

DMXking eDMX MAX Configuration Utility User Manual



DMXking.com

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**eDMX MAX
Configuration Utility**

USER MANUAL

1. CONFIGURATION UTILITY

The eDMX MAX Configuration utility provides a simple interface to device parameters.

All MAX series DMXking hardware, including ultraDMX MAX, is supported along with previous generation eDMX PRO series hardware (minimum firmware v3.3 required).

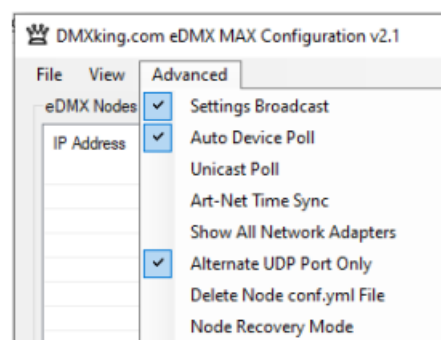
Some configuration items may not be applicable to earlier firmware versions and it is recommended to update to the latest available firmware. Configuration items unavailable in device firmware will simply refuse to change value when updated.

NETWORK / USB SELECTION

Firmware v4.3+ supports configuration over USB in addition to configuration over network. Select Network or USB in the Node Communication box. Refresh List will update the available COM ports. Network Adapter IP list is only updated upon application startup.

The image shows two screenshots of the eDMX MAX Configuration utility interface. The top screenshot shows the 'Node Communication' section with 'Network' selected. It displays a 'Selected COM Port' of COM1, a 'Selected Network Adapter IP' of 192.168.0.5, and a 'Subnet Mask' of 255.255.255.0. The bottom screenshot shows the same interface with 'USB' selected, and the 'Selected COM Port' is COM61. Both screenshots show a 'Refresh List' button and a list of available network adapters, including 'Intel(R) I210 Gigabit Network'.

eDMX MAX Configuration connects to networked nodes using primary Art-Net UDP port 6454 or an alternate UDP port 16454 port for device configuration. This is helpful when simultaneously running eDMX MAX Configuration and a lighting control application to avoid UDP port conflict. Automatic selection of alternate port is performed upon utility startup if the primary ArtNet port is unavailable. It is also possible to lock eDMX MAX Configuration to alternate port via the Advanced menu. Note that DMXking nodes are always listening on both primary and alternate ports so there is no device configuration required to switch between UDP ports.



eDMX MAX Node configuration can be saved/loaded from a simple Key:Value YAML file. Select the node and perform Load/Save accessible in the File menu. Configuration files can be loaded upon device startup from a file named "conf.yml" stored on an optional SD card however updates made to configuration are not saved by the node back to the conf.yml file. This is intended as a deployment mechanism where complete device configuration and show content can be prepared externally on an SD card to be later installed on a device.

NETWORK TAB

DMXking.com eDMX MAX Configuration v2.1

File View Advanced

eDMX Nodes

IP Address	Short Name
192.168.0.112	eDMX4 MAX 400010

Search

ArtPoll Broadcast ☐ Mute Responses

Node Communication

☒ Network ☐ USB

COM1 Refresh List 192.168.0.5 255.255.255.0 Intel(R) I210 Gigabit Network

Selected COM Port Selected Network Adapter IP Subnet Mask

Node Report: #0001[9]DMX-0.0.0.0 SYNC:Async SHOW:000 REC:No SD

Messages

Time	Type	Source	ArtNet Messages
1/09/2023 5:15:32 PM	Received	192.168.0.112	PollReply
1/09/2023 5:15:31 PM	Transmitted	192.168.0.5	Poll
1/09/2023 5:15:27 PM	Received	192.168.0.112	SettingsNewReply
1/09/2023 5:15:27 PM	Transmitted	192.168.0.5	SettingsNew

Network

Port A Port B Port C Port D Recorder

Node MAC Address 00:1A:19:40:00:10

Current IP Address 192.168.0.112

Port 6454

Network Settings

IP Address 192 168 0 112

Subnet Mask 255 255 255 0

Default Gateway 192 168 0 254

Network Mode ☒ Static IP ☐ DHCP

IGMPv2 ☐ Unsolicited Report

Firmware Status

☐ Boot Loader

☒ Application (Hash OK)

☐ Boot Loader Updater

Node Information

Hardware eDMX4 MAX Firmware Version 4.5

Short Name eDMX4 MAX 400010 Update Name

Long Name DMXking.com eDMX4 MAX S/N 001A19400010

Commands

Update Network Settings

Firmware Update

eDMX MAX Configuration can find and configure eDMX MAX nodes on different IP subnets from the computer network adapter using Settings Broadcast mode. Some functions such as the Recorder require both node and computer on the same IP subnet range e.g., Computer IP 192.168.0.100 Subnet 255.255.255.0 Gateway 192.168.0.254 and eDMX MAX on default IP 192.168.0.112 Subnet 255.255.255.0.

Direct connection through a USB Virtual COM Port connection is also possible with firmware v4.3 onwards. It is recommended to try USB Node Communication if Network is unsuccessful and ascertain what the current Network Settings are to assist with diagnosing issues.

