COEX
Art-Net Protocol

Instructions

Contents

1 Applicable Products 1
2 Service Description 1
2.1 About Art-Net 1
2.2 Receiver Configuration 1
3 Operating Procedure 3

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).

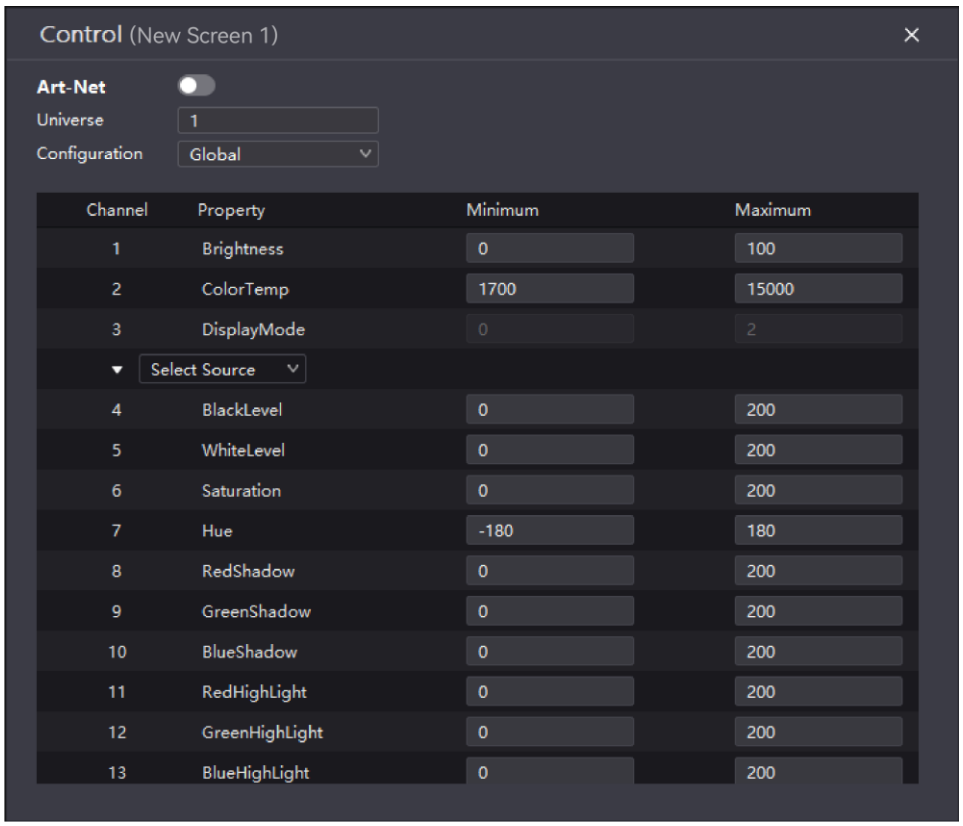
When the sender transmits Art-Net data to the specified receiver (based on IP addressing), the message includes the controlled universe number, controlled channel number, and the value. **Currently, the control software used on the PC is DMXworkshop**.

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:

