



# INSTRUCTIONS

Z6 Super Controller

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USER MANUAL

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## 1 Overview

Z6 Super Controller is a professional LED display controller. As video splicer, processor and sender in one combined, Z6 has 4K video input capability, UHD and HDR images processing and transmission. Z6 can be applied to high-end rental display and high resolution LED display perfectly.

Features:

- Video input ports including SDI×2, HDMI2.0×1, DVI×4;
- Support input resolution up to 3840×2160@60Hz;
- Loading capacity: 8.3 million pixels, Maximum Width/Height: 8192 pixels;
- The input images can be spliced and scaled according to the screen resolution;
- Support PIP function, the location and size can be adjusted freely;
- Support splicing and cascading among several controllers with synchronization strictly;
- Support 3D display;
- Support brightness and chromaticity adjustment;
- Support improved gray-scale at low brightness;
- Support HDCP2.2;
- Compatible with all receiving cards, multifunction card, optical fiber transceivers of Colorlight.

## 2 Appearance

### Front Panel



NO	Name	Function
1	3.5-inch LCD	Display operation menu and system information
2	Knob	Turning knob to select or adjust

3	Function keys	OK: Enter key ESC: Escape current operation or selection Bright: Brightness options Black: Blank screen Lock: Lock keys
4	Selection keys	PIP: PIP switch Freeze: Freeze screen DVI/HDMI/SDI1/SDI2: video source selection

### Back Panel



Input Interface		
1	SDI	2 3G-SDI inputs
2	HDMI	HDMI2.0 input
3	DVI	4 DVI inputs
Output Interface		
1	Gigabit Ethernet	16 Neutrik Gigabit Ethernet outputs
Controlling Interface		
1	100M Ethernet	100M-Ethernet Control port (communication with PC, or access network), and can be used as Art-Net control port
2	USB_OUT	USB output, cascading with next controller
3	USB_IN	USB input, connecting to PC to configure parameters
4	Genlock	Genlock signal input ensures synchronism of display image
5	Genlock_loop	Genlock synchronous signal loop output
6	3D sync	Connect to 3D emitter (Optional)

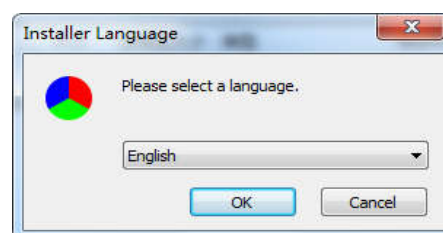
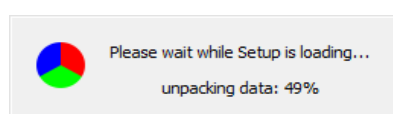
### 3 Signal Connection



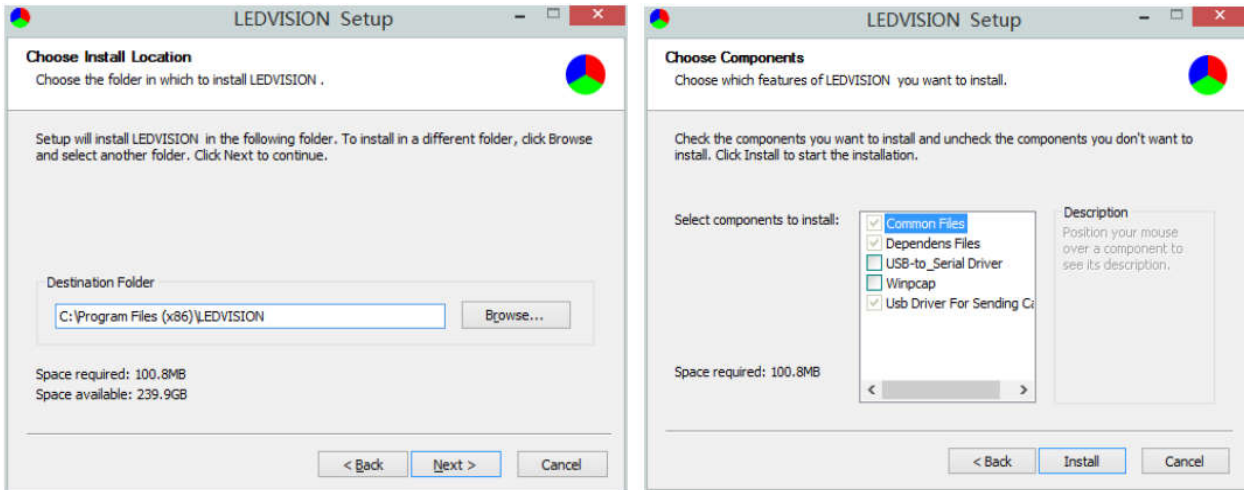
### 4 LEDVISION Installation

Please download the installation package of the LEDVISION software from Colorlight’s official website [www.colorlightinside.com](http://www.colorlightinside.com), and complete the installation according to the diagrams shown below.

- ① Run the software package, and select **[English]** for installer language. Click **[OK]** to move on.



- ② After selecting a language, an installation wizard like below will appear, click **[Next]**;  
 Then choose installation location, click **[Browse]** to change default target location, then click **[Next]** after completing;  
 Choose components according to your own computer status, click **[Install]** to complete;  
 After the installation is complete you are ready to use LEDVISION.

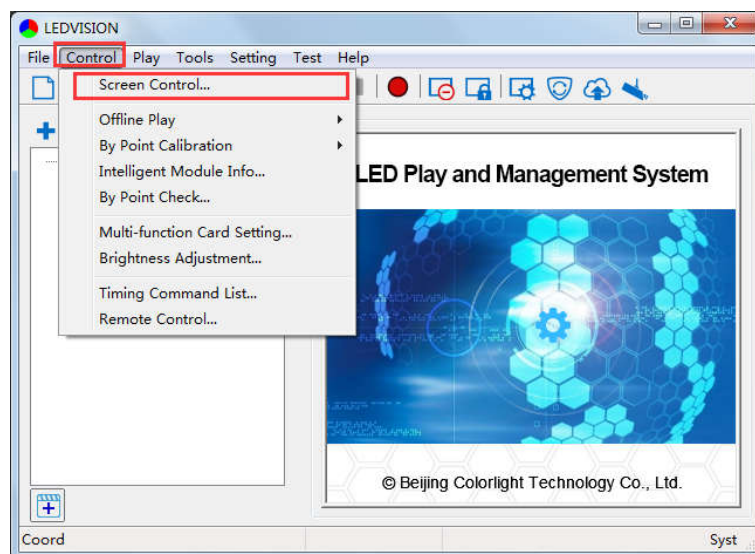


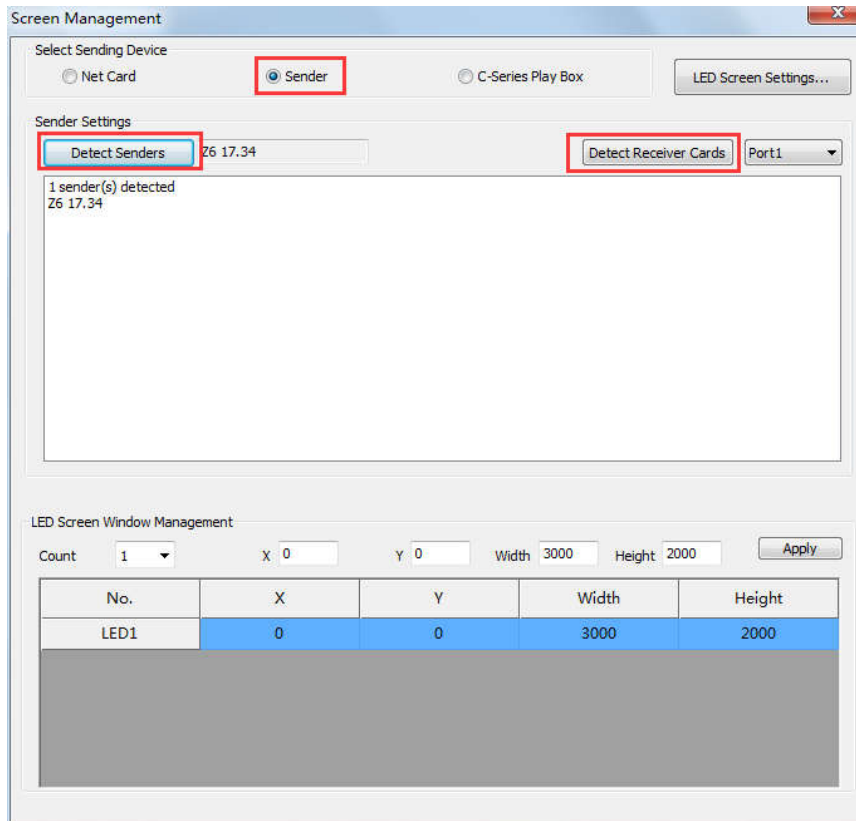
## 5 Parameter Configuration

Please make sure the correctness of the hardware connection before setting, use LEDVISION to detect sender and all receiving cards.

### 5.1 Detect Sender and Receiving Card

- ① Run LEDVISION, click **[Control]** – **[Screen Control]**, **[Select Sending Device]** for **[Sender]**.



