but also the ratio of red, green and blue. We recommend to enable this option if your input is a video or image file, or if you're using 16 bit LED IC's to make the dimming curve smoother if the brightness is low.

Adjustable fallback color
In case of absence or loss of the control signal, a fallback color can be set for every DiGidot PxLNet Node. You can also set the delay time before the fallback activates.

Online/offline firmware updates
We offer online updates which can be installed easily from the user interface. These updates can also be downloaded and installed on the DiGidot PxLNet Node controllers are not connected to the internet. You can download the DiGidot PxLNet Node software at digidot.eu/support/updates. Use the download link to get the file. You can upload the new firmware at http://10.254.254.254/fwupdate.htm. You can also change the '10.254.254.254' in the URL into the IP address of your DiGidot PxLNet Node device. It is also possible to upgrade or downgrade multiple devices simultaneously by checking the 'Broadcast' option on the fwupdate page.

Output limiter
You can limit the output power to a pre-set brightness.
There are two ways to do this:

Brightness limiter
This option limits the individual channels to a specific percentage. This means that every channel or LED will never exceed this percentage.

E.g.: Limiting brightness to 50%, means that all individual channels can never exceed 50% but the control range per channel will remain the same. Effectively the percentage is applied to the input value for each channel.

Adaptive power limiter
This option limits the total average output of all channels combined to a specific percentage in order to decrease total power consumption. Individual channels my still output up to 100%.

E.g.: Limiting power to 50% means that half of the channels can output 100% and the other half at 0% or all channels at 50%, etc.
In case you would try to output all channels to 75%, the output of all channels would be automatically limited to a total 50%, but will maintain ratios relative to each other.

> **Warning:**
> If you turn on a limiter there will be less step to dim. E.g.: If limiter is set to 50% and the IC is 8-bit (256 step to dim). You will have 128 step to dim left (256 − (256/0.50=128)).

16 bit dimming output
Whenever high-resolution dimming is required and supported by your IC, two input channels can be combined to one output channel in order to convert 8 bit to 16 bit dimming.

Configure LED color order
In case a LED product has an alternative order of LED ICs or dyes, you can change the order of control channels easily in the user interface. The interface uses the default color order of the selected IC. You can configure R, G and B in any order with an optional W channel.

BEFORE INSTALLATION

Before installing DiGidot products it is important to consider following safety and installation instructions.

Safety instructions

- Before installation and before use of this product, read this manual carefully.
- Make sure that these instructions are handed over to the end-user and those responsible for installation and usage.
- Local electrical and safety rules and guidelines always overrule this manual.
- DiGidot Technologies B.V. cannot be held liable for improper handling, product installation, usage or storage.
- Installation should only be carried out by a professional and certified installer that is qualified to work on the electric installation.
- Do not conduct any repairs of the device (there are no user serviceable parts inside). Any unapproved repairs and/or product modifications will void product warranty. DiGidot Technologies B.V. cannot be held liable for any consequences.
- Repairs of this product may only be carried out by the manufacturer DiGidot Technologies B.V.
- Repairs and maintenance on the installation may only be carried out by qualified technicians.
- Always disconnect the mains power when working on a high voltage electric installation, not doing so may result in product damage or personal injuries.
- Do not connect or modify this product other than described in this manual.
- Never use a product that is damaged or does not work correctly or when the product is visibly damaged or when the product starts to smoke, or when a crackling/sizzling noise is audible. If this is the case in any way, turn off the power of the device and contact your supplier immediately.
- The DiGidot PxLNet Node is designed for indoor use (dry locations) only. Exposure to rain or moisture may cause fatal damage to the controller and increase risk of electrical shock.

Mounting options

Install the DiGidot PxLNet Node properly in a 19" rack, and protect the device from direct sunlight, rain, moisture. Make sure that the device is installed and secured properly and that it's not able to move around.
If you have any doubts regarding the environmental circumstances of your application, please contact your DiGidot reseller or DiGidot Technologies B.V. prior to installation for further consultation.

Warning

The DiGidot PxLNet Node should not be subjected to extremely low air pressure (risk of component gas/liquid leakage). Keep the DiGidot PxLNet Node away from sunlight, rain or other moisture (short circuit risk).

Do not use the DiGidot PxLNet Node outdoors or in humid environments (short circuit risk). Provide enough air circulation around the devices for cooling.

INSTALLATION & WIRING

The DiGidot PxLNet Node is not designed to power the LED lights, but only to transmit signal/data to the LED lights/control IC's. An additional external power supply with properly rated output capacity is required to power the LED lights.

Data inputs/outputs

In this chapter we will go through various wiring diagrams, depending on the Input/Output (I/O) configuration.
The DiGidot PxLNet Node is capable of sending different SPI protocols (only one protocol at simultaneously per bay). The ports can also be configured as DMX outputs. This means that there are many ways of connecting to the I/O ports. You can always verify your wiring in the 'How to connect' box of the input/output configuration page in the user interface.

Go in the user interface or app to *Home > Settings > In/out configuration*

> **TIP**
> Make sure to select the correct device if you're using multiple devices and different I/O setups. You can use the highlight button 💡 to identify your device.

> **NOTE**
> The PxLNet Transceivers used in the images are sold separately!

16 x SPI OUT
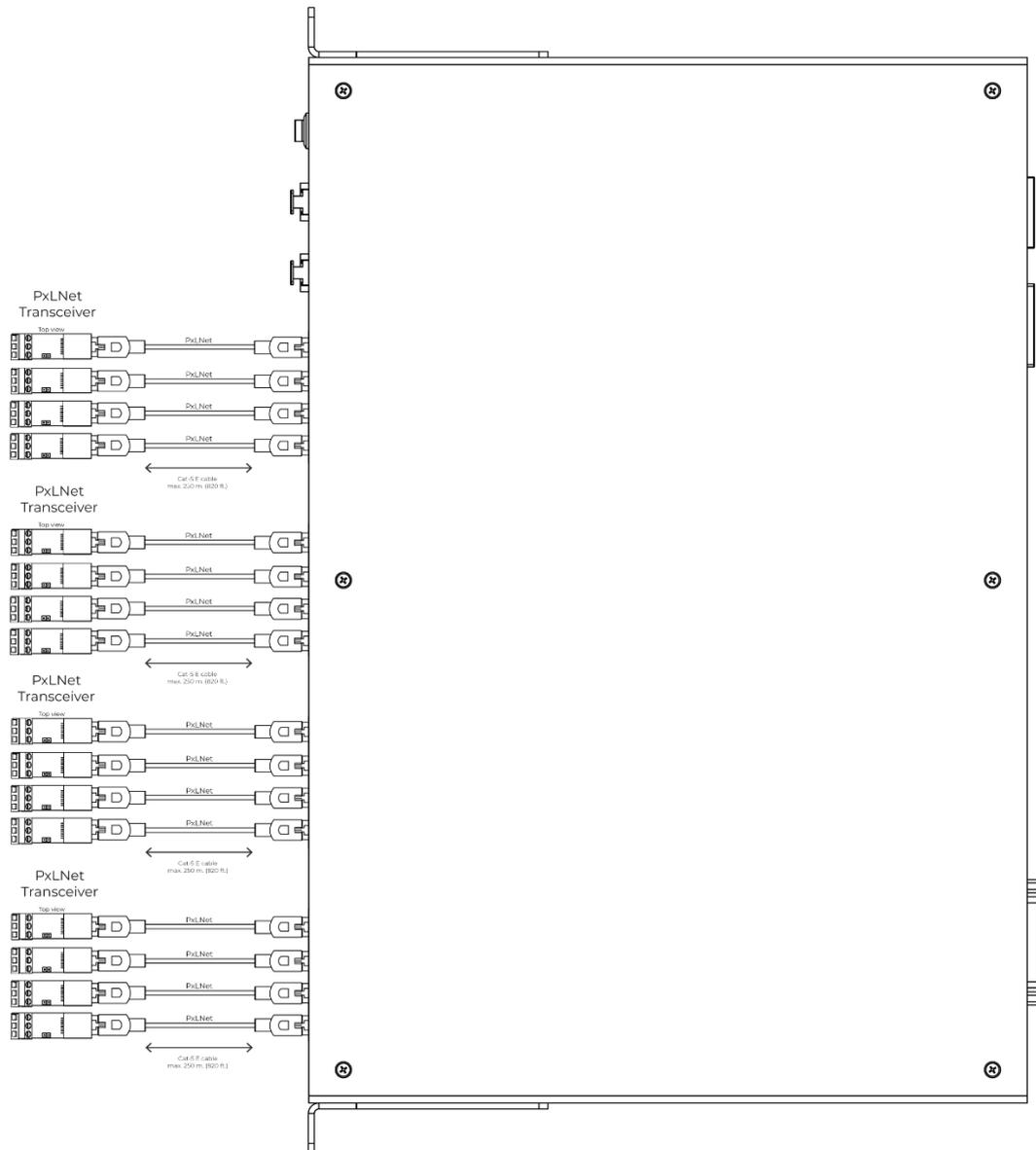
Average recommendation is max. 3 SPI universes per port (check the SPI Performance guide for max. load per IC)

