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# LeDMX4 PRO

# Interface



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## USER MANUAL

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## 1. INTRODUCTION

Thanks for purchasing a DMXking.com product. Our aim is to bring you high quality products with great features we know you'll appreciate. We ship only what's required which is why there's no CD or printed manual in the box, this is part of our commitment to minimizing environmental impact.

This user manual covers features up to v3.7 firmware. Some functionality may not be available with earlier firmware versions.

The DMXking.com LeDMX4 PRO is available in 2 versions.

Model	Features
LeDMX4 PRO 5V	Directly drives 5V LED pixel products. Can also provide signal drive for 5-24V LED pixel products where separate power supplies are used.
LeDMX4 PRO 12V	Directly drives 12V – 24V LED pixel products.

Please check carefully before applying power that you have the correct voltage and polarity!

In many LED pixel installations, especially where the majority of pixels may be running simultaneously at full brightness, it is necessary to inject DC power at various points along the pixel strip or string. Although the LeDMX4 PRO can only provide up to 5A per output port terminal block this is not a limitation since currents higher than that will require power injection along the strip anyhow.

## HARDWARE AND FIRMWARE VERSIONS

From time to time minor hardware changes occur in our products usually small feature additions or unseen optimizations. The table below lists LeDMX4 PRO product variants. Check the product label for P/N details.

Part Number	Feature addition
0106-1.0	Initial product release
0106-1.1	Accessory port for external play back triggering added

Firmware updates are released on a semi-regular basis. We recommend updating to the latest available firmware version so all product features are available. Please take note the user manual reflects latest firmware version features unless otherwise noted.

Firmware Version	Comments
v2.2	Initial release
v2.3	Split AP104 from WS281x for timing optimization. Corrected timing issue with ports 1&2.
v2.4	Relaxed Art-Net protocol version check to account for Arkaos byte order error.
v2.6	ArtNet 4 support, IGMP report fix, DMX Port A usable for pixel output source and sync universe, Snapshot Port A useable for pixel output, Full Mapping mode enhancements, Pixel output engine improvements, HTP Merging for pixel outputs, DHCP support added.
v3.0	Record playback added, RDM enhancements, Universe Sync, IGMP report when universe change + unsolicited option, DMX IN Single IP. *Update to v3.1 is highly recommend.
v3.1	Maximum 4 universes mapped to each pixel output 680 RGB, ArtNet 4 all pixel universes reported, NodeReport messages, External trigger port added, RGBW support, Additional pixel types, Auto-universe

	usage based on pixel configuration, ArtAddress configuration of pixel universes, Zero pixel length issues eliminated, Dynamic IGMP reporting based on current port configurations.
v3.3	Record/playback enhancements, up/down show trigger limited to consecutive range, individual show scripts, tftp delete function, pixel output master level control, APA102C Intensity+XXX 4ch mapping, sACN multicast playback, fixed bug with DMX IN pixel control without network, blackout show255 defined, UCS8903/UCS8904 16bit RGB/RGBW pixel support.
v3.5	CR+LF no longer required on last script line, Extend full mapping to RGBW RGB16 RGBW16 color mappings over 4 universes, Pixel Group Size 255 means all pixels regardless of Pixel Count, Automatic blanking of pixel outputs upon power up.
V3.6	WS2822S/DMX512-P pixel support. Master Level channel configurable. External trigger Up behavior loops back to show001 when next is non-existent. Playback groups of 10 shows option added for triggering multiple units independently from same trigger universe.
v3.7	DMXworkshop excess ArtPoll bytes accepted, Full frame DMX512 option DMX-IN & DMX-OUT, Broadcast ArtNet playback over network, ArtPollReply includes UID report, ArtNet fail safe modes, NTP time sync and time zone with DST, DMX-IN & DMX-OUT re-mapping channel offset, Timeout all sources for DMX-IN, sACN CID fix for multiple DMX-IN ports on same universe, sACN Universe Sync enhancements, Recording from DMX-IN sources, Default Gateway added to ArtIpProg, Numerous Record/playback enhancements (see eDMX Recorder manual), Alternate pixel mapping option.

## MAIN FEATURES

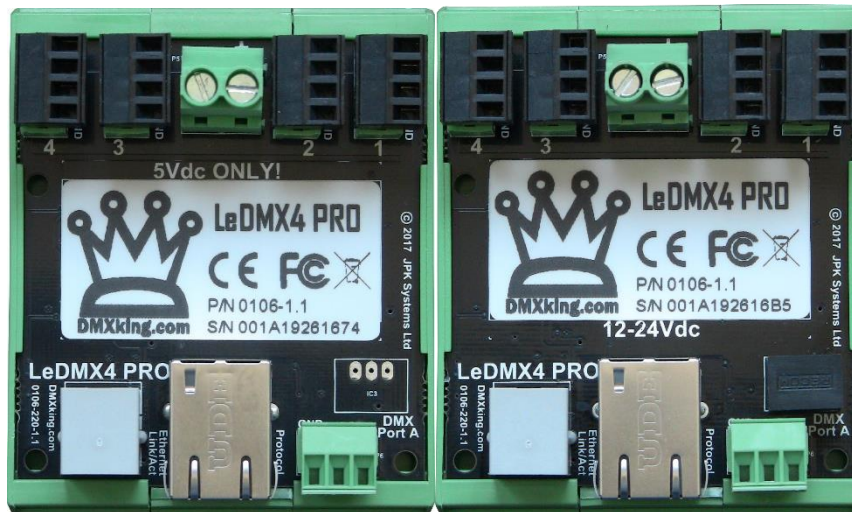
- Designed for integration into your custom LED designs
- DIN rail mount with DIN clip accessory
- 4 Independent pixel outputs each with 5A supply capability
- 1x DMX512 IN/OUT port
- Directly drives WS2811, WS2812, WS2812B, WS2813, WS2815, WS2822S UCS1903, UCS2903, UCS2912, UCS8903, UCS8904, PL9823, TM1934, APA101, SK9822, APA102, APA104, APA106, APA107, NS107, INK1002, INK1003, SM16703, SK6812, WS2801, LPD6803, LPD8806, DMX512-P and many more compatible LED strips
- Selectable clock/data rate to suit long cables or fast output
- Up to 680 RGB pixels or 512 RGBW pixels per output spanning 4 DMX universes (2720 RGB pixels / 16 universes per board). Requires firmware 3.1+
- Up to 340 16bit RGB pixels or 256 16bit RGBW pixels per output. Requires firmware 3.3+
- Automatic RGB, RGBW color order correction or raw mapping options
- Per pixel intensity control for APA102/SK9822 utilizing the 5bit current pre-regulator. Requires firmware 3.3+
- Master Level control independent of incoming universe streams. Requires firmware 3.3+
- Flexible Full Mapping option for outputs permitting any start address and zig-zag corrections of RGB, RGB16, RGBW and RGBW16 pixel types
- Alternate Full Mapping and Master Level changeover with sACN Priority threshold
- Null pixel support for longer runs to first active pixel
- Static IP or DHCP network addressing
- Supported operating systems: Any with Ethernet networking support. Windows, MAC OS, Linux, iOS, Android....
- Art-Net broadcast, Art-Net II,3 & 4 unicast, sACN/E1.31 Multicast and sACN Unicast support
- HTP Merging of 2 Art-Net or sACN sources in any combination
- Merge 2 streams of Art-Net/sACN or DMX input -> Pixel universe output
- DMX512 Input Port -> Pixel universe output
- sACN Priority takeover for multi-tier controller arrangements
- Mix and match ArtNet with sACN merge/priority sources
- User configuration of Art-Net Node short and long names
- Fully compatible with \*ALL\* software and hardware that supports Art-Net I, II, 3 & 4 and sACN protocols
- Works with your existing console if Art-Net or sACN external nodes are supported
- Universe Sync Art-Net, sACN and Madrix Post Sync. Requires firmware v3.0+
- Recording and playback to microSD card (not included). See eDMX PRO Record / Playback manual
- Standalone show playback without computer or network connection
- Internal clock with NTP time sync for timed playback
- Configuration utility with basic Art-Net output/input test functionality
- Firmware updates can be performed by end user

