ARTNET TO DMX512/RDM 8-PORT EXPANDER
CR061R-D

Operation Manual

The Artnet node 8ch is an Ethernet to DMX converter that offers dual Art-Net to DMX512 conversion capabilities along with RDM functionality. It features eight DMX output ports, all supporting the RDM (Remote Device Management) protocol, allowing for convenient configuration and management of RDM/DMX lighting fixtures. This device is powered by a high-speed ARM processor, adheres to the standard Art-Net protocol, and provides an RJ45 network interface as well as standard DMX512 input and output interfaces. The ArtNet-DMX8 is highly compatible with protocol standards, ensuring real-time operation, stability, and reliability.

The Artnet node 8ch comes factory-configured with an IP address of 2.x.x.x and a subnet mask of 255.0.0.0, generally requiring no modification for plug-and-play use. Special network configurations can be adjusted using the device's menu.

Standard Support

1. Artnet protocol standard support
2. DMX512 protocol standard support
3. RDM Remote Management protocol standard support

Ethernet Standard RJ45 Interface

1. 10/100Mbps rate
2. Ethernet interface
3. DHCP automatic address assignment/manual address setting

DMX512/RDM Ports

1. Eight output ports
2. A total of 4096 channel expansion
3. RDM remote management of lighting devices

Rated Operating Range

1. Rated voltage: AC100V-AC240V
2. Rated frequency: 50Hz-60Hz

1.1 Output Mode

The output mode receives information from a UNIVERSE Art-Net compatible transmitter and converts it into DMX512/RDM signals to directly control DMX/RDM devices, achieving networked operation.
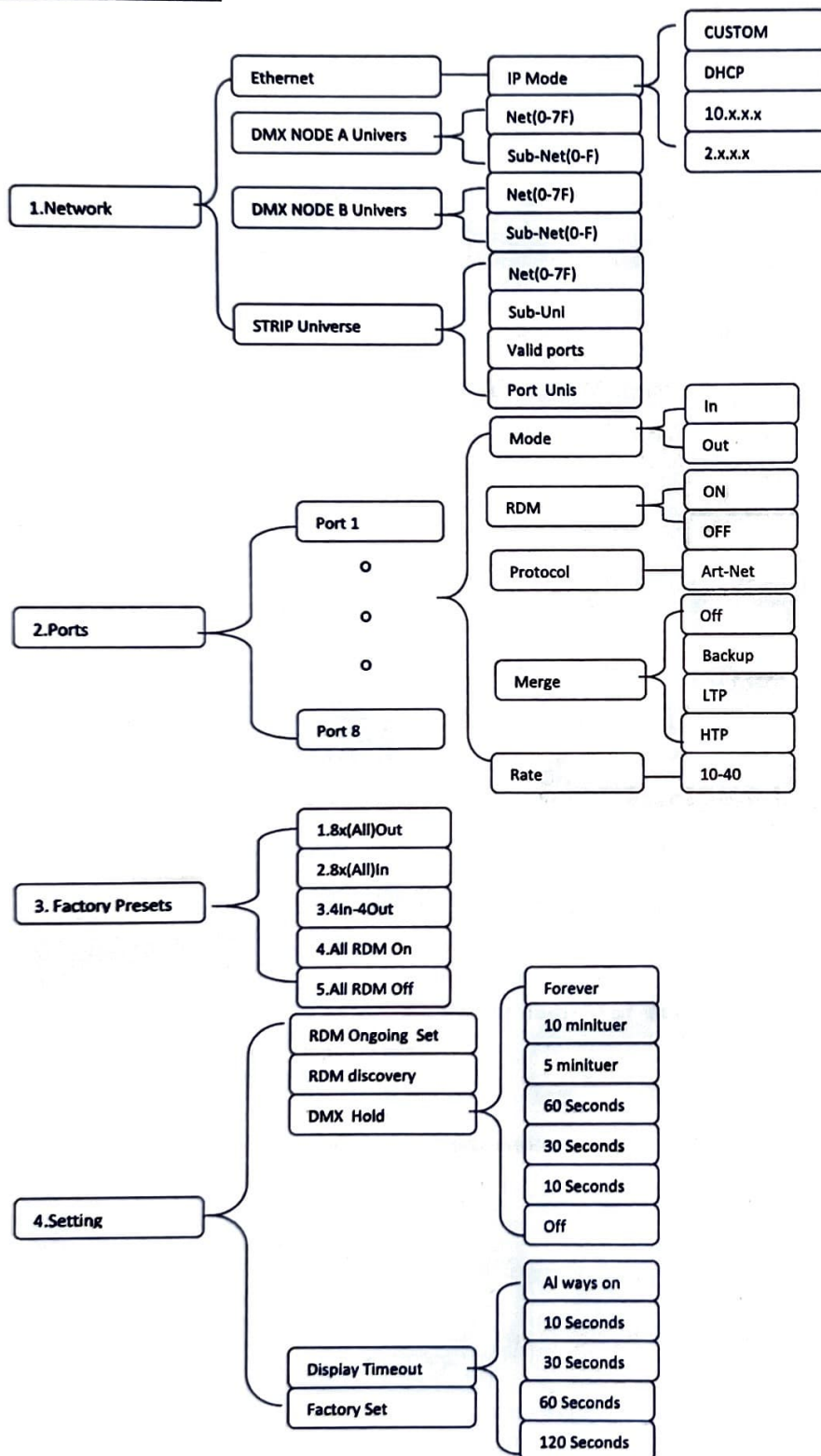
1.2 Configuration