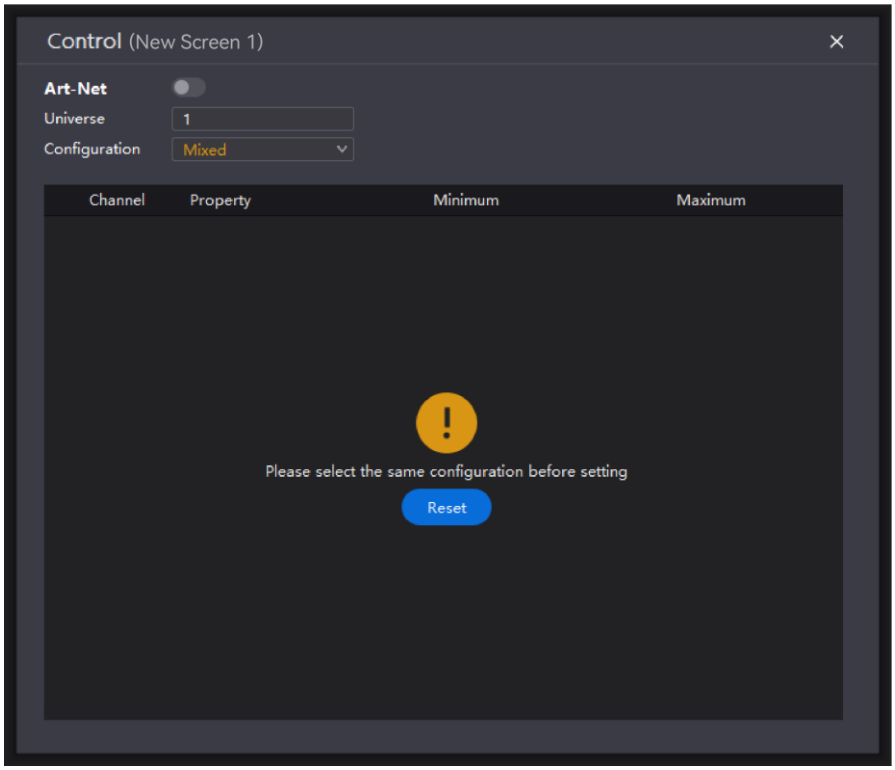


- Switch: Click on the Art-Net switch to adjust the Art-Net switch status of the controller.
- Universe: Each controller must be configured with one universe number, and only one universe number is supported. The range of universe number can be set: 1-32767.

- 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).

