User's Manual

LED Display Video Controller VX4S、VX4

Rev1.0.0　NS160100018

Statement

Dear users:

Welcome to use Nova's Products. We are pleased to offer this manual to help you understand and use the product. In the preparation of the manual, we try to make it accurate and reliable. Nova may revise and alter the contents of the manual at any time without notice. If you have any problems in the use, or you have any suggestions, please inform us in accordance with the contact provided in this manual. For the problems you encounter in the use, we will do our best to provide support. For your suggestions, we would like to express our thanks and make assessment as soon as possible for adoption.

Copyright

Trademark

NOVASTAR is the registered trademark of Nova.

FCC Caution

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device 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.

Note: 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 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.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment .This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Contents

1 Safety statement

To avoid potential hazards, please use this equipment according to the regulations. In case of damages, non-professionals should not open for maintenance without permission; please contact the after-sales department of the company.

	High risk: The operating voltage of this product is 100-250V AC.
	Grounding: This production is connected to ground via the ground wire of power supply; please ensure the good grounding of grounding conductor.
	Electromagnetic interference: The device should be far away from magnets, motors and transformers.
	Moisture proof: Keep the equipment in a dry and clean environment. In case of liquid immersion, please pull the plug immediately.
	Away from flammable and dangerous goods.
	Prevent liquids or metal fragments from being immersed in the machine to avoid safety accidents.

2 Accessories

1	One power wire	6	One SDI wire (VX4S' s Accessorie）
2	One HDMI wire	7	One DP wire
3	One VGA wire	8	One User's Manual
4	One USB wire	9	One certificate
5	One DVI wire		

3 Model description

Model	Description (input interface type)
VX4	DVI×2, VGA×3, CVBS×3, HDMI×1, DP×1
VX4S	DVI×1, VGA×2, CVBS×2, HDMI×1, DP×1, SDI×1

Tips: VX4 has different type and number of interface with VX4S, but their functions are basically the same. In this manual, VX4 is described as the example.

4 General

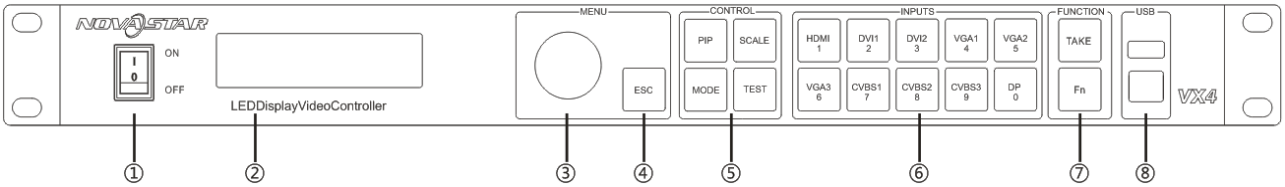
The VX4 is a professional LED display controller. Besides the function of display control, it also features in powerful front end processing, so an external scalar is no longer needed. With professional interfaces integrated, VX4 with excellent image quality and flexible image control greatly meet the needs of the broadcast industry, Its friendly in user-interface. so that the display to work has never been as easier and more enjoyable as with VX4.

Product feature:

1) The inputs of the VX4 include CVBS×3, VGA×3, DVI×2, HDMI×1 , DP×1. They support input resolution up to 1920×1200@60Hz; the input images of VX4 can be zoomed point-to-point according to the screen resolution;
2) Provide seamless high-speed switch and fade-in/ fade-out effect so as to strengthen and display picture demonstration of professional quality;
3) The location and size of PIP can both be adjusted, which can be controlled at will;
4) Adopts the Nova G4 engine; the screen is stable and flicker free without scanning lines; the images are exquisite and have a good sense of depth;
5) Can implement white balance calibration and color gamut mapping based on different features of LEDs used by screens to ensure reproduction of true colors;
6) HDMI/external audio input;
7) 10bit/8bit HD video source;
8) The loading capacity: 2.3 million pixels;
9) Support multiple controller Image Mosaic for loading huge screen;
10) Supports Nova's new-generation point-by-point correction technology; the correction is fast and efficient;
11) Computer software for system configuration is not necessary. The system can be configured using one knob and one button. All can be done just by fingers. That's what we called Touch Track!
12) Adopts an innovative architecture to implement smart configuration; the screen debugging can be completed within 30 seconds; greatly shorten the preparation time on the stage;
13) A intuitive OLED display interface and clear button light hint simplify the control of the system.