This option shows 16x SPI Data only outputs. Each SPI Ground wire must be the same length as the Data wire per output, to prevent timing issues. View the manual of the PxLNet Transceiver to see all schema options with PxLNet.

16 x DMX OUT
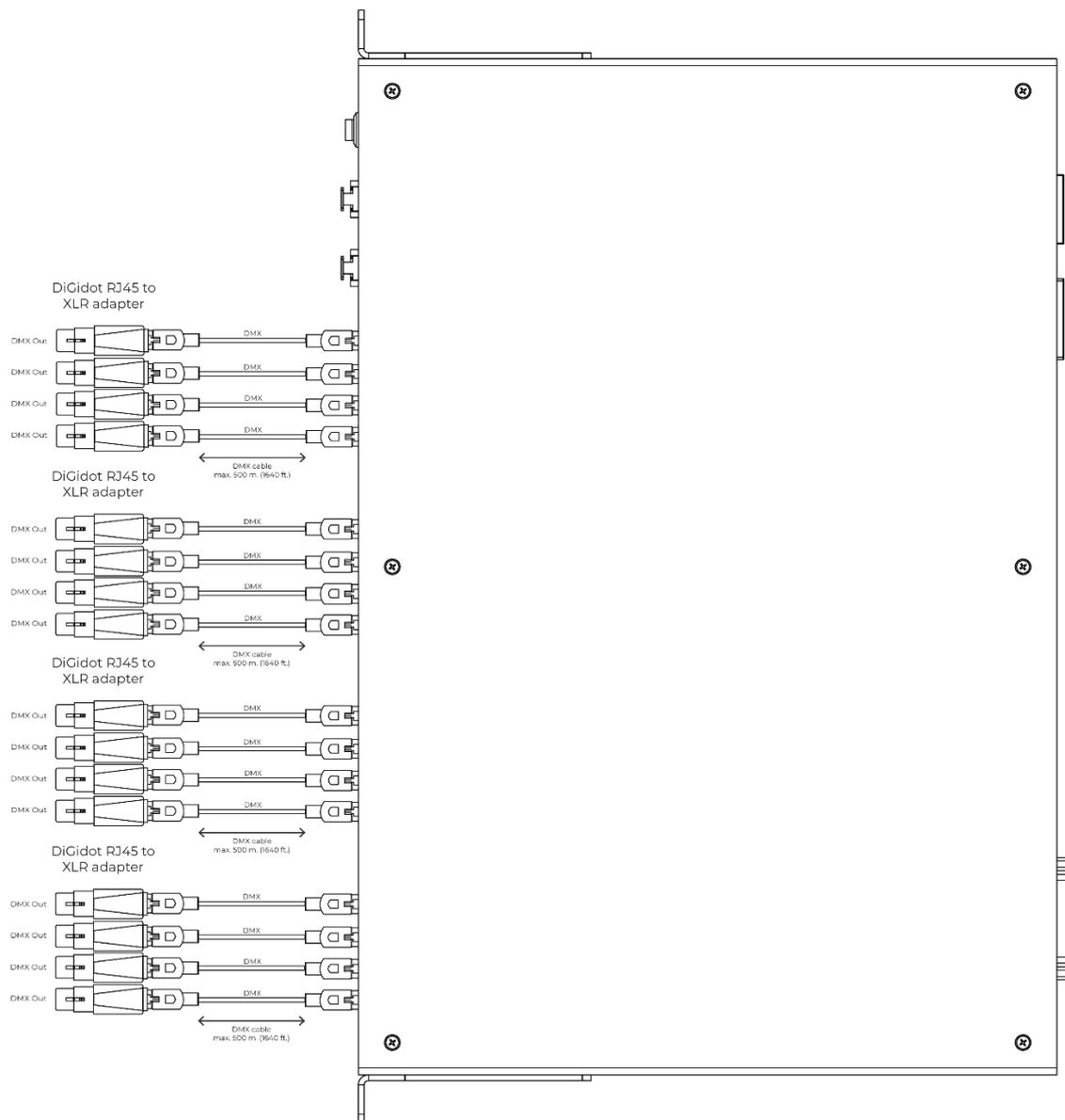
Max. 512 channels per combined DMX port | DMX cable max 500 m. (1640 ft.)

This option shows 16x DMX outputs. Every DMX signal requires a connected ground as indicated above. Cable should be a DMX cable with an impedance of 110 Ohm or a CAT6E (s/FTP recommended) or better.

16 x DMX TTL
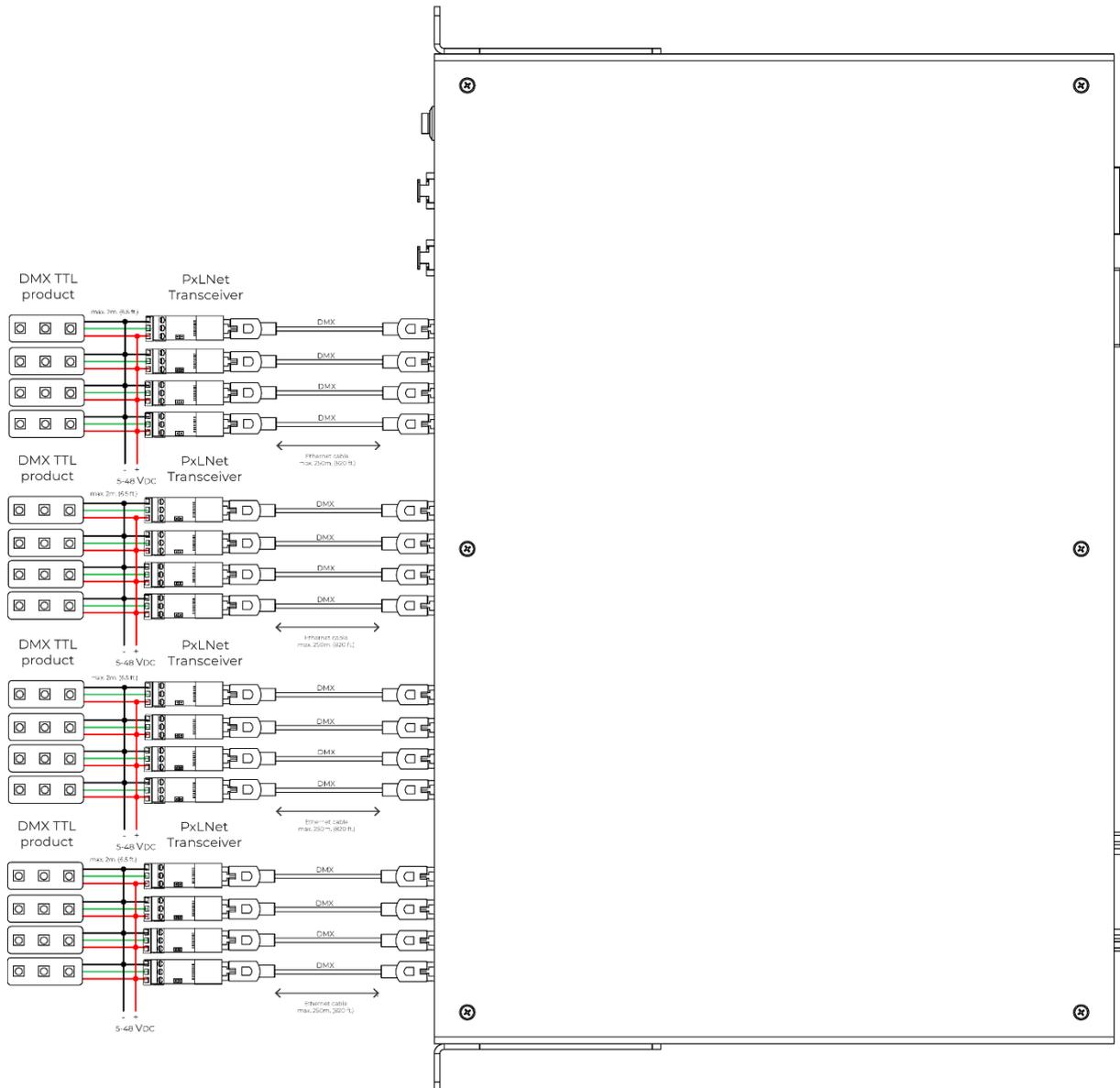
Ethernet cable max 250 m. (820 ft.)