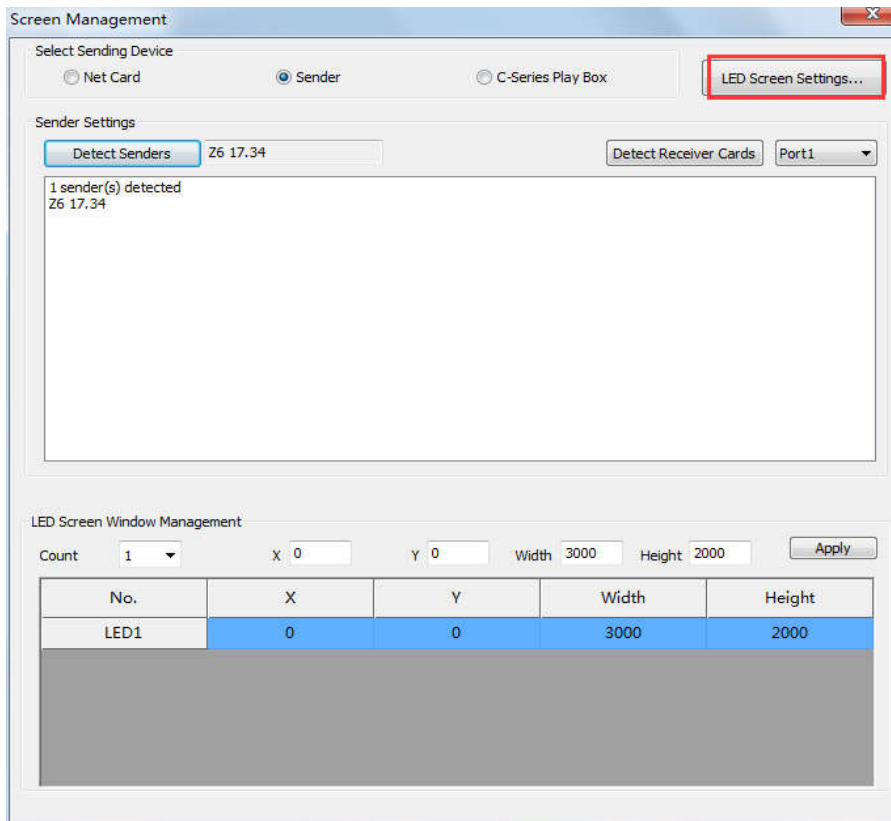


② Click **[Detect Senders]** in **[Sender Settings]**. Please check the hardware connection or the installation of relevant driver if cannot detect senders.

Select network port and click **[Detect Receiver Cards]** respectively, the software will automatically acquire the receiver card quantity of each network port of the sender. Please check corresponding cable if the numbers of receiver card are inconsistent with actual status.

## 5.2 LED Screen Setting

Click **[LED Screen Settings]** to enter the LED Screen Setting interface, and set up **[Sending Device]**, **[Screen Parameters]**, **[Connection Parameters]**.



### 5.2.1 Sending Device Setting

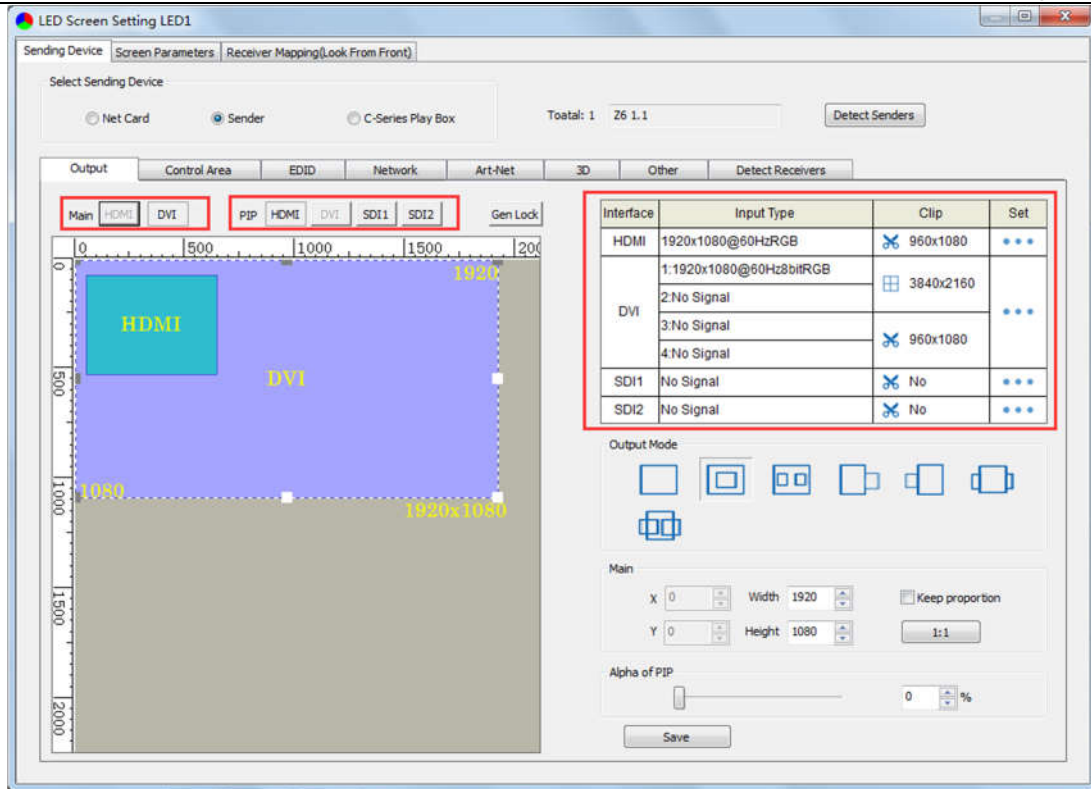
[Select Sending Device] for [Sender], and detect senders. Sending Device Setting includes 8 parts: Output, Control Area, EDID, Network, Art-Net, 3D, Other, Detect Receivers.

#### 1, Output

##### ① Signal Source

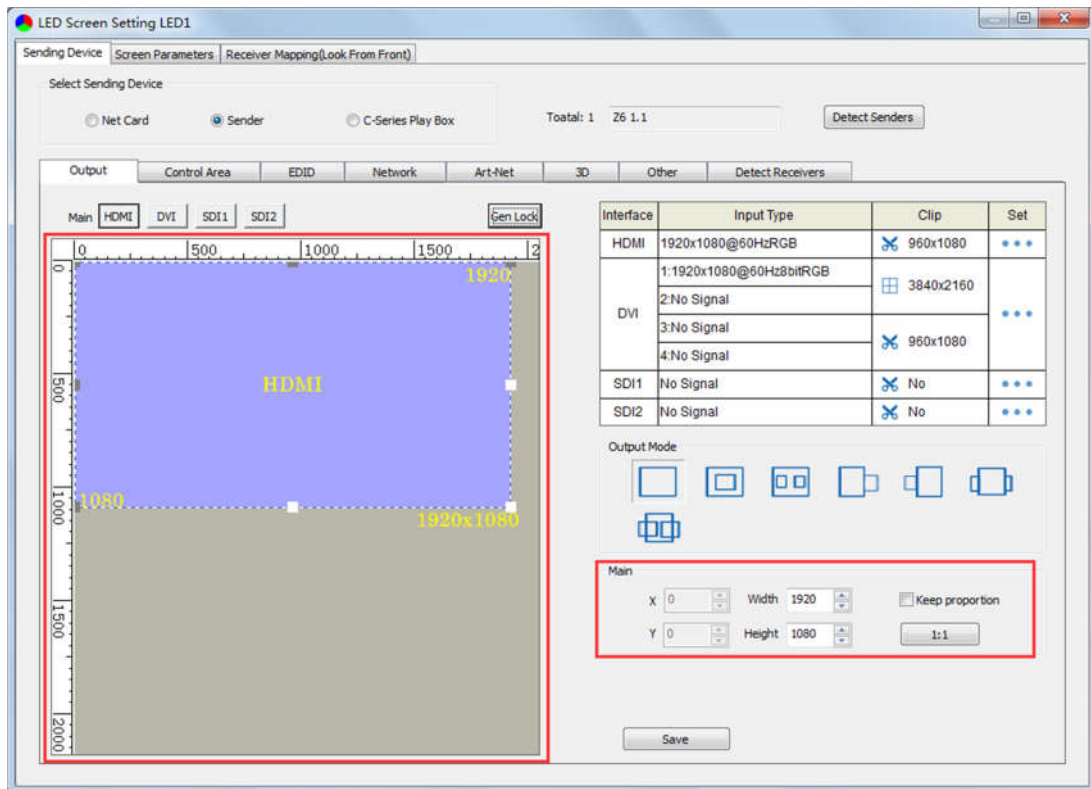
When the input signal source of Z6 is normal, the upper right of the software interface will display the input signal information auto acquired via the software. At the moment, users can select signal source (HDMI/DVI/SDI1/SDI2) according to needs in [Main]; if PIP has been open, users can also select specific signal source (HDMI/DVI/SDI/SDI2) in [PIP]. **Note: Main and PIP can't select the same source.**





