

COEX Art-Net Protocol



Instructions

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1 Applicable Products

Product Type	Model	Version
LED display controller	MX40 Pro, MX30, MX20, KU20	V1.4.0
Software	VMP	V1.4.0

2 Service Description

2.1 About Art-Net

To use the Art-Net protocol, you need both a transmitter (such as a console or control PC) and a receiver (like a lighting system or LED display control system). For Art-Net to function correctly, both the transmitter and receiver must be on the same local area network (LAN).

When the sender transmits Art-Net data to the specified receiver (based on IP addressing), the message includes the controlled universe number, controlled channel number, and the value. **Currently, the control software used on the PC is DMXworkshop**.

The receiver needs to configure the universe number it belongs to, the channel number, the configurable parameter range, and the parameter type corresponding to the channel.

For example, the Art-Net control PC sends universe 1, channel 1, value 255 to the LED display controller, and when the LED display controller receives the data, it can map the parameter to a function to achieve the adjustment of that function.

2.2 Receiver Configuration

After selecting a device from the device list on the left side of VMP, click Tools > Control in the menu bar and the following page will appear:

Control (New Screen 1)								
Art-NetImage: ConfigurationConfigurationGlobalV		1 Global V						
	Channel	Property	Minimum	Maximum				
	1	Brightness		100				
	2	ColorTemp	1700	15000				
		DisplayMode						
	▼ Sel	ect Source 🔍						
	4	BlackLevel		200				
	5	WhiteLevel		200				
	6	Saturation		200				
	7	Hue	-180	180				
	8	RedShadow		200				
	9	GreenShadow		200				
	10	BlueShadow		200				
	11	RedHighLight		200				
	12	GreenHighLight		200				
	13	BlueHighLight	0	200				

- Switch: Click on the Art-Net switch to adjust the Art-Net switch status of the controller.
- Universe: Each controller must be configured with one universe number, and only one universe number is supported. The range of universe number can be set: 1-32767.



- Configuration: Each controller supports multiple channels. Available channel range is: 1-512. A total of 4 sets of configurations are available for the controller: **Global**, **Source**, **Image Quality**, **Preset**. The 4 configurations can be switched in the drop-down box of the configuration. Each set of configuration defines the parameters that can be set for each channel. After selecting the relevant configuration, the above page will present the corresponding configuration of the channel configuration
- Select Source: When the configuration is switched to Global or Source, the input source type of the input source channel needs to be designated. For example, channels 1-10 correspond to parameters such as black level and contrast of the input source, respectively, but the channel needs to be specified as HDMI or DP, etc. Therefore, the specific source that can be specified depends on the current input source type of the controller.
- Changing maximum and minimum values: Except for the display mode channel in the Global configuration and the preset switching channel in the Preset configuration, the maximum and minimum values of all other channels can be set, and the range is: -32768 to 32767. When a value that exceeds this range is entered, the extreme value will be displayed.

Maximum and minimum values represent the range of parameters mapped to the data range (0-255) for one channel of the control PC.

For example: For the Global configuration, if the minimum and maximum values of the channel 1 brightness are set to 0 and 100, respectively, the data "0" transmitted from the control PC software will be mapped to 0% brightness, and "100" will be mapped to 100% brightness, that is, (0-255) is mapped to (0-100). If the minimum and maximum values are set to 0 and 255, respectively, the data "0" transmitted from the control PC software will be mapped to 0% brightness, "100" will be mapped to 100% brightness, and the mapping for transmitted values over 100 will be invalid, that is, (0-255) is mapped to (0-255).

• When there are multiple devices, if there are different settings between the devices, **Mixed** state will occur. Using the reset button as shown in the figure below can restore all configurations to the default configuration (The default universe number is 1. The default values of each channel in Global configuration are shown in the table below. The display mode and preset do not support the adjustment of the channel range).

Control (Ne	w Screen 1)			×
Art-Net Universe Configuration	1 Mixed V			
Channel	Property	Minimum	Maximum	
	Please select the	same configuration before set Reset	ting	

Brightness	0	100	
Color Temperature	1700	15000	
Display Mode	0	2	
Black Level	0	200	
Contrast	0	200	
Saturation	0	200	
Hue	-180	180	

Red Shadow	0	200
Green Shadow	0	200
Blue Shadow	0	200
Red Highlight	0	200
Green Highlight	0	200
Blue Highlight	0	200
Preset	1	128

3 Operating Procedure

• The control PC software is DMXworkshop. Connect the control PC and the controller to the same LAN and set them to be on the same network segment. Then, open DMXworkshop software. From the NIC drop-down box, select the IP Address that are on the same LAN as the controller.