IMPORTANT: In many LED pixel installations, especially where the majority of pixels may be running simultaneously at full brightness, it is necessary to inject DC power at various points along the pixel strip or string. Although the LeDMX4 PRO can only provide up to 5A per output port terminal block this is not a limitation since currents higher than that would require power injection along the strip anyhow. Contact DMXking technical support for additional advice.

**LeDMX4 PRO products consider Art-Net 00:0:0 to be Universe 1 (i.e. offset by 1) so there is an easy mapping between sACN/E1.31 and Art-Net.**

## 2. CONNECTIONS

### LEDMX4 PRO



5V LeDMX4 PRO

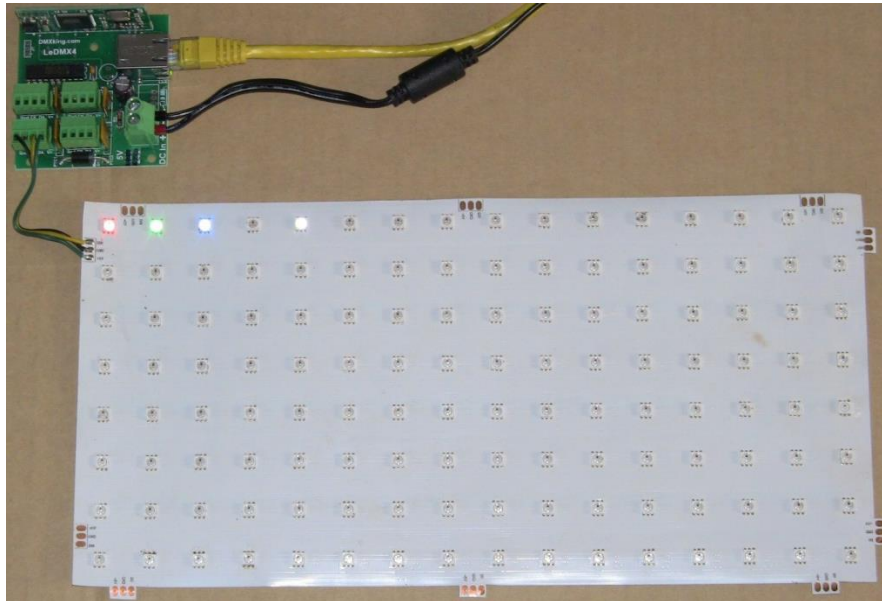
12-24V LeDMX4 PRO

- DC Power Input – Supply polarity marked on board. Note supply voltage is marked. Pay careful attention!
- Ethernet 10/100Mbps RJ45 socket
- 4x 4way 3.5mm pitch pluggable terminal blocks for pixel strip outputs. GND, Clock [CK], Data [DA], V+
- 1x 3way 3.81mm pitch pluggable terminal block for DMX512 port.
- Warning not all pixel strips/products use the same wire color code. Double check the signal names match wire colors.
- Optional DIN rail clips available for insulated board carrier supplied with unit.

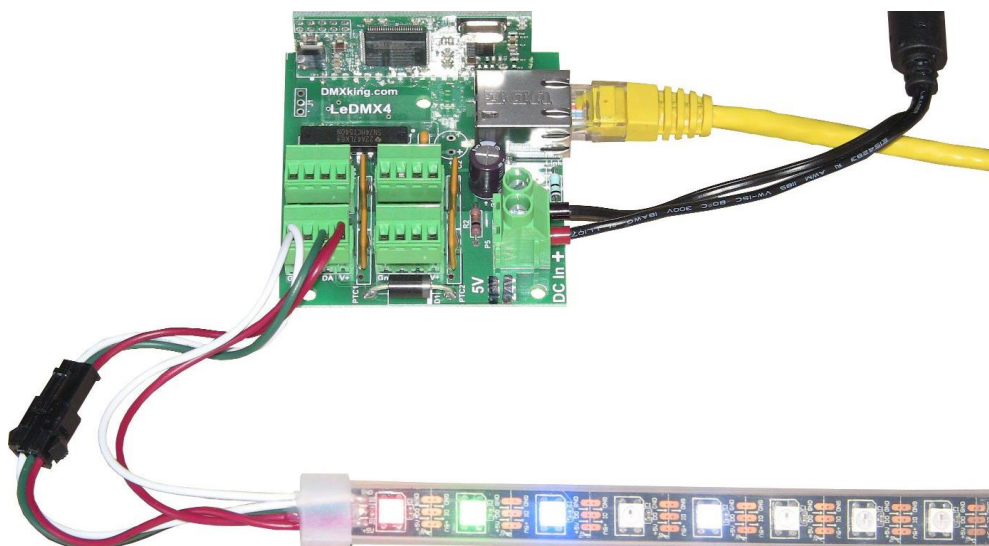
## STATUS LED TABLE

LED	Indication
Protocol – During power up	Flash Yellow during boot up for 2 seconds. Solid Yellow after boot up = Firmware Update mode.
Protocol – Operation	Protocol activity. Flash Yellow = Art-Net/sACN. Slow/fast regular flash = Record Playback functions.
Network	Network activity. Green = Link, Flash = Traffic

## TYPICAL APPLICATIONS



LED Pixel Array



LED Pixel Strip

There are many pixel types and form factors available. Please check carefully when designing for your application.



### 3. DEFAULT CONFIGURATION

LeDMX4 PRO units ship with default static IP address settings. Please reconfigure for your local area network requirements before use.

Default configuration is for WS2811/2812 pixel output with automatic RGB color order correction and 1 DMX universe mapping to 170 RGB pixels per output.

#### **Network Tab**

Parameter	Default Setting
Network Mode	Static IP
IP Address	192.168.0.113
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.254
IGMPv2 Unsolicited Report	<i>Unchecked</i>

Pixel Output and Art-Net configuration parameters are configured with the following default values.

#### **Settings Tab – v3.7+ firmware**

Parameter	Default Setting
Update Rate	30Hz - Universe Sync will override.
Master Level	255 – Full output intensity.
Alternate Master Level	255 – Full output intensity.
Alt. mapping priority threshold	0 – Alternate Mapping Disabled.

#### **Settings Tab – v3.1+ firmware – update your firmware!**

Parameter	Default Setting
Update Rate	30Hz - Universe Sync will override.