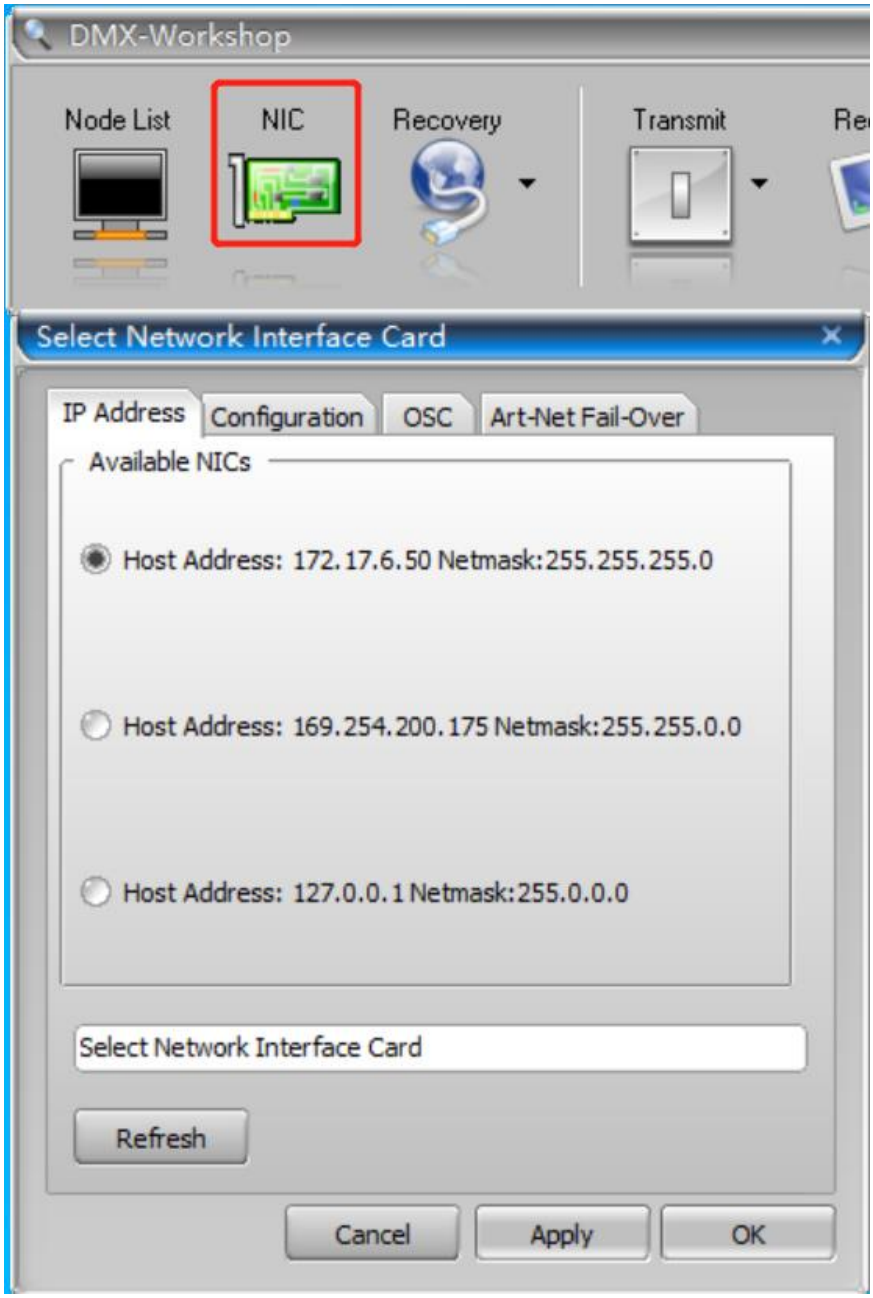


Brightness	0	100
Color Temperature	1700	15000
Display Mode	0	2
Black Level	0	200
Contrast	0	200
Saturation	0	200
Hue	-180	180

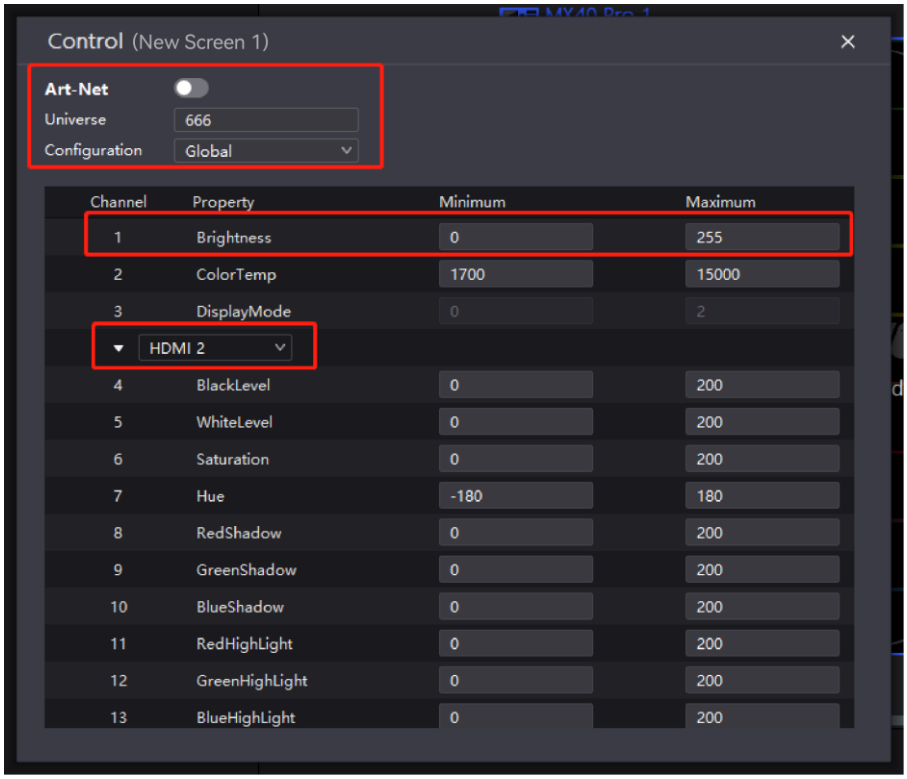
Red Shadow	0	200
Green Shadow	0	200
Blue Shadow	0	200
Red Highlight	0	200
Green Highlight	0	200
Blue Highlight	0	200
Preset	1	128