This option shows 16x DMX TTL. Every DMX signal requires a connected ground as indicated above. Cable should be DMX cable with an impedance of 110 Ohm or CAT6 (s/FTP recommended) or better.

Connecting ethernet
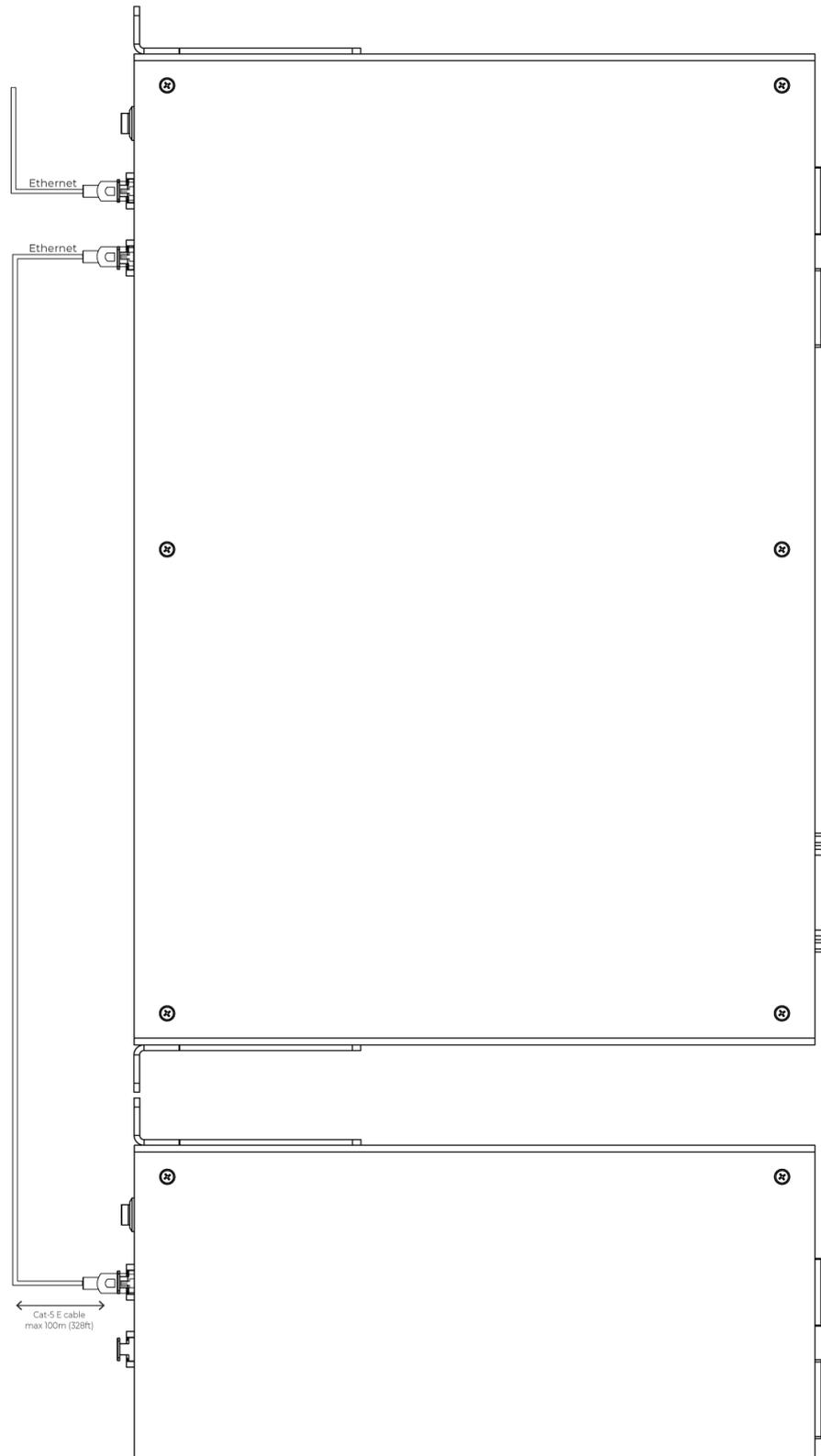
The DiGidot PxLNet Node has a built-in Gigabit ethernet switch that allows multiple units to be daisy chained. It's recommended to not daisy chain more than 8 PxLNet Nodes.

Connecting power

C13
connector

C14
connector

max. 3m (9.84 ft.)

C13
connector
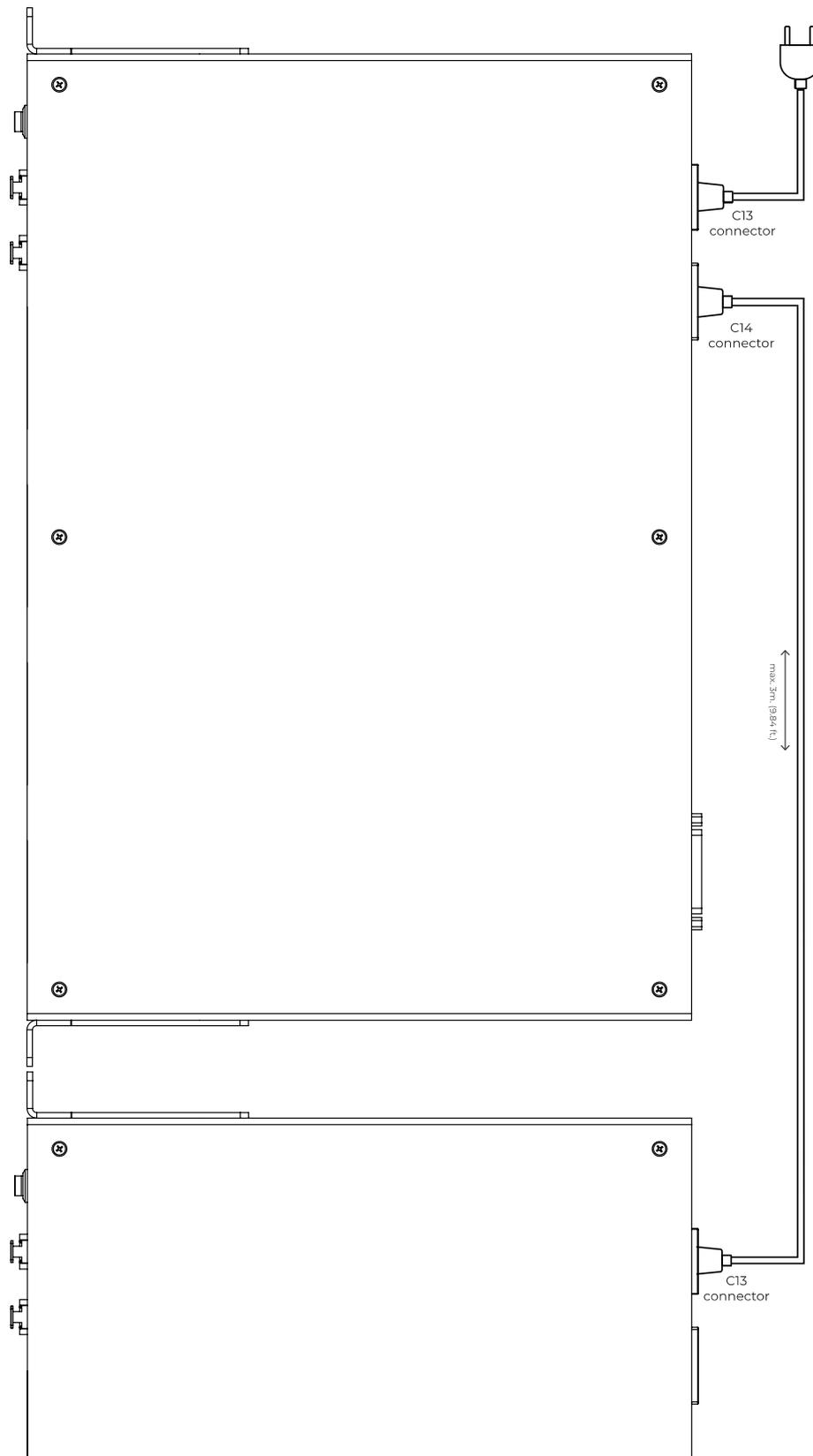
Connect the DiGidot PxLNet Node to a power source and switch the device on with the power switch on the front. You can also daisy chain the power cable with a C14 male to C13 female cable.