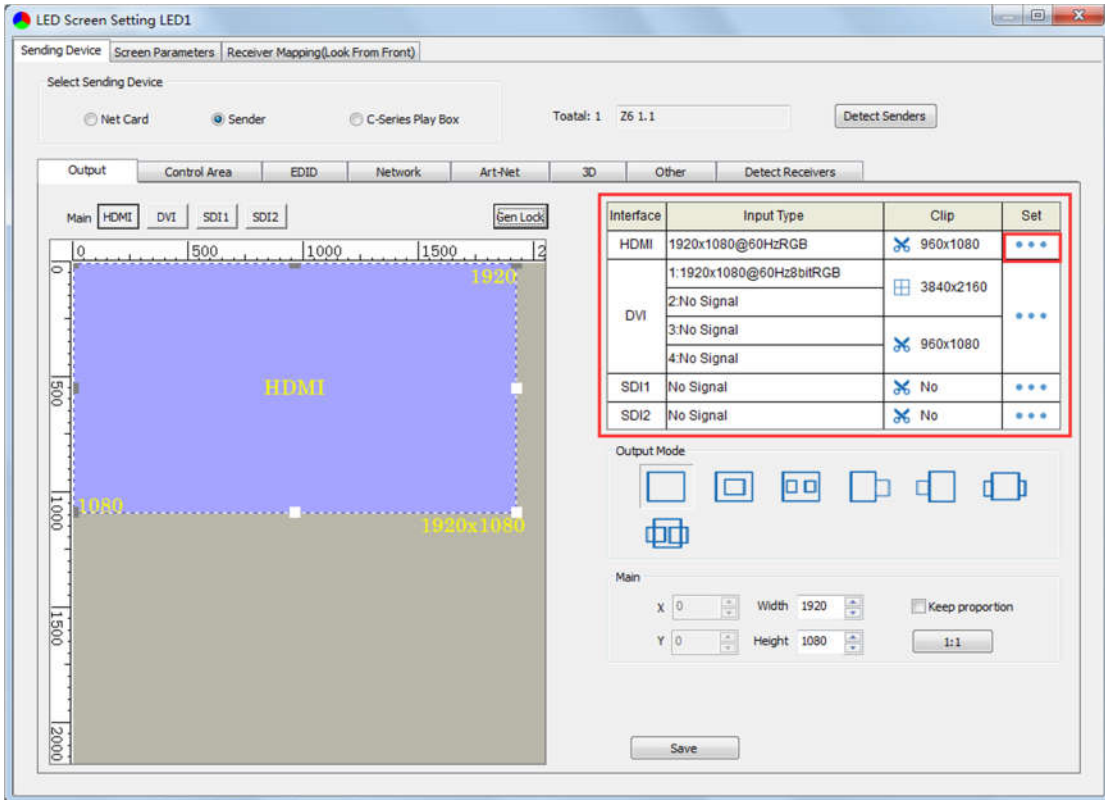
② **Scaling**

In **Image View Area**, select the image that needs to be scaled, set X, Y, width and height of it in **[Main Image]**, or you can click the white box in the bottom right corner of the image and drag it with the mouse, finally click **[Save]**.

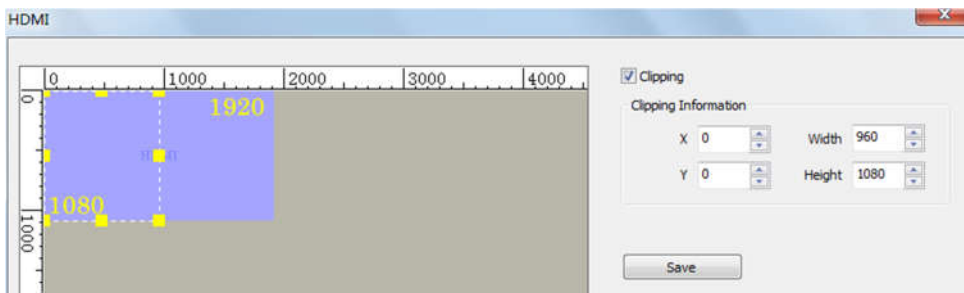


③ Clipping

Select signal source of the image that needs to be clipped in **Input Signal Area**, click **[Set]** to enter the clipping interface.

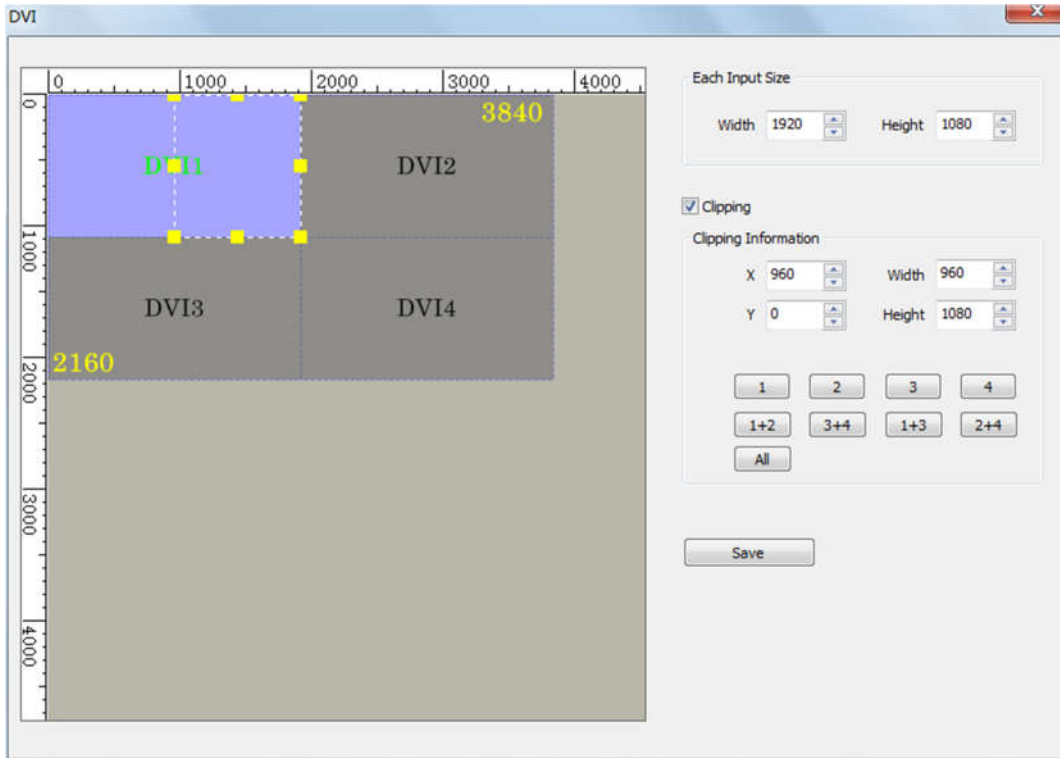


In the clipping interface, check **[Clipping]**, set X, Y, width and height, then click **[Save]** to complete.



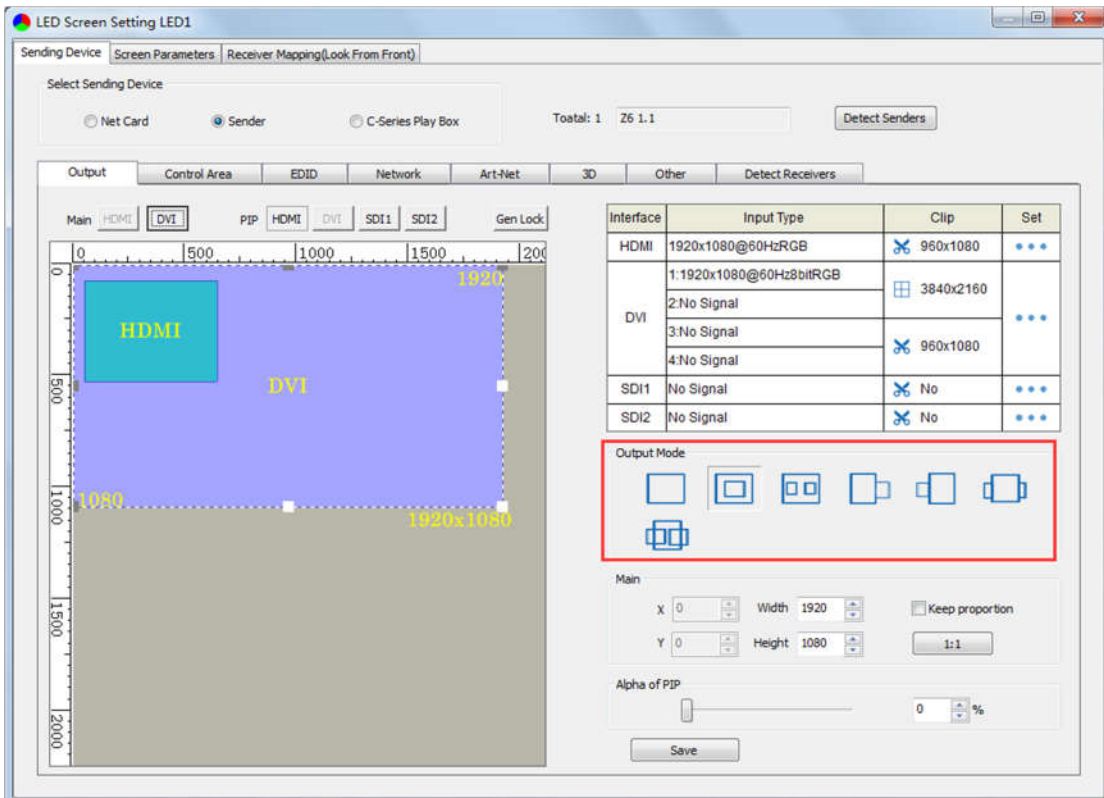
④ Splicing

Select DVI signal source in **Input Signal Area**, click **[Set]** to enter the splicing interface; there is only one specific splicing mode, set width and height of splicing unit of it, then click **[Save]** to complete. **Note: Splicing is only available for DVI signal source.**