Upon startup eDMX nodes are automatically detected and displayed by IP address. To poll for new devices or just check the communications is okay by clicking the **Search** button which will first clear all listed nodes. Polling is automatic every 8 seconds but can be disabled through the **Advanced | Auto Device Poll** menu option. **Mute Responses** option prevents any new nodes from being listed regardless of their status on the network. With large node counts this can be helpful to prevent unwanted eDMX Node list updating.

Click on an eDMX Node entry and all settings will be retrieved. Note that if no response is received the Network tab settings will be greyed out and no additional tabs available. An activity box shows both transmitted and received ArtNet messages to help with diagnosing communication issues. If your network configuration has multiple adapters and/or IP addresses you should select the same network range as the eDMX from the **Network Adapter IP Address** dropdown box and also ensure the subnet mask matches.

Node firmware status is indicated however this will always show Application unless Node Recovery Mode is used.

Firmware Status

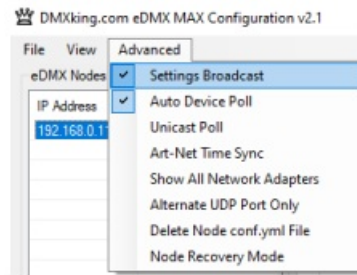
☐ Boot Loader

☒ Application (Hash OK)

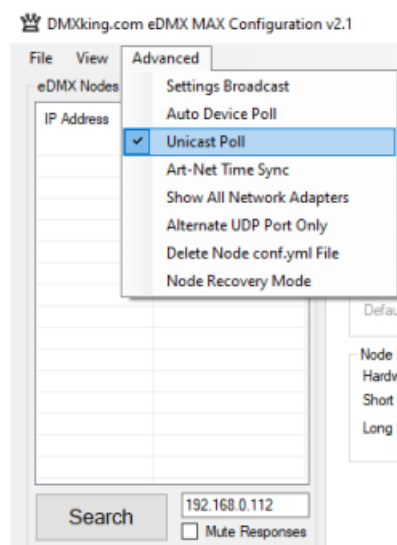
☐ Boot Loader Updater

Settings Broadcast is supported by eDMX MAX which allows node settings to be updated regardless of the network adapter subnet range. This can be enabled or disabled through menu item **Advanced | Settings**

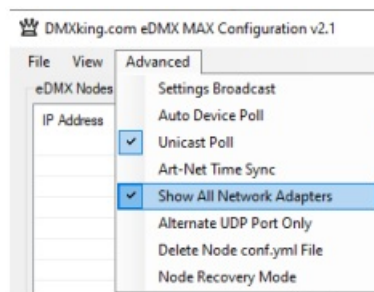
Broadcast.



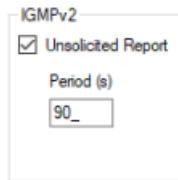
Unicast single node discovery and configuration is possible by selecting **Advanced | Unicast Poll** and entering the destination IPv4 address then click Search. This will function over routed networks assuming the applicable **Default Gateway** has been specified in Network Settings. Both Settings Broadcast and Auto Device Poll are not applicable to Unicast Poll operation.



Some network adapters, such as some VPN virtual adapters, are not listed as standard Ethernet type and will not be included in the Network Adapter list. By default this list excludes non-Ethernet types but optionally all filtering can be disabled with **Advanced | Show All Network Adapters** (requires application restart to take effect). Typically used in conjunction with Unicast Poll for accessing remote eDMX nodes through certain VPN adapters.

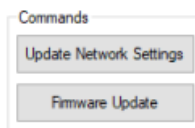


eDMX MAX nodes provide IGMPv2 Reports necessary to participate in a multicast environment as necessary for correct operation in sACN/E1.31 protocol environments. Sometimes due to network infrastructure issues an IGMP querier is not present and in these situations, optionally the node can generate ongoing unsolicited IGMPv2 Reports to maintain open multicast traffic routes through IGMP snooping network switches.

A small configuration window titled "IGMPv2". It contains a checked checkbox labeled "Unsolicited Report" and a text input field labeled "Period (s)" with the value "90_" entered.

To make changes click **Update Network Settings**.

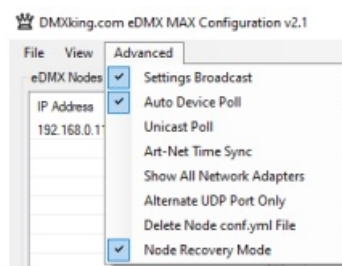
Selecting **Firmware Update** will prompt for an appropriate firmware file and upload upon confirmation. All eDMX hardware includes a built-in network boot loader permitting user updating of eDMX firmware. eDMX MAX hardware with bootloader v1.2+ also includes a built-in USB boot loader (check boot loader version in Node Recovery Mode). Note only signed encrypted firmware files from DMXking.com can be successfully loaded to ensure you won't brick your device by accident. Future firmware releases for this product will be in the form *-500-VersionMajor.VersionMinor.enc

A small menu titled "Commands" containing two buttons: "Update Network Settings" and "Firmware Update".

NETWORK TAB - NODE RECOVERY MODE / DEVICE OPTIONS

eDMX MAX nodes include a Recovery Mode which allows device Firmware Status to be checked and new application firmware to be loaded if a complete factory reset has been performed by the user. Holding the Factory Reset button on power up will wipe the application firmware.