CONFIGURATION

Accessing the DiGidot PxLNet Node

Quick start

DiGidot PxLNet Node has a built-in Smart DHCP server. This will automatically setup a connection when the DiGidot PxLNet Node and a device are connected with Ethernet (wired) directly to a computer.

Accessing a **DiGidot PxLNet Node** controller works as follows:
1. Connect the DiGidot PxLNet Node to a power source. Read chapter 'Connecting power'.
2. Use an Ethernet cable (Cat 5E or better) to connect the DiGidot PxLNet Node to a network port of a computer.
3. Open your internet browser and go to http://10.254.254.254.

In case an account has been created to access the DiGidot PxLNet Node, the same username and password have to be used in the app.

Configuring computer with a fixed IP address

This setup method can be skipped if you only want to access the DiGidot PxLNet Node web interface because the Smart DHCP server is enabled by default and you can follow the steps in the previous chapter.
A fixed IP address may be required if you want to connect a control system to the DiGidot PxLNet Node, such as a computer with MADRIX software.
To setup a wired computer connection, power up the DiGidot PxLNet Node and use a CAT5-E (or better), plug the network cable in one of the RJ45 network ports of the DiGidot PxLNet Node and into the computers Ethernet port.

> **NOTE**:
> Please note that changing your Ethernet settings can prevent you from reaching
> the Internet and/or other devices in your network.
> To stay connected to the Internet and use the online update and upgrade functions, it is
> required to use a computer with multiple network connections (LAN or Wi-Fi).
> It's recommended to write down what your current network configuration in
> order to restore these settings after you finished the configuration process if necessary.
> Some laptops switch between Wi-Fi or Ethernet, in these cases you cannot have both
> connections simultaneously. This can be solved by using a third-party Ethernet dongle.

On Windows computers go to:

Control Panel > Network and Internet > Network and Sharing Centre > Ethernet > Properties > Internet Protocol Version 4 (TCP/IPv4) > Use the following network settings
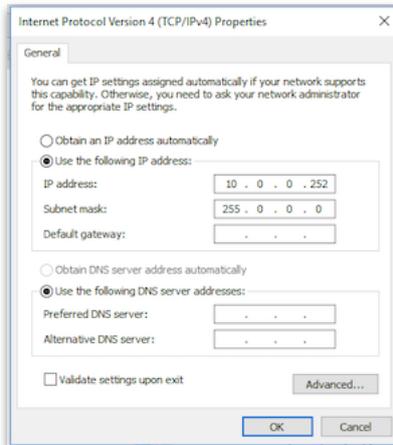
Network Settings example:

IP address   10.0.0.1

The static IP address of your computer

Subnet mask   255.0.0.0

Network range of your computer

Default Gateway   (empty)

Router for Internet access

On Mac computers go to:

System Preferences > Network > Ethernet > Configure IPv4 > Manually > Use the following network settings

Network Settings example:

IP address   10.0.0.1

The static IP address of your computer

Subnet mask   255.0.0.0

Network range of your computer

Router   (empty)

Router for Internet access

Your computer is now ready to access the DiGidot PxLNet Node. Open your web browser and go to http://10.254.254.254.

Device network settings for Art-Net and sACN

The device network settings can be changed in the DiGidot PxLNet Node user interface. This is required in case you want to communicate with an Art-Net or sACN control device.

1. Log into user interface
The DiGidot PxLNet Node has a Built-in web-based user interface which you can access by using a web browser.
Once you have configured the IP settings on your computer, you can access the DiGidot PxLNet Node interface. Open your web browser, type http://10.254.254.254 in the address bar and press enter.

2. Configure device name and network settings
Home > Settings > Network.

You can change the IP addresses and subnet mask of the DiGidot PxLNet Node. The IP addresses needs to be unique in your network to avoid IP conflicts. Every bay uses it's own IP address. If you're using Art-Net, it's recommended that the subnet mask is identical on both the computer and the controller side.
The device name than will be shown in the network can be changed on device page.

Example of Network settings:
Device name: My DiGidot PxLNet Node
IP addresses: 10.0.0.2, 10.0.0.3, 10.0.0.4, 10.0.0.5
Subnet-mask: 255.0.0.0

> **NOTE**:
> These settings are just an example in order to get the DiGidot PxLNet Node to work. Alternatively, the DiGidot PxLNet Node can be integrated in an existing network (be sure to change your DiGidot PxLNet Node network settings to match your local network). For questions about network integration, consult a local IT or network specialist.

INTERFACE

The DiGidot PxLNet Node has a built-in web interface for configuration.
The interface can be accessed through a web browser by using a wired ethernet using the IP address of the DiGidot PxLNet Node (default Ethernet IP address: 10.254.254.254).

Interface map

This map shows the internal menu structure of the DiGidot PxLNet Node.
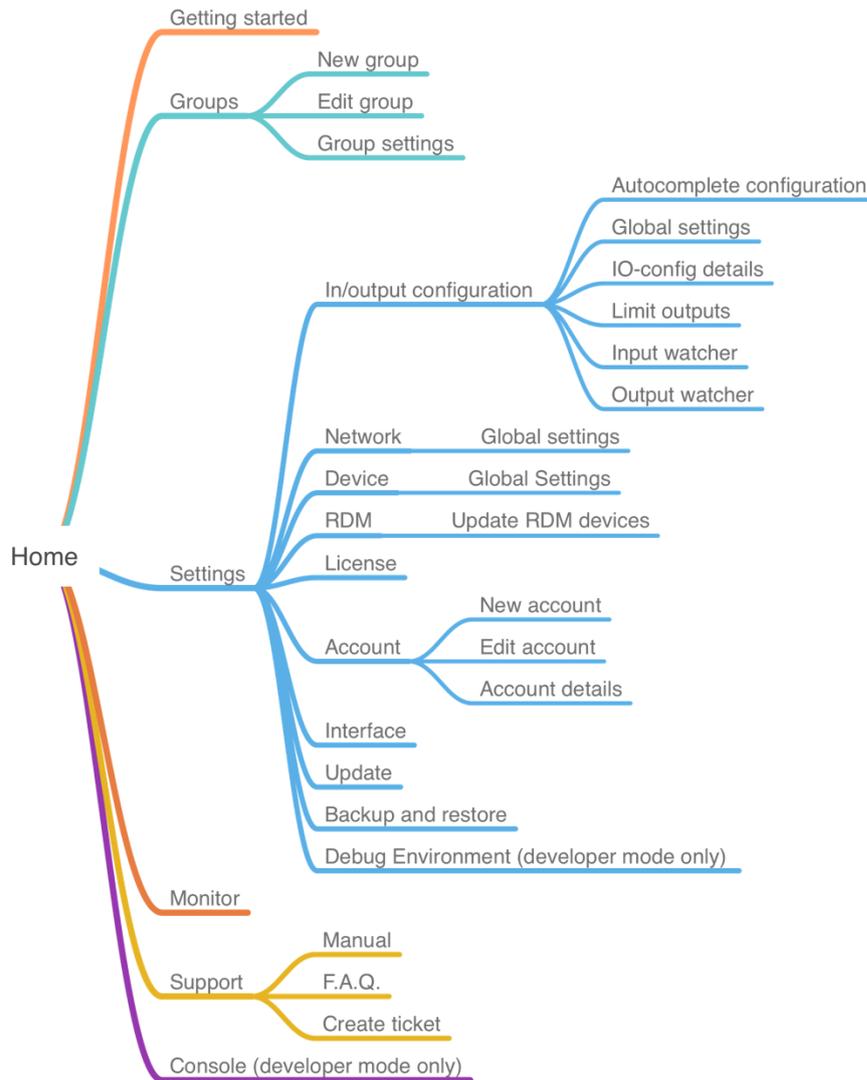
Getting started