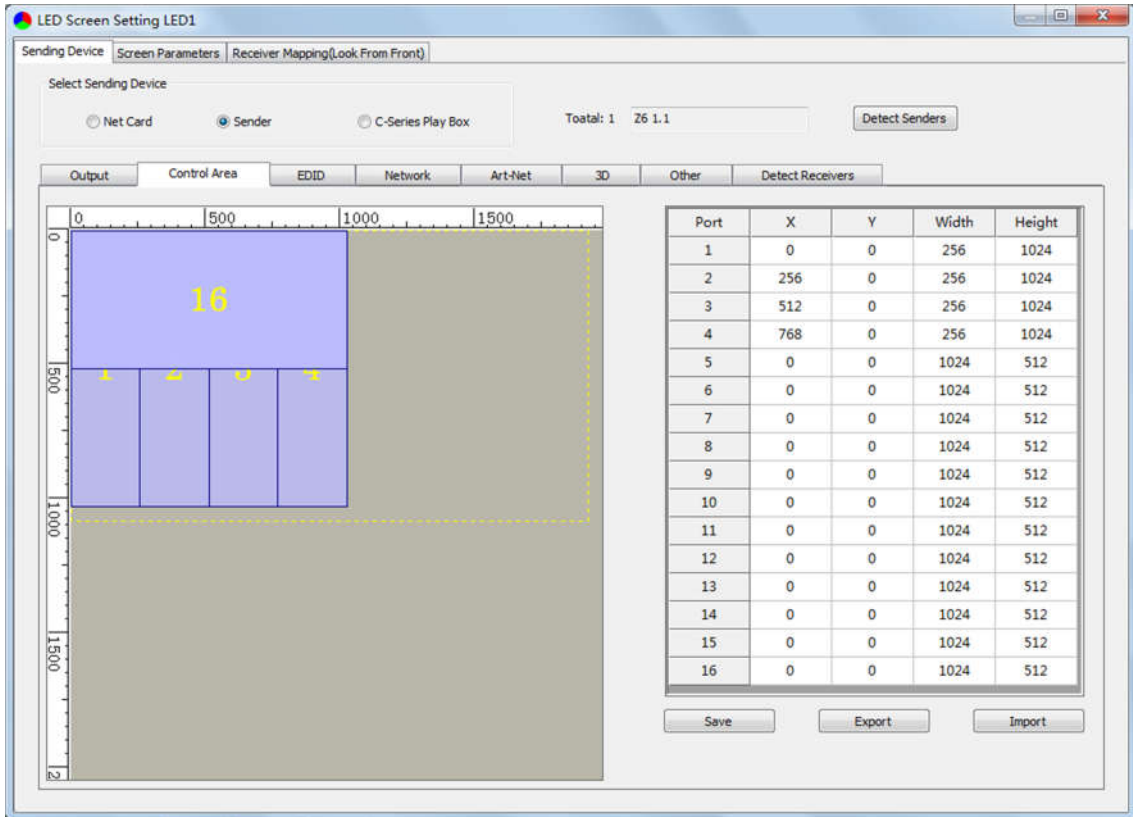


⑤ PIP

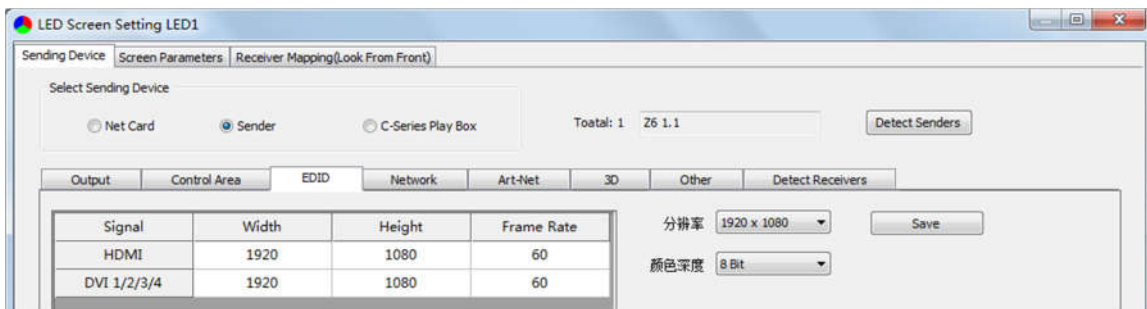
There are multiple output modes of main image and PIP in **Output Mode**, users can select specific PIP mode based on the requirement, and conduct the operation like move, scaling, clipping and splicing on the main image and PIP image respectively.



2, In **Control Area**, it displays the control area of each net port of Z6. Click **[Import]** and select correct parameter file, click **[Save]** to save parameters into corresponding sender; or set up the control area of each net port respectively (X, Y, Width, Height), click **[Save]**.

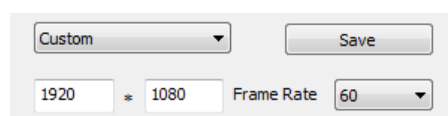
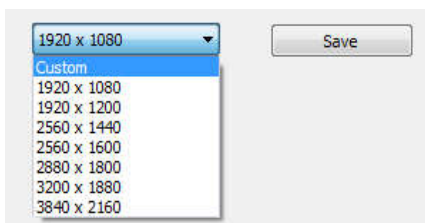


3, **EDID**: Set sender resolution, the first one is the default as current resolution.

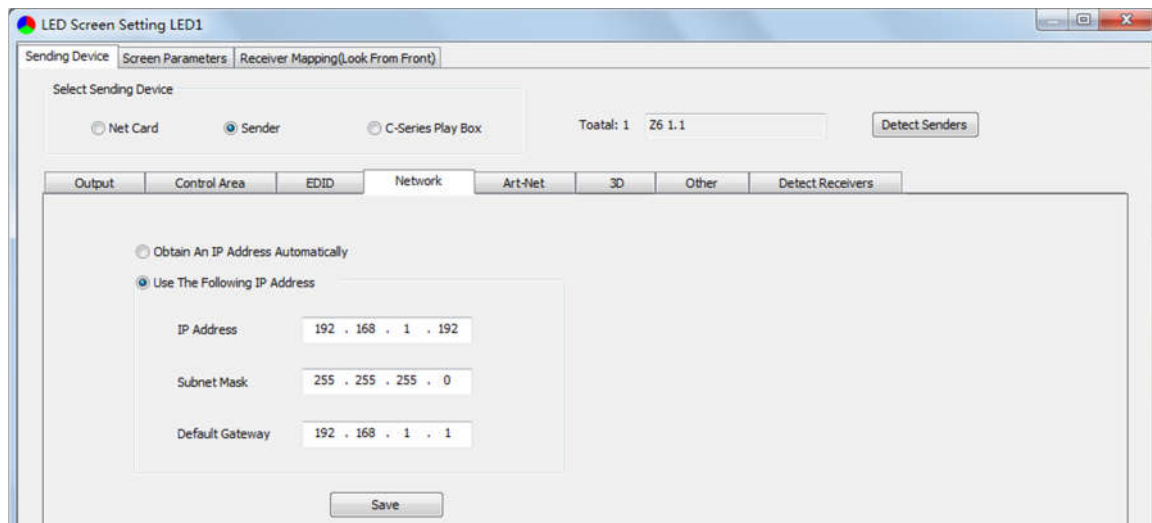


Click the dropdown button to display the resolution list to select the mainstream resolution, and you can also customize the sender resolution, by setting the width/height and frame rate.

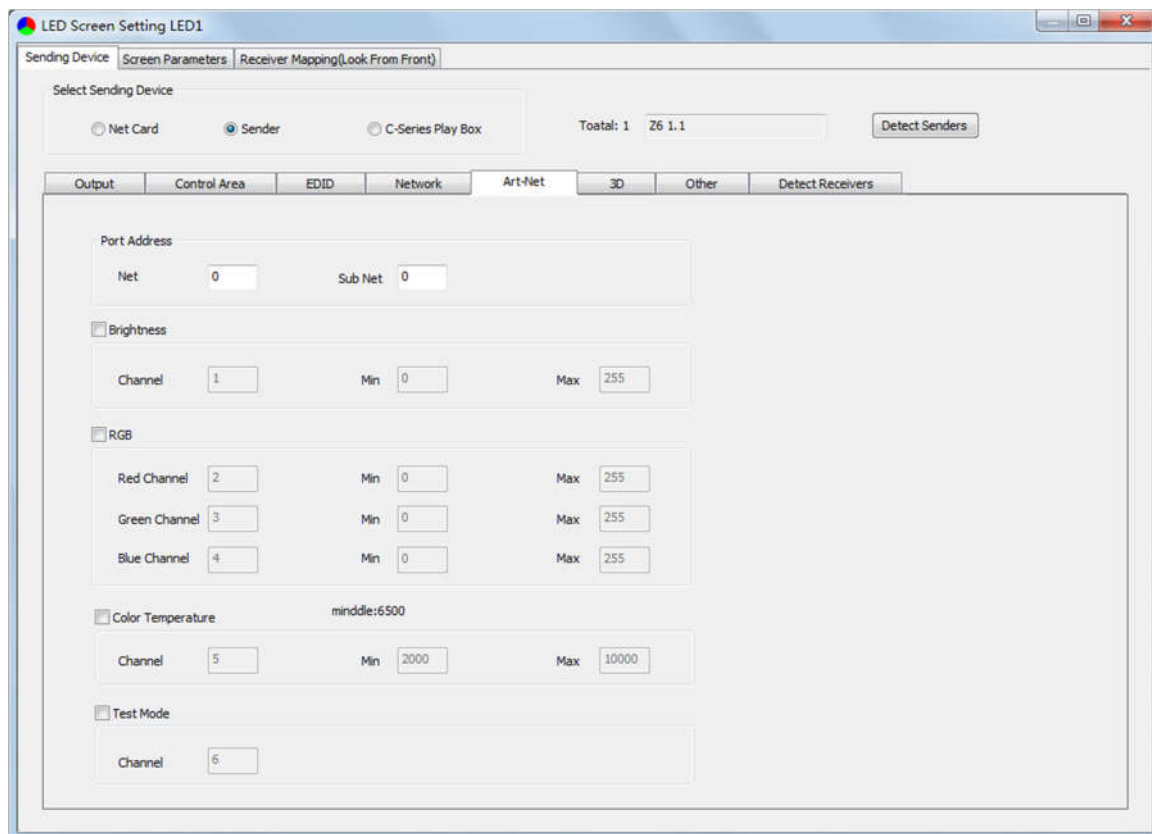
Click **[Save]** after setting.