3 Operating Procedure

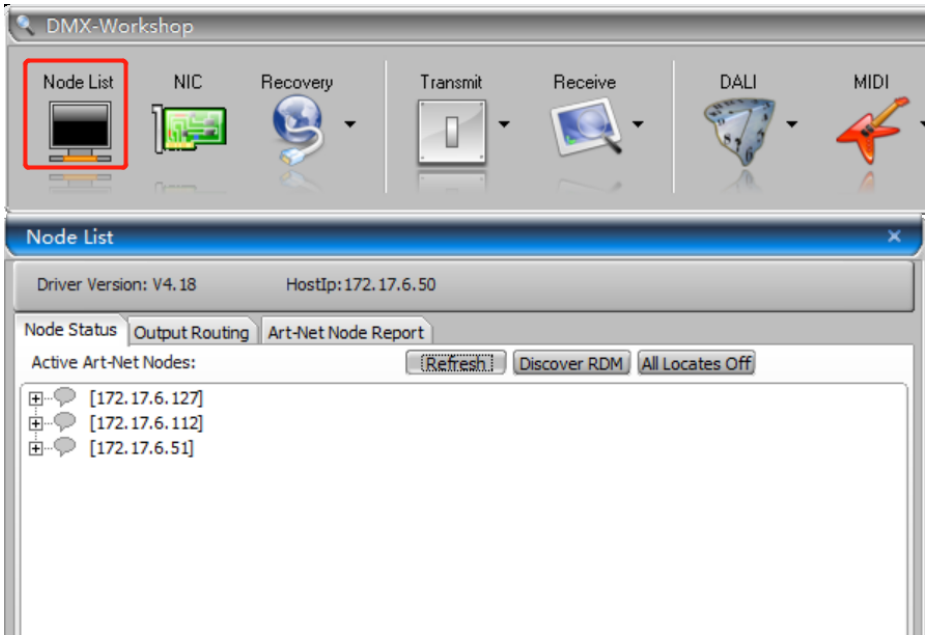
- The control PC software is DMXworkshop. Connect the control PC and the controller to the same LAN and set them to be on the same network segment. Then, open DMXworkshop software. From the NIC drop-down box, select the IP Address that are on the same LAN as the controller.