The ArtNet-DMX8 can be configured using the device's menu, PC-based configuration tools, and web browsers in a remarkably straightforward manner. The Art-Net standard uses Class A IP addresses, with the option to set to 2.x.x.x (subnet mask 255.0.0.0) or 10.x.x.x (subnet mask 255.0.0.0). If the control console has special settings, the device's IP can be changed to the same network segment.

IP addresses can be set in four modes: 2.x.x.x automatic, 10.x.x.x automatic, DHCP, and custom mode. The first two IP address modes are auto-generated with a subnet mask of 255.0.0.0 each, DHCP addresses are assigned by a DHCP server, and the last mode allows for custom settings as needed. Please ensure devices communicating with each other are on the same network segment.
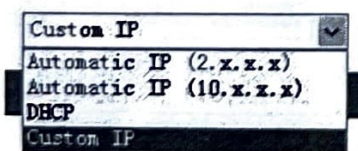
Art-Net identifies nodes through the UNIVERSE, with the setting range being 0 to 255. The UNIVERSE for this device starts counting from 0, while some devices start from 1, please pay attention to this distinction when identifying.

Menu Hierarchy Diagram

1.Network
- Ethernet
  - IP Mode
    - CUSTOM
    - DHCP
    - 10.x.x.x
    - 2.x.x.x
- DMX NODE A Univers
  - Net(0-7F)
  - Sub-Net(0-F)
- DMX NODE B Univers
  - Net(0-7F)
  - Sub-Net(0-F)
- STRIP Universe
  - Net(0-7F)
  - Sub-Uni
  - Valid ports
  - Port Unis

2.Ports
- Port 1
  - o
  - o
  - o
- Port 8
  - Mode
    - In
    - Out
  - RDM
    - ON
    - OFF
  - Protocol
    - Art-Net
  - Merge
    - Off
    - Backup
    - LTP
    - HTP
  - Rate
    - 10-40

3. Factory Presets
- 1.8x(All)Out
- 2.8x(All)In
- 3.4In-4Out
- 4.All RDM On
- 5.All RDM Off

4.Setting
- RDM Ongoing Set
- RDM discovery
- DMX Hold
  - Forever
  - 10 minituer
  - 5 minituer
  - 60 Seconds
  - 30 Seconds
  - 10 Seconds
  - Off
- Display Timeout
  - Al ways on
  - 10 Seconds
  - 30 Seconds
  - 60 Seconds
  - 120 Seconds
- Factory Set

Configure system parameters

Key/button icons	← ● [MENU]	^ ● [UP]	v ● [DOWN]	● ↵ [ENT ER]
Functionality	[MENU]	[UP]	[DOWN]	[ENT ER]

2. Device Menu

The menu system consists of 4 buttons located on the right side of the display.