4, **Network:** Set up IP address, select “Automatically obtain an IP address”, then the sender would auto obtain the IP address; or it would manual set up IP address, subnet mask and gateway.



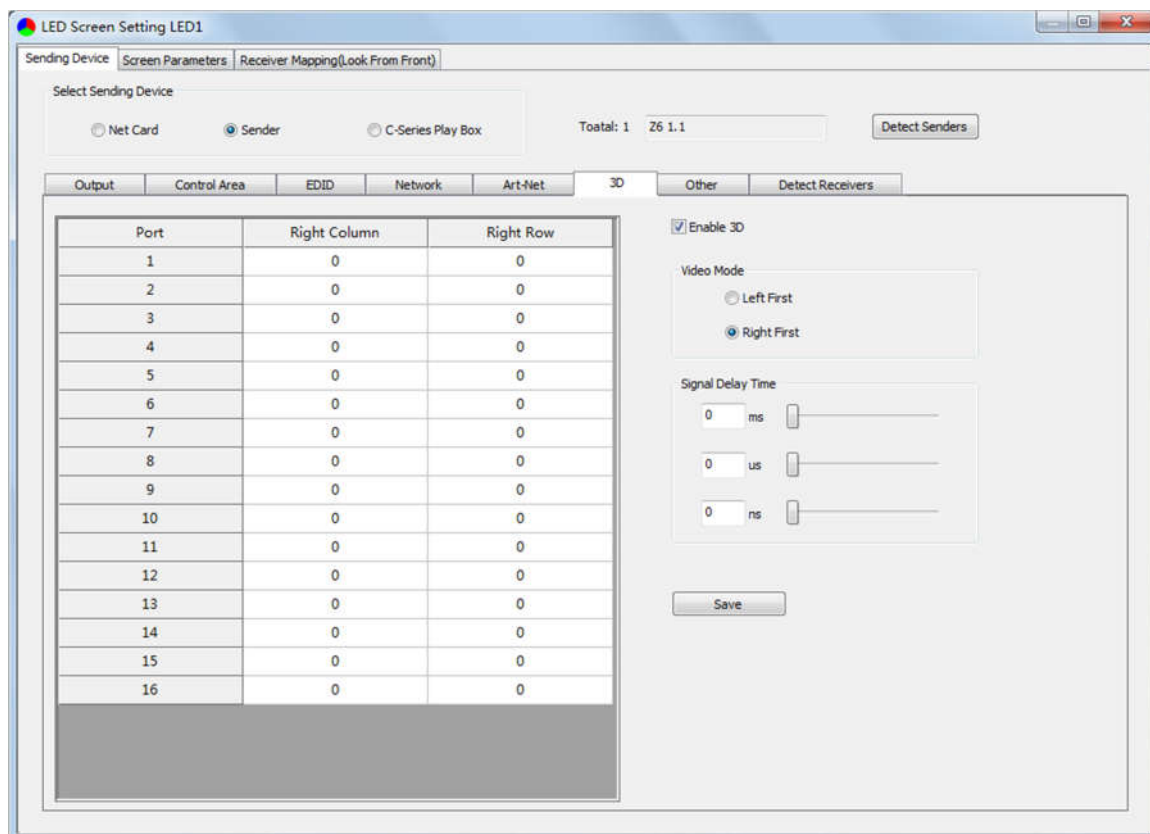
5, **Art-Net:** Realize the function of intelligent dimming control, users can adjust brightness, RGB, color temperature and select test mode according to actual demand. First, select the channel of brightness, RGB, color temperature and test mode, then set up the minimum value and the maximum value to complete. **Note: RGB and color temperature cannot be set up at the same time.**



6, **3D**: Check “**Enable 3D**”; “**Right First**” is the system default in video mode; then set up **Control Area**, namely the right row and right column of each net port; all parameters of **Signal Delay Time** set up to be 0. As follows:

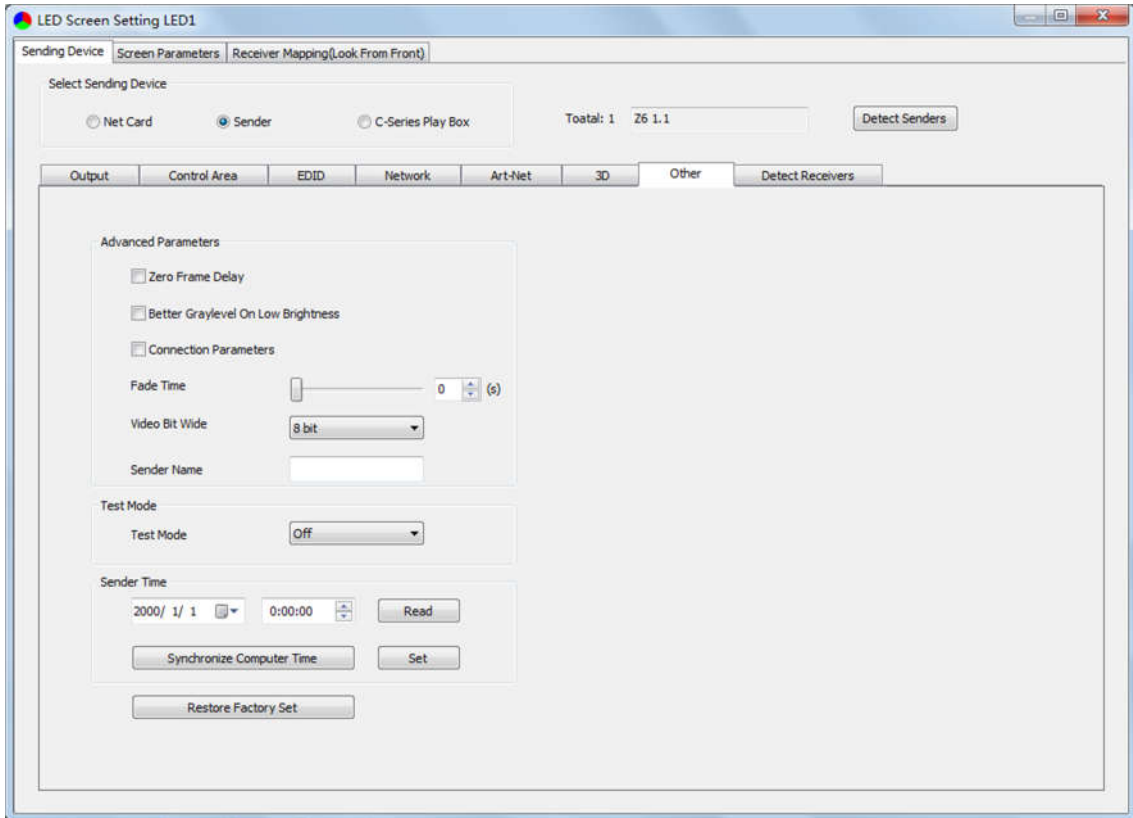
**Right column**=  $X+Y/2+Z$  (X is column origin of each output port; Y is the width of sender resolution; Z is depth of field, DOF is generally set to 4 points or 8 points, should not be set up too large, otherwise it may cause the viewer to feel dizzy).

