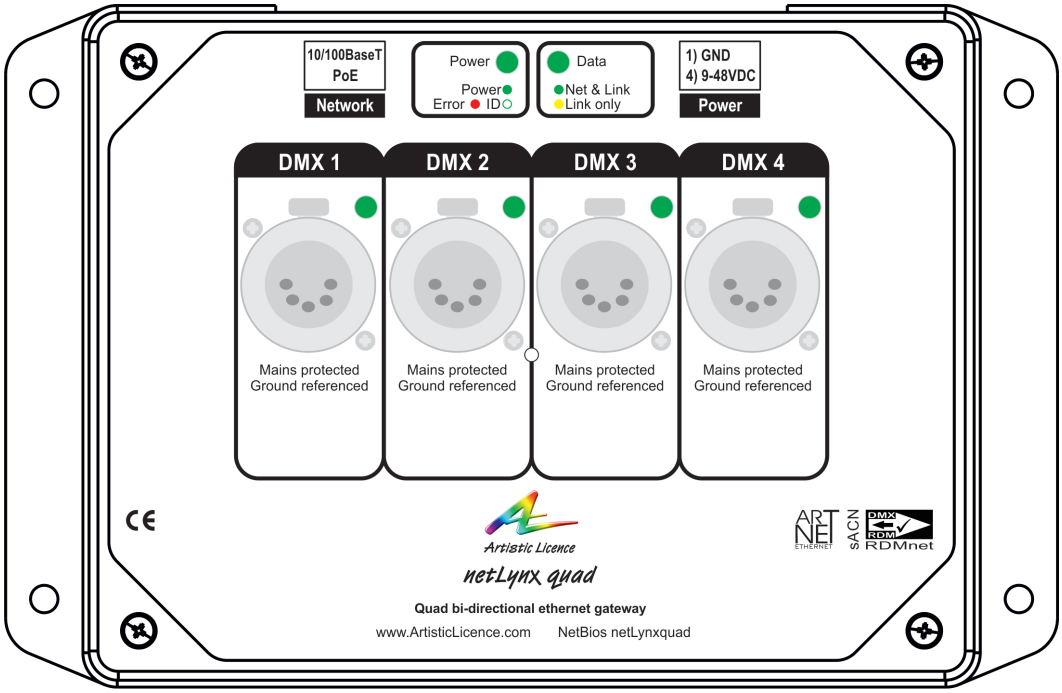
Artistic Licence



netLynx quad

User Guide

Please read these instructions before using the product.

This product has been designed & manufactured for professional use only.
It should only be installed by a suitably qualified technician and in accordance with electrical regulations in the country of use.

Unless directed in the instructions there are no user serviceable parts inside the outer case of this product.

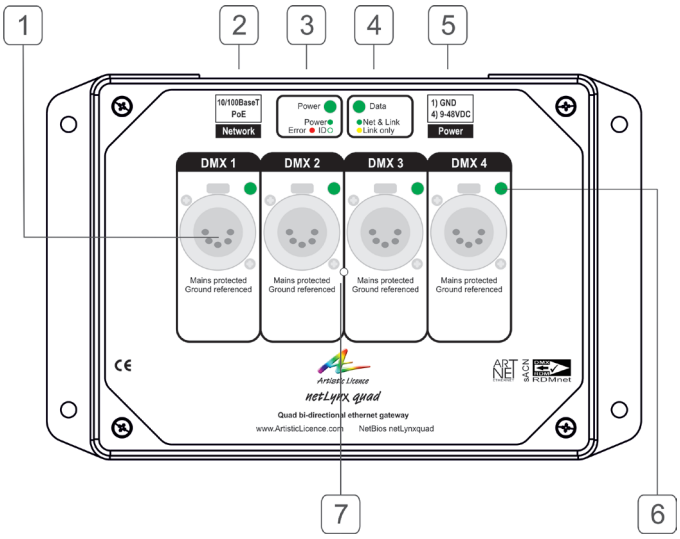
Always disconnect from the power supply when not in use.

Any specific IP rating, where appropriate, is given in the instructions. Unless otherwise stated this product is designed for indoor use only. If used outdoors it MUST be installed in an appropriate IP rated cabinet. Do not allow this product to be exposed to rain or moisture. Do not allow liquid to penetrate the product.

Please recycle all packaging.

