

# Pathport OCTO

## User Guide

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For nodes using firmware 3.6.0.0 or higher



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## About Pathport Octo

Pathway Connectivity's Pathport® OCTO is an eight-port DMX-over-Ethernet node intended for use primarily in entertainment lighting systems. The OCTO provides transparent transmission and receipt of the DMX512 lighting control standard, using a number of widely accepted protocols, across a standard Ethernet data network.

The OCTO may be used alone, networked other OCTOs and Pathport nodes, as well as with a number of other Ethernet-aware lighting control products, such as consoles and controllers.

The OCTO, like all Pathports, is a routing device and does not provide control over the protocols or the data being passed. It only provides control over the path the data takes, how multiple DMX sources are treated (merged or prioritized), and certain other routing characteristics including DMX transmission speed and signal loss behavior.

## Installation Instructions

The Pathport Octo is intended for desktop use, or for mounting in a standard 19" equipment rack, using the rack ears included.

Truss-mount adaptors (#9002) and wall-mount kits (#9003) are also available.

The Pathport Octo is intended for installation in a dry, indoor location. Operating conditions: -10°C to 50°C; 10-90% relative humidity, non-condensing.

**Warning:** The AC socket outlet shall be installed near the equipment and shall be easily accessible.

**Warning:** This equipment relies on building installation primary overcurrent protection.

**Warning:** Except for the IEC chassis plug marked for AC input, all ports on the Pathport Octo are intended for low voltage data lines only. Attaching anything other than low voltage sources to the data ports may result in severe equipment damage, and personal injury or death.

## Protocols Supported

### DMX512

The most widely used digital multiplex protocol for controlling entertainment lighting and effects equipment. The DMX signal consists of 512 8-bit control packets sent asynchronously over a two-pair shielded cable at 250K Baud. The standard connector type is 5 pin XLR. The standard has been revised several times over the years, with the latest being ANSI E1.11 DMX512-A (2005). The Pathport OCTO is designed to work seamlessly with all variants of the protocol.

DMX is a last mile protocol, daisy-chained between end fixtures.

### Ethernet Protocols

Ethernet protocols are used to multiplex DMX data over Ethernet networks, largely to circumvent control channel limitations inherent in the DMX standard. The Pathport OCTO supports the most widely accepted.

Pathport Protocol: A broadcast protocol developed by Pathway Connectivity and implemented by a variety of console manufacturers.

ArtNet: A broadcast protocol developed by Artistic Licence. Its free distribution has made it popular with media server manufacturers. Because this is not a standard, some implementations may not work with others.

Strand Shownet: A proprietary broadcast protocol developed by Strand Lighting and used exclusively in Strand lighting consoles.

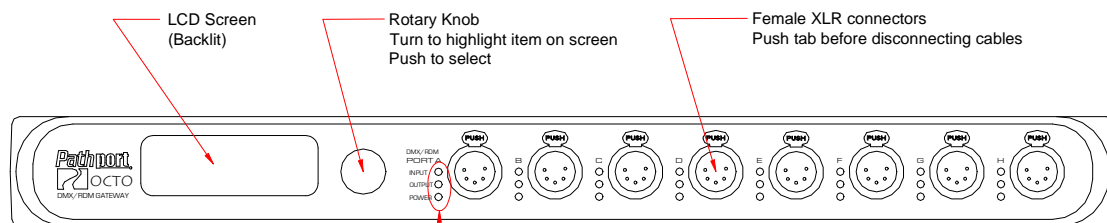
ANSI E1.31 streaming ACN (sACN): A multicast industry standard developed and maintained by the Technical Standards Program of the Entertainment Services and Technology Association (ESTA). The standard is available for a nominal cost from ESTA. This standard provides the DMX512 data transport for the separate ANSI E1.17 ACN (Architecture for Control Networks) industry standard.

sACN is the DMX transport used by ETC Net3. The Quattro is fully compliant with Net3, and will seamlessly receive either Final Draft 20, or the ANSI approved versions of sACN.

### Remote Device Management

ANSI E1.20 Remote Device Management is an industry standard, also published by ESTA, which allows remote configuration of last-mile DMX devices, using the same wire pair that carries the DMX signal. Like DMX, RDM requires a separate dedicated controller to generate the signal packets the OCTO will route. The freely available Pathport Manager is required to use the OCTO as an RDM gateway to configure DMX-based equipment.

## Front Panel Controls



LED Indicator Chart - Indicators apply on a port-by-port basis			
Colour	Label	Action	Explanation
RED	INPUT	Flashing	No Data Present
		Steady On	Valid DMX Received
GREEN	OUTPUT	Flashing	No Data Present
		Steady On	Valid DMX Transmit
BLUE	POWER	Off	Port Disabled
		Steady On	Port Enabled

Model 6403 shown

For the DMX ports, Pathport Octos are available with 5-pin XLR, 3-pin XLR, or RJ45 Ethernet connectors, mounted front or rear, or terminals strip connectors, rear only.

The RJ45 Ethernet network connection is located on the rear panel, and cannot be front mounted.

## Front Panel Display

The front panel controls of the OCTO allow the user to configure some properties of the node. Current settings are displayed on the LCD screen.

The rotary knob will scroll the screen between base node information and properties of each port. When pushed, the knob also acts as a selector.