In order to get started quickly or if you're new to using the DiGidot PxLNet Node, we recommend using the '**Getting Started**' wizard from the **'Home'** menu. This wizard will guide you through all the essential steps to get the DiGidot PxLNet Node up and running.
This wizard goes through following steps:

1. Device and network settings
2. Device positioning (in case of multiple devices)
3. Input/Output (IO) configuration
4. Security (Trigger security settings can be changed in the '**HTTP, UDP and OSC**' sub menu on the 'Triggers' page)

Open the user interface and go to the '**Getting started**' wizard.
Follow the instructions carefully and complete the wizard in order to get your system up and running quickly. In case you need more information about a certain subject, you can open the information windows by clicking the blue '**i**' icons.
When the Getting started wizard has been completed, your DiGidot PxLNet Node controller is ready to use.

Groups

This function allows you to create specific groups of DiGidot PxLNet Node controllers. This makes the configuration, identification, testing, restarting and organizing specific parts of your project or installation a lot easier.

Add a group

Input fields
Name: Enter a name for this group.
Select devices: Check all devices that you want to add to this group.

Group settings

Auto select group at start-up:
In the group settings you can set up a device or group that is selected at the start-up of the app. This can be useful if you create an "user" account that should only control those devices.

Hide single devices:
When you enable this option, single devices will be hidden in the "My Devices" overview (select-box in the top bar). Groups will not be affected by this option.

Monitor

In the Monitor function you will find relevant information such as Response time, Status, MAC-Addresses and IP addresses and so forth. This can be helpful when setting up your network, for troubleshooting or live monitoring the performance.

Response time
Response time shows the network message response time.
When the Response time light is green, the network connection is working.
When the Response time light is red the DiGidot PxLNet Node is not responding. Click on the "timeout" text to get more information about the timeout session.

Status
Definitions of device statuses:
▸ Playing [scene name]: Device is playing a scene or playlist.
▸ Scene FPS
▸ Incoming FPS

Analog
This shows the incoming values of the analog ports.

Name
This is the device name.

MAC addresses
MAC addresses of device.

IP addresses
IP addresses of device.

Universe(s)
This shows the configured universe(s) that the DiGidot PxLNet Node listens to. There are two statuses:
▸ Red numbers indicate that no incoming signal data present.
▸ Green numbers indicate that incoming signal is present.
Click on the device universes to open the Art-Net or sACN watcher window, to monitor the incoming channel values.

Port
This shows which ports have been configured as an output.
If you click on a port, it will highlight the DiGidot PxLNet Node output until you click again.

Actions
Restart: will restart all devices that are currently displayed on the Monitor page.
Highlight: will highlight all configured outputs of all displayed devices on the Monitor page.

To select more or less devices, click on the "ALL DEVICES" button (select-box in the top bar) and select the preferred device or group.

Account

This page allows to create accounts by enabling the accounts option. A popup will appear to create an 'admin' account. These login credentials will be asked if you try to log in to the DiGidot PxLNet Node.
After the 'admin' account is created, it's possible to create accounts with different access levels. This can be used to restrict access to some parts of the interface for certain users. An user for example only able to playback scenes and playlists. When a user (with 'user' rights) logs in, the user will automatically be redirected to the scene page.

Settings overview

This page shows all the settings and device configuration.

Input & output configuration

On this page you can configure the inputs and outputs.

Choose the output type for these ports. Then click the blue + icon of each port to add universes. To edit the output options, click the universe item.

The DiGidot PxLNet Node is able to output one unique SPI protocol type simultaneously. If you select an SPI protocol for one port, this protocol will also be used for all other output ports from that bay.

Combining ports example:
Port P1 is set to Data+Clock out and will automatically be combined with port P2, because 2 separate data lines for a Data+Clock signal are required.

Art-Net out
This feature can be used to send or redirect incoming Art-Net to Art-Net out.

Click the '+' button to add Art-Net output universes.
Select an input source and enter the number of channels that need to be send.

Select the 'Advanced settings' for more universe specific settings such as the starting address, IP address of the Art-Net source, 16-bit input and other output options.

Art-Net out universes can also be used to record them from an Art-Net stream in order to play back later and send them over Art-Net again. The DiGidot PxLNet Node can therefore also be used as an Art-Net playback recorder.

Art-Net out channels are considered as output channels and will affect licensed channels.

Quick edit

The quick edit mode allows you to edit the configuration items with saving after all adjustments has been made. This speed up the process when you have to edit the universe number or channels quantity for multiple devices.

> **NOTE**:
> The DiGidot PxLNet Node starts to count Art-Net universes at 0 (zero)! Some software's or consoles, such as MADRIX may start counting at universe 1.

> TIP: **Additional tools available!**
> In the right top menu you will often find additional tools under the three dots in the top right blue bar.

Autocomplete configuration

Use this tool to copy the configuration of the first port of the first device to the selected ports/devices. The interface will show various autocomplete options, depending on your system setup.

Global configuration

This page offers advanced configuration item options that apply to all selected devices.
Such as;

- ‣ Gamma Correction
- ‣ Color profile
- ‣ Fallback options
- ‣ IP address filter

Input watcher

The input watcher is a useful tool that monitors incoming control signals. You can switch between:

- ‣ Art-Net/sACN: you can enter a specific universe that you want to monitor. You can only watch the selected input protocol at the 'Input and output configuration' page.

Limit outputs

On this page you can set the master brightness, the brightness limiter and the adaptive power limiter.

Brightness limiter

This option limits the individual channels to a specific percentage. This means that every channel or LED will never exceed this percentage.

E.g.: Limiting brightness to 50%, means that all individual channels can never exceed 50% but the control range per channel will remain the same. Effectively the percentage is applied to the input value for each channel.

Adaptive power limiter

This option limits the total average output of all channels combined to a specific percentage in order to decrease total power consumption.
Individual channels may still output up to 100%.

E.g.: Limiting power to 50% means that half of the channels can output 100% and the other half at 0% or all channels at 50%, etc.
In case you would try to output all channels to 75%, the output of all channels would be automatically limited to a total 50%, but will maintain ratios relative to each other.

Delete configuration
Deletes all IO configuration settings of selected devices.

In/out configuration item page

Home > Settings > In/out configuration > Universe item

Click on Port P1-P16 to select or change the output protocol. Click on the '+' symbol to add a universe to each port. Click on a universe item to change following settings.

Channels: Define the number of output channels.
Universe: Assign a universe number as input.
Further configuration options will be shown when you expand the '**Show advanced settings**' option.

Advanced IO config

Start-channel
This option allows you to enter an offset value of the starting channel that this universe listens to. By entering a start channel (0-511), all channel data before this channel offset will be skipped.

Example
Goal: You want to use channel 100 up to channel 200 as output channel 0-100.
Configuration settings will be as follows:

- ‣ Start channel is set to 100.
- ‣ Channels is set to 200.