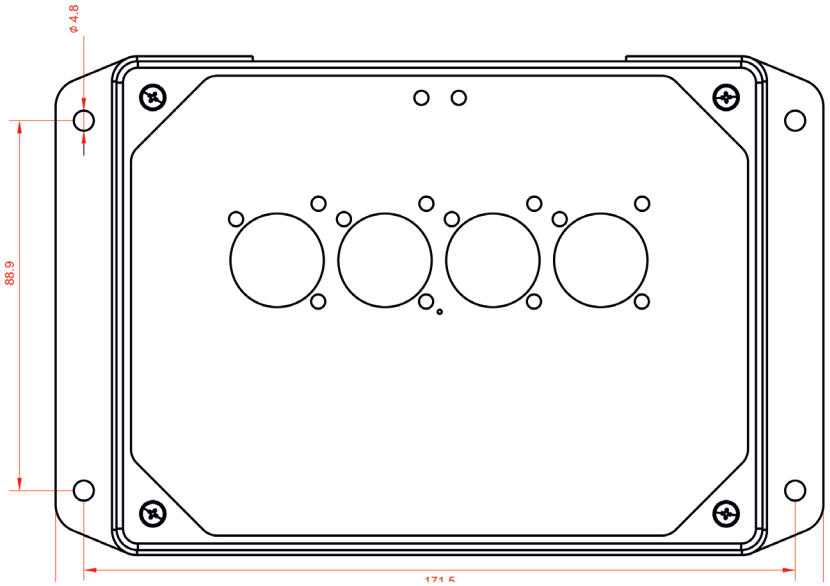
Download the user guide by scanning the following QR code:

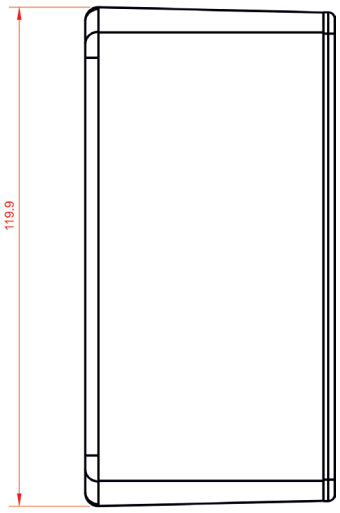
Connections



Ref.	Type	Description
1	Data Connection	DMX ports 1-4
2	Data/PoE Connection	RJ45
3	LED	Power / Identify indicator
4	LED	Network indicator
5	Power Input	Pin 1 = 0 VDC Pin 4 = 9-48 VDC
6	LED	DMX indicators
7	Configuration	Squawk (single press) OR Factory reset (hold down and cycle power)

Mounting Diagram





Product Overview

netLynx quad is a desktop or truss-mounted Ethernet-to-DMX512 converter. It is capable of converting Art-Net or sACN into 4 DMX/RDM Universes. The product is powered via an external power supply unit or, alternatively, the Power over Ethernet (PoE) standard.

netLynx quad is configurable via its internal web-browser or by using DMX-Workshop (free-of-charge software available from Artistic Licence). DHCP is supported for automatic IP addressing.

netLynx quad offers high levels of electrical protection. All outputs are protected against mains electrocution (international voltages including UK 3-phase) and are self-healing.

A handy factory reset switch enables the default settings to be restored - simply hold down and cycle the power. Alternatively, a single press of this button sends a 'squawk' message over the network to the console. This enables the gateway to be easily physically located.

Summary of Key Features

- 10BaseT and 100BaseT ethernet port (RJ45); compatible with Art-Net and sACN
- 4 DMX512 outputs, compatible with all variants of DMX, including DMX512-A.
- RDM (ANSI E1.20 - 2010) compatible
- Power, network and DMX activity indicators
- Factory reset and Squawk button
- PoE compatible (IEEE 802.3af - 2003)
- Configurable using internal web-browser or DMX-Workshop
- DHCP supported
- All outputs protected against continuous connection to 425 VAC (self-healing)
- Failsafe mode
- RDM Integrity supported
- Surface or truss mount

Power

netLynx quad can be powered from either an external PSU (9-48 VDC) or with PoE. The latter requires a suitable ethernet switch for the power source, such as Art-Switch PoE4.

Please note that the product should be powered via EITHER the DC power input or ethernet PoE, but not both (there is no option to failover from one power source to the other if both are connected).

Ethernet Connection

netLynx quad has a single RJ45 ethernet input. The interface can accept Art-Net (all versions) or sACN.

netLynx quad requires Cat 5 cable or better and supports 10BaseT and 100BaseT.