By default, the LCD display shows the node name, or soft label, its IP address and subnet class and at the bottom, a flashing “N” when the OCTO detects it is connected to a network via the rear-panel Ethercon® port.

```
<Node Name>  
IP: x.x.x.x/<class>  
<N>
```

If no soft-label name has been assigned to the node, the IP address will be shown on the top line as well as the middle. The subnet class, shown after the IP on the middle line, will be “/8”, “/16” or “/24” which are, respectively, a Class A subnet mask of 255.0.0.0, a Class B subnet mask of 255.255.0.0, and a Class C subnet mask of 255.255.255.0.

From the default display, turn the knob to scroll through the Port status screens. A typical port status screen shows the port name or soft label, the port letter and universe patch name, and its DMX status and port direction.

```
<Port Name>  
Port x: <patch name>  
Status: <state><direction>
```

If no soft-label name has been assigned, “Port <letter>” will be displayed instead.

## Setting Node Properties

With the default display showing, press the encoder knob. The Node Configuration menu will be shown.

Node Configuration
Network Setup
Device Info / Status

The current menu choice will be highlighted in reverse video. Rotate the knob to scroll through the list. Push the knob to select the highlighted menu option. Scroll to the bottom of the list and select "<Back>" to return to the previous menu level. The following are the Node Configuration menu options.

<b>Node Configuration</b>
Network Setup
Device Info / Status
Protocol Support
Utilities
<Back>

Network Setup		
Property	Explanation	Available Settings
IP Address	Set IP address for node	Select, then turn knob to set each octet. Push to accept.
Subnet Mask	Set subnet mask for node	Select, then turn knob to set each octet. Push to accept.
Default Gateway	Set default gateway for node (Not typically required)	Select, then turn knob to set each octet. Push to accept.
Link Max	Set the maximum connection speed for the Ethernet port	Auto Negotiate (default) 10Mb Half Duplex 10Mb Full Duplex 100Mb Half Duplex 100Mb Full Duplex
<Back>	Returns to previous menu	

Device Info / Status		
Property	Explanation	Available Settings
Serial Number	Reports Node's serial number	
MAC Address	Reports Node's MAC address	
Firmware Version	Reports current firmware version	
<Back>		

<b>Protocol Support</b>		
Property	Explanation	Available Settings
Art-Net Rx (receive)	Set node to listen for Artnet	Enable (default) Disable
sACN Rx (receive)	Set node to listen for sACN	Enable (default) Disable
Shownet Rx (receive)	Set node to listen for Shownet	Enable (default) Disable
Pathport Rx (receive)	Set node to listen for Pathport	Enable (default) Disable
Tx Data Protocol (send)	Choose transmit protocol	Artnet sACN Shownet Pathport (default)
<Back>		
<b>Utilities</b>		
Property	Explanation	Available Settings
Reboot	Power cycle the node	
Factory Default	Resets patches and all properties except the IP settings to factory values. Includes properties, such as signal loss, that are set from Pathport Manager.	
Factory Default Including Network Setup	Resets patches and all properties including the IP settings to factory values. Includes properties, such as signal loss, that are set from Pathport Manager.	
<Back>		

### **Note Regarding ArtNet, Shownet and Subnet Mask**

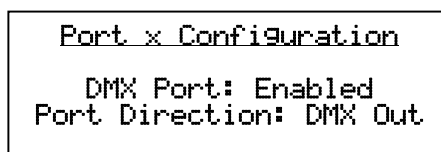
The ArtNet protocol is explicitly sent to a broadcast address, typically 2.255.255.255 or 10.255.255.255. The Octo must have its subnet mask set wide enough to include this broadcast address. When using ArtNet, a Class A subnet mask of 255.0.0.0 is recommended to ensure DMX output.

Shownet is explicitly sent to 192.168.1.255. On most Shownet systems, an Octo should use an IP of 192.168.1.x and a subnet mask of 255.255.255.0.



## Setting Port Properties

From the Port Status screen of the desired port, push the button. The Port Configuration screen will be shown.



The property available for editing will be highlighted in reverse video. Rotate the knob to scroll through the list of properties. Push the knob to select for editing. The list of choices will be displayed, with asterisks on either side of the current setting. Highlight the desired new setting by rotating the knob and push to select. The asterisks will now appear beside the new setting. Scroll to the bottom of the list and select "<Back>" to return to the previous menu level.

The following properties are available from Port Configuration. Further options may be added from time to time:

Property	Explanation	Available Settings
DMX Port	Turns blue power light on/off	Enable (default) Disable
Port Direction	Sets DMX direction for port	Input Output (default)
Patch	Allows selection from a list of standard universe patches	Unpatched Univ 1 through Univ 63999
DMX Speed	Sets DMX output speed (no effect on ports set as inputs)	Slow (32 packets per second) Medium (37 pps) Fast (40 pps) Maximum (44 pps) (default)
<Back>	Returns to previous menu	

## Advanced Configuration

Several node and port properties may only be altered using Pathport Manager software, available on the Pathway website: [www.pathwayconnect.com](http://www.pathwayconnect.com).

Please refer to the Pathport Manager manual for information on these values and how to set them.

Firmware upgrades may only be done using Pathport Manager.