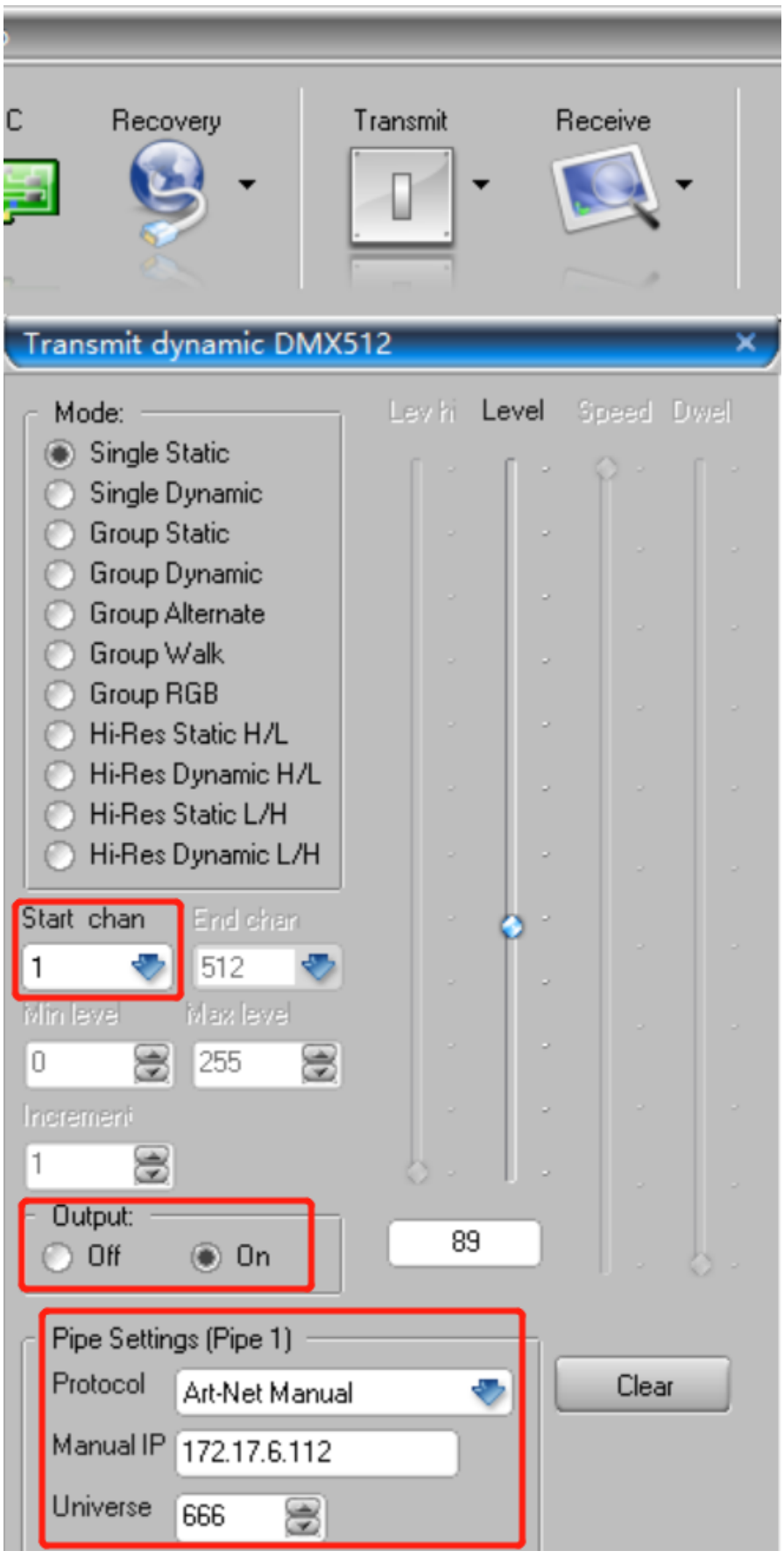
- After selecting the device in the device list on the left side of VMP, click Tools > Control in the menu bar, turn on the Art-Net function, configure the universe value to 666, and configure other parameters (optional).