DMX Outputs

netLynx quad can output a maximum of four Universes of DMX512 data. There are 4 DMX/RDM output ports with XLR5 connectors.

The DMX512-A standard specifies that Cat5 cable can be used to carry DMX data. The table below shows which cores should be used. It is recommended that Cat5E cable is used. RDM data uses the same connections as the DMX512 data.

All outputs are electrocution protected against continuous connection to 425 VAC.

Failsafe mode

Failsafe mode allows the user to define what the DMX outputs will do in the event that network data or connectivity is lost. Failsafe mode triggers after loss of either network data for 7 seconds or loss of ethernet link.

The options are:

- Do nothing, *i.e.* hold last state (products with serial nos. up to 163 work this way)
- Output all channels at zero
- Output all channels at full
- Output a recorded failsafe scene

Failsafe mode is configured using our free DMX-Workshop software. Failsafe mode also operates at boot up, so if the gateways power on and there is no controller, they will execute failsafe.

DMX512 Wiring

XLR Pin (convention)	Function	Colour	RJ45 Pin	Cable Colour
1	COM	**Black**	7 & 8	White/ Brown & Brown
2	DMX -	**Blue**	2	Orange
3	DMX +	**Red**	1	White/ Orange

Universe, Sub-Net and Net

Each universe being transmitted over ethernet needs to be distinguishable from other universes on the same network. For universe numbers up to 256 (the maximum limit of Art-Net II), this is achieved by setting the (4-bit) Universe and Sub-Net numbers. The settings can be changed as described in the 'Configuration' section below.

In contrast, later versions of Art-Net can carry up to 32768 universes, while sACN can handle 65536 universes. To handle these large values, the concept of a 16-bit port address including a 'Net' field is introduced. The port address of each DMX512 universe is a number composed of the (Net)+(Sub-Net)+(Universe).

Configuration

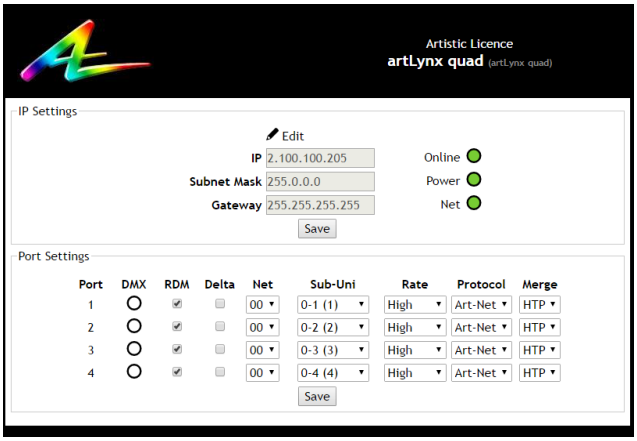
Configuration is achived via the internal web server (browse to NetBios 'netLynxquad'), or via DMX-Workshop.

In order to restore the product to its factory default state, hold down the reset button (under the terminal guard) and cycle the power.

Internal web-browser

IP Settings

The IP settings for the product are displayed in the top section of the screen. The Edit control allows the static IP, subnet mask and gateway to be configured. DHCP operation can be selected via DMX-Workshop.



The indicator meanings are as follows:

- Online: Green = live connection between browser & product; Red = connection lost
- Power: Green = powered; Flashing green = Identify; Red = Fault
- Net: Yellow = Link; Green = Art-Net or sACN activity

Port Settings

The settings for each DMX port can be configured via the web-browser using the following columns:

- Port: The DMX port number
- DMX: Green shows changing data
- RDM: Tick to enable RDM
- Delta: Tick to enable delta transmission (DMX frames are only sent when network data changes)
- Net, Sub-Uni: Set the port address for this output
- Rate: Set the DMX refresh rate (see table below)
- Protocol: Select either Art-Net or sACN control over this output
- Merge: Select HTP or LTP merge when 2 controllers send data to this port (for more information, see 'Merging' section on page 6).