5 Appearance

5.1 Front panel

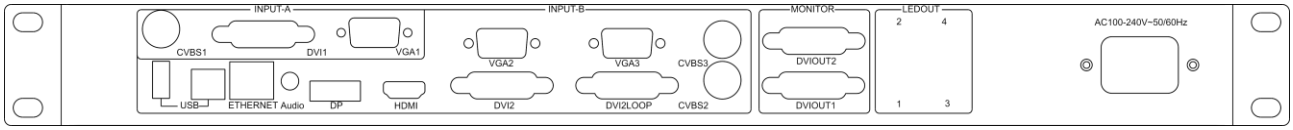


①**: Power switch.**
②: **Operation screen**(Please see the section-**Main Interface** for detail).
③**: Knob.** To press knob means Enter or OK, rotating knob represents selection or adjustment.
④**: ESC.** Escape current operation or selection.
⑤**: Four control keyboard shortcuts.** **PIP:**PIP Turn-on/off. The lighting of this key represents the turn-on of PIP; otherwise, PIP is turned off. **SCALE:** Picture zoom turn-on/turn off. The lighting of this key represents the turn-on of zoom function; otherwise, zoom function is unavailable. **MODE:** Shortcut menu of loading or storage of display model. The key is light when entering the model or shortcut menu, in case of exiting, the key is not bright. **TEST:** Shortcut of turn-on/off of testing picture. In case of entering testing picture, the key is bright; otherwise, the key is not bright.
⑥:**Shortcut keys for switching of 10 signal input source.** Short press to set as the main screen input source, and long press to set as PIP input source. the key is bright after press when the video source has signal; the key flashes when the input of video source has no signal. the setting result can be checked while setting on the display screen and OLED screen.
⑦: **Function keys**. **TAKE:** Display switching shortcut key. After short pressing TAKE key, PIP will be opened; if it has been opened, the switching of between MAIN and PIP will be realized. **Fn:** Custom shortcut key.

⑧: **Flat mouth** (Type A, female USB) is USB interface, which connects U disk;

Square mouth (Type B female USB) is USB controlling interface, Communication with PC.

5.2 Rear panel



Tips: In order to improve the user's experience, the layout of interface may be adjusted a little, The picture is only for reference.

Input Source	
Audio	Audio Input
DP	DP Input
HDMI	HDMI Input
CVBS1~CVBS3	3-Channel PAL/NTSC TV composite video Inputs
DVI -1~DVI-2	2-Channel DVI Inputs
VGA1~VGA3	3-Channel VGA Inputs
Output Interface	
DVI LOOP	DVI LOOP Output
Monitor -DVI OUT1	DVI Monitoring Interface 1
Monitor -DVI OUT2	DVI Monitoring Interface 2
LED Out 1、2、3、4	4-Channel LED Outputs
Controlling Interface	
ETHERNET	Network Control (Communication with PC, or Access Network)
Type B, female USB	USB Control (Communication with PC, or Cascade IN)
Type A, female USB	USB Cascade OUT
Power	
AC 100-250V～50/60HZ	AC Power Interface

Tips： The two USB (typeA) on front panel and rear panel are both forbidden to connect with PC directly.

6 Signal connection

Connect the required hardware equipment reference with the interface descriptions of the previous chapters.