Node Recovery Mode can be activated through menu item **Advanced | Node Recovery Mode**. It is not possible to configure device parameters other than IP network settings and Device Options when in Node Recovery Mode. UDP Port 6456 is used for Node Recovery Mode operations.



DMXking.com eDMX MAX Configuration v2.1

File View Advanced

eDMX Nodes

IP Address	Short Name
192.168.0.112	00:1A:19:40:00:10

Search ArtPoll Broadcast ☐ Mute Responses

Network

Node MAC Address: 00:1A:19:40:00:10

Current IP Address: 192.168.0.112

Port: 6456

Network Settings

IP Address: 192 168 0 112

Subnet Mask: 255 255 255 0

Default Gateway: 192 168 0 254

Network Mode: ☒ Static IP ☐ DHCP

IGMPv2: ☐ Unsolicited Report

Firmware Status

☐ Boot Loader

☒ Application (Hash OK)

☐ Boot Loader Updater

IN OUT

Device Information - Recovery Mode

Hardware: eDMX4 MAX

UID: 59A6EFE4150669D7

Firmware Load Count: 13

Boot Loader Version: 1.2 (1)

Hardware Revision: 0

Application Version: 4.5

Commands

Update Network Settings

Firmware Update

Device Options

☐ Disable USB DMX ☐ Internal FLASH Disk

Update Device Options

Node Communication

☒ Network ☐ USB

COM1 Refresh List 192.168.0.5 255.255.255.0 Intel(R) I210 Gigabit Network

Selected COM Port Selected Network Adapter IP Subnet Mask

Node Report:

ArtNet Messages

Time	Type	Source	ArtNet Messages
3/09/2023 9:54:33 AM	Received	192.168.0.112	RecoverySettingsReply
3/09/2023 9:54:33 AM	Transmitted	192.168.0.5	RecoverySettings
3/09/2023 9:54:28 AM	Received	192.168.0.112	RecoverySettingsReply
3/09/2023 9:54:27 AM	Transmitted	192.168.223.87	RecoverySettings

Additional Device Information is presented and Device Options specific to the hardware are also available.

Device Information - Recovery Mode

Hardware: eDMX4 MAX

UID: 59A6EFE4150669D7

Firmware Load Count: 14

Boot Loader Version: 1.2 (1)

Hardware Revision: 0

Application Version: 4.5

Commands

Update Network Settings

Firmware Update

Device Options

☐ Disable USB DMX

Update Device Options

For applications where it is undesirable to have USB device configuration or USB DMX functionality available the USB port can be disabled with Device Option **Disable USB DMX**.

PORT TAB - DMX512 PORT

DMX512 ports can be individually configured as either DMX-OUT, with automatic dual sACN/Art-Net protocol support, or DMXIN, with manually selected sACN or Art-Net protocol and optional forwarding over USB DMX. The number of available Ports is determined by physical DMX port count on the hardware. Clicking the **Update** button will save all DMX port configurations to non-volatile memory not just the selected DMX port.

DMX-OUT MODE

The screenshot shows the configuration window for a DMX port. At the top, there are tabs for 'Network', 'Port A', 'Port B', 'Port C', 'Port D', and 'Recorder'. The 'Port A' tab is selected. The window is divided into several sections:

- DMX-OUT Options:** Includes 'Async Update Rate' (set to 40hz), 'Merge Mode' (radio buttons for 'Highest Takes Priority (HTP)' and 'Latest Takes Priority (LTP)', and a checkbox for 'Full DMX Frame'.
- DMX-IN Options:** Includes 'Broadcast Threshold' (set to 10) and a checkbox for 'Full DMX Frame'.
- DMX-OUT RDM Settings:** Includes 'Discovery Period' (set to 0s) and 'Packet Spacing' (set to 1 1/20s).
- Port Operation Mode:** Radio buttons for 'DMX-IN Art-Net', 'DMX-IN sACN', and 'DMX-OUT' (selected). There are also checkboxes for 'USB DMX Forward' and 'USB ArtNet/sACN Fwd', and a 'Channel Offset' field (set to 0).
- DMX-OUT Failsafe Mode:** Radio buttons for 'Hold Last' (selected) and 'Snapshot Scene'. There are also checkboxes for 'Outputs Zero' and 'Outputs Full', and a checkbox for 'Recall DMX snapshot at startup'.
- DMX512 Universe:** A field for the universe number (set to 1) and an 'Art-Net Port-Address' field (set to 00 0 0).

An 'Update' button is located at the bottom right of the window.

DMX-OUT Options:

- **Async Update Rate** adjusts DMX512 frame output rate independent of incoming Art-Net/sACN/USBDMX. This is overridden by Universe Sync messages if the lighting controller produces them.
- **Merge Mode** selects how 2 Art-Net/sACN/USBDMX streams of the same DMX512 Universe are merged together.
- **Full DMX Frame** will expand the incoming Art-Net/sACN/USBDMX stream to all 512 channels if there are fewer channels available by filling them with zeros.

