

# USER MANUAL

## Gateway 8

### ETHERNET TO DMX GATEWAY



## Thank you

Thank you for choosing Gateway 8 by Zero 88 to fulfil your data distribution needs. We sincerely hope that your new product will bring you years of trouble-free service. We make great efforts to build in reliability and serviceability at every stage of our development and production processes and include a three-year limited warranty - giving you peace of mind for your investment.

Our extensive dealer network can also provide you with technical service and sales support in your local language no matter where you are in the world. If you have any questions, comments or problems our contact details can be found at [zero88.com/support](http://zero88.com/support)

Once again, thank you for choosing Zero 88.

## WARNING!

Zero 88 networking devices are designed for use within a dedicated, stand alone, private, local area network only, for the sole purpose of transmitting and/or receiving nonsensitive entertainment lighting control data. Although they utilize ethernet networking, these devices should not be connected to the internet.

## Introduction

Gateway 8 provides flexible DMX / RDM data distribution, converting eight universes of Ethernet (sACN or Art-Net) into DMX512/RDM. The unit can be mounted into a 19" rack mount.

Gateway 8 is fully compatible with the latest protocols (sACN, Art-Net 4, LLRP, DMX & RDM), ensuring your distribution network is ready to meet your future demands. Gateway 8 is appropriate for permanent installations or as a flexible, adaptable rental & touring tool.

When combined with any ZerOS console, Gateway 8 provides on-board configuration from the console, for a truly integrated system. Alternatively, the unit can be configured through an internal web server or via optional control software. DHCP enables automatic IP addressing; static IP and LLRP negotiation are also supported.

Gateway 8 is ideal for use alongside Splitter 8 and Gateway 4 to build a larger data distribution system.

## Power

The internal power supply requires an input in the range 90-250 VAC with an Earth connection. The mains fuse should only be replaced with a 3.15A slow blow fuse.



This product must be earthed  
Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.



Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan  
Apparatet må tilkoples jordet stikkontakt  
Apparaten skall anslutas till jordat uttag



## Ethernet connection

Gateway 8 has an RJ45 (etherCON) connector and supports Art-Net 4 and sACN (ESTA E1.31). Gateway 8 requires Cat 5 cable or better and supports 10BaseT and 100BaseT.

## DMX Outputs

Gateway 8 can output a maximum of eight Universes of DMX512 data. There are eight DMX/RDM output ports with female XLR5 connectors.

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

## Failsafe mode

Failsafe mode defines what the DMX outputs will do if 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
- Output all channels at zero
- Output all channels at full
- Output a recorded failsafe scene

Failsafe mode is configured using Artistic Licence's 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.

DMX Connector	Pin	Desc.
	1	COM
	2	DMX -
	3	DMX +
	4	Not Connected
	5	Not Connected

## DMX inputs

Any of the DMX ports can be set to receive DMX and generate either Art-Net or sACN. Configuration is achieved with either DMX-Workshop or the web browser. When receiving DMX, the LED port indicator illuminates to show that data is being received.

## 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.

## LED indication

Each port has an individual LED indicator. During operation, the LEDs illuminate green to show DMX activity

## Configuration

Configuration is achieved via the internal web server or via DMX-Workshop. In order to restore the product to its factory default state, hold down the reset button and cycle the power.

## Web server

To configure Gateway 8 via the internal web-server, either type in the IP address of the product or, if your web-browser supports NetBios, type "Gateway8". To find the IP address, use DMX-Workshop.

The screenshot shows the Zero 88 Gateway 8 web interface. The top bar is blue with the Zero 88 logo and the text 'Zero 88 Gateway 8 (Data 88 Gateway 8)'. Below this is the 'IP Settings' section with an 'Edit' button. It shows 'IP Address Mode' set to 'Static IP Address', 'IP' set to '10.0.0.30', 'Subnet Mask' set to '255.0.0.0', and 'Gateway' set to '255.255.255.255'. There are also fields for 'IP 2: 50.74.148', 'Subnet Mask 255.0.0.0', 'Gateway 255.255.255.255', and 'IP Not yet assigned'. A 'Save' button is at the bottom. Below the IP settings is the 'Port Settings' section with a table of columns: Port, DMX, RDM, Delta, Universe, Rate, Protocol, Merge, Label.

## 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

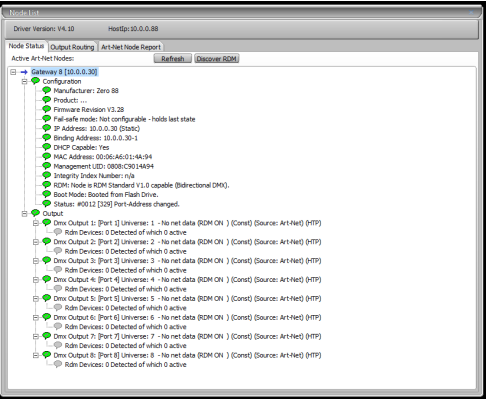
The settings for each DMX port can be configured via the web-browser using the following columns:

- Port: The DMX port number
- Input: Tick to set as DMX input
- 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).
- Priority (active if IP & sACN are selected): Set the Priority number (1-200) that is used when converting DMX to sACN
- 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 the Artistic-Licence website.

When Gateway 8 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.



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, failover mode, 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 opposite.

**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 Gateway 8 causes the product to send a message over the network to the console.

**Merging**  
Gateway 8 can 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.

**DMX Input**  
A DMX input can be merged with an Art-Net stream, an sACN stream or another DMX input. The table summarises the merging operation.

	Source A	Source B	Condition	Output
1	Art-Net	Art-Net	Different IP addresses	Merge of A + B*
2	sACN	sACN	Identical priorities	Merge of A + B*
3	sACN	sACN	Different priorities	Highest priority
4	DMX input converting to Art-Net	DMX input converting to Art-Net		Merge of A + B*
5	DMX input converting to sACN	DMX input converting to sACN	Identical priorities	Merge of A + B*
6	DMX input converting to sACN	DMX input converting to sACN	Different priorities	Highest priority
7	DMX input converting to Art-Net	Art-Net		Merge of A + B*
8	DMX input converting to sACN	sACN	Identical priorities	Merge of A + B*
9	DMX input converting to sACN	sACN	Different priorities	Highest priority

\*HTP or LTP as per user selection

This equipment is designed for professional lighting control and is unsuitable for any other purpose. It should be used by, or under the supervision of, an appropriately qualified or trained person.

E&OE. Cooper Lighting Solutions reserves the right to make changes to the equipment and specification described in this manual without prior notice.