



rackLynx octo

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.

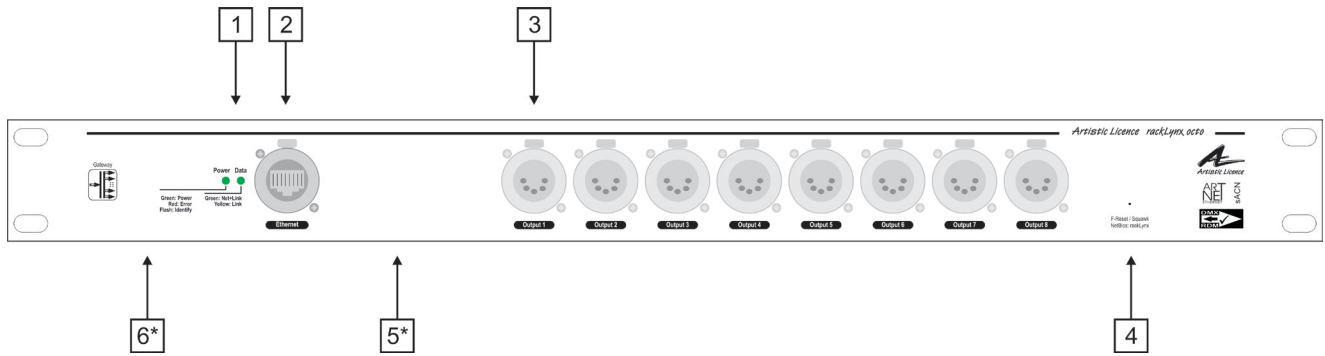
Please recycle all packaging.

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Download the user guide by scanning the following QR code:

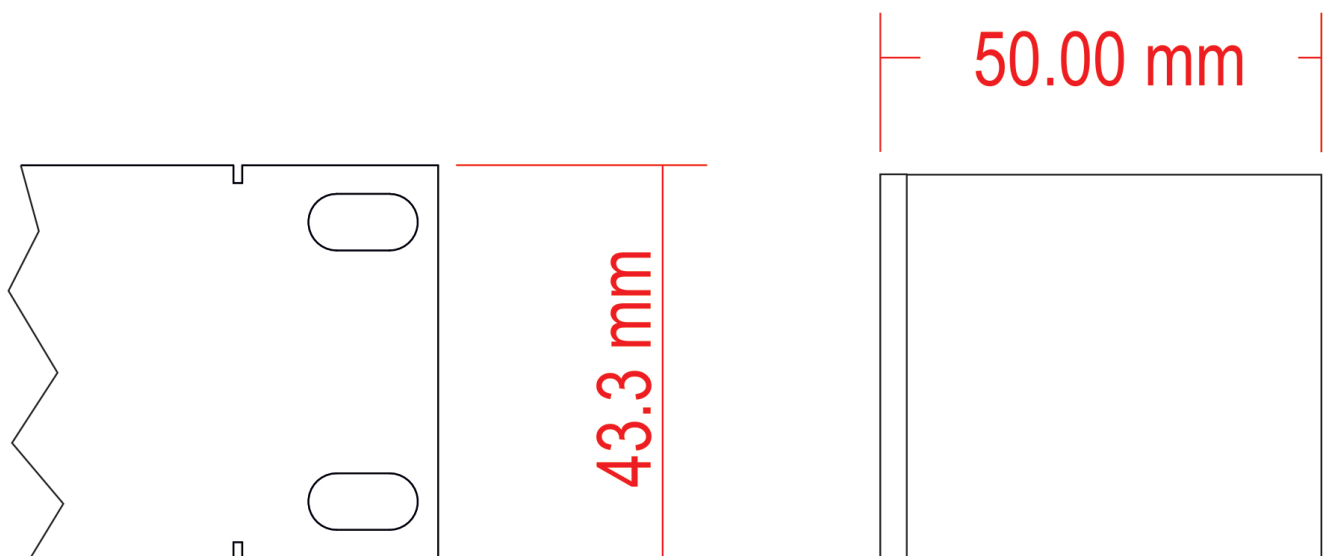


Connections



Ref.	Type	Description
1	LED	Power & Ethernet indicators
2	Data Connection	Network (Ethercon)
3	Data Connection	DMX ports (XLR5F)
4	Configuration	Factory reset & squawk button
5* (rear)	Data Connection	Firmware upgrade port
6* (rear)	Power Connection	Universal Mains input

Mounting Diagram



Product Overview

rackLynx octo is a rack-mounted Ethernet-to-DMX512 gateway. It converts 8 universes of Art-Net (supports all versions up to Art-Net 4) or sACN ethernet into DMX512/RDM.

rackLynx octo is designed to be mounted in a 19" 1U rack enclosure. Its ultraslim depth of just 50mm makes it possible to mount 2 products per 1U slot if desired. The product is supplied with a standard IEC connector.