DMX-OUT RDM Settings:

- **Discovery Period** adjusts the time between RDM device discovery operations. Set to 0 seconds will disable RDM operation.
- **Packet Spacing** adjusts how frequently RDM packets can interrupt the normal DMX512 stream. Setting this to 0 will allow the fastest possible RDM operation but at the expense of DMX512 frames being cut out.

*RDM functionality is not currently available in eDMX MAX firmware.

DMX512 Universe:

- **DMX512 Universe** is the sACN Universe 1-63999 assigned to this DMX Port. Art-Net Port-Address is automatically overlayed with sACN Universe and displayed for convenience. DMXking products map sACN Universe 1 to Art-Net PortAddress 00:0:0.
- Multiple DMX Ports may be configured to the same DMX512 Universe.

Port Operation Mode:

- **Timeout all sources** provides an optional override of normal Art-Net defined behavior which specifies a DMX port shall output the last received Art-Net frame forever until another is received. This is used in conjunction with **Failsafe Mode** option which is described below.
- **Channel Offset** performs re-mapping of incoming ArtNet/sACN/USBDMX stream(s) by pushing channel 1 up to channel 1+N. When channel 1+N exceeds 512 the extra incoming stream channels are ignored/lost. Setting

to 0 will disable Channel Offset.

DMX-OUT Failsafe Mode:

- **Hold Last.** Last received ArtNet/sACN/USBDMX universe frame is held forever until a new frame is received. **Timeout all sources** must be disabled for **Hold Last** to function otherwise the DMX port will cease output after a 3 second timeout period.
- **Snapshot Scene.** Recall saved Snapshot DMX frame for this channel when all sources have timed out. **Timeout all sources** must be enabled for **Snapshot Scene** recall to function.
- **Outputs Zero.** Set all DMX channel levels to zero when all sources have timed out. **Timeout all sources** must be enabled for **Outputs Zero** to function.
- **Outputs Full.** Set all DMX channel levels to full level when all sources have timed out. **Timeout all sources** must be enabled for **Outputs Full** to function.
- **Recall DMX snapshot at startup.** DMX port will output saved snapshot upon device power up. **Timeout all sources** will be ignored until a new ArtNet/sACN/USBDMX universe frame is received so it is possible to recall the DMX snapshot upon device power up and optionally failsafe DMX snapshot when universe frame reception stops.
- **Snapshot DMX** records the current DMX output for this port into non-volatile memory.

DMX-IN MODE

Network Port A Port B Port C Port D Recorder

DMX-OUT Options

Async Update Rate: 40hz

Merge Mode:
☒ Highest Takes Priority (HTP)
☐ Latest Takes Priority (LTP)

☐ Full DMX Frame

DMX-IN Options

Broadcast Threshold: 10

Unicast IP: 0.0.0.0

☐ Full DMX Frame

DMX-IN sACN Priority

sACN Priority: 100

Port Operation Mode

☐ DMX-IN Art-Net ☐ USB DMX Forward
☒ DMX-IN sACN ☐ USB ArtNet/sACN Fwd
☐ DMX-OUT

☐ Timeout all sources Channel Offset: 0

DMX-OUT Failsafe Mode

☒ Hold Last ☐ Snapshot Scene
☐ Outputs Zero ☐ Outputs Full

☐ Recall DMX snapshot at startup

Snapshot DMX

DMX512 Universe

Art-Net Port-Address: 1 00 0 0

Update

DMX-IN Options:

- **Broadcast Threshold** determines how many Art-Net devices (unicast subscribers) on the same DMX Universe should receive unicast ArtDmx packets before falling back to broadcasting ArtDmx. Set this to zero to always broadcast ArtDmx packets. No effect on DMX-IN sACN operation mode. This setting is only visible on Port A and applies to all DMX ports on the node.
- **Unicast IP.** Specified destination IP address for received DMX frames. This IP address does not have to be on the local subnet and will route through default gateway. Set to IP 0.0.0.0 to disable Unicast IP.
- **Full DMX Frame** will expand the incoming DMX512 frame to all 512 channels if there are fewer channels available by filling them with zeros.

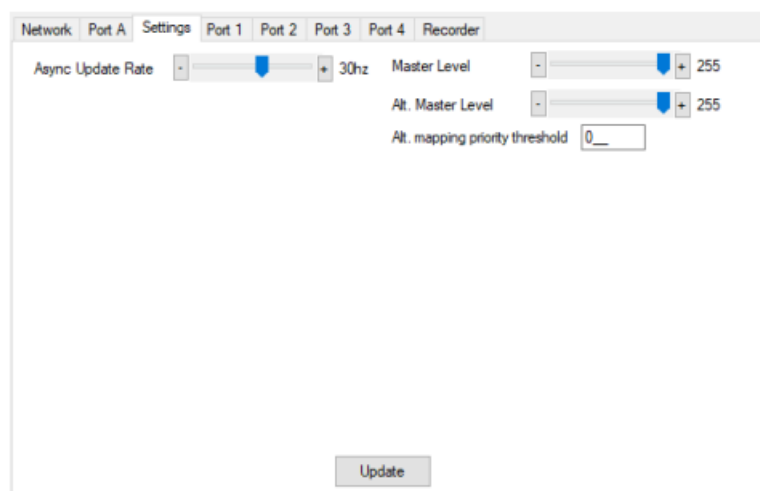
DMX-IN sACN Priority:

- **sACN Priority** sets the priority value tagged to sACN stream data for the DMX-IN port.