**Right row**=row start point of each port.



7, **Other**:

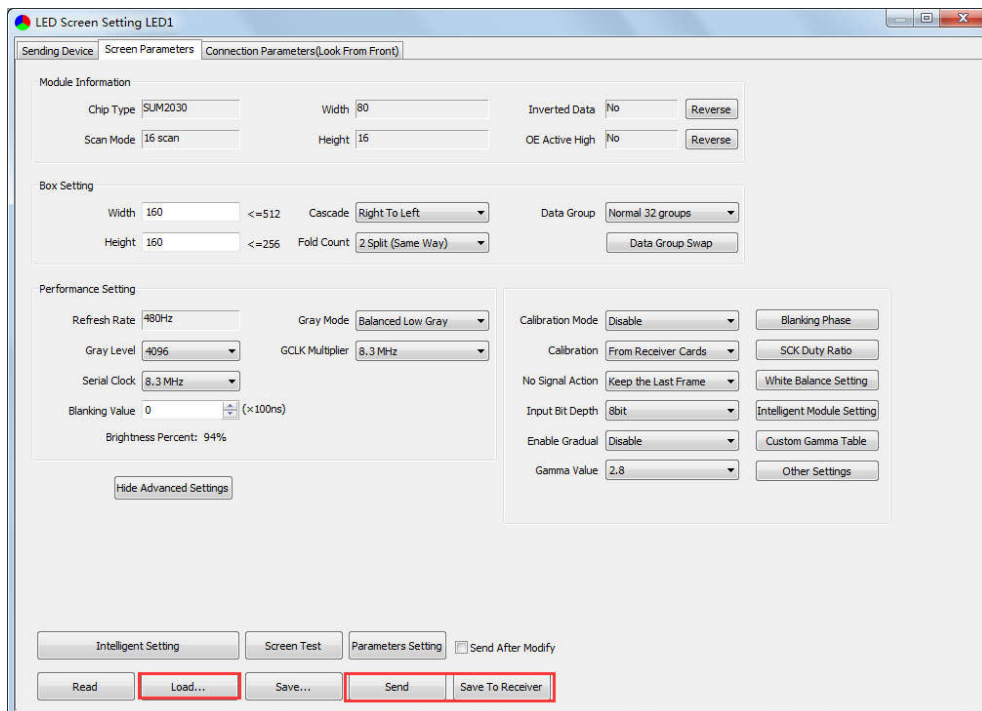
**Advanced Parameters** are prepared for experts for special applications settings, no operation is allowed for non-professionals. **Advanced Parameters** mainly include parameters as follows: **Zero Frame Delay**, **Better Graylevel On Low Brightness**, **Connection Parameters**, **Fade Time**, **Video Bit Wide** (Default “8bit”).



## 8, Detect Receivers

### 5.2.2 Screen Parameters Setting

Observe the display screen, single cabinet is an unit, and if all cabinets themselves could display normally (it is normal status even the picture between cabinets is not continuous), please ignore this step and directly go to the next step.



Click [**Load**], choose the correct parameter file.

Click [**Send**], to send the loading parameters to the receiving cards. At the moment, each cabinet should display normally (it is normal status even the picture between cabinets is not continuous), then click [**Save To Receiver**] to save the parameters to the receiving cards.

If each cabinet cannot display normally, you can conduct via the **Basic Setting (Module Information, Box Setting, Performance Setting)** or **Intelligent Setting**, and you can also contact with the LED screen engineers.

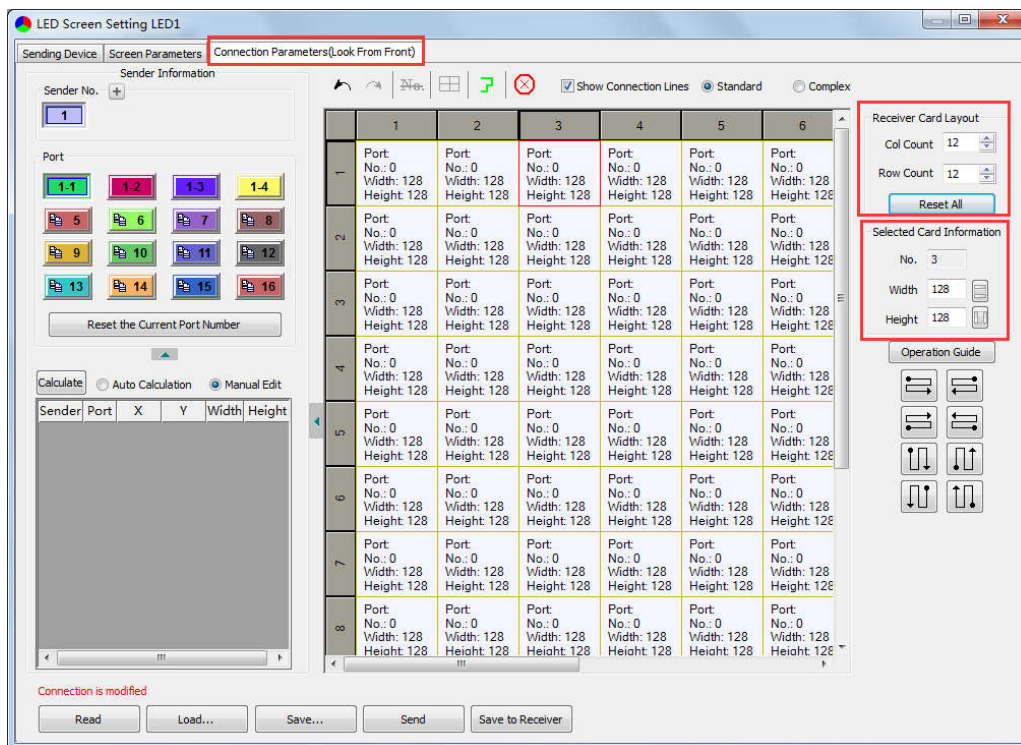
### 5.2.3 Connection Parameters Setting

Users don't need to set up the control area of each net port respectively, but to the connection relationship between the receiving cards under the network port loading via each sender, and the software will auto calculate and set up the port control area according to the connection relationship.

Detailed setting steps as follows:

#### ① Set up the quantity of receiving card

Set how many receiver (receiving card) that one port manages in Row Count and Col Count (12\*12 as an example) according to the actual loading of LED display, you will see LED display mapping area from the right side (Viewing from the front of LED display).





## ② Receiving Card Parameters Setting

Select the target sender and the net port from the left side, then **select** the corresponding **cabinets** within net port actual control area and set the connection lines in the mapping area.

There are two methods to set up:

### ◆ Use mouse to select one by one:

In the mapping area, select the first receiving card based on the actual connection of the net port (view from the front), and then set up the actual loading width and height of the target receiving card in the right side (128\*128 as an example).

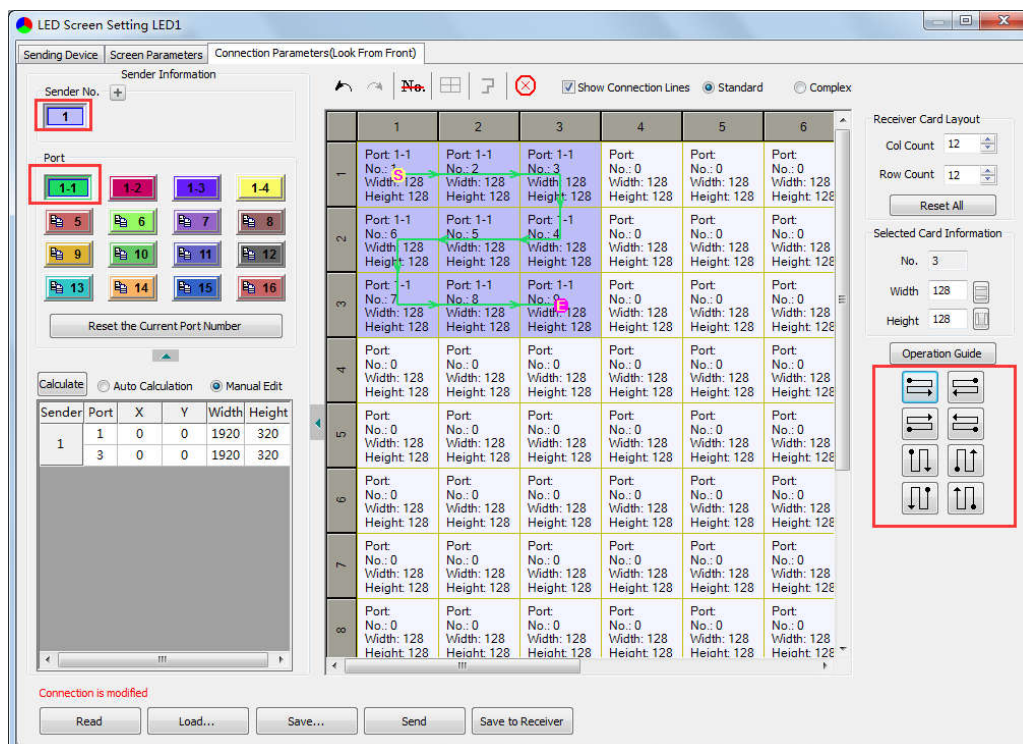
Click the receiver (receiving card) one by one, according to actual connecting line, until the last one for this network port loads.

### ◆ Connection Pattern

Aiming at the LED screen with standard connection lines, firstly set up the receiving card information according to the actual loading width and height (128\*128 as an example).

Select the Screen connection LED line you want from the right side, then cover the corresponding area of net port loading in mapping area, finally complete setting.