#### **Settings Tab – v3.0 firmware and earlier – update your firmware!**

Parameter	Default Setting
Update Rate	30Hz

Synchronization Mode	None (not used in firmware 3.0+)
Pixel Mapping Mode	RGB 1 Universe
Incoming Universes	1 thru 16 (Art-Net 00:0:0 – 00:0:F)

**Port Tabs (1-4) – v3.7+ firmware**

Parameter	Default Setting
Pixel Type	WS2811
Pixel Count	170
Null Pixels	0
Color Order	GRB
Primary Start Universe	1,2,3,4 (Ports 1,2,3,4 respectively)
Primary Start Channel	1
Primary Pixel Group Size	1
Primary ZigZag	0
Primary Direction	Normal (unticked)
Alternate Start Universe	1,2,3,4 (Ports 1,2,3,4 respectively)
Alternate Start Channel	1
Alternate Pixel Group Size	1
Alternate ZigZag	0
Alternate Direction	Normal (unticked)

**Port Tab A (DMX512 port)**

Parameter	Default Setting
Async Update Rate	40 [DMX512 frames per second]. Universe Sync will override.
Port Operation Mode	DMX-OUT
Timeout all sources	<i>Unchecked</i>
Channel Offset	0
Fixed IP	0.0.0.0 [Only for DMX IN – Unicast to 1 IP address only]
Merge Mode	HTP

Full DMX Frame	<i>Unchecked</i>
Broadcast Threshold	10 [Art-Net II/3/4 unicasting up to 10 nodes]. Set to 0 for Art-Net I broadcast on DMX IN ports.
Unicast IP [DMX-IN]	0.0.0.0
sACN Priority [DMX-IN]	100
RDM Discovery Period [DMX-OUT]	0s / RDM Disabled
RDM Packet Spacing [DMX-OUT]	1/20s
DMX-OUT Failsafe Mode	Hold Last
Recall DMX Snapshot at startup	<i>Unchecked</i>
DMX512 Universe	1-4 [Net 00, Subnet 0, Universe 0-3] <b>Note: sACN Universe 1 = Art-Net 00:0:0</b>

#### 4. CONFIGURATION UTILITY

The eDMX Configuration utility provides a simple interface to all device parameters. Typically, parameters are set once during initial configuration and left untouched. If you are not confident in setting up network IP Address, Subnet Mask and Default Gateway parameters please get in touch with DMXking.com support and we'll walk you through the process. DHCP is supported from firmware v2.6 onwards.

**IMPORTANT:** Once you've finished configuring your eDMX product close the configuration utility before starting your lighting control application if it's running from the same computer. In general, only 1 Art-Net application will function at a time.

The screenshot shows the 'Network' tab of the DMXking.com eDMX Configuration v1.20 utility. The interface includes a menu bar (File, View, Advanced), a toolbar, and several sections:

- eDMX Nodes:** A table listing detected nodes. The selected node is 192.168.223.119, identified as 'LeDMX4 PRO 2615...'.
 

IP Address	Short Name
192.168.223.111	eDMX1 PRO 2813D7
192.168.223.114	eDMX2 PRO 221223
192.168.223.118	eDMX4 PRO 201286
192.168.223.119	LeDMX4 PRO 2615...
- Search:** A button to refresh the node list.
- ArtPoll Broadcast:** A checkbox labeled 'Mute Responses'.
- Node MAC Address:** 00:1A:19:26:15:AA
- Current IP Address:** 192.168.223.119
- Network Settings:**
  - IP Address: 192.168.223.119
  - Subnet Mask: 255.255.255.0
  - Default Gateway: 192.168.223.254
- Network Mode:**
  - ☐ 2.155.21.170
  - ☐ 10.155.21.170
  - ☒ Static IP
  - ☐ DHCP
- IGMPv2:** ☐ Unsolicited Report
- Node Information:**
  - Hardware: LeDMX PRO
  - Firmware Version: 3.7
  - Long Name: DMXking.com LeDMX4 PRO S/N 001A192615AA
- Commands:**
  - Update Network Settings
  - Firmware Update
- Computer Network Adapter IP Address / Subnet Mask:**
  - 192.168.223.5
  - 255.255.255.0
  - Intel(R) I210 Gigabit Network Connection
- Node Report:** #0001[110]DMX:0 PIX:30 SYNC:Async SHOW:000 REC:Idle
- Messages:** A table showing network activity.
 

Time	Type	Source	ArtNet Messages
17/10/2020 10:10:25 AM	Transmitted	192.168.223.5	Poll
17/10/2020 10:10:19 AM	Received	192.168.223.111	PollReply
17/10/2020 10:10:18 AM	Received	192.168.223.114	PollReply
17/10/2020 10:10:18 AM	Received	192.168.223.118	PollReply

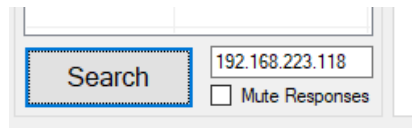
Before starting the eDMX Configuration utility please ensure your computer has appropriate IPv4 network settings, for example IP 192.168.0.100 Subnet 255.255.255.0 Gateway 192.168.0.254.

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 **Search**. From v1.16 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.

Click on the desired node's entry and all Settings will be retrieved. Note that if no response is received the settings will be greyed out and no additional tabs visible. An activity box shows both transmitted and received 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 is appropriate.

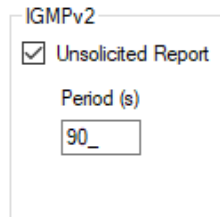
Utility v1.20 uses **Settings Broadcast** by default which allows node settings to be updated regardless of the network adapter subnet range. This only works if all detected nodes are firmware v3.0+ and is automatically disabled otherwise.

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 provided a **Default Gateway** has been specified in the node Network Settings.



Search 192.168.223.118 ☐ Mute Responses

All eDMX/LeDMX/ultraDMX PRO nodes provide IGMPv2 Reports necessary to participate in a multicast environment as necessary for sACN/E1.31 protocol. Sometimes due to network infrastructure issues an IGMP querier is not present and in these situations, you can opt to have the node generate ongoing unsolicited IGMPv2 Reports.



IGMPv2  
☒ Unsolicited Report  
Period (s)  
90\_

To change the node Network Settings make applicable changes then click **Update Network Settings**.

Selecting **Firmware Update** will prompt for an appropriate firmware file and upload upon confirmation. A built-in boot loader permits updating of the eDMX firmware. We do not recommend performing firmware updates over routed networks. 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 0106-500-VersionMajor.VersionMinor.enc

The screenshot shows the 'Settings' tab selected in the top navigation bar. Below the tabs, there are three rows of settings:

- Async Update Rate:** A slider with minus and plus buttons, currently set to 30hz.
- Master Level:** A slider with minus and plus buttons, currently set to 255.
- Alt. Master Level:** A slider with minus and plus buttons, currently set to 255.
- Alt. mapping priority threshold:** A text input field containing the value 0.

An 'Update' button is located at the bottom center of the settings area.