Port Operation Mode:

- **USB DMX Forward** enables DMX-IN frames to be directed over USB DMX. Only 1 DMX port can be selected since there is no universe tag.
- **USB ArtNet/sACN Forward** enables DMX-IN frames to be directed over USB DMX using ArtNet/sACN messages. Currently only DMX Display utilizes this forwarding option.
- **Timeout all sources.** When enabled and DMX512 input on the port stops the outgoing ArtNet/sACN/USBDMX stream will end after 3 seconds.
- **Channel Offset.** Incoming DMX512 is re-mapped so channel 1 is pushed up to channel 1+N on the outgoing ArtNet/sACN/USBDMX stream. When incoming DMX512 channel 1+N exceeds 512 the following channels are ignored/lost. Setting to 0 will disable Channel Offset.

SETTINGS TAB - LEDMX



- **Async Update Rate** adjusts Pixel output rate independent of incoming Art-Net/sACN/USBDMX. This is overridden by Universe Sync messages if the lighting controller produces them.
- **Master Level.** Pixel output master level control for all ports. Has no effect for Raw Color Order modes and is overridden by Playback Universe Master Level (see eDMX MAX Recorder Manual).
- **Alternate Master Level.** Pixel output master level control for all outputs when Alternate Mapping is in effect. Has no effect for Raw Color Order modes.
- **Alternate mapping priority threshold.** sACN Priority below which pixel Alternate Mapping parameters are used if no higher Priority sACN stream is present. Threshold is only assessed on the Start Universe for a pixel port. When incoming stream priority is > threshold then Primary mapping applies. Priority <= threshold Alternate mapping applies. For Primary source 100 Priority and Alternate source 50 set threshold between 50 and 99 for example.

PORT TAB - LEDMX PIXEL PORT

Network Port A Settings Port 1 Port 2 Port 3 Port 4 Recorder

Pixels

Pixel Type: WS2811

Pixel Count: 170

Null Pixels: 0

Colour Order: GRB

Primary Mapping

Start Universe: 1

Start Channel: 1

Pixel Group Size: 1

ZigZag: 0

Direction: ☐ Reverse

Alternate Mapping

Start Universe: 5

Start Channel: 1

Pixel Group Size: 1

ZigZag: 0

Direction: ☐ Reverse

Disable Full Mapping Update

Pixels:

- **Pixel Type.** Match your connected Pixel type or an equivalent type. There are clock speed options for many pixel types and recommend slower clock rates for longer cable runs.
- **Pixel Count.** Number of physical pixels in the string. Maximum depends on number of channels per pixel which depends on the Color Order setting. RGB = 1020, RGBW = 768, 2ch = 1536, 1ch = 3072, Raw I+3ch = 768, RGB 16bit = 510, RGBW 16bit = 384.
- **Null Pixels.** Number of pixels to ignore at the start of the pixel strip. Minimum 0. Maximum 16. Commonly used to extend the drive distance from source to the first active pixel.
- **Color Order.** DMX channel mapping to pixel elements. RGB, RBG, GRB, GBR, BRG, BGR, raw 1/2/3/4/5ch, 2ch swapped, RGBW, WRGB, WRBG, GRBW, Raw I+3ch, Raw 3ch 16bit, Raw 4ch 16bit, RGB 16bit, RGBW 16bit.

Primary Mapping:

- **Start Universe.** Art-Net/sACN Universe pixels start mapping from with automatic rollover into subsequent universes
- **Start Channel.** Pixels start mapping from specified channel. Must be 1+ multiple of pixel channel count. **Start Channel** has no effect when **Color Order** is Raw type.
- **Pixel Group Size.** Multiple sequential pixels can be grouped together mapped to less channels. Set to 255 for ALL pixels as specified by **Pixel Count**.
- **ZigZag.** Reverses pixel direction every N pixels.
- **Direction.** Reverse start end of pixel strip based on specified **Pixel Count**.

Alternate Mapping:

- **Start Universe.** Art-Net/sACN Universe pixels start mapping from with automatic rollover into subsequent universes
- **Start Channel.** Pixels start mapping from specified channel. Must be 1+ multiple of pixel channel count. **Start Channel** has no effect when **Color Order** is Raw type.
- **Pixel Group Size.** Multiple sequential pixels can be grouped together mapped to less channels. Set to 255 for ALL pixels as specified by **Pixel Count**.

- **ZigZag.** Reverses pixel direction every N pixels.
- **Direction.** Reverse start end of pixel strip based on specified **Pixel Count**.

RECORDER TAB

Please refer to the eDMX MAX Recorder manual for more information. This functionality is common to all MAX series hardware that includes an SD card socket. Backup battery replacement procedure can also be located in the document.