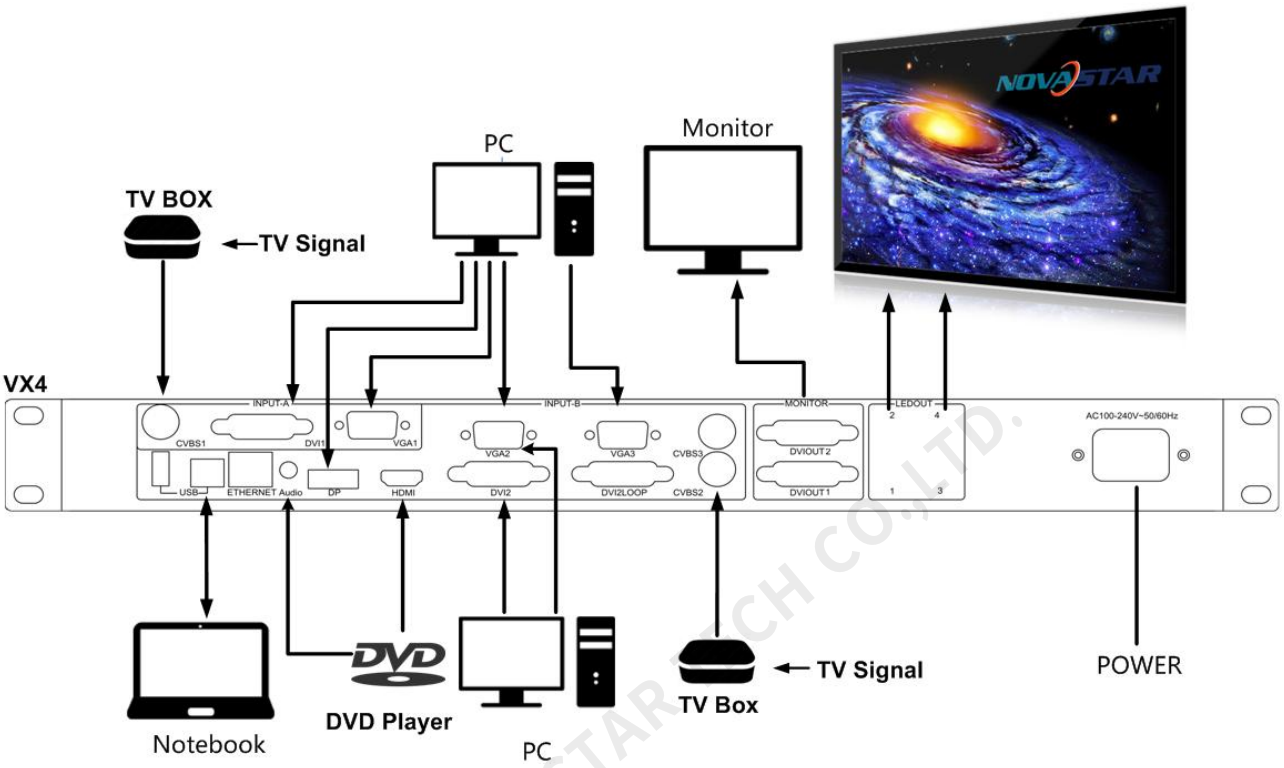
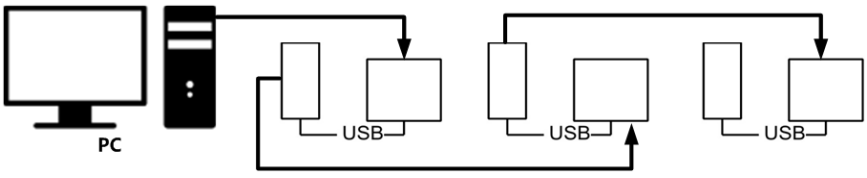


Diagram of VX4 signal connection

Tips: It's must to turn-off Power before signal connection.

If it is required to control more than one sets of VX4, please connect them according to the following figure.



Multiple cascade

7 Operational motion instruction

Knob:

- ✧ Press the knob under main interface to enter the operation interface of menu;

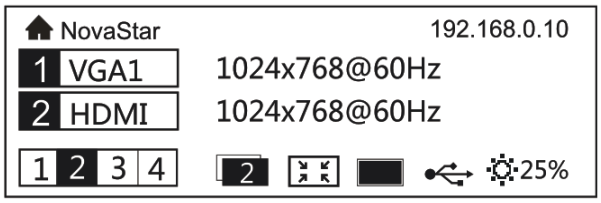
- ✧ Rotate the knob to select menu or press the knob under the operation interface of menu to select current menu or enter submenu;
- ✧ Rotate the knob to adjust the parameter after selecting the menu with parameter; press the knob again for confirmation after adjustment.

ESC: Return key, exit current menu or operation.

Key lock/unlock: long press **knob** and **ESC** key simultaneously.

8 Main Interface

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



First row: Company name; the name and IP of the product are shown alternately;

Second row: Main screen 1; signal source; input source signal format;

Third row: PIP 2; signal source; input source signal format;

Forth row: Status bar. the meanings of all icons are shown below.