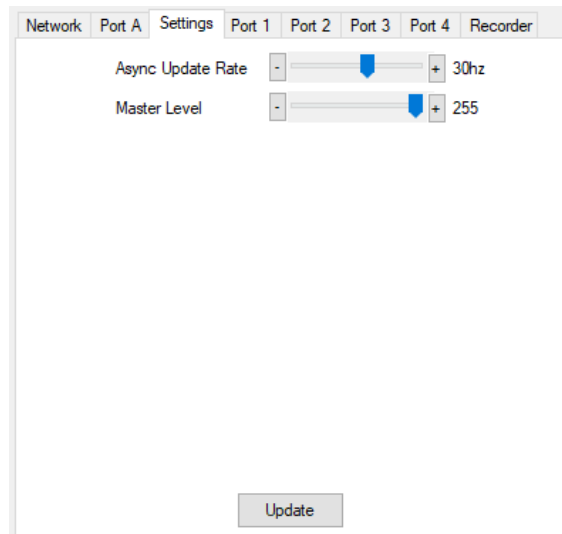
Make changes as required then click “Update” to save settings in your LeDMX4 PRO unit.

The following table explains each of the settings parameters.

Parameter	Usage
Update Rate	Frequency LED strip receives updates from Incoming Universe data. Universe Sync takes precedence.
Master Level	Pixel output master level control for all outputs. Has no effect for Raw Colour Order modes and is overridden by Playback Universe Master Level (see Recorder Manual).
Alternate Master Level	Pixel output master level control for all outputs when Alternate Mapping is in effect. Has no effect for Raw Colour Order modes.
Alternate mapping priority threshold	sACN Priority below which Alternate Mapping parameters are used if no higher Priority sACN stream is present. Threshold is assessed on the Start Universe only.

## SETTINGS TAB – FIRMWARE 3.3+

If your settings tab looks like this it's time to update firmware. Download the latest eDMX Configuration Utility and perform the update!



Make changes as required then click “Update” to save settings in your LeDMX4 PRO unit.

The following table explains each of the settings parameters.

Parameter	Usage
Update Rate	Frequency LED strip receives updates from Incoming Universe data. Universe Sync takes precedence.
Master Level	Pixel output master level control for all outputs. Has no effect for Raw Colour Order modes and is overridden by Playback Universe Master Level (see Recorder Manual).

From firmware v3.1+ pixel mapping mode and universe usage are inferred from the pixel port settings so there is no longer any need to specify these parameters separately and are excluded from the Settings tab accordingly in newer versions of eDMX Configuration.

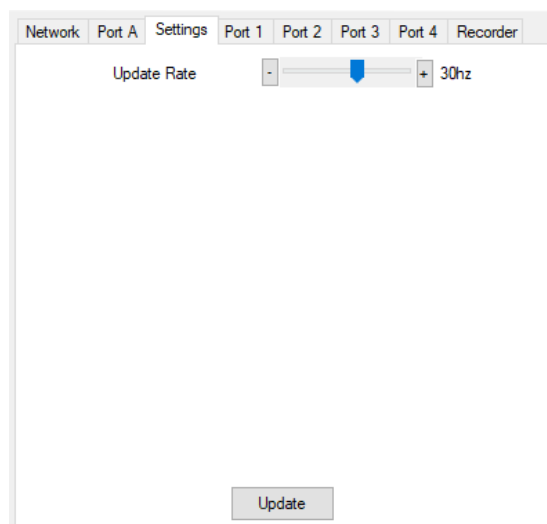
From firmware v3.1+ universe synchronization modes are automatically activated upon receiving sACN Universe Sync, ArtSync or Madrix Post Sync packets. Because of the inherent incompatibility between these synchronization schemes it is up to the user to ensure only 1 is present on the network.

Firmware 3.3+ includes a Master Level control. With APA102 (a.k.a. APA101, SK9822) pixel types the 5bit pre-output current control is used for Master Level. All other pixel types are computed from channel levels \* master level resulting in a resolution loss at lower levels. Use UCS8903 or UCS8904 16 bit pixels for better control of low output levels.

**\*\*ToDo** Alternate mapping priority threshold. 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. Note only first universe mapped to pixel port is used to decide priorities.

## SETTINGS TAB – FIRMWARE 3.1+

If your settings tab looks like this it's time to update firmware. Download the latest eDMX Configuration Utility and perform the update!



Make changes as required then click “Update” to save settings in your LeDMX4 PRO unit.

The following table explains each of the settings parameters.

Parameter	Usage
Update Rate	Frequency LED strip receives updates from Incoming Universe data. Universe Sync takes precedence.

From firmware v3.1+ pixel mapping mode and universe usage are inferred from the pixel port settings so there is no longer any need to specify these parameters separately and are excluded from the Settings tab accordingly in newer versions of eDMX Configuration.

From firmware v3.1+ universe synchronization modes are automatically activated upon receiving sACN Universe Sync, ArtSync or Madrix Post Sync packets. Because of the inherent incompatibility between these synchronization schemes it is up to the user to ensure only 1 is present on the network.



## SETTINGS TAB – FIRMWARE 3.0 AND EARLIER

If your settings tab looks like this it's time to update firmware. Download the latest eDMX Configuration Utility and perform the update!

The screenshot shows the 'Settings' tab of the eDMX Configuration Utility. The 'Update Rate' is set to 30hz. 'Synchronization Mode' is set to 'None'. 'Pixel Mapping Mode' is set to 'RGB 1 Universe'. Below these settings is a table titled 'Incoming sACN / Art-Net Universes' with two columns: 'sACN' and 'Art-Net 3'. The table contains 16 rows, each representing a universe. The 'sACN' column has values from 1 to 16, and the 'Art-Net 3' column has values from 00 to 0F. An 'Update' button is located at the bottom of the table.

sACN	Art-Net 3	sACN	Art-Net 3
1	00	0	0
2	00	0	1
3	00	0	2
4	00	0	3
5	00	0	4
6	00	0	5
7	00	0	6
8	00	0	7
9	00	0	8
10	00	0	9
11	00	0	A
12	00	0	B
13	00	0	C
14	00	0	D
15	00	0	E
16	00	0	F

Make changes as required then click “Update” to save settings in your LeDMX4 PRO unit.

The following table explains each of the settings parameters.

Parameter	Usage
Update Rate	Frequency LED strip receives updates from Incoming Universe data. Universe Sync takes precedence.
Synchronization Mode	This setting is deprecated from v3.0 firmware onwards. Universe sync now occurs automatically if Art-Net Sync, sACN Universe Sync, or Madrix Post Sync are present on the network.
Pixel Mapping Mode	RGB pixel mapping to DMX512 data. Raw 1U   Raw 2U   RGB remap 1U   RGB remap 2U   Full mapping with group size, zigzag and direction. Of note full mapping of 340 pixels may actually span 3 universes depending on the start channel and pixel count.
Incoming Universes	These 16 universes are a filtering mechanism. All universes mapped to Ports must be included otherwise data won't be received. Note when sACN Universe > 32767 is specified Art-Net wraps back to universe 00:0:0 again.

Raw 1U/2U or RGB 1U/2U Pixel Mapping Modes are recommended unless your software package is not capable of re-mapping pixel locations. Most packages are now capable of this functionality which reduces processing requirements on the LeDMX4 PRO itself.