DMX DISPLAY FUNCTION

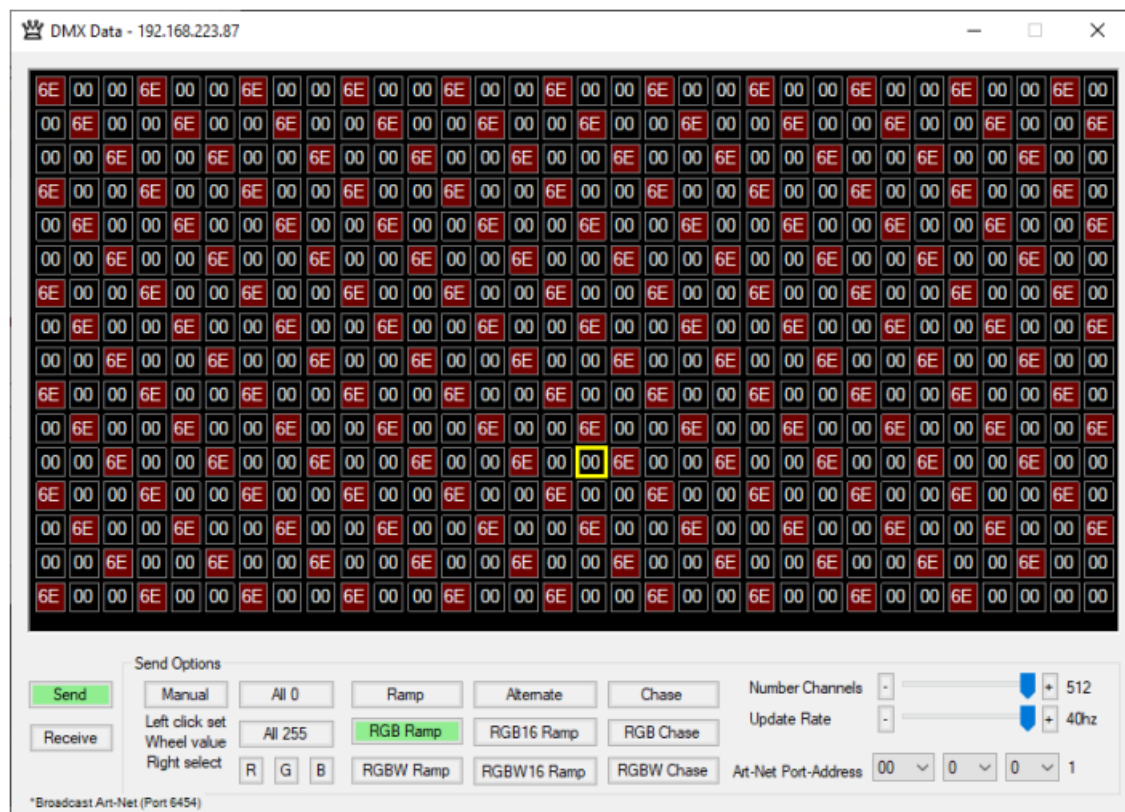
Select **View | DMX Display** for a simple Art-Net DMX512 test utility.

SEND ART-NET

To generate an all-networks (255.255.255.255) broadcast Art-Net output stream click Send then select one of the Send Options. Change Art-Net Universe as applicable, sACN Universe number is displayed next to Art-Net value. When in Manual mode you can click on any of the channels, represented by small boxes with hexadecimal channel level inside, to set ON level and double click to set zero. The mouse scroll wheel adjusts a channel by a defined increment. ON level and mouse wheel step can be set by right clicking anywhere within the channel display area.

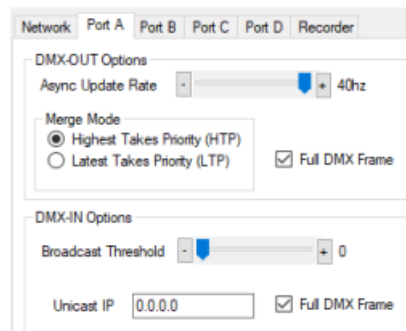
Channel number display increments left to right and top to bottom. Number of channels transmitted and Art-Net output rate can be adjusted as required.

USB Node Communication also functions with DMX Display Send mode and is automatically selected if Node Communication is USB.