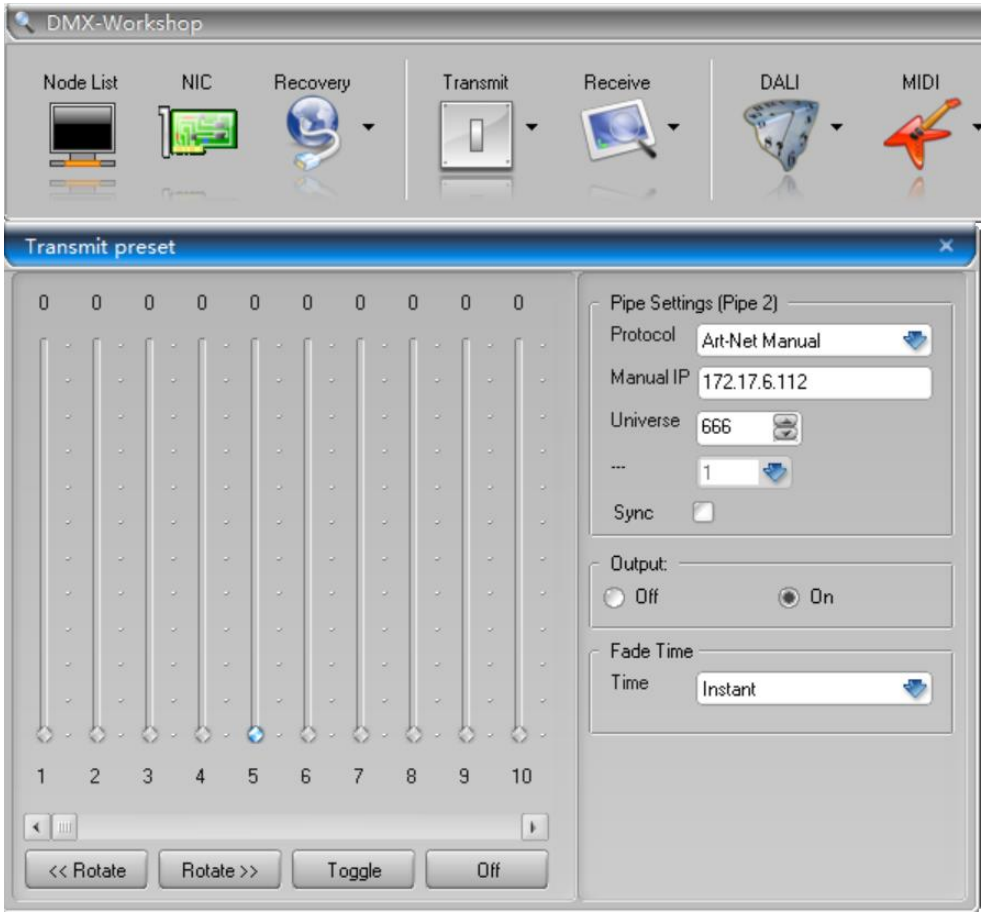
- In DMX software, click **Node**, and click Refresh to see if the selected controller device has been discovered.



- 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.