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

Pixel Type

Pixel Count

Null Pixels

Colour Order

Start Universe

Full Mapping Options

Start Channel

Pixel Group Size

ZigZag

Direction ☐ Reverse

*Click Update under Settings tab to apply*

Port tab – v3.6 firmware and earlier

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

Pixels

Pixel Type

Pixel Count

Null Pixels

Colour Order

Primary Mapping

Start Universe

Start Channel

Pixel Group Size

ZigZag

Direction ☐ Reverse

Alternate Mapping

Start Universe

Start Channel

Pixel Group Size

ZigZag

Direction ☐ Reverse

Port tab – v3.7+ firmware

Make changes as required then click “Update” in the Settings Tab to save settings in your LeDMX PRO unit. The Disable Full Mapping button returns Start Channel, Pixel Group Size, ZigZag and Direction to defaults that ensure Full Mapping mode is not activated in firmware v3.1+. Firmware v3.0 required explicit setting of Full Mapping mode through the Settings tab whereas v3.1+ uses an automatic detection based on these parameters.

Not all Pixel Types and Color Orders are implemented in earlier firmware versions. The configuration utility will let you select an unsupported type but it will revert to a default if unsupported. We highly recommend using the latest firmware and configuration utility releases.

**Port 1 & Port 2 are locked to the same Pixel Type and Pixel Count.** There is no problem with physical pixel count being less than the configured Pixel Count.

### **Firmware 3.7+**

<b>Parameter (3.3+)</b>	<b>Usage</b>
Pixel Type	Must match your connected Pixel type. There are clock speed options for many pixel types and we recommended slower 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 = 680, RGBW = 512, 2ch = 1024, 1ch = 2048, Raw I+3ch = 512, RGB 16bit = 340, RGBW 16bit = 256.
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 Start Universe	sACN/Art-Net Universe number pixels are mapped to.
Primary Start Channel	DMX512 channel number pixel data starts from.
Primary Pixel Group Size	Multiple sequential pixels can be mapped to a channel group. Set to 255 for ALL pixels regardless of actual Pixel Count.
Primary Zig Zag	Reverses pixel direction every N pixels.
Primary Direction	Reverse makes pixel 1 appear at the far end of the strip.
Alternate Start Universe	Alternate sACN/Art-Net Universe number pixels are mapped to.
Alternate Start Channel	Alternate DMX512 channel number pixel data starts from.
Alternate Pixel Group Size	Alternate map. Multiple sequential pixels can be mapped to a channel group. Set to 255 for ALL pixels regardless of actual Pixel Count.
Alternate Zig Zag	Alternate Reverses pixel direction every N pixels.
Alternate Direction	Alternate map. Reverse makes pixel 1 appear at the far end of the strip.

### **Firmware 3.3+**

<b>Parameter (3.3+)</b>	<b>Usage</b>
Pixel Type	Must match your connected Pixel type. There are clock speed options for many pixel types and we recommended slower 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 = 680, RGBW = 512, 2ch = 1024, 1ch = 2048, Raw I+3ch = 512, RGB 16bit = 340, RGBW 16bit = 256.
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 1+3ch, Raw 3ch 16bit, Raw 4ch 16bit, RGB 16bit, RGBW 16bit.
Start Universe	sACN/Art-Net Universe number pixels are mapped to.
Start Channel	DMX512 channel number pixel data starts from. Only RGB/3ch pixels supported.
Pixel Group Size	Multiple sequential pixels can be mapped to an RGB/3ch DMX channel group. Only RGB/3ch pixels supported. Maximum group size 255.
Zig Zag	Reverses pixel direction every N RGB/3ch pixels. Only RGB/3ch pixels supported.
Direction	Reverse makes pixel 1 appear at the far end of the RGB strip. Only RGB/3ch pixels supported.

### ***Firmware 3.1+***

Parameter (3.1+)	Usage
Pixel Type	Must match your connected Pixel type. There are clock speed options for many pixel types and we recommended slower 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 = 680, RGBW = 512, 2ch = 1024, 1ch = 2048.
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.
Start Universe	sACN/Art-Net Universe number pixels are mapped to.
Start Channel	DMX512 channel number pixel data starts from. Only RGB/3ch pixels supported.
Pixel Group Size	Multiple sequential pixels can be mapped to an RGB/3ch DMX channel group. Only RGB/3ch pixels supported. Maximum group size 255.
Zig Zag	Reverses pixel direction every N RGB/3ch pixels. Only RGB/3ch pixels supported.
Direction	Reverse makes pixel 1 appear at the far end of the RGB strip. Only RGB/3ch pixels supported.

### ***Firmware 3.0 and earlier***

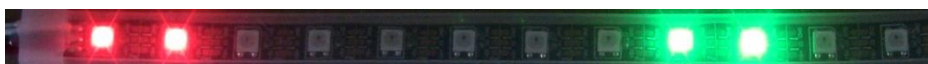
Parameter (3.0 and lower)	Usage
Pixel Type	Must match your connected Pixel type. There are clock speed options for many pixel types and we recommended slower rates for longer cable runs.
Pixel Count	Number of physical RGB pixels in the string (i.e. 1 pixel = R+G+B 3 channels). Maximum 340.
Null Pixels	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 RGB elements. RGB, RBG, GRB, GBR, BRG, BGR. This parameter is ignored when Raw 1U or Raw 2U mode is selected.
Start Universe	sACN/Art-Net Universe number pixels are mapped to. Note you must include this universe in your Incoming sACN/Art-Net universe table as well.
Start Channel	DMX512 channel number pixel data starts from. This parameter is ignored when Raw 1U, Raw2U, RGB 1U and RGB 2U mode is selected.
Pixel Group Size	Multiple sequential pixels can be mapped to an RGB DMX channel group. Only used with Full Mapping mode. Maximum group size 255.
Zig Zag	Reverses pixel direction every N pixels. Only used with Full Mapping mode.
Direction	Reverse makes pixel 1 appear at the far end of the strip. Only used with Full Mapping mode.

Some examples of Full Mapping from source DMX512 data ch1 = Full (Pixel 1 Red), ch14 = Full (Pixel 5 Green). Port 1 configured with Pixel Count = 12, Null Pixels = 0, Start Universe = 1, Start Channel = 0.



Pixel Group Size = 1



Pixel Group Size = 2



Reverse Order. Pixel Group Size = 1

The screenshot shows the 'Port A Settings' window with the 'Settings' tab selected. The 'Port Operation Mode' is set to 'DMX-OUT'. The 'DMX-OUT Options' section includes 'Async Update Rate' at 40hz, 'Merge Mode' set to 'Highest Takes Priority (HTP)', and a 'Full DMX Frame' checkbox. The 'DMX-IN Options' section includes a 'Broadcast Threshold' at 10 and a 'Full DMX Frame' checkbox. The 'DMX-OUT RDM Settings' section includes 'Discovery Period' at 0s and 'Packet Spacing' at 1 1/20s. The 'DMX-OUT Failsafe Mode' section includes 'Hold Last' selected, 'Snapshot Scene', 'Outputs Zero', 'Outputs Full', and a 'Recall DMX snapshot at startup' checkbox. The 'DMX512 Universe' is set to 33 and the 'Art-Net Port-Address' is 0020. An 'Update' button is at the bottom right.