	LED Output (it is Port 2 output currently in primary mode, and backup status is displayed as )
	PIP is turned off
	PIP is turned on
	The current effect is point-to-point display
	It is “scale down” mode
	It is “scale up” mode
	Image Mosaic is disabled;
	Image Mosaic is enabled;
	It is USB control currently

	It is network port control currently
	The current brightness is 25%
	Sign of press key lock. When this icon appears at the main interface, it is in key and knob function locking state.

9 Operation instruction

Tips:

The functions of VX4 are powerful with very simple operation, and multiple operations can be completed with a knob and a return key. The design of more than one shortcut keys makes operations more efficient. Generally, the LED display can be used normally, and the brightness is moderate after conducting the following four steps: **Input settings** → **Screen settings** → **Brightness** → **Output settings**. Other menus such as screen control and senior setting can help users better control LED display.

See the following section for details of operations.

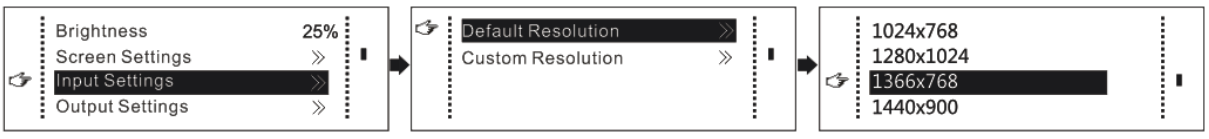
9.1 Step1: Input Settings

Set resolution of input source signal. Resolution can be directly set and changed for digital input interfaces DVI, HDMI and DP. Resolution can only be modified for other input methods on input devices.

Input resolution can be set in two ways:

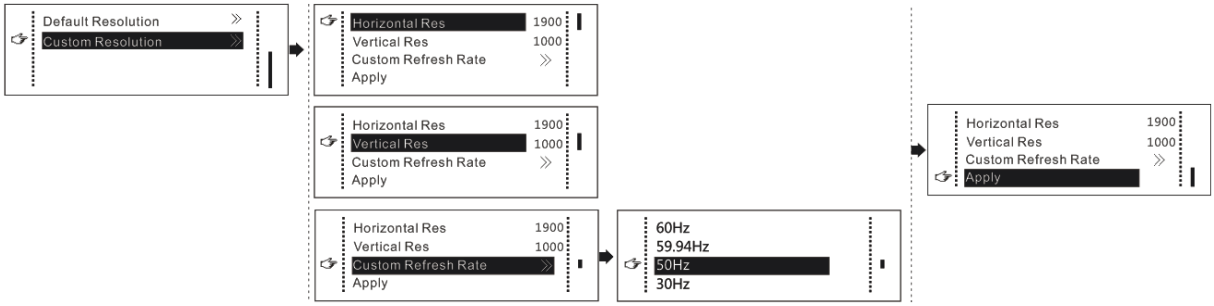
Method one: Default Resolution.

Selection is made in preset resolution of the controller. If there is no preset resolution, you can select the second method and customize resolution.



Method two: Custom Resolution.

Set Horizontal Res, Vertical Res and Custom refresh rate and then select "apply" and press the knob for application. If the application is not confirmed, custom resolution is invalid.

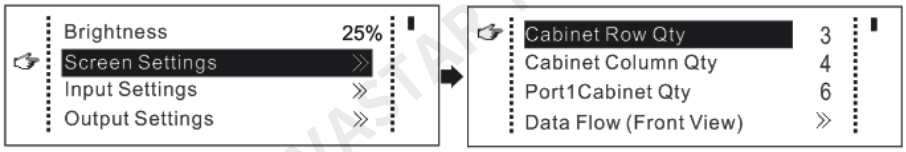


9.2 Step2: Screen settings

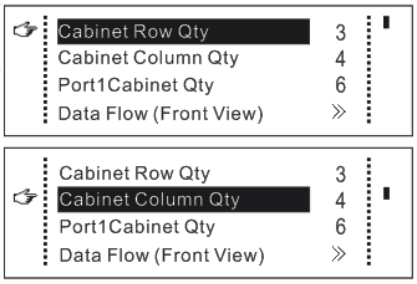
The precondition of Screen setting in shortcut is that the screen must be regular rectangle (not special-shaped), cabinet must be regular rectangle and the size of each cabinet are identical.