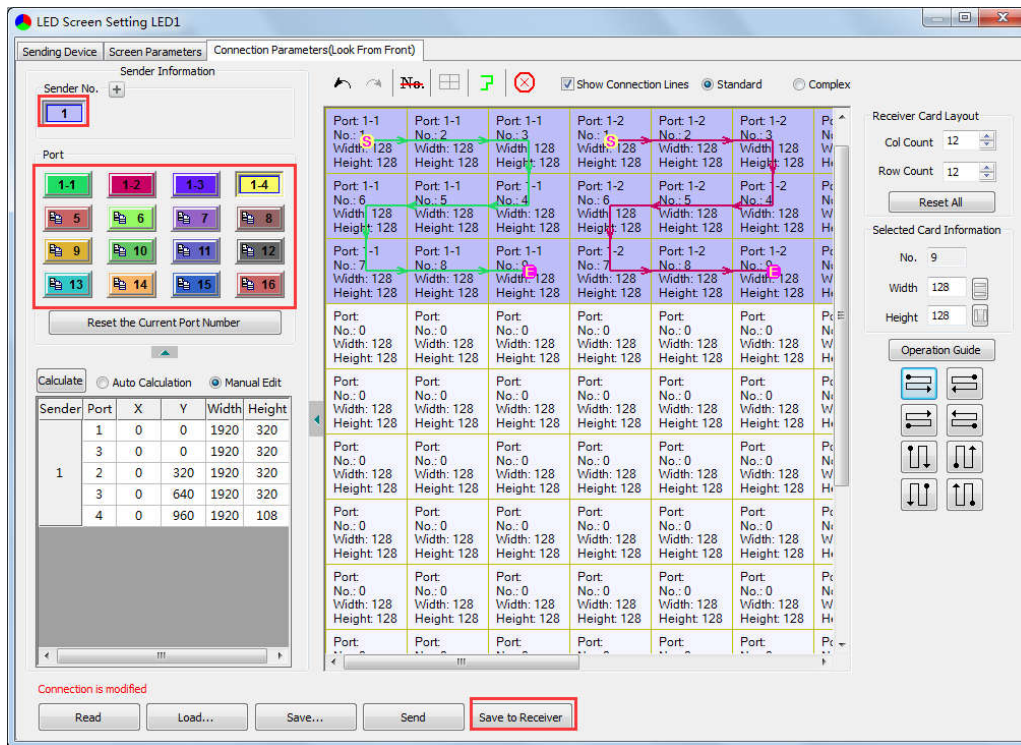
**Note:** As the cabinets have multiple and different specification (that is the inconsistent capacity of the receiving card), you can select the different one to adjust separately after completing setting.



### ③ Send & Save to Receiving Card

After setting up all the receiving card parameters and connection lines respectively, click [Send] to send the correct parameter to the receiving card, and the screen should display normally at this time.

Then click [Save to Receiver] to save parameters to corresponding receiving card after confirming.



## 6 LCD Operation Instruction

### 6.1 Operational Motion Instruction

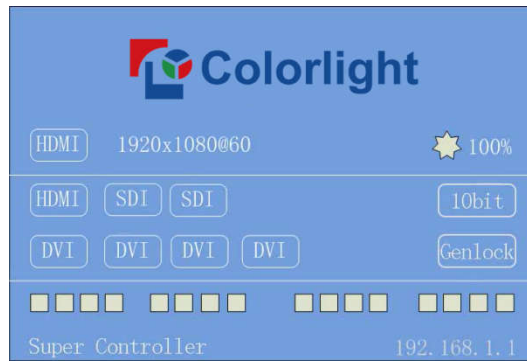
#### Knob/OK:

- ▶ Press the knob/OK under main interface to enter operation interface of menu;
- ▶ Rotate the knob to select menu or press the knob/OK under the operation interface of menu to select current menu or enter submenu;
- ▶ Rotate the knob to adjust parameters after selecting the menu with parameter; press the knob/OK again for confirmation after adjustment.

**ESC:** Return key, exit current menu or operation.

## 6.2 Main Interface

After starting the controller, main interface of LCD display is as follows:



First row: Company name.

Second row: Signal source and resolution of main image, brightness.

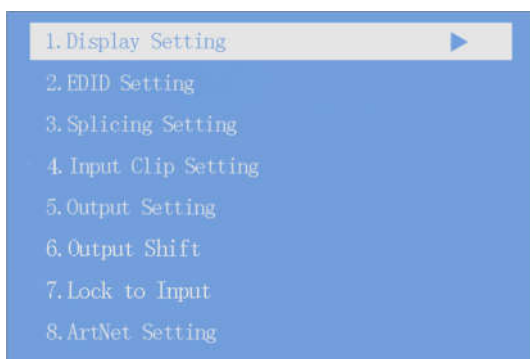
Third/forth row: Connection status of signal source and Genlock, 10bit mode on/off.

Fifth row: Connection status of network port.

Sixth row: Product type, the IP of Z6.

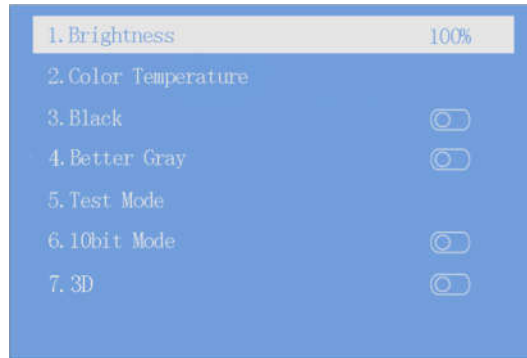
## 6.3 Operation Instruction

Press the knob/OK to enter the operation interface of main menu, and it includes 11 operation instructions: Display Setting, EDID Setting, Splicing Setting, Input Clip Setting, Output Setting, Output Shift, Lock to Input, Art-Net Setting, Network Setting, Language Setting, System Setting.



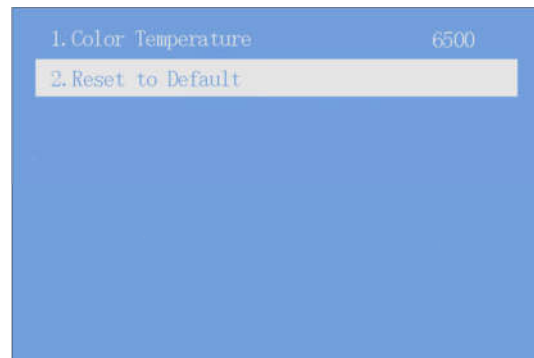
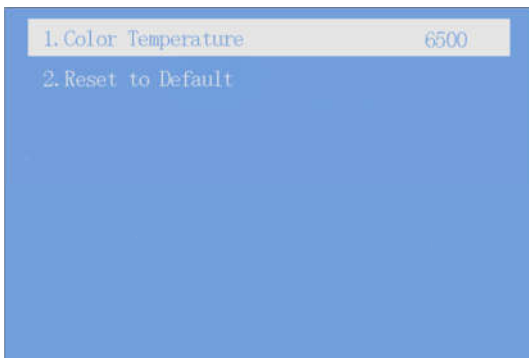
### 6.3.1 Display Setting

Rotate the knob to select display setting, then press the knob/OK to enter submenu of “Display Setting”.



① In the option of “Brightness”, rotate the knob to change the brightness, and it will be auto saved if there is no following operation.

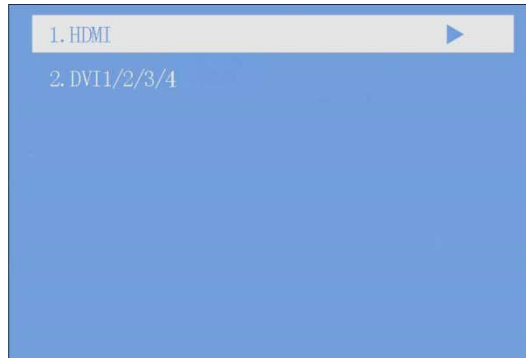
② Color temperature adjustment, rotate the knob to change the value of color temperature in the option of “Color Temperature”, and it will be auto saved within 10 seconds if there is no continuing operation; otherwise, you can press the knob/OK to reset the value of color temperature as 6500 in the option of “Reset to Default”.



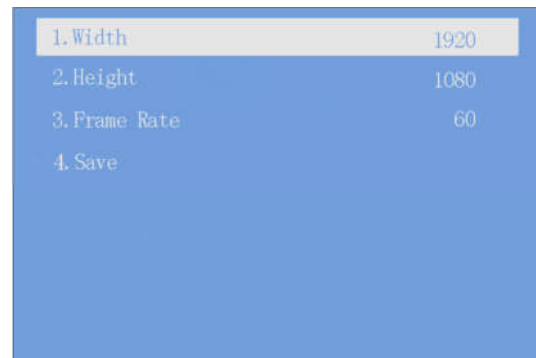
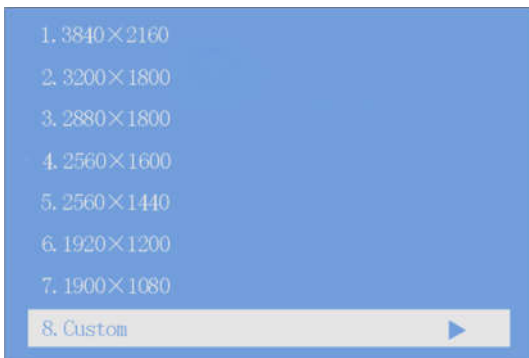
- ③ Black: Press the knob/OK to switch on/off LED screen;  
 Better Gray: Press the knob/OK to turn on/off the option of “Better Gray”;  
 Test Mode: Enter the interface of “Test Mode”, rotate the knob to select test mode, press ESC back to normal mode;  
 10bit mode: Press the knob/OK to turn on/off 10bit mode;  
 3D: Press the knob/OK to turn on/off 3D.