📄 **(Menu)** button has several functions:

- **Accessing the menu**
- **Exiting the menu**
- **Returning to the previous step in some cases**

↵ **(Enter)** button is used to open a menu or confirm a selection.

^ v The up and down arrows are used to select menu items or adjust values.

Operation Method:

Current IP address and system status information in the menu during startup.

```
rNode8        │ Art-Net
IP. 002 034. 243. 146
Net:  001   (Port1-4)
001*  002*  003*  004*
Net:  001   (Port5-8)
005*  006*  007*  008*
                    ▶
```

The display status page shows the port number address status for each route. A port number without a white frame indicates output mode, and a port number with a white frame indicates input mode. Each route has a **DMX** signal indicator light. The top right corner displays "**Art-Net**" to indicate that an **Art-Net** signal has been received, and "**Ready**" indicates that either an **Art-Net** signal has not been received or there is no network cable connected. Press the "**Menu**" button to enter the main menu (as shown below)
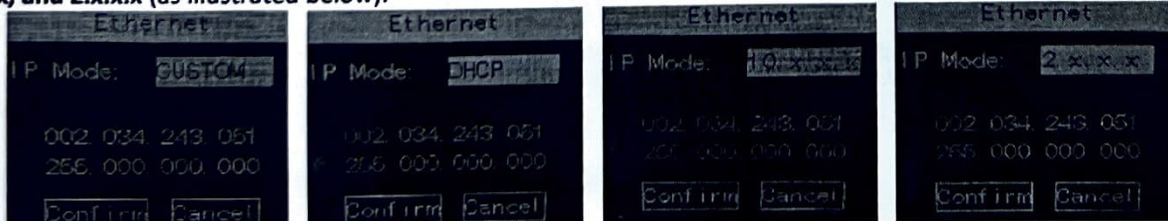
```
System Menu
● Network
○ Ports
○ Factory Presets
○ Setting
```

1. Network Configuration

1-1) Press the "**Enter**" key to access the sub-menu (as illustrated below).

```
Network
● Ethernet
○ DMX NODEA Univers
○ DMX NODEB Univers
○ STRIP Universe
```
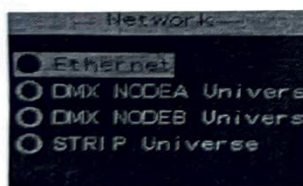
1-2) Press the "**Enter**" key to enter the **Ether net** settings. IP mode options include: **Manual Setup, Automatic Acquisition, 10.x.x.x, and 2.x.x.x** (as illustrated below).

```
Ethernet              Ethernet              Ethernet              Ethernet
IP Mode: CUSTOM       IP Mode: DHCP         IP Mode: 10.x.x.x     IP Mode: 2.x.x.x

002.034.243.051       002.034.243.051       002.034.243.051       002.034.243.051
255.000.000.000       255.000.000.000       255.000.000.000       255.000.000.000

Confirm Cancel        Confirm Cancel        Confirm Cancel        Confirm Cancel
```

1.2.1) **CUSTOM Manual Setup:** Modify the IP and subnet mask using the "**Enter**" key combined with the "⌒" and "⌄" keys. To save settings, select the "**Confirm**" option and press the "**Enter**" key.

1.2.2) **DHCP Automatic Setup:** First, select the "**DHCP**" option, then the "**Confirm**" option, and press the **Enter** key to save

the settings. This allows the device to automatically obtain an IP address through the router.

1.2.3) 10.x.x.x Quick Setup: First, select the "**10.x.x.x**" option, then the "**Confirm**" option, and press the **Enter** key to save settings, quickly setting up a 10-segment IP.

1.2.4）2.x.x.x Quick Setup: First, select the "**2.x.x.x**" option, then the "**Confirm**" option, and press the **Enter** key to save settings, quickly setting up a 2-segment IP.