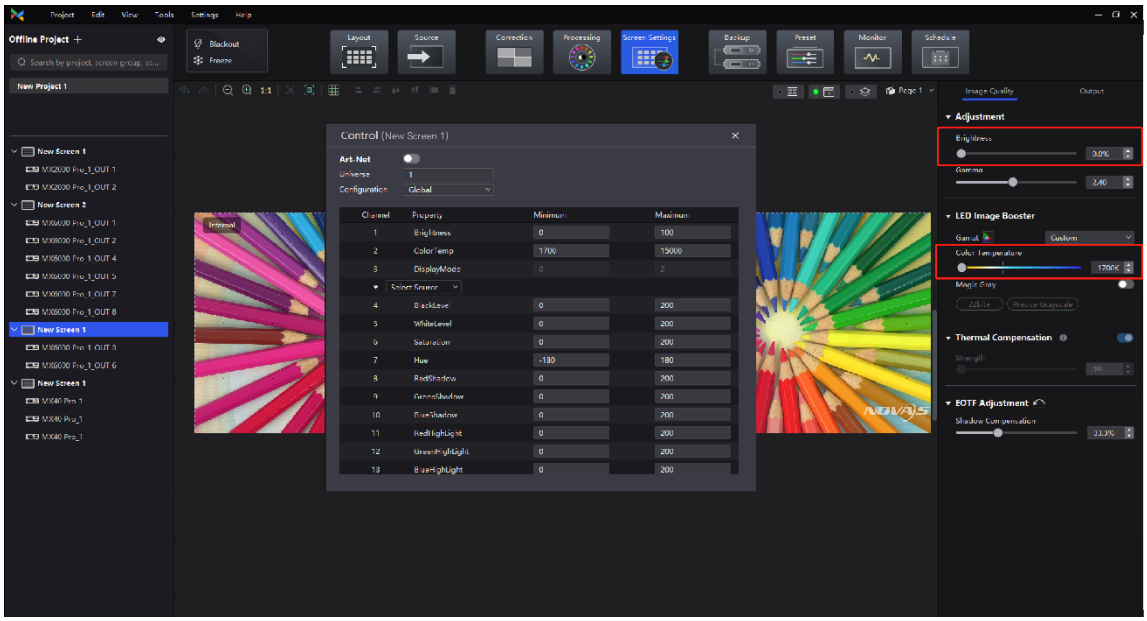


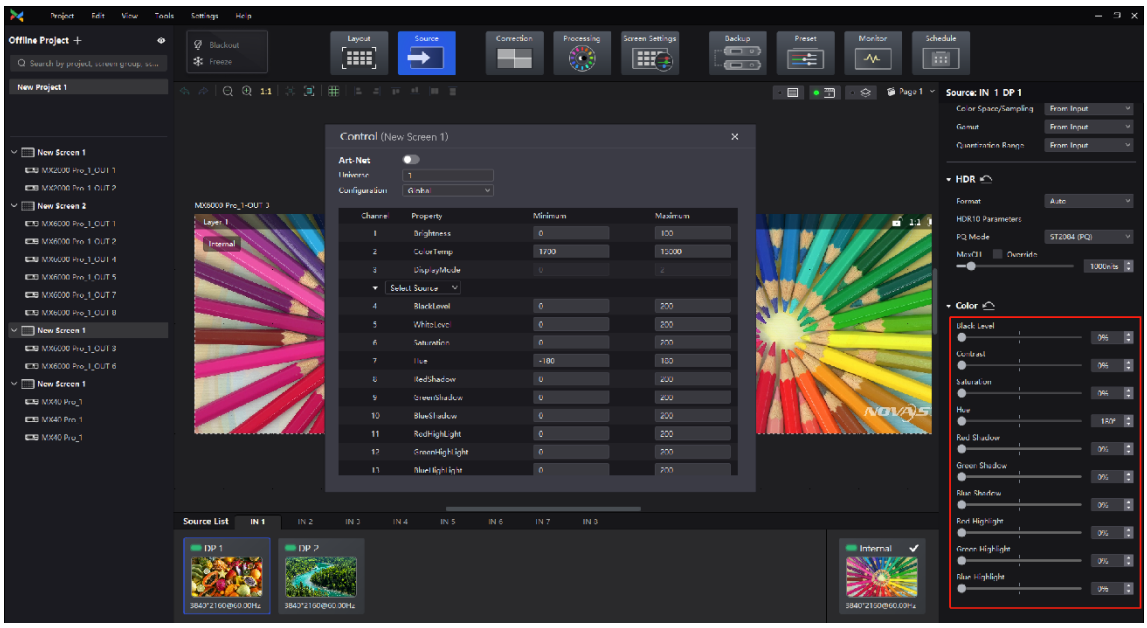
- Or click **Transmit-Transmit preset,** and select **On** for **Output**. Then, perform **Pipe Settings**: set **Protocol** to **Art-Net** Manual, fill in the **Manual IP** field with the selected controller IP, and set **Universe** to be the same as the controller Universe (the universe number range 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.



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:




Offline Project
Control (New Screen 1)
Art-Net
Source: IN 1 DP 1
HDR
Color
Source List

Copyright © 2024 Xi'an NovaStar Tech Co., Ltd. All Rights Reserved.

No part of this document may be copied, reproduced, extracted or transmitted in any form or by any means without the prior written consent of Xi'an NovaStar Tech Co., Ltd.

Trademark

NOVASTAR is a trademark of Xi'an NovaStar Tech Co., Ltd.

Statement

Thank you for choosing NovaStar's product. This document is intended to help you understand and use the product. For accuracy and reliability, NovaStar may make improvements and/or changes to this document at any time and without notice. If you experience any problems in use or have any suggestions, please contact us via the contact information given in this document. We will do our best to solve any issues, as well as evaluate and implement any suggestions.

Official website
www.novastar.tech

Technical support
support@novastar.tech