### 6.3.2 EDID Setting

Rotate the knob to select EDID setting, then press the knob/OK to enter submenu of “EDID Setting”.

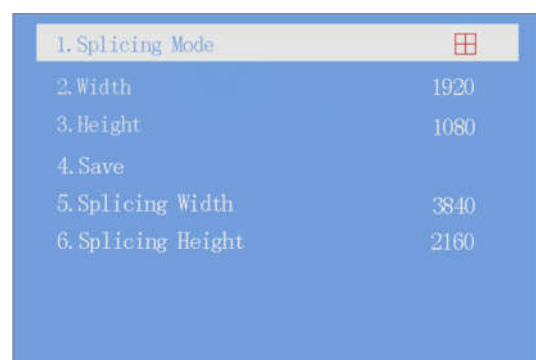
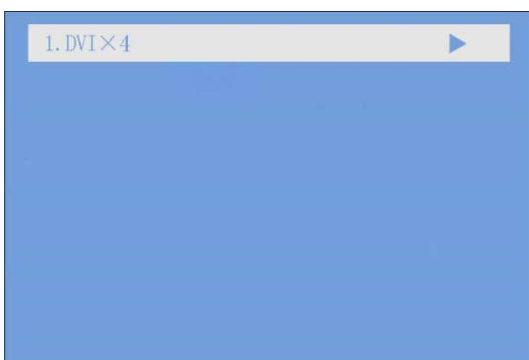


Enter the EDID setting interface of “HDMI” or “DVI1/2/3/4”. Rotate the knob to select conventional resolution; or set width, height and frame rate by knob in the option of “Custom”.



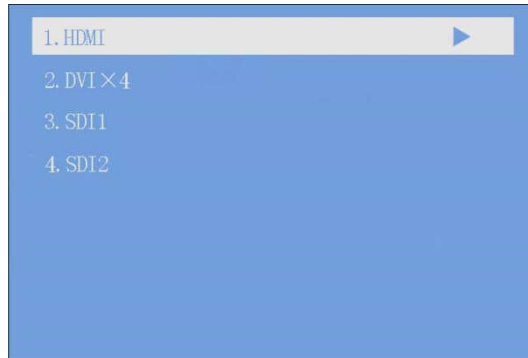
### 6.3.3 Splicing Setting

Rotate the knob to select splicing, then press the knob/OK to enter submenu of “Splicing Setting”. Continue pressing the knob/OK to enter the splicing interface of “DVI×4”, you can set width and height of splicing unit via the knob, then save it. At this time, splicing width and splicing height can be automatically calculated.

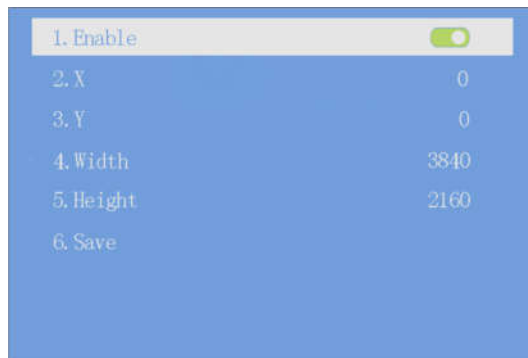


### 6.3.4 Input Clip Setting

Rotate the knob to select input clip setting, then press the knob/OK to enter submenu of “Input Clip Setting”.

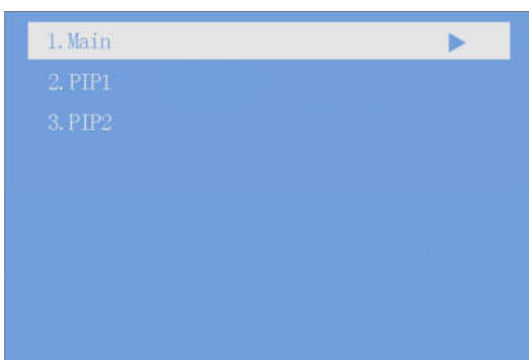


Enter the clip interface of “HDMI” or “DVI x4” or “SDI1” or “SDI2”, press the knob/OK to turn on/off clip. Set X, Y, width and height of input signal by knob then save the data.



### 6.3.5 Output Setting

Rotate the knob to select output setting, then press the knob/OK to enter submenu of “Output Setting”; Continue rotating the knob to select “Main” or “PIP1” or “PIP2”, press the knob/OK to enter the output setting interface. Rotate the knob to adjust X, Y, width and height of output, then save it.

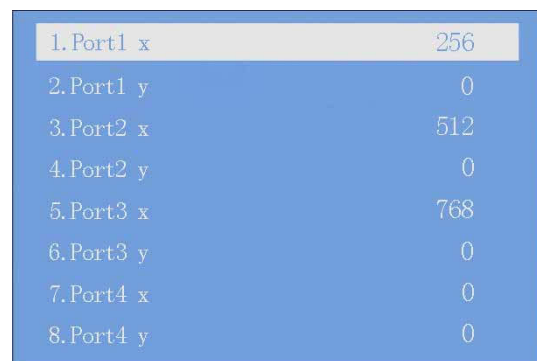


### 6.3.6 Output Shift

Rotate the knob to select output shift, then press the knob/OK to enter submenu of “Output Shift”.

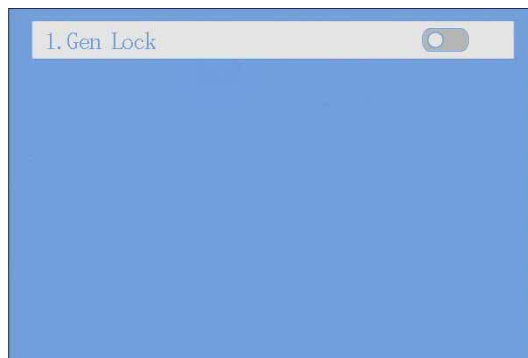


Output shift includes two ways: “Whole” and “By Port”. In the setting interface of “Whole”, you can rotate the knob to set X and Y of the whole image and save it; in the setting interface of “By Port”, you can set X and Y of the image of each net port respectively, then save it.



### 6.3.7 Lock to Input

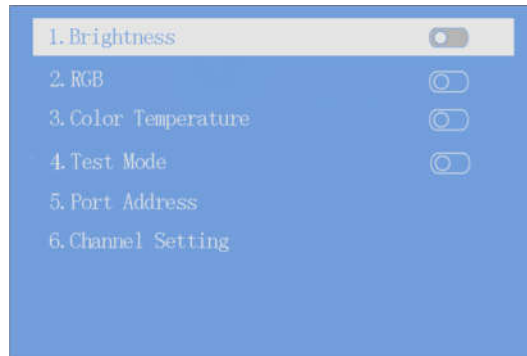
When several controllers were cascaded with each other, “Lock to Input” is necessary to ensure the synchronization of video display. Rotate the knob to select “Lock to Input”, then press the knob/OK to enter submenu of it. In the submenu, press the knob/OK to turn on/off “Lock to Input”.



### 6.3.8 Art-Net Setting

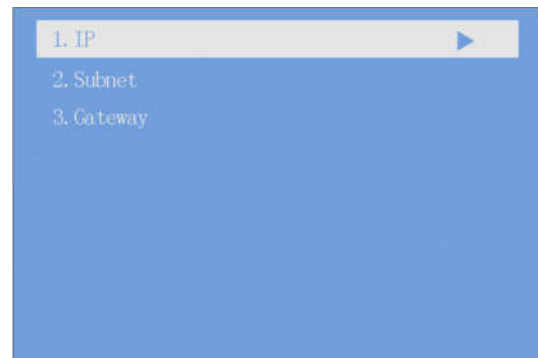
Rotate the knob to select Art-Net Setting, then press the knob/OK to enter submenu of “Art-Net Setting”. In the submenu, users can turn on/off the function of brightness adjustment, RGB adjustment, color temperature adjustment and test mode selection, and select the channel of

brightness, RGB, color temperature and test mode in “Channel Setting”, set up the minimum value and the maximum value of it; users can also conduct Net setting, Sub-Net setting and Universe in “Port Address”.

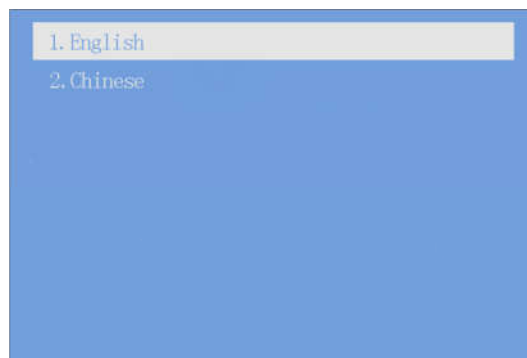


### 6.3.9 Others

**Network Setting:** Users can automatically obtain an IP address or set manually. Enter the setting of “Network Setting”, press the knob/OK to turn on/off DHCP; or press the knob/OK to enter manual IP setting, you can set up IP address, subnet mask and gateway respectively via the knob.



**Language:** Enter the setting interface of “Language”, press the knob/OK to switch the language.



**System Setting:** In “System Setting”, users can set date and time, restore factory settings and check current firmware information.



1. Date
2. Time
3. Restore Factory Settings
4. Firmware Information



Visual Future

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Colorlight US, Inc.  
[www.colorlightinside.com](http://www.colorlightinside.com)