Configuration is achieved over the network using the internal web-server or DMX-Workshop (free-of-charge software available from Artistic Licence). DHCP is supported for automatic IP address allocation. The product is also compatible with RDMnet - LLRP.

rackLynx octo offers protection against electrical transients on the outputs.

Summary of Key Features

- 1U 19" rack mount, 50mm depth
- Neutrik Ethercon & XLR5 connectors
- 10/100BaseT network input
- Supports Art-Net 4 and sACN
- 8 DMX512 ports, compatible with all variants of DMX, including DMX512-A
- RDM (E1.20 - 2010) compatible
- Power & Ethernet LED indicators
- Outputs protected against electrical transients
- Default IP address 2.x.y.z
- Configurable using internal web-browser or DMX-Workshop
- RDM filter
- DHCP supported
- RDMnet - LLRP
- Factory reset and Squawk button
- IEC power connector

Power Supply & Earthing

The internal power supply requires an input in the range 94-230 VAC +/- 10% with an Earth connection. The table below summarises the internal Earth interconnection and isolation.

(Please note that we use the term Earth-Ground to avoid international confusions. In Europe Earth-Ground is called Earth; in the USA Earth-Ground is called Ground).

Circuit	Description	
Chassis	Bonded to Earth-Ground	
DMX512 Ports	Type	Ground referenced
	Pin 1	Connects to Internal Logic Ground
	Shell	The connector shell is connected to chassis
Ethernet	Type	Transformer isolated
	Screen	Connects to Earth-Ground via 75 Ohm resistance & 100 pF capacitance, as specified in IEEE standard
Internal Logic Ground	Connects to Earth-Ground via 10 Ohm resistance	

Ethernet Connection

rackLynx octo has an Ethercon connection on the front panel. The product supports Art-Net 4 and sACN (the standard managed under ESTA E1.31). rackLynx octo requires Cat 5 cable or better and supports 10BaseT and 100BaseT.

Ethernet Indicators

The front panel features 2 LED indicators for Power and Data. These give different informational signals depending on whether the product is booting up or in operational mode:

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).
- Data LED
 - Yellow = network link established (but no lighting data)
 - Green = Art-Net or sACN detected
- All indicators
 - Off = mute command received

****The Power LED will flash continuously when the Identify command is sent by DMX-Workshop. This enables rackLynx octo 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.

DMX Ports

rackLynx octo can convert a maximum of 8 Universes of data. Each port has a 5-pin XLR female output connector.

DMX512 Wiring

XLR Pin	Function	Colour	RJ45 Pin	Cable Colour
1	Ground	Black	7 & 8	White/Brown & Brown
2	Data -	Blue	2	Orange
3	Data +	Red	1	White/Orange

The DMX512-A standard specifies that Cat5 cable can be used to carry DMX data. The table above shows which cores should be used. It is recommended that Cat5e cable is used. RDM data uses the same connections as the DMX data.

All outputs are protected against electrical transients.

Universe Addressing

The universe (Port Address) is used to uniquely identify the DMX data on the network.

Art-Net allows universe numbers in the range 0-32767.

sACN allows universe numbers in the range 1-65535.

For the avoidance of cross-protocol confusion, users are advised to number universes from 1.

Configuration

Configuration is achieved via the internal web server or via DMX-Workshop.