• After selecting the device in the device list on the left side of VMP, click Tools > Control in the menu bar, turn on the Art-Net function, configure the universe value to 666, and configure other parameters (optional).

				ro 1	
Control (Nev	v Screen 1)				×
Art-Net Universe Configuration	666 Global				
Channel	Property	Minimur	n	Maximum	
1	Brightness	0		255	
2	ColorTemp	1700		15000	
3	DisplayMode				
▼ HD	MI 2 🗸				
4	BlackLevel			200	d
	WhiteLevel			200	
	Saturation			200	
7	Hue	-180		180	
8	RedShadow			200	
9	GreenShadow			200	
10	BlueShadow			200	
11	RedHighLight			200	
12	GreenHighLight			200	
13	BlueHighLight	0		200	

 In DMX software, click Node, and click Refresh to see if the selected controller device has been discovered.

🔍 DMX-Wo	orkshop					
Node List	NIC	Recovery	Transmit	Receive	DALI	MIDI
Node List						×
Driver Versio	on: V4.18	HostIp: 172.	17.6.50			
Node Status	Output Routin	g Art-Net Node I	Report			
Active Art-Ne	et Nodes:		(Refresh)	Discover RDM All L	ocates Off	
.	17.6.127]					
	17.6.112]					
	17.6.51]					

If a controller has been found, click Transmit > Transmit dynamic DMX. Select On for Output and Single Static for Mode. Set Start Chan to the channel to which the parameter you want to adjust belongs. Then, perform Pipe Settings: set Protocol to Art-Net Manual, fill in the Manual IP field with the selected controller IP, and set Universe to be the same as the controller Universe (the universe number range of the software only supports 1 to 32767). Last, adjust the Level slider to see if the corresponding parameter of the controller follows the value of the slider.



• Or click **Transmit-Transmit preset**, and select **On** for **Output**. Then, perform **Pipe Settings**: set **Protocol** to **Art-Net** Manual, fill in the **Manual IP** field with the selected controller IP, and set **Universe** to be the same as the controller Universe (the universe number range of the software only supports 1 to 32767). Last, adjust the slider corresponding to the channel number to see if the corresponding parameter of the controller follows the value of the slider.



R DI	MX-Wo	orksho	p									
No	de List		VIC	Rec	overy	Ŧ	Tra	ansmi	t] -	Receive	DALI	MIDI
Tran	smit p	reset										×
0									0	Pipe Settin Protocol Manual IP Universe Sync Output: Off	gs (Pipe 2) Art-Net Manual 172.17.6.112 666 😨 1 😻	
		*	*	* * *	× × .	* * .	* * *	× × ×	*	Fade Time	Instant	
0	5.	0	61	5		, ,			10			
	2 Rotate	3 [F	4 Rotate :	» (Tog	gle		Off	•			

Notes:

When using the control page for adjustment, if the value of the channel slider is not changed, the values of the functions corresponding to all valid channels will be set to the minimum value, as shown in the figures:



🔀 Project Edit View Tool	s Sattings Help								– – ×
Offiline Project + &	Ø Bluckout ✿ Freeze	Layout	Source	Correction Processing	Screen Settings	Dackup	Preset Monitor Sol	edule	
New Project 1							- 🗐 🔹 😨 🕞 Page 1 🗠	Source: IN 1 DP 1	
								Color Space/Sampling	From Input 9
		Control (Net							From Input V
V New Screen 1								Quantization Range	From Input 🛛 👻
E30 MX2000 Pro_1_OUT 1		Art-Net	-						
EB MX2000 Pro 1 OUT 2		Configuration						→ HDR I	
Wew Screen 2	MX6000 Pro_1-OUT 3		-	-				Format	Auto 🗸
	Layer 1	Channel	Property	Minimum	Maximum		- 11 I	HDR10 Parameters	
EE MX6000 Pro 1 OUT 2	Irtemal		Color Terren	1700	100			PQ Mode	ST2064 (PQ) V
COURT 1_0014			Contemp	0	2			MaxCII Override	1000mits 🔅
		- 	det Starte V						
CE MX6000 Pro_1_OUT 7			BlackLevel					• Color	
CTB MX6000 Pro_1_OUT 8			WhiteLevel	0	200	- 8		Hack Javal	
V New Screen 1			Saturation	0	200			•	095 🗘
CE MX6000 Pro_1_OUT 3				-180	100	- 1	M	Contrast	
EE MX6000 Pro_I_OUT 6			RedShadow	0	200	- 1		Saluration	
TER AVAILUES 1			GreenShadow		200			•	095 🗘
ETE MX40 Pro_1			BlueShadow				NOVA)5	Hor	1204
CB MX40 Pro 1			RedHighLight					Red Shadow	150 -
			GroonHighLight					•	
		13	Bluel lightlight	0	200			Green Shadow	M: ■
								Blue Shedew	 -
								•	3 %
	Source List IN 1 IN 2		N 4 IN 5					Rod Highlight	
	🔲 DP 1 👘 DP 2						🥌 Internal 🗸	Green Highlight	
								•	0%
	3840'2160@60.00Hz 3840'2160@	960.00Hz					3840"2160@60.00Hz	Rhe Highlight	0% :

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