1-3) Press the "⌄" key, then press the "**Enter**" key to access the "**DMX NODEA Univers**" A-port domain setting menu (as illustrated below). Use the "**Enter**" key combined with the "⌃" and "⌄" keys to modify the network address, subnet address, and port address. To save settings, select the "**Confirm**" option and press the **Enter** key.
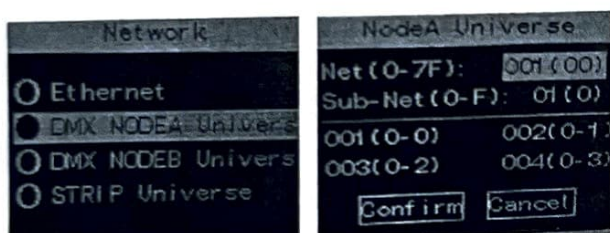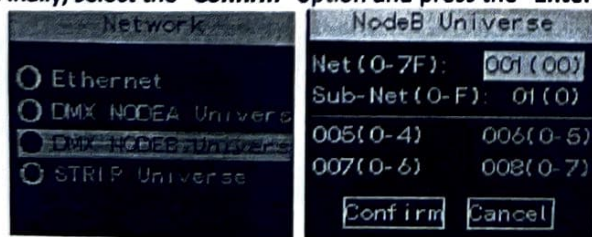

Menu Explanation:

Net(0-7F)	Network Address (addresses 1 to 128 can be set)
Sub-Net(0-F)	Subnet Address (addresses 1 to 16 can be set)
001（0-0）—	Port Address (addresses 1 to 16 can be set)

1-4) Press the "⌄" key, then press the "**Enter**" key to enter the "**DMX NODEB Univers**" B port domain setting menu. (As shown in the picture below)

Press the "**Enter**" key along with the "⌃" and "⌄" keys to modify parameters such as the network address, subnet address, and port address.

Finally, select the "**Confirm**" option and press the "**Enter**" key to save the settings.

Menu Explanation:

Net(0-7F)	Network Address (addresses 1 to 128 can be set)
Sub-Net(0-F)	Subnet Address (addresses 1 to 16 can be set)
001（0-0）—	Port Address (addresses 1 to 16 can be set)

1-5) Press the ">" key, then press the "Enter" key to enter the "STRIP Universe" light strip field setting menu (as shown in the following figure)

```
Strip Universe
Net(0-7F):   001(00)
Sub-Uni:     017(1-0)

Valid Ports:  0
Port Unis:    4

 Confirm  Cancel
```

Menu Meaning:

Net(0-7F)	Network address
Sub-Net(0-F)	Subnet address (1-256 addresses can be set)
Valid Ports	Valid port (0-4 can be set) Note: 0 represents shutdown
Port Unis	Port address domain (1-4 can be set)

1.5.1) Note: The light strip needs to meet the following conditions: support single line drive or WS 2812 class light strip

1.5.2) Note: Valid Ports: 0 represents the closed state, which is closed by default at the factory.

1.5.3) When using the light strip, press the ">" key, select the valid port option "Valid Ports: 0" and change it to (1-4 optional), then select the "Confirm" option and press the Enter key to save the settings

1.5.4) Meaning of (Valid Ports) and (Port Unis Port Address Domain)
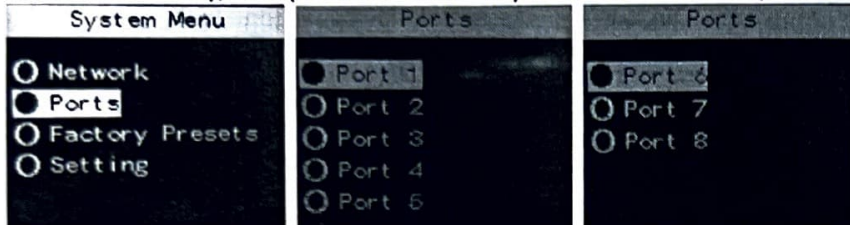**For example:**
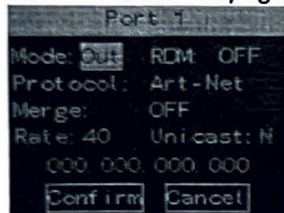**Valid Ports: 4 represents 4 valid ports**
Port Unis: 4 represents that one port has four address domains

2. Ports Information

2-1) Press the "⌄" key, then press the "Enter" key to access "**Port1--8**" (as shown in the diagram below).