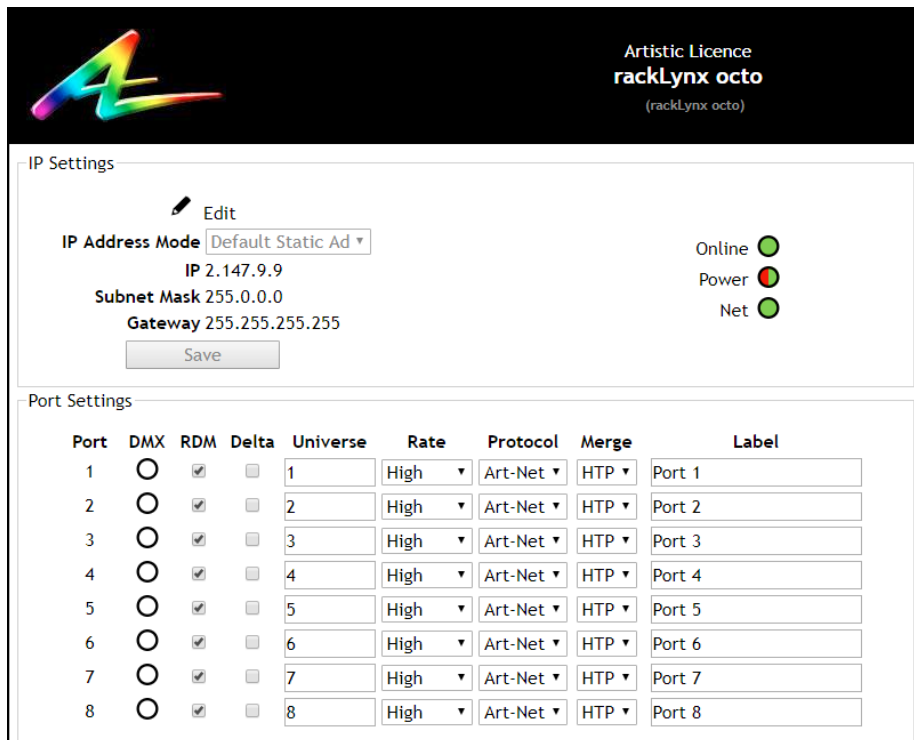
In order to restore the product to its factory default state, use a pin to hold down the reset button on the front panel (see Connections diagram) and cycle the power.

Web server

To configure rackLynx octo via the internal web-server, either type in the IP address of the product or, if your web-browser supports NetBios, then enter the name: rackLynx. To find the IP address, use DMX-Workshop.

A screenshot of the internal web server and an explanation of the settings follow on the next page.

Figure: rackLynx internal web server



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)
- Universe: Set the universe (port address) for this output
- Rate: Sets the DMX refresh rate:
 - High = 24 ms frame time
 - Medium = 32 ms frame time
 - Slow = 48 ms frame time
- 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 8).
- Label: Editable field for port name

DMX-Workshop

DMX-Workshop™ is a fully featured network management, analysis, configuration and diagnostics tool for lighting networks. You can download the free software from our [website](#).

When rackLynx duo 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 below.

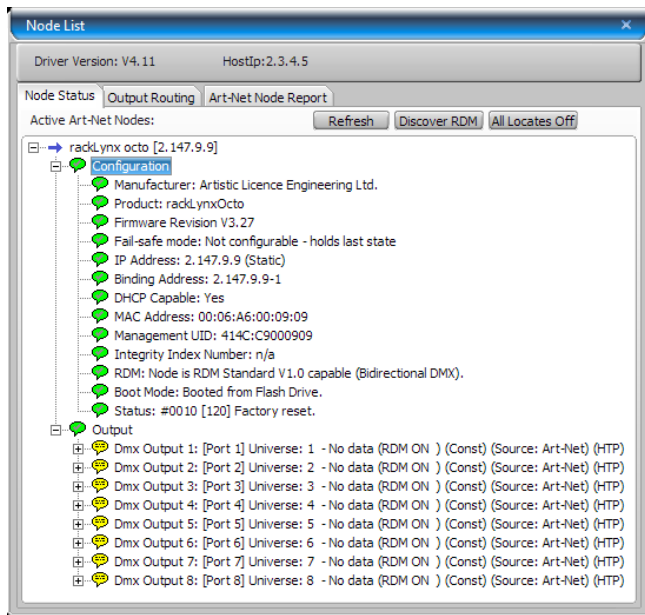


Figure: rackLynx octo as viewed in DMX-Workshop

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

- The 'Configure Node' option enables configuration of the universe number (port address), protocol (Art-Net or sACN), sACN priority, product name and port labels.
- '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 (latest takes preference) or HTP (highest takes preference) 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 and configuration.
- 'Advanced' leads to 'Programme Upload' and 'Configure IP Address and DHCP' as described 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 rackLynx octo causes the product to send a message over the network to the console.

Merging

rackLynx octo is able to merge two streams of data to a DMX output. Depending on the settings, merge can operate as HTP/LTP or Priority.

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.

In Priority, the sACN Priority field defines which universe will be output.

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.