Explained: First, the start channel will shift 100 channels of the input. This will skip the first 100 channels of the universe. Then set the channels to 200, because 200 channels are required, starting after the first 100 skipped channels.

Create segments
This option combines multiple channels or LEDs in order to become one pixel/segment. It's recommended to use this option when the amount of control channels needs to be reduced, if you want to create larger pixel segments are required or if multiple channels of a IC control the same channel (e.g. Sometimes a 3 or 4 channel IC is used to control only white LED's within one package or module).

Segment type
Select a segment type from the dropdown menu.
- ‣ No segments - Disables segments (Default)
- ‣ Create segments - Allows to create your own segmentation
- ‣ RGB(W) LED segments - Link multiple LEDs together (e.g.: channel 1 & 4 & 7, 2 & 5 & 8, …)
- ‣ Monochrome segments - Groups channels together (e.g.: channel 1-3, 4-6, …)

Examples
Repeating 3 RGB pixels: Output channels 1,2,3,4,5,6,7,8 and 9 will correspond to input channels 1,2 and 3.

Number of linked channels: 1

Repeat linkedchannels: 3

Input channels

1	2	3	4	5	6	7	8	9

Output channels

1	2	3	4	5	6	7	8	9

Convert a pixel product into simple '1,2,3,' chaser for less control channels: Copy the input channels 1,2,3, in the following order the outputs.

Number of linked channels: 3
Repeat linkedchannels: 1
Input channels

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Output channels

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |

Increase pixel size/ decrease channels: Combine/group multiple output channels into one, in order to save input channels.

> **NOTE:** Combining input channels will not reduce the amount of output channels.
> The DiGidot PxLNet Node is always limited to the total amount of output channels corresponding to the license. The number of input universes is not limited.

Gamma correction
Gamma correction adjust the overall brightness of the output. This option is used if you want to display videos And images or if you have a 16 bit output to have finer control if the LED is low in brightness.

Color profile
Rearrange the LED color order, for example from RGB to BGR. You can select a few standard conversion profiles or create your own Custom profile. This might be required for some LED products. The DiGidot PxLNet Node uses the default color order from the technical documentation of a selected IC/SPI protocol.

Fallback color
This function allows to select a color that will be send to all output channels as soon as no incoming signal is detected for a specified amount of time.

Color
Enter an RGB(W) value between 0 and 255 per LED channel or use the color picker to select a color easily. If you use the color picker, you can also adjust the saturation and brightness by adjusting the sliders underneath. After selecting the fallback color, hit the ✓ button in the center of the color picker to confirm your selection.

Timeout
Enter a delay/timeout in seconds when the fallback color becomes active after signal loss.

Advanced input

Further universe specific settings can be changed;

▸ **Only accept signal from IP address**: enter a dedicated IP address that this universe listens to.

▸ **16-bit input**: When sending 16-bit data to the DiGidot PxLNet Node, two input channels are used for one color channel. If your IC does not support 16 bit and you want to convert 16-bit to 8-bit, please enable this option. If your input is 16 bit and your IC is too, it will be done automatically.

▸ **Second input (HTP merge)**: This will merge the selected universes together and transmit the merged signals to the designated output. Enter the desired universe, start channel and the number of channels you want to merge.

Advanced output

▸ **Bypass master dimmer**: Enable if you want this output not to be dimmed by a master dimmer or brightness trigger.

▸ **Max time until resend:** When no signal is received within a given time the current output is resend to the IC's (LEDs). This is used to prevent data issues and IC timeout functions from happening because some IC's will switch to a default color or sequence when no SPI is received for a certain duration.
Reset this value to its default by pressing delete and generate a new universe again by selecting the blue + button of the specific P port.

When you are finished adjusting the advanced options, click 'save' to store the settings.

> TIP: In order to quickly test your outputs, you can toggle all ports on to full white when clicking the bulb 💡 icon.

Network settings

Home > Settings > Network

This page shows a tab for both Ethernet network related settings of the DiGidot PxLNet Node.

MAC addresses

These are the unique device MAC addresses. Every bay on the DiGidot PxLNet Node got an own MAC address. This address cannot be changed and is being used for identification and network communication.

Ethernet configuration

IP addresses

The ethernet IP addresses of the DiGidot PxLNet Node. Every bay on the DiGidot PxLNet Node got an own IP address

Subnet-mask

Network range of your device.

Smart ethernet DHCP
Enable or disable the smart DHCP server. When enabled the DiGidot PxLNet Node will assign IP addresses to devices that connect trough ethernet. If a DHCP is already present on the network, it will be disabled internally if the DHCP server responds within a certain time window.

In case you've changed any ethernet settings, click the 'SAVE' button to store them.

Gateway
The gateway of the device.

Restart all
This will restart all devices in the network.

Global settings (multiple devices only)
This page offers global settings that will be apply to all selected devices.
Such as;

‣ Subnet mask

‣ Gateway

‣ Smart DHCP server

Device settings

Home > Settings > Device

This page shows devices settings of the DiGidot PxLNet Node.

Device name
The name of the device by which it can be identified.

Status Lights
The status LEDs can be dimmed in four levels:

‣ 100%

‣ 25%

‣ 10%

‣ 0% (off)

Ethernet Lights
Disabled/enable the ethernet LEDs.

Actions
Restart - Restarts the DiGidot PxLNet Node

License

Home > Settings > License

On this page you can view the license(s) of your DiGidot PxLNet Node device(s).

Diagnostic

This page will show relevant information to diagnose how a DiGidot PxLNet Node is performing.

Actions
Global settings – This will open a settings page where it is possible to change the refresh interval
1. File Browser – Will open the file browser page of the DiGidot PxLNet Node
2. Trigger Watcher – Will open the trigger watcher page of the DiGidot PxLNet Node

Filter
This will open a popup where it is possible to (de-)select views. This will also reduce the network load because the fields are not refreshed when deselected.

Global
This tab will show global information about the DiGidot PxLNet Node.

IO
This tab will show information about the configured Input and output configuration of the DiGidot PxLNet Node. The items are focused on the refresh timings of the different configured items. The Input will be updated when there is new data available from the Art-Net, sACN or scene stream. The map will be refreshed when all data is available and matches the FPS. The output should always be refreshed with in the configured timeout.

Network
This tab will show additional information about the connected ethernet ports and Wi-Fi.

Trigger
This tab will show the loaded triggers and if the DiGidot PxLNet Node will respond to external trigger calls.

Playback
The playback tab will show information about scenes and/or playlists playing. This tab will also show information about the FPS, Total processed frames and skipped frames of the different input protocols.

Performance
This will show the different cycle durations. This can be used to find what the performance is of the DiGidot PxLNet Node.

Memory
The memory tab will show an overview of the used RAM and which managers are using it. It will also show the status of the SD card and if mounted the free space of the FAT partition.

Error
This tab will show the generated errors of the API and error items logged during the current session. These values will be reset after a reboot.

Interface settings

This page offers a few user interface related options. These settings are stored in your browser or DiGidot PxLNet Node app.

Theme
You can choose 'Light' (default) or 'Dark' color mode when this is preferable.

Developer mode

This mode adds the 'Console' menu item to the Home page. This option opens a command editor which should only be used by advanced users or if instructed by DiGidot support.

Update

When there is an internet connection, the user interface will automatically show if a firmware update is available. It's possible to update multiple devices at a time. Before updating, please make sure that all connected devices have the same firmware version, that all devices are all switched on and connected by wired Ethernet. Follow the update instructions from the interface.

Offline update

When no internet connection is available, you can download the latest update from our website and then manually upload it to the DiGidot PxLNet Node.

Open your web browser and go to the following address: *http://<ip-address of the DiGidot PxLNet Node>/fwupdate.htm*. Click the "Browse" button and locate the update file. Then Click "Install" to start the update process (this may take a few minutes). You can also check the checkbox 'Broadcast' if you want to send the update to every device. Make sure that you're not sending Art-Net or sACN if you choose to broadcast!
After the update is completed the DiGidot PxLNet Node status lights will return to idle state, fading blue to cyan.

By default, the IP address of the DiGidot PxLNet Node is 10.254.254.254. When you have configured a different IP address you can use that one as well.