2-2) Press the "Enter" key again to enter the port settings (as shown in the diagram below).
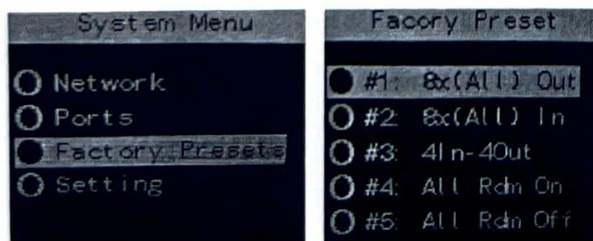

Menu meaning:

Mode:	Out/In (Input or output mode can be modified independently)
RDM function:	ON/OFF (RDM function can be independently turned on or off)
Protocol:	Art-Net Protocol
Merge:	OFF
Rate:	10-40 (Adjustable)

2-3) Press the "**Enter**" key and use the "⌃" and "⌄" keys to modify parameters. Finally, select the "**Confirm**" option and press the **Enter** key to save the settings.

3. Factory Presets

3-1) Press the "⌄" key, then press the "**Enter**" key to enter Factory Presets (as shown in the diagram below).

Menu Meaning:

8X (ALL) Out	All 8 ports in DMX512 signal output mode
8X (ALL) In	All 8 ports in DMX512 signal input mode
4In-4Out	4 ports in DMX512 signal input mode 4 ports in DMX512 signal output mode
ALL RDM ON	RDM function turned on for all ports
ALL RDM Off	RDM function turned off for all ports

3-2)   Press the "⌣" key, select "8X (ALL) Out", then press the "Enter" key to enter the mode where all 8 ports output DMX512 signal.
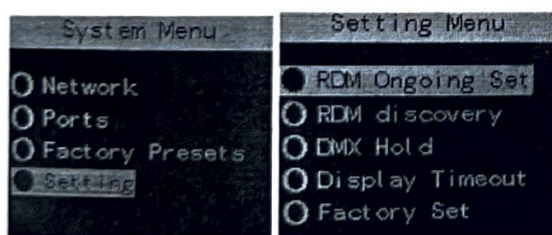
Press the "⌣" key, select "8X (ALL) In", then press the "Enter" key to enter the mode where all 8 ports input DMX512 signal.

Press the "⌣" key, select "4In-4Out", then press the "Enter" key to enter the mode with 4 ports inputting DMX512 signal and 4 ports outputting DMX512 signal.

Press the "⌣" key, select "ALL RDMON", then press the "Enter" key to enable RDM function on all ports. Press the "⌣" key, select "ALL RDM Off", then press the "Enter" key to disable RDM function on all ports.

4.   Setting

4-1) Press the "⌣" key, then press the "Enter" key to enter the Settings menu (as shown in the diagram below).

4-2)   Press the "⌣" key, select **"RDM Ongoing Set"**, then press the **"Enter"** key to execute the real-time RDM device search function.

Press the "⌣" key, select **"RDM Discovery"**, then press the **"Enter"** key to execute the manual RDM device search function. Press the "⌣" key, select **"DMX Hold"**, then press the **"Enter"** key, choose the parameter to modify, and press the **"Enter"** key again to save and set the DMX hold time.

Press the "⌣" key, select "Display Timeout", then press the **"Enter"** key, choose the parameter, and press the **"Enter"** key again to save and set the display backlight status.

Press the "⌣" key, select **"Factory Set"**, then press the **"Enter"** key, select the "Confirm" option, and press the **"Enter"** key to restore factory settings.

5. Application Example

Node8 Mode

ARTNET to DMX512 /RDM   The primary purpose of the 8-port expander is to increase or extend the number of DMX units in a lighting network.

Each device can manage up to 8 DMX units. Simply connect the device to an Art-Net/Art-Net II compatible console or a PC-based controller.

Configuration method: All ports are set to output mode. The UNIVERSE can be sequentially set from 0-7 or 0-31.