Port Operation Mode: DMX-OUT

The screenshot shows the 'Port A Settings' window with the 'Settings' tab selected. The 'Port Operation Mode' is set to 'DMX-IN sACN'. The 'DMX-OUT Options' section includes 'Async Update Rate' at 40hz, 'Merge Mode' set to 'Highest Takes Priority (HTP)', and a 'Full DMX Frame' checkbox. The 'DMX-IN Options' section includes a 'Broadcast Threshold' at 10, a 'Unicast IP' field set to 0.0.0.0, and a 'Full DMX Frame' checkbox. The 'DMX-IN sACN Priority' section includes a 'sACN Priority' slider set to 100. The 'DMX-OUT Failsafe Mode' section includes 'Hold Last' selected, 'Snapshot Scene', 'Outputs Zero', 'Outputs Full', and a 'Recall DMX snapshot at startup' checkbox. The 'DMX512 Universe' is set to 33 and the 'Art-Net Port-Address' is 0020. An 'Update' button is at the bottom right.

Port Operation Mode: DMX-IN sACN with sACN Priority 100

DMX512 ports can be individually configured as either DMX-OUT, with automatic dual sACN/Art-Net protocol support, or DMX-IN, with manually selected sACN or Art-Net protocol. When configured as DMX-IN a single **Unicast IP** address destination may be specified but in the majority of applications leaving this field at 0.0.0.0 is appropriate.

**Timeout all sources** can be used to override default ArtNet defined behavior of holding the last sent or received frame forever.

- DMX-OUT mode: Whenever 2 sources are present and being merged together a 2<sup>nd</sup> source will always timeout when the stream stops. In DMX-OUT mode if **Timeout all sources** is unchecked and Hold Last mode selected the output will hold last frame forever. **Timeout all sources** checked and Failsafe Mode other than Hold Last selected will cause the output to change to Zero, Full or Snapshot Scene.

- DMX-IN mode: An ArtNet or sACN stream is generated upon receiving DMX512 on the port. **Timeout all sources** checked will cause this stream to end a few seconds after the DMX512 signal stops.

**Channel Offset** provides simple re-mapping for both DMX-OUT and DMX-IN port configurations. Set to 0 for no re-mapping.

- DMX-OUT mode: Incoming ArtNet or sACN stream(s) are re-mapped so channel 1 is pushed up to channel 1+N. When channel 1+N exceeds 512 the incoming stream channels are ignored/lost.
- DMX-IN mode: Incoming DMX512 is re-mapped so channel 1 is pushed up to channel 1+N on the outgoing ArtNet or sACN stream. When incoming DMX512 channel 1+N exceeds 512 to channels are ignored/lost.

Make changes to the applicable Port settings then click **Update**. Changes on all port tabs are updated regardless of which tab the **Update** button is clicked.

Network	Port A	Settings	Port 1	Port 2	Port 3	Port 4	Recorder
<div> <div> <b>Recorder Settings</b>  <input checked="" type="checkbox"/> Playback Enable  <input checked="" type="checkbox"/> Record Enable  <input type="checkbox"/> Playback Merge  <input type="checkbox"/> Record Monitor  <input type="checkbox"/> Network Playback </div> <div> <b>Show Settings</b>  <input type="checkbox"/> B/O Show After Stop  <input type="checkbox"/> Hold Last Scene  <input type="checkbox"/> Last Show Recall </div> <div> <b>TFTP</b>  <input checked="" type="checkbox"/> Read Access  <input checked="" type="checkbox"/> Write Access            Restricted Client IP  <input type="text" value="0.0.0.0"/> </div> </div> <div> <b>Time</b>            NTP Server IP <input type="text" value="202.46.177.18"/>            NTP Poll Interval <input type="text" value="2"/> Hours            Time Zone <input type="text" value="UTC +12:00"/>  <input type="checkbox"/> US Date Format  <b>Daylight Savings</b>  <input checked="" type="checkbox"/> DST Enabled  <input type="radio"/> Specified <input checked="" type="radio"/> Recurring  <div> <div>DST Begin</div> <div>DST End</div> </div> <div> <div>Month <input type="text" value="September"/></div> <div>Week Num <input type="text" value="Last"/></div> <div>Week Day <input type="text" value="Sunday"/></div> <div>Hour <input type="text" value="2"/></div> </div> </div> <div> <b>Show Triggering</b>  <input type="checkbox"/> eDMX Trigger <input type="checkbox"/> Up/Down/Go  <input type="checkbox"/> eDMX Control <input type="checkbox"/> Skip Script  <input type="checkbox"/> Playback Trigger Universe            Universe <input type="text" value="1"/> <input type="text" value="00"/> <input type="text" value="0"/> <input type="text" value="0"/>            Playback Group <input type="text" value="0"/>  <input type="checkbox"/> Playback Master Level            DMX Channel <input type="text" value="1"/>  <input type="checkbox"/> Show Run Until Complete  <input type="checkbox"/> Broadcast Triggers  <input type="checkbox"/> Record Trigger Universe            Universe <input type="text" value="1"/> <input type="text" value="00"/> <input type="text" value="0"/> <input type="text" value="0"/>            DMX Channel <input type="text" value="1"/> </div> <div>Update Settings</div>							

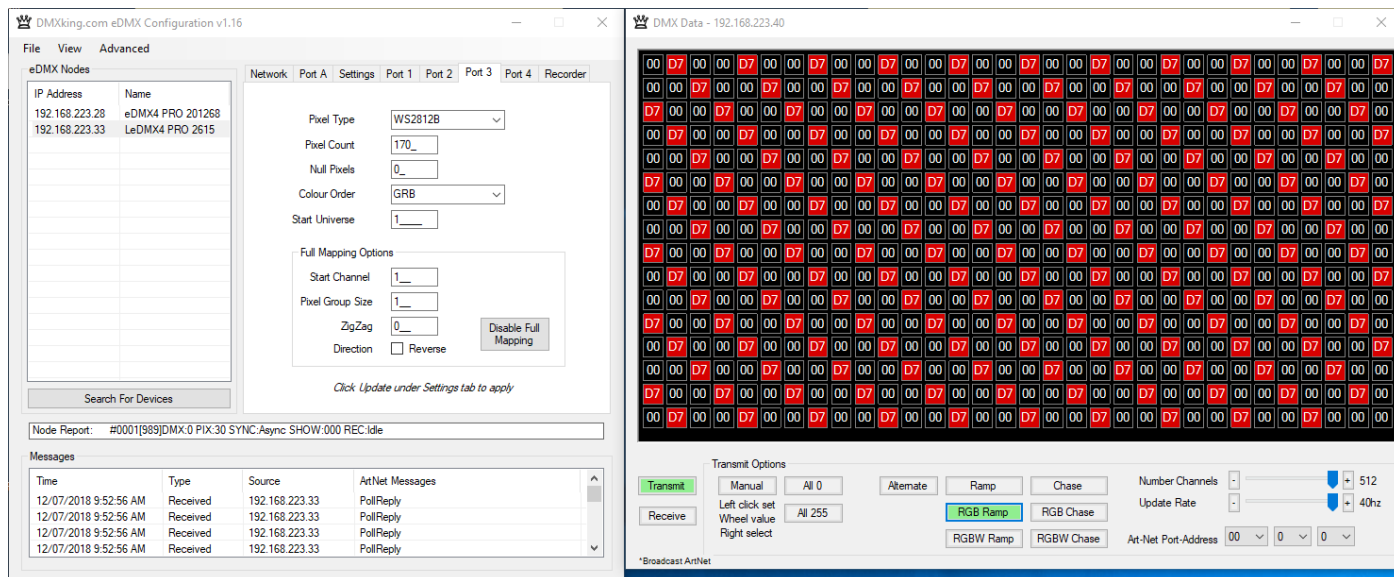
Please refer to the eDMX PRO Recorder manual for more information. This functionality is common to all eDMX PRO, LeDMX PRO and ultraDMX2 PRO devices.