Backup and restore

The DiGidot PxLNet Node has a backup feature that allows to back-up the settings from multiple devices. The backup can save accounts settings, network settings and device settings.

There are two ways to create a backup:

Save backup: this will save the backup to the application memory in the browser/app and the backup will show as an option in the restore options inside the interface.

Export backup (browser version only): This will create a backup and it will be downloaded as a zip file. This zip file can be used at 'Upload backup file'.

Support overview

Home > support

This page shows all support items.

Node Manual

Home > support > Manual

This page shows the manual of the DiGidot PxLNet Node. The manual is always compatible with the connected DiGidot PxLNet Node firmware/interface. An internet connection is required to open this page.

F.A.Q.

Home > support > F.A.Q.

This page will load the F.A.Q. page from the DiGidot website to help you answer frequently ask questions. This page requires an internet connection.

Support Ticket

Home > support > Support ticket

On the support ticket page, you can fill in a form for any firmware/interface bug, for a feature request or for other improvements for existing features. When reporting a bug, we recommend downloading a bug report (browser only) and select it at the 'Bug report file' input. This makes it easier to diagnose your problem. Any screenshot or video of the situation will also help a lot. This page requires an internet connection.

TIPS & TROUBLESHOOTING

Standard troubleshooting checklist

1. Double check all cables and connections.
2. Is the DiGidot PxLNet Node powered correctly?
3. Are the LEDs powered correctly?
4. Are all power supplies connected correctly to your mains power supply?
5. Is your network setup done correctly?
    5.1. Prevent IP address conflicts (same IP address across multiple devices)
    5.2. Make sure that the subnet mask range is set correctly and that all IP address are set within the appropriate range.
6. Are the inputs and outputs configured correctly?
    6.1. Make sure that the correct IC/SPI protocol is configured.
    6.2. Make sure that the patch of Art-net/sACN software is correct. Check if no fixtures are patched twice.
    6.3. Make sure that input and output matches the system setup.
        Please note: Some software start universe counting from 1 instead of universe 0.
7. Make sure that not more than one browser session is opened and connected to the DiGidot PxLNet Node.
8. Clear your browser cache or try incognito mode.
9. Refresh the interface by pulling down the top of the interface page. The pull to refresh action can be executed on the Scenes, Playlist, Account, Triggers, Input- & output configuration, Network, License, Update, File browser and Device page.
10. Perform a factory reset. Disconnect the power from the DiGidot PxLNet Node, press and hold the onboard button on the front, apply power and hold the button for at least 10 seconds. Once the status LED's turn to blinking yellow, the factory reset is initiated, once the status LEDs turn to solid yellow you can release the onboard button. Resetting and rebooting will take ± 15 seconds. Please take into account that all settings such as the in/out configuration, network, device and account settings, will be lost. Perform this for all four bays.

Status LEDs

The DiGidot PxLNet Node has a front view status LED indicator for every bay. There are several states of the device.

Definition of status light indicators:

	Light colors	Category	Explanation
● ●	Fading blue-cyan light	Informative	The DiGidot PxLNet Node is Idle with a license
● ●	Fading blue-green	Informative	The DiGidot PxLNet Node is receiving incoming signal (Art-Net, sACN)
● ●	Fading blue-magenta	Informative	The DiGidot PxLNet Node is playing a scene
● ○	Fading blue-white	Informative	The DiGidot PxLNet Node is recording or processing a scene
● ●	Fading green-off	Informative	Settings successfully stored or device successfully discovered
○ ●	Fading white-off	Informative	The DiGidot PxLNet Node is updating the Wi-Fi firmware
● ●	Fading yellow-off	Informative	Preparing factory reset, keep button pressed until fading stops
○ ●	Blinking white to cyan	Informative	Temporary Wi-Fi Access-point is activated
● ●	Blinking red for 3 seconds	Error	A General (temporary) unknown error
● ●	Alternating red	Error	The microSD card must be formatted
● ●	Alternating blue-red	Error	The DiGidot PxLNet Node system is frozen, a reset will be performed
● ●	Alternating red-yellow	Error	The internal battery is empty or has a problem
● ○	Alternating red-white	Error	The DiGidot PxLNet Node has crashed, a reset will be performed
● ●	Alternating purple-purple	Error	Self test during startup failed

> **NOTE**
> In case of a Battery Error: Status lights are alternating from yellow to red for 3 seconds, contact DiGidot for further instructions.

No output signal from DiGidot PxLNet Node

Make sure that:

‣ The DiGidot PxLNet Node is powered.
‣ Master brightness and the port limiters are not set to zero.
‣ The inputs and outputs are configured.
‣ The lighting fixtures/LEDs that need to be controlled are powered.

DiGidot PxLNet Node not receiving signal

Make sure that:

‣ The DiGidot PxLNet Node is powered and is properly connected to the Art-Net or sACN console/computer.
‣ The network, input and output configuration of the DiGidot PxLNet Node device is setup properly.
‣ The computer/device that is sending signal is set up to match the network settings.
‣ The computer/device that is sending signal is set up to match the universe inputs.
‣ The incoming signal status can also be checked from the interface on the Monitor page.

Art-Net/sACN software doesn't recognize the DiGidot PxLNet Node

Make sure that:

- ‣ The DiGidot PxLNet Node powered and properly connected to the Art-Net console/computer.
- ‣ In order for the DiGidot PxLNet Node to be discoverable for any software, you need make sure that the network and one or more output(s) have been configured properly.
- ‣ The DiGidot PxLNet Node controller is reported to work with most well-known Art-Net consoles and softwares. Some Art-Net consoles only work in the 2.0.0.x range. Please configure your device in the same range if necessary.
- ‣ If you try to discover devices from Art-Net software, the subnet mask of the console/computer must be identical to the subnet mask of all the DiGidot PxLNet Node device(s).

In case your console or software continues to fail to discover the DiGidot PxLNet Node you can try to reboot your DiGidot PxLNet Node device(s).
If the problem still remains, please contact DiGidot support.

Factory reset

Some problems require a factory reset if nothing else seems to work. In this way the DiGidot PxLNet Node device returns to its factory default settings. The factory reset needs to be done per bay. The factory reset will reset the input/output configuration, device settings, network settings and user accounts.
After resetting, the device can be accessed through IP address http://10.254.254.254.

> WARNING! Deleted settings cannot be restored, please make a backup, before resetting the device.

Factory reset procedure:
1.   Disconnect the power of the DiGidot PxLNet Node.
2.   While pressing the onboard button on the front, re-apply power to the device and hold the button for 5 seconds. Both status light will blink 5 times yellow, then it remains on, which indicates that you can release the button. The device will reboot and is then ready to use.

In case you're not able to perform this reset due to accessibility and if the DiGidot PxLNet Node network is or can be connected to a computer with internet access, contact DiGidot support for remote assistance.

Having trouble with your DiGidot PxLNet Node Setup?

When you have followed all the steps from the manual and still having problems settings up the DiGidot PxLNet Node, you can visit our online support page digidot.eu/support or send us an e-mail: support@digidot.eu Please make a backup file and send it along with your email, as this will make trouble shooting for our engineers a lot easier.

If you can't connect to the DiGidot PxLNet Node User Interface, try to open the user interface by opening Google Chrome and typing http://10.254.254.254 in the address bar and press enter. When the user interface does not load or seems unresponsive you can reload the page. When reloading doesn't resolve the problem, you need to:

- ‣ Make sure the DiGidot PxLNet Node is connected correctly to a power source according to the wiring instructions.
- ‣ Make sure that the device is connected to a computer or mobile device.
- ‣ Empty your browser cache.
- ‣ Check for IP conflicts.
- ‣ Check your network connection and network settings. .

Make sure that the computer network is in the same range as the DiGidot PxLNet Node. For example, when your DiGidot PxLNet Node is configured to use the IP address "10.0.0.2" with subnet mask "255.0.0.0" your computer network needs to be in that same "10.x.x.x" range on subnet mask "255.0.0.0".

You can test your network connection with the DiGidot PxLNet Node.