**8 universes**

32 universes
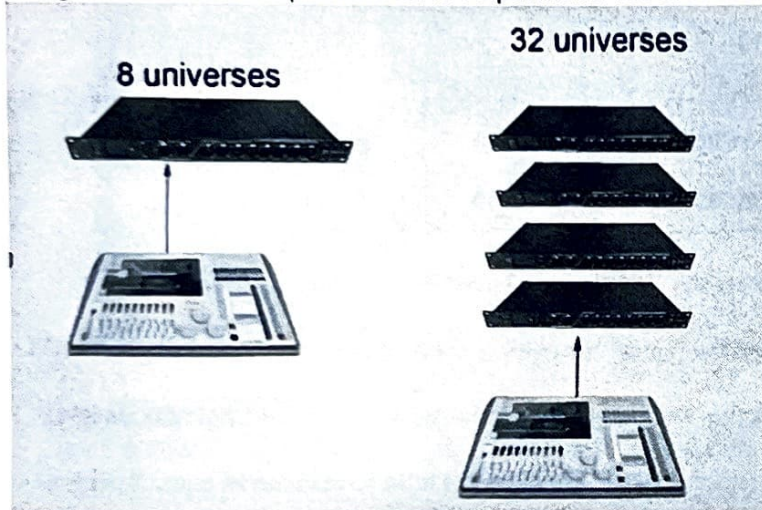
OUTPUT MODE

1.The device receives Art-Net network signals and converts them to DMX output, functioning as a decoder.

Configuration method: All ports are set to output mode.

2.RDM Function: Enables easy management of RDM and DMX lighting fixtures. RDM is the Remote Device Management protocol, which simplifies the configuration and management of RDM/DMX lighting fixtures.

Configuration method: Turn on the RDM switch.

ART-NET IN   **RDM/DMX OUT**
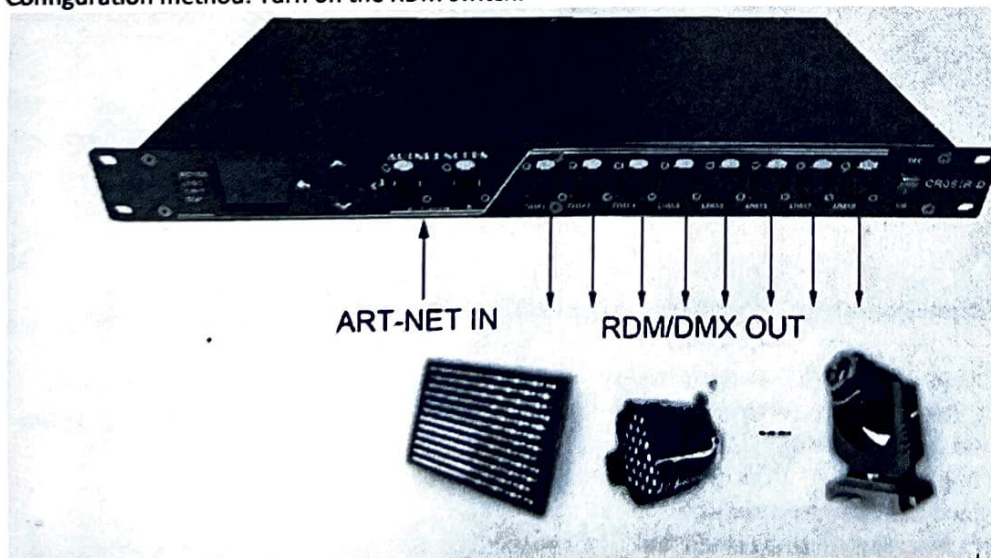
6. Specifications

6. **Connectors**

   DMX: 8 x shielded & gold-plated 3-pin XLR (female)

   Network: 1 x 10/100Mbps RJ45 connector

   Power: 110V-220V AC

DMX Features

   Supported Protocols: DMX512 (1986 & 1990), DMX512-A, RDM (optional)

   DMX Port Direction: Input or Output (configurable)

   DMX Port Protection: Built-in 1.5KV

   DMX Port Matching/Bias: Yes

   DMX Parameters: Frame Rate: 10-40fps / Break: 176-352µs

Ethernet Features

   Supported Protocols: Art-Net, UDP, TCP, ICMP, DHCP

   Port Rate: 10/100BaseTX

   Port Detection: Auto-negotiation, MDI/MDIX

Additional Features

   Configuration Management Software: Discovery and simple configuration

   WEB Configuration: Supported

Status Reporting

   LCD Display Configuration: Setting information (IP address, subnet mask, DMX port settings)

   Ethernet Port Indicators: Connection and activity

   Operation: LED indicators