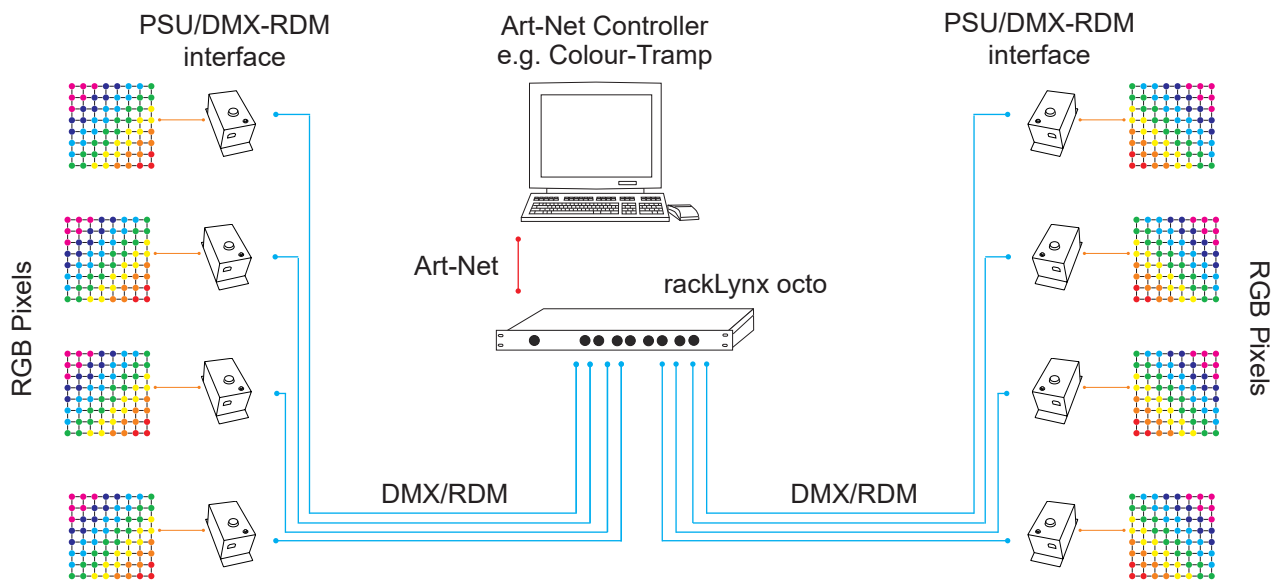
If two streams from different IP addresses are directed to the same universe, the priority field is checked and the stream with the highest priority is output. If the priority field in both streams is identical, merging will occur.

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.

Please refer to Application Note “0130 Gateway merging” for more information.

<https://artisticlicence.com/application-notes/>

rackLynx octo Application Diagram



In this example, rackLynx octo converts Art-Net from a Colour-Tramp controller into DMX/RDM data. This is fed into intelligent power supplies for use with an LED pixel product.

rackLynx octo Specification

Mechanical <ul style="list-style-type: none">• Housing: 19" 1U rack enclosure• Material: metal• Overall dimensions: 1RU (H) x 19" (W) x 50 mm (D)• Weight: 0.82 kg• Country of manufacture: UK	Control <ul style="list-style-type: none">• Ethernet Protocols: Art-Net, sACN, RDMnet LLRP• Output Protocols: DMX512, DMX512 (1990), DMX512-A, RDM V1.0 (E1.20 - 2010)
Environmental <ul style="list-style-type: none">• 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)	LED Indication <ul style="list-style-type: none">• Power & Data
Power & Electrical <ul style="list-style-type: none">• Operating voltage: 94-230 VAC +/- 10%• Operating frequency: 47-63 Hz• Input connector: IEC C13 male• Input power (max): 250 W• Duty cycle: 100% @ 25°C• Internal fuse: T1A slow blow	Configuration <ul style="list-style-type: none">• Internal web-browser or DMX Workshop• Manual factory reset button
Ethernet <ul style="list-style-type: none">• Type: 10/100BaseT• Connector: Ethercon• Isolation: 1 kV	Package Contents <ul style="list-style-type: none">• rackLynx octo• IEC mains lead
DMX512 Outputs <ul style="list-style-type: none">• Output mode: ground referenced• Output isolation: n/a• Output ESD protection: 12 kV• Output voltage protection: +/- 80 V• Connector: Neutrik XLR5F (8 no.)	Ordering Info <ul style="list-style-type: none">• Product code: rackLynx octo

**No user serviceable parts inside
Disconnect power before opening
Product must be earthed**

CE Compliance



rackLynx octo is CE compliant

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, FCC, 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.



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Due to our policy of continuing product improvement specifications are subject to change without notice