## DMX DISPLAY FUNCTION

Select **View | DMX Display** for a simple DMX512 test utility. To generate an Art-Net output stream click Transmit then select one of the 10 Transmit Options and change Art-Net Universe as applicable. 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. Channel number increases left to right, top to bottom and the roaming tool tip provides information about a specific channel.

Both the ON level and mouse wheel step can be set by right clicking anywhere within the black display area. Number of channels transmitted and the refresh rate can be adjusted using the applicable sliders adjacent to transmit options.



The DMX Display utility works with any manufacturers Art-Net hardware and can be useful for diagnostics and simple testing of DMX512 fixtures. In Receive mode only Art-Net I broadcast traffic is supported. To display channel data from an eDMX/LeDMX DMX-In port you must configure Broadcast Threshold to 0 otherwise Art-Net messages will be unicast.

## NODE REPORT

Node Report: #0001[1022]DMX:0 PIX:30 SYNC:Async SHOW:000 REC:Idle

From firmware v3.3+ each node provides a brief status report indicating DMX frame rates, PIXel output rate, SYNC status, SHOW playback selection and RECorder status.

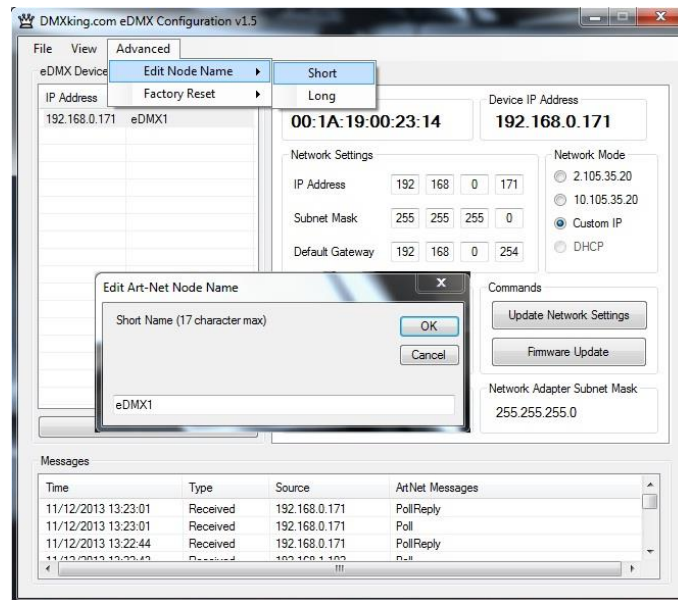
Above an LeDMX4 PRO reports Port A at 0fps, Pixel output at 30fps with no synchronization present (Async mode) and the recorder state Idle.

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 LeDMX Device can be modified using the **Advanced | Edit Node Name** dialog.



## FACTORY RESET

This is a last resort option if for whatever reason incorrect or forgotten device network settings have rendered your device unusable. A word of warning – this function will factory reset **\*ALL\*** eDMX devices on your network so it's critical to separate off the device requiring reset. We recommend directly connecting a computer and eDMX device using a crossover cable so there's no chance of additional eDMX devices accidentally being reset too.

Several warnings are presented before the command is sent. This function is not intended for use with eDMX/LeDMX PRO and ultraDMX2 PRO devices and will not have any effect in firmware 3.0+.

## SUMMARY OF SETTINGS

Parameter	Usage
MAC Address	Factory programmed Ethernet MAC address
IP Address	IPv4 network address
Subnet Mask	Subnet mask, typically 255.0.0.0, 255.255.0.0 or 255.255.255.0 for class A,B & C respectively
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
Port Operation Mode	DMX-IN Art-Net, DMX-IN sACN, DMX OUT (both Art-Net and sACN are always enabled). Fixed IP is 0.0.0.0 by default which equates to multicast sACN or automatic unicast/broadcast Art-Net. Setting a Fixed IP forces DMX-IN ArtNet or sACN unicast to 1 IP only.
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.
Channel Offset	Re-mapping for DMX-OUT or DMX-IN streams
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 (DMX-IN)
Unicast IP	Single IPv4 destination for unicast ArtNet or sACN from DMX-IN
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 <b>disable RDM</b>
RDM Packet Spacing	Number of 1/20sec intervals enforced minimum between RDM messages on DMX line
DMX-OUT Failsafe Mode	ArtNet failsafe mode selection. Timeout All Sources must be checked 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 results in sACN Universe = 1 and Art-Net 00:0:0 (Universe 1 = Art-Net Universe 0)

## 5. PORTS, MERGING, PRIORITY AND DMX INPUT

### DMX512 PORT A AND MERGING

eDMX Products are capable of several advanced merging and stream selection functions usually only found on high priced equipment. Support for both HTP (Highest Takes Precedence) and LTP (Latest Takes Precedence) merging of 2 sources producing a single DMX512/pixel universe output thus permitting 2 controllers to co-exist for 1 lighting rig. To achieve DMX stream merging simply send 2 Art-Net or sACN streams with the same Universe ID and configure the applicable merge scheme HTP or LTP. If the number of sources exceeds 2 only the first 2 will be processed and all others are dropped. Possible merging sources are:

Source	Notes
Art-Net I, II, 3 or 4	Priority 100 is assigned to permit Art-Net + sACN merge/priority functionality.
sACN / E1.31	Only sACN sources of the same Priority will be HTP or LTP merged.

### PIXEL PORTS AND MERGING

LeDMX4 PRO firmware v3.0+ supports HTP merging of 2 sources producing a single pixel universe output thus permitting 2 controllers to co-exist for 1 lighting rig. To achieve DMX stream merging simply send 2 Art-Net or sACN streams with the same Universe ID. If the number of sources exceeds 2 only the first 2 will be processed and all others are dropped. Possible merging sources are:

Source	Notes
Art-Net I, II, 3 or 4	Priority 100 is assigned to permit Art-Net + sACN merge/priority functionality.
sACN / E1.31	Only sACN sources of the same Priority will be HTP or LTP merged.
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 port configuration sACN Priority.

### 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 timeout 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.
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.

## SACN / E1.31 PRIORITY

At any time if a higher priority sACN stream is received it will take over control a DMX Out channel / Pixel Universe regardless of other incoming streams or merging. When an sACN stream is stopped gracefully via a stream terminate message the eDMX port / Pixel Universe will immediately revert to whatever other sources are present, otherwise the default stream timeout of 3 seconds applies. If you want to merge 2 sACN streams together they must be of the same 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 specific priority.