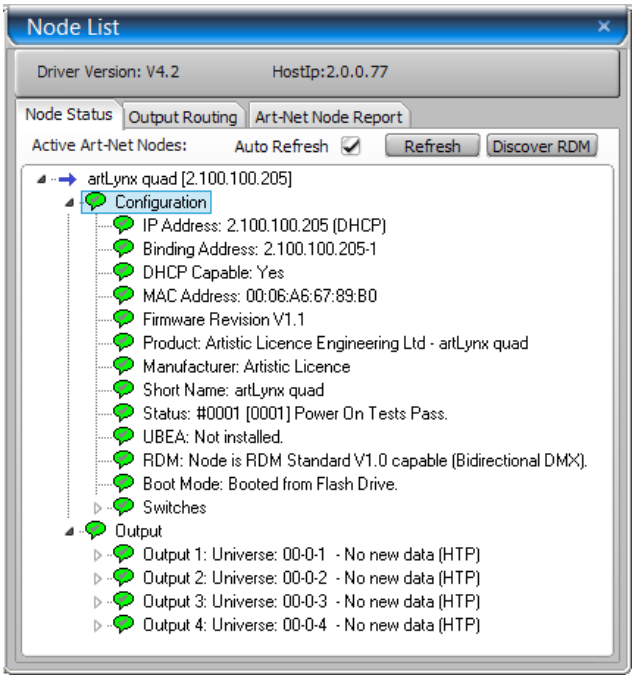
Rate	Frame time
High	24 ms
Medium	32 ms
Slow	48 ms

DMX refresh rate settings

DMX-Workshop

DMX-Workshop™ is a software application that runs on Windows XP / 7 / 8 / 10. It is a fully featured network management, analysis, configuration and diagnostics tool for Art-Net networks.

When netLynx quad is connected to a computer running DMX-Workshop, it should be detected and displayed as an Art-Net node (click the 'Node List' tab to verify this). The node can be expanded to show the configuration and DMX output information, as shown in the screen-shot below.



Right-clicking on any entry brings up a menu that offers various functionality:

- The 'Configure Node' option enables configuration of the Universe, Sub-Net and Net values. It also allows the user to give the device a short and long name.
- 'Copy to clipboard' enables all the node information to be pasted into a support request email.
- 'Merge Controls' (selectable only on individual DMX outputs) enables the choice of LTP or HTP merge modes.
- 'Indicators' enables selection of normal, identify or mute for the LED indicators. Normal is the default behaviour, identify causes the power LED to flash, and mute turns off all the LEDs.
- 'RDM Devices' offers options for device discovery on RDM networks.
- 'Advanced' leads to 'Configure IP Address' (see below).

IP Address Configuration

Choosing the 'Configure IP Address' in the 'Advanced' menu brings up a window that shows the IP and Subnet Mask.

The IP uniquely identifies any nodes or controllers on a network, while the Subnet Mask defines which part of the IP represents the network address and which part represents the node address. For example, a Subnet Mask of 255.0.0.0 means that the first byte of the IP defines the network address and the remaining 3 bytes define the Node address.

By default, the product has a static IP address in the range 2.x.x.x. There are situations in which the user may wish to change this - for example, a 192.168.x.x address is generally used in office environments.

A useful additional feature is the ability to enable automatic IP address allocation on networks controlled by a DHCP server (check the 'Enable DHCP' box to activate).

Squawk

On a complicated network it is not always easy to relate what is showing on screen to the physical location of the nodes. A single press of the factory reset button on netLynx quad causes the product to send a message over the network to the console. This should help you find it!

Merging

netLynx quad is able to merge two streams of data to a DMX output. The method of merging will be either HTP or LTP.

In HTP (highest takes precedence), the levels of each channel in the two streams are compared and the highest value is used.

In LTP (latest takes precedence), the levels of each channel in the two streams is compared to the output; if there is a change, that level is output.

The selection of LTP vs HTP can be set on a per output basis using either the web browser or via Art-Net using DMX-Workshop.

The arbitration of merging differs depending on the selected lighting protocol:

Art-Net

If two streams from different IP addresses are directed to the same Port-Address, merging will occur. If more streams are directed to the same Port-Address, they will be ignored.

sACN

Merging can operate with both unicast and multicast data.

If two streams from different IP addresses are directed to the same universe, the priority field is checked and the stream with the highest priority is output. If the priority field in both streams is identical, merging will occur.

If additional stream(s) are directed to the same universe, any additional stream with higher priority will take precedence. If the priority is identical to the merging streams, it will be ignored.

LED indication

netLynx quad features various LED indicators, which give different informational signals depending on whether the product is booting up or in operational mode. The meanings are explained below.