On Windows
Click the Start *Menu > All Apps > Windows System > Command Prompt.*

You can also find the Windows Command Prompt by right clicking on the *Start button > Command Prompt.*

On Mac OS
Open the *Utilities Folder > Applications* folder and open the Terminal App or you can use Spotlight by clicking CMD + Spacebar and search for Terminal App.

Type ping and the IP address of the DiGidot PxLNet Node 'ping 10.254.254.254' and then press the Enter key of your keyboard to ping the DiGidot PxLNet Node device. A timeout will indicate a broken connection.

If you still can't access your DiGidot PxLNet Node, is the interface page not loading correctly or are the discovered devices not added automatically try to empty your browser cache and re-power and reload the user interface.

Forgot the username or password for the DiGidot PxLNet Node?

When you have lost your username or password you can perform a factory reset of the DiGidot PxLNet Node. The reset function will restore the factory settings. Information on the microSD (such as scenes, playlist and triggers) will not be erased. After resetting you can access the device on it's default IP address.
If you have created a backup, you can restore the device configurations according to the backup & restore instructions.

Can't find your protocol/IC?

The DiGidot PxLNet Node supports most SPI protocols of all pixel controllers on the market. However, technology is evolving rapidly and we're not always the first to know when there's new product IC chip with a new protocol on the market.
In case you have or want to use an IC that is not listed in our supported IC's overview, please contact support@digidot.eu. We will do our best to support your IC with a new firmware update soon after.

Some LED's/colors are not responding correctly

This is a common issue that occurs when the voltage drops below a certain minimum.
Please check the voltage at the end of the LED strip and note that if you're running a 5 Vdc products for example, the data signal runs also on this level. If the voltage drops to 3.5 Vdc for example, this means that the ICs are not able to work properly and the data packets become corrupted. The LEDs also require a certain minimum voltage (forward voltage), which varies per LED and color.

Reasons for voltage drops:

- ‣ Too long cable runs between power supply and LED product.
- ‣ Inappropriate wire gauge between power supply and LED product.
- ‣ Design of LED product that does not allow for high enough currents to pass (too small copper lanes and high resistance). Some LED strips for example cannot be daisy chained because of this. Contact your LED product manufacturer for technical specifications.

Based on the amount of current draw (amount of simultaneous LED's/colors being lit), the voltage may fluctuate and cause an intermittent fault. This means that in some cases everything might seem to work fine and sometimes when content or colors change, it might not.

Solutions:
Check the voltage with a voltage meter at the beginning of the line. If the voltage dropped at the beginning already, compared to the PSU voltage, please shorten the supply cables, increase wire gauges or increase the supply voltage if possible (some power supplies have a voltage adjust potentiometer that can be used to increase the output voltage by a few percent).

> NOTE:
> Do not exceed the supply voltage at the beginning of your data line/first LED product.

Re-supply voltage at some point (where the voltage drop measured is significant) before the faulty LEDs are visible (e.g., in the middle of the line) or at the end of the line.

> NOTE:
> Re-supplying power must be done from the same power supply or if another power supply is being used, all grounds of all power supplies must be connected in order to balance the ground potential. Don't connect the VCC from different power supplies.

> TIP:
> Do not use excessive wire gauges to transfer data from the DiGidot PxLNet Node to the LED products, this will only increase the risk of failures. Typically, we recommend to use wire gauges for the data signal of 0.3-0.5 mm^2 (20-22 AWG).

FAQ

Please visit our website digidot.eu/support/faq for all FAQ's and further support.

ACCESSORIES

DiGidot offers various accessories for your installation.
Please contact your DiGidot reseller to order other following DiGidot products.

DiGidot PxLNet Transceiver 2
Art. no.: 20353xx

- ‣ Operating voltage: 5-48 Vdc
- ‣ Two operating modes:
- ‣ Receiving mode: Converts PxLNet to the original SPI protocol
- ‣ Transmitting mode: Converts SPI protocol to PxLNet
- ‣ DMX to DMX TTL conversion
- ‣ Status LED indicators
- ‣ Signal range of 250 meters
- ‣ Can directly be soldered to the beginning or end of most SPI controlled LED strips
- ‣ 4 variants available: RJ45 / Screw / Solder pads and RJ45+Screw

DiGidot RJ45 Network Cable
Art. no.: 20330

- ‣ Spare RJ45 Network cable for connecting and daisy chaining DiGidot PxLNet Node

DiGidot RJ45 DMX Adapter
Art. no.: 20329

- ‣ Connects to a network cable that runs prom a PxLNet Transmitter port and can be plugged in any DMX controlled product with an XLR-3 socket.

For further DiGidot products, Transceiver kits and accessories visit our website digidot.eu.

VARIOUS

Online resources

For technical specifications, latest documentation, manuals, product information, support and upgrades, please visit digidot.eu.

Remarks

We've put great care in writing this manual. However, in case you encounter any discrepancies or unclarities, please contact us. This manual and feature specific instructions are based on firmware and interface versions mentioned in the chapter 'Manual version'.

Terminology

SPI	Serial Peripheral Interface: this is an interface bus that is used to send data between microcontrollers and IC's.
IC	Integrated Circuit: this is an electronic component which houses a readymade circuit that is able to perform one specific task. An IC can be placed separately on a PCB or integrated in a LED package to control/drive a LED or segment/array of LEDs.
IC/SPI protocol	Type of control protocol that is used by an IC.
Scene	A scene can contact static and dynamic values that control specific channels.
Playlist	A playlist can also be referred as a cue and consists of multiple scenes that are played in a specific order according to pre-programmed parameters.
Action list	A sequence of actions triggered by only a single trigger.
Universe	Typically, a universe is referred as one DMX control network consisting of 512 control channels, also typically associated with one DMX output. DiGidot also refers to a universe as one set of 512 control Channels that belong to specific Art-Net, sACN or DMX universes. But when we mention more than one universe on one output for example, we always refer to them as amount of control channels and not necessarily as DMX universes.
I/O configuration	Input/Output configuration, determines how and which signals the controller are received and how the ports of the controllers are configured for sending a specific signal.
DMX	Digital MultipleX is a universal lighting control protocol which is standardized by USITT and ESTA/Plasa.
RDM	Is the implementation of Remote Device Management based on ANSI E1.20
Art-Net protocol	Is a UDP protocol that allows multiple DMX universes to be sent over an ethernet network and was standardized by Artistic License Holdings Ltd.
sACN protocol	Similar to Art-Net, is a UDP protocol that allows multiple DMX universes to be sent over an ethernet network and is standardized by the ANSI Standard E1.17-2006

Compliances & EU declaration of Conformity

This product is designed and produced by DiGidot Technologies BV, Amsterdam, The Netherlands. Country Of Origin is: The Netherlands. Official Certificates of Origin can be issued upon request.

Hereby, DiGidot Technologies BV declares that the DiGidot PxLNet Node device complies with and was tested according to essential requirements of all relevant CE directives. DiGidot Technologies BV is a registered DMX-RDM manufacturer at tsp.esta.org, under ID 00b6h. DiGidot Technologies BV registered Art-Net manufacturer at artisticlicence.com, under ID. 0x0fd0.

Warranty

This product is covered by a carry-in manufacturer's warranty of 5 years which covers any design faults, production faults and component failures. Warranty voids if the product was installed or used incorrectly or not in accordance with this manual, and/or if the product was damaged due to external factors, opened, modified or electrically overloaded. Warranty conditions of DiGidot Technologies B.V. apply. Warranty claims must be issued by email: support@digidot.eu.

Disposal and recycling

This product should not be disposed with other household waste. When you decide to dispose this product and/or its battery, do so in accordance with local environmental and recycling regulations.

Feedback

Tell us all about your experience with DiGidot! The continuous development of the DiGidot control platform is only possible thanks to feedback from our users. If you have any suggestions, please contact us by email: info@digidot.eu.

Imprint

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Manual version

This manual version may predate the firmware version of your DiGidot PxLNet Node controller. Some functions may be different and new features may have been added. Please make sure that you're using the manual that matches your firmware version.
This manual corresponds to DiGidot PxLNet Node firmware version listed below this page.