## DMX512 IN – UNICAST / BROADCAST / MULTICAST

When you feed a DMX512 signal into an eDMX 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 the specified IPv4 address.

As you can see there are multiple ways broadcast could occur. The implementation is done like this to ensure compatibility with mixed Art-Net I/II/3/4 device networks but still permit 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.

## 6. COMPATIBLE SOFTWARE

Art-Net/sACN and DMX512 are the most commonly used lighting control protocols with roots in simple theatrical light dimming. These days almost any lighting or stage effect equipment may be controlled using DMX512 including LED pixels.

The DMXking.com LeDMX4 PRO unit is a 4 Pixel Output + 1 DMX512 sACN/Art-Net device designed for use with computer-based show control and effect software.

Check the following page for a short list of compatible software:

<http://dmxking.com/control-software>

## 7. TECHNICAL SPECIFICATIONS

- Dimensions: 72mm x 65mm x 29mm (WxDxH).
- Weight: 80grams.
- Power input 5Vdc or 12-24Vdc depending on model purchased.
- Control electronics power requirements: 5Vdc @ 200mA (or 12-24Vdc @ 150mA max for 12V model)
- Maximum continuous current per output 5A.
- Buffered 5V Clock and Data lines.
- WS2811, WS2812, WS2812B, WS2813, UCS1903, UCS2903, UCS2912, UCS8903, UCS8904, PL9823, TM1934, APA101, APA102, SK9822, APA104, APA106, APA107, INK1002, INK1003, SM16703, SK6812, WS2801, LPD6803, LPD8806 pixel types and equivalents supported. Note many pixels are actually the exact same protocol timing as those listed. Check with DMXking support.
- Fast 800kHz and slow 400kHz data rates supported for WS2811 / APA104.
- SPI pixels can be clocked at 500kHz, 1MHz, 2MHz and 4MHz
- Up to 680 RGB pixels / 4 DMX universes per output.
- Art-Net, Art-Net II, Art-Net 3, Art-Net 4 and sACN/E1.31 support.
- Universe Sync Art-Net, sACN and Madrix Post Sync.
- Both HTP and LTP merging of 2 Art-Net/sACN streams on Port A
- HTP merging of 2 Art-Net/sACN streams on Pixel ports
- sACN Priority
- IPv4 Addressing
- IGMPv2 for multicast network management
- Ethernet 10/100BaseT.

## 8. WHERE DO I BUY LED PIXELS?

There are *many* sources for LED pixels in strip and other formats. Pretty much all of it comes out of China and it can be more cost effective to source through sites such as Aliexpress which provide individual item sales without much effort.

Try these Aliexpress stores or direct from a manufacturer:

- <https://kinggreen.aliexpress.com/store/713947>
- <https://www.aliexpress.com/store/701799>
- <http://www.shiji-led.com/Index/index.html>

## 9. FREQUENTLY ASKED QUESTIONS

Q: Does DMXking recommend any particular type of pixels or control ICs?

A: We highly recommend APA102/SK9822 pixels because they have a higher clocking rate and an additional 5bit master current control. This really helps with smooth fades at reduced Master Level.

Q: What is DMX512P? Is this DMX512?

A: Yes and No. Actually, more No than Yes. Someone thought it would be a good idea to use DMX512 signaling for pixel control but it really makes no sense and creates confusion because it's not a differential signal like real DMX512. Connect DMX512P pixels to the Pixel Ports only so the signal levels are appropriate.

Q: How big should my power supply be?

A: It depends on the pixel count, output intensity, and how many pixels will be lit simultaneously. Often power supplies are oversized when calculations are done assuming all pixels might be on at full intensity. There is no straight answer and per pixel current consumption should be ascertained from the product datasheet.

Q: Why do my pixels start going pink instead of white further along the strip?

A: What's happening is the power supply voltage is dropping and generally blue LEDs will drop in current first since they have the highest forward voltage. This is simply  $V=IR$  and different strips will exhibit different results because their conductor resistance might be higher/lower. By injecting power again (from the same power supply or another power supply) along the strip at intervals it is possible to mitigate the voltage drop effects. Higher voltage strips/pixels (12V or 24V) are usually less susceptible to color fade issues.

Q: Can I use my LeDMX4 PRO 5V unit to run 12V pixels?

A: Yes but you'll need 2 power supplies. The first, a 5Vdc unit, powers only the LeDMX4 PRO unit. The second, a 12Vdc unit, powers only the LED pixels. Connect only DA/CLK and GND between the LED pixels and LeDMX4 PRO unit. Do not connect to V+ on the output connectors!

Q: Is it possible to control pixel outputs from DMX512 rather than Art-Net/sACN over the network?

A: Yes but there's only 1 DMX512 port and thus 1 DMX Universe available so you're constrained in how many pixels can be controlled. Of course using Full Mapping mode with >1 Pixel Group size it's possible to stretch that 1 universe a little further. Just configure Port A as DMX-In sACN on the same universe you've configured a pixel output.

Q: I'm use WS2813 pixels with dual signal wires. What should I connect to the LeDMX4 PRO pixel port?

A: Only the DATA IN wire from the pixel strip should be connect to DA on the LeDMX4 PRO. Do not connect the DATA OUT return wire to anything.

Q: I accidentally connected 12V to my 5V unit is it dead?

A: At the very least you have fried the output driver IC.

Q: The power supply I purchased has exposed AC input terminals. Is this safe?

A: No. Unless you are suitably qualified please defer all AC mains wiring to applicable professionals. Safety first.

Q: My question doesn't appear here.

A: Ask our technical support people. Maybe it'll appear in the next user manual too.



## 10. WARRANTY

### DMXKING.COM HARDWARE LIMITED WARRANTY

#### What is covered

This warranty covers any defects in materials or workmanship with the exceptions stated below.

#### How long coverage lasts

This warranty runs for one year from the date of shipment from an authorized DMXking.com distributor.

#### What is not covered

Failure due to operator error or incorrect application of product. Opening the unit voids the warranty.

#### What DMXking.com will do

DMXking.com will repair or replace, at its sole discretion, the defective hardware. Return shipping costs from our service facility in New Zealand shall be free of charge.

#### How to obtain service

Contact DMXking.com directly by email [sales@dmxking.com](mailto:sales@dmxking.com)

## 11. DECLARATIONS (FCC & CE)

### FEDERAL COMMUNICATIONS COMMISSION (FCC) DECLARATION OF CONFORMITY

Responsible Party: JPK Systems Limited  
PO Box 493  
Pukekohe 2340  
New Zealand

declares that the product LeDMX4 PRO complies with Part 15 of the FCC rules.

Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## EEC DECLARATION

We

JPK Systems Limited  
PO Box 493  
Pukekohe 2340  
New Zealand

declare under our sole responsibility that our product LeDMX4 PRO conforms to the requirements of Council Directives 89/336/EEC and 73/23/EEC and therefore complies with the requirements of Council Directive 73/23/EEC, (The Low Voltage Directive) on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits as amended by Article 13 of Council Directive 93/68/EEC

- EN 55103-1
- EN 55103-2
- EN 60065

Signed: Jason Kyle

Date: 22 December 2015

Position: Managing Director