During boot-up

- Power LED
  - Slow flashing green (1Hz) = booting normally
  - Slow alternating green/red (1Hz) = factory start (settings cleared)

During operation

- Power LED
  - Static green = powered, normal operation
  - Fast flashing green (5Hz) = identify**
  - Occulting green = remote programming command received
  - Static red = fault condition
  - Fast alternating green/red (5Hz) = product is not commissioned (return for service)

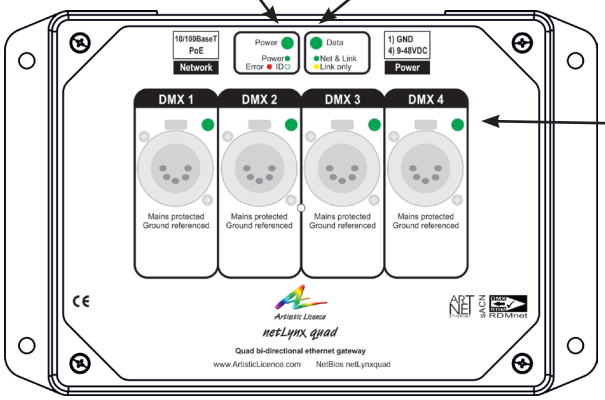
- Net & Link LED
  - Yellow = network link established (but no lighting data)
  - Green = Art-Net or sACN detected

- LEDs 1, 2, 3 & 4
  - Green = Data activity

- All indicators
  - Off = mute command received

Power LED:
OFF = Not connected
Green (solid) = Good power
Green (flashing) = Identify**
Red = Fault condition

Net & Link LED:
OFF = Not connected
Yellow = Connected but no lighting data
Green = Art-Net / sACN on network



DMX LEDs:
OFF = No data is being sent to this port
Green = Lighting data is being output on this port

***The Power LED will flash continuously when the Identify command is sent by DMX-Workshop. This enables netLynx quad to be easily distinguished on a network containing multiple nodes. This LED will also blip briefly in response to any programming command received via the network.*

netLynx quad Specification

Mechanical

- Mounting: Flange or Desk
- Material: Flame retardant black ABS (UL94V-0)
- Overall Dimensions: 156mm (W) x 118mm (H) x 58mm (D)
- Mounting centres: 171.5mm x 89mm (4 no. M4)
- Mass: 0.2 kg
- Country of manufacture: UK

Environmental

- Operating temperature: 0°C to 40°C
- Storage temperature: -10°C to +50°C
- Operating relative humidity (max): 80% non-condensing
- IP rating: IP20 indoor use only
- Certification: CE, WEEE, RoHS
- Warranty: 2-year (return to base)

Power & Electrical

- Input voltage: 9-48 VDC or PoE
- Input connector: XLR4 (1 no.)
- Input power (max): 2W
- DC fuse: internal resettable fuse for control electronics

Ethernet

- Type: 10BaseT and 100BaseT
- Isolation: 1 kV
- PoE: supported (IEEE 802.3af - 2003)

DMX512 Outputs

- Output mode: ground referenced
- Output isolation: n/a
- Output ESD protection: 15 kV
- Electrocution protection: 425 VAC continuous connection (self-healing)

Control

- Input Protocols: Art-Net, sACN
- Output Protocols: DMX512, DMX512 (1990), DMX512-A, RDM V1.0 (E1.20 - 2010)

Data Connections

- RJ45 ethernet (1 no.)
- XLR5 DMX outputs (4 no.)

LED Indication

- Power / Network Activity / DMX Activity

Configuration

- Internal web-browser or DMX Workshop
- Manual factory reset / squawk button

Package Contents

- netLynx quad

Ordering Info

- Product code: netLynx quad

Accessories (not included)

- PSU-9-1.5-FER
- Art-Switch PoE4 & PSU-48-1-DR (powers up to 4 x netLynx quad)

Warranty

All products are covered from date of purchase by a two-year return to base warranty.

By return to base, we mean that the customer is responsible for all costs of transport to and from Artistic Licence.

Returns will not be accepted without prior authorisation. In order to discuss a request to return goods, please email:

Sales@ArtisticLicence.com

Compliance

All Products manufactured or sold by Artistic Licence Engineering Ltd are fully compliant with the appropriate CE and RoHS regulations. Product specific information is available on request.

Waste Electrical & Electronic Equipment (WEEE)

Artistic Licence is a member of a WEEE compliance scheme and will happily recycle any of our products that you, at your expense, return to us.

CE Compliance CE

netLynx quad is CE compliant

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