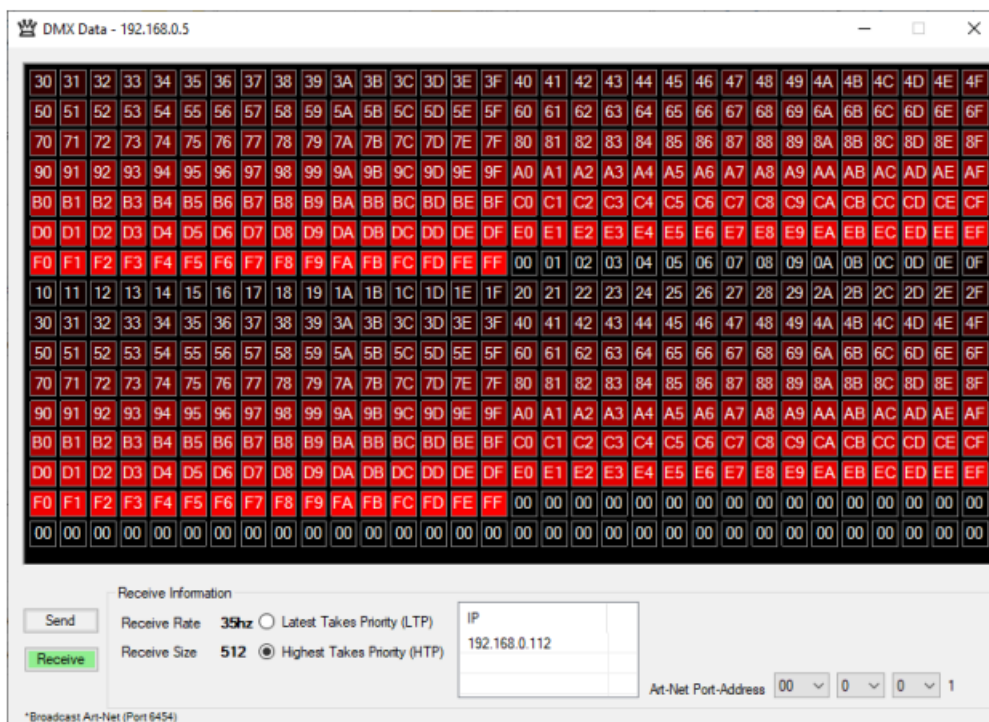
RECEIVE ART-NET

Receive mode will display the selected Art-Net universe number with HTP/LTP merged streams if more than 1 is present. Only Art-Net broadcast streams are supported. To configure an eDMX node to broadcast Art-Net from DMX-IN ports set the Broadcast Threshold to zero on the Port A tab as below.



USB Node Communication also functions with DMX Display Receive mode and is automatically selected if Node Communication is USB. It is also necessary to configure Port Operation Mode option USB ArtNet/sACN Forwarding as below. Not required for Network sourced DMX Data.





NODE REPORT

Node provide a brief status report indicating DMX frame rates, SYNC status, SHOW playback selection and Recorder status.

Node Report: #0001[11]DMX:40,40,40,40 SYNC:Async SHOW:000 REC:Idle

Above an eDMX4 MAX reports Port A,B,C,D at 40fps with no synchronization present (Async mode) and the recorder state Idle.

Node Report: #0001[7]DMX:0,0,0,0 SYNC:Async SHOW:000 REC:No SD

In the example above the recorder status indicates there is No SD card present.

ART-NET NODE NAME

The Art-Net protocol supports device naming which can make larger installations more manageable. Both Short Name (17 characters) and Long Name (63 characters) for an eDMX Device can be edited in the Node Information box.



Art-Net Short Name is also used for sACN protocol name.

SUMMARY OF SETTINGS

Parameter	Usage
MAC Address	Factory programmed Ethernet MAC address / device serial number
IP Address	IPv4 network address
Subnet Mask	Subnet mask, typically 255.0.0.0, 255.255.0.0 or 255.255.255.0
Default Gateway	Address of network gateway (router) for communications beyond local subnet
Network Mode	DHCP or Static IPv4
IGMPv2 Unsolicited Report	IGMPv2 Report messages sent at 5-255 second intervals without active IGMP Querier
Port Operation Mode	DMX-IN Art-Net, DMX-IN sACN, DMX OUT (both Art-Net and sACN are always enabled)
Timeout all sources	Last Art-Net or sACN stream source if lost will timeout DMX-OUT. Loss of DMX-IN signal will timeout outgoing ArtNet or sACN stream. Fixed period 3 seconds.
Channel Offset	Re-mapping offset for DMX-OUT or DMX-IN streams
USB DMX Forward	Enable forwarding of DMX-IN port over simple USB DMX protocol
USB ArtNet/sACN Forward	Enable forwarding of DMX-IN ArtNet/sACN protocols over port over USB DMX
Async Update Rate	DMX512 output frame rate/frequency. Universe Sync takes precedence.
Merge Mode	HTP (Highest Takes Precedence – dimmers), LTP (Last Takes Precedence moving lights)
Full DMX Frame	Force DMX-OUT or DMX-IN to full 512 channel frames with zero levels filling gaps
Broadcast Threshold	0 = Force Art-Net broadcast mode, > 0 Art-Net II/3/4 unicast until threshold of universe subscribers exceeded (DMX-IN global setting located in Port A tab)
Unicast IP	Single IPv4 destination for unicast ArtNet or sACN from DMX-IN. Routable via default gateway.
sACN Priority	DMX-IN sACN Priority value assigned to sACN stream. 0 200, default 100
RDM Discovery Period	Number of seconds between internally initiated RDM Discovery attempt. Setting Discovery Period = 0s will disable RDM
RDM Packet Spacing	Number of 1/20 sec intervals enforced minimum between RDM messages on DMX line
DMX-OUT Failsafe Mode	ArtNet failsafe mode selection. Timeout All Sources must be enabled for all options other than Hold Last.
Recall DMX snapshot at startup	Recall snapshot scene at power on and output until Art-Net or sACN stream received. Snapshot DMX button records current DMX output to snapshot memory.
DMX Universe	sACN 1-63999 which is translated to an Art-Net Port-Address (Net:Sub:Uni). Setting DMX Universe = 1 -> sACN Universe = 1 and Art-Net 00:0:0 (i.e. Universe 1 = Art-Net Universe 0)

2. PORTS, MERGING, PRIORITY AND DMX INPUT

PORTS AND MERGING

Each DMX Port is fully independent which allows for configurations including setting multiple ports to the same universe. Some merging combinations are not supported on devices with only 1 DMX port and ultraDMX MAX is a special case since the only interface is USB.

eDMX MAX nodes are capable of several advanced merging and stream priority switching functions. Support for both HTP (Highest Takes Precedence) and LTP (Latest Takes Precedence) merging of 2 sources producing a single DMX512 output thus permitting 2 controllers to simultaneously operate on 1 lighting rig. To achieve DMX stream merging simply send 2 Art-Net or sACN streams on the same Universe and configure the applicable DMX OUT port merge scheme HTP or LTP. If the number of sources exceeds 2 only the first 2 will be processed and all new streams that appear are simply dropped. Possible merging sources are:

Source	Notes
Art-Net I, II, 3 or 4	Priority 100 is assigned to permit Art-Net + sACN or USB merge/priority functionality.
sACN / E1.31	Only sACN sources of the same Priority will be HTP or LTP merged.
USB DMX	Priority 100 is assigned to permit USB DMX + Art-Net or sACN merge/priority functionality.
DMX-IN Art-Net	Configure DMX-IN port universe to match a DMX-OUT port universe. Priority is locked to 100 since Art-Net does not have a Priority value.
DMX-IN sACN	Configure DMX-IN port universe to match a DMX-OUT port universe. Priority is defined by the DMX port configuration sACN Priority value.

SUPPORTED MERGING COMBINATIONS

Source 1	Source 2	Notes
Art-Net	Art-Net	Sources are timed out 3 seconds after last received frame.
sACN / E1.31	sACN / E1.31	Sources will end immediately upon sACN stream termination flag, otherwise 3 second time out after last received frame.
Art-Net	sACN / E1.31	Art-Net source timed out 3 seconds after last received frame, sACN stream termination flag otherwise 3 second timeout after last received frame.
Art-Net	USB D MX	Sources are timed out 3 seconds after last received frame.
sACN / E1.31	USB D MX	USB DMX source timed out 3 seconds after last received frame, sACN stream termination flag otherwise 3 second timeout after last received frame.
DMX-IN	Art-Net	Merge external DMX512 source with incoming Art-Net stream.
DMX-IN	sACN / E1.31	Merge external DMX512 source with incoming sACN stream.
DMX-IN	USB D MX	Merge external DMX512 source with incoming USB DMX stream.
DMX-IN (1)	DMX-IN (2)	Merge 2 external DMX512 sources. Priority is defined by the respective port configuration sACN Priority.

SACN / E1.31 PRIORITY

At any time if a higher priority sACN stream, on the same Universe, is received it will take over control a DMX-OUT port regardless of other incoming streams or merging. When an sACN stream is stopped gracefully via a stream terminate message the eDMX MAX port will immediately revert to whatever other sources are present, otherwise the default stream timeout of 3 seconds applies. If you want to HTP/LTP merge two sACN streams together they must be of the same priority.

Both Art-Net and USB DMX streams are internally assigned Priority 100 so they can participate in sACN Priority.

SACN / E1.31 PRIORITY - DMX RECEIVE

When a port is configured for DMX-IN sACN operation the sACN Priority can be set. This permits DMX Inputs to generate sACN multicast or unicast streams with a specified priority.

DMX512 IN - UNICAST / BROADCAST / MULTICAST

For DMX512 signal fed into an eDMX MAX Port configured as **DMX-IN Art-Net** the following will determine Art-Net unicast or broadcast:

1. If Broadcast Threshold = 0 the frame is always broadcast on the IP subnet.
2. If Broadcast Threshold > 0 and number of detected Art-Net II/3/4 devices "subscribed" to that universe is less than the threshold the frame is unicast to each device.
3. If Broadcast Threshold > 0 and the number of detected Art-Net II/3/4 devices "subscribed" to that universe is greater than the threshold the frame is broadcast on the subnet.

4. If Broadcast Threshold > 0 and zero Art-Net II/3/4 devices are “subscribed” to that universe the frame is broadcast on the subnet.
5. If Fixed IP is **not** 0.0.0.0 the frame is only unicast to that single specified IPv4 address.

There are multiple ways broadcasting of Art-Net from DMX-IN can occur. The implementation ensures compatibility with mixed Art-Net I/II/3/4 device networks but still permits unicast when Art-Net II/3/4 devices are used exclusively.

For **DMX-IN sACN** multicast frames will be generated when Fixed IP is 0.0.0.0 otherwise frames are unicast to the specified destination.


3. SUPPORT

How to obtain support

Contact your local distributor <https://www.dmxking.com/distributors>

[DMXking.com](https://www.dmxking.com) • JPK Systems Limited • New Zealand
0135-700-2.1 17

Documents / Resources

 <p>eDMX MAX Configuration Utility</p>	<p>DMXking eDMX MAX Configuration Utility [pdf] User Manual ultraDMX MAX, eDMX PRO series, eDMX MAX Configuration Utility, Configuration Utility, Utility</p>
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References

-  [HOME](#)
-  [DISTRIBUTORS](#)