Step 1 The screen being power-on, if the cabinet is in normal display, enter into step 2); if the cabinet is in abnormal display, first load the cabinet file, and save it to the receiving card; see detailed operation in 9.7 Advanced Settings .

Step 2 Return to the **"Screen Settings"** submenu. Rotate the button to switch to submenus of other options respectively to perform configurations, as shown in the following figures:

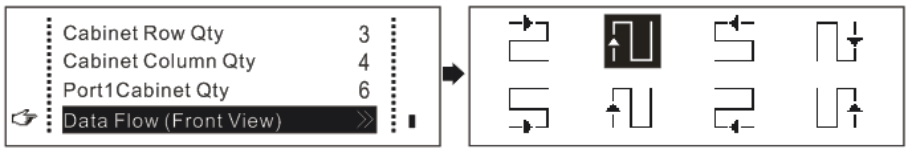


Step 3 Set **Cabinet Row Qty and Cabinet Column Qty** according to the actual situation of the screen.



Step 4 Set **Port1 Cabinet Qty**. The device has some limitations on the cabinet quantity of ports. For details, see precautions for screen settings a).

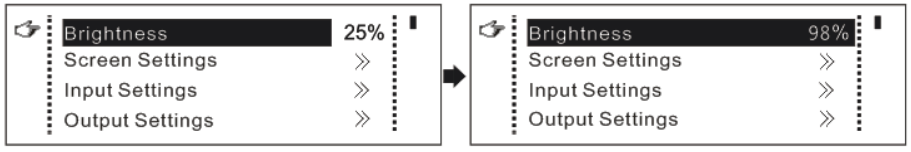
Step 5 Set the Data Flow(Front View). Pay attention to precautions for screen settings c), d) and e) below.



<table>
<tr><td colspan="2">Precautions for screen settings:</td></tr>
<tr><td>a) If the number of ports with loads is n (n≤4), the first n-1 ports must load the same number of cabinets, which must also be an integral multiple of the number of cabinet rows or columns and be greater than or equal to the number of cabinets for the nth ports.</td><td>Example:
For example, if port 1, port 2, port 3 have loads, port 1 and port 2 must have the same number of cabinets, which must also be an integral multiple of the number of cabinet rows or columns. Therefore, you need only to set port 1 cabinet Qty according to the actual situation when setting the screen. The number of receiving cards port 3 loads must be smaller than or equal to port 1.</td></tr>
<tr><td colspan="2">b) In the case of special-shaped cabinets, different cabinet sizes and special-shaped screen, the NovaLCT-Mars software is required to be connected to configure the screen.</td></tr>
<tr><td colspan="2">c) During Data Flow setting, you can rotate the button to see the effects of different data flow on the screen in real time. If you are satisfied with the effect of current data flow, you must press the button to save the setting. You can press the ESC to exit from the current operation.</td></tr>
<tr><td colspan="2">d) During Data Flow setting, you must ensure that the data flow of each port is downward in the same direction.</td></tr>
<tr><td colspan="2">e) During Data Flow setting, you must ensure that Port 1 is the start position of the whole data flow connection.</td></tr>
<tr><td colspan="2">f) VX4 can load 2.3 million (2048x1152@60Hz) pixels in maximum. The width of lateral load can reach to 3840 pixels in maximum(3840x600@60Hz); the longitudinal load can reach to 1920 pixels in maximum(1920 x1200@60Hz).</td></tr>
</table>

9.3 Setp3: Brightness

Return to the main menu interface. Press the Knob to select the corresponding value of Brightness. You can rotate the Knob to adjust the value at this time.



9.4 Setp4: Output Settings

Output settings are divided into three cases:

First one: disable Scaling, i.e., the sizes of output image and input image are the same, and original scale output is used. If the input resolution is smaller than the LED display in one direction, LED display may not become bright in this direction; if the input resolution is greater than the LED display in one direction, the input contents may not be displayed completely in this direction. This option is applicable to the application scenarios requiring point-to-point display. Horizontal offset and vertical offset of images can be set according to the needs, and at this time the displayed contents may move to the left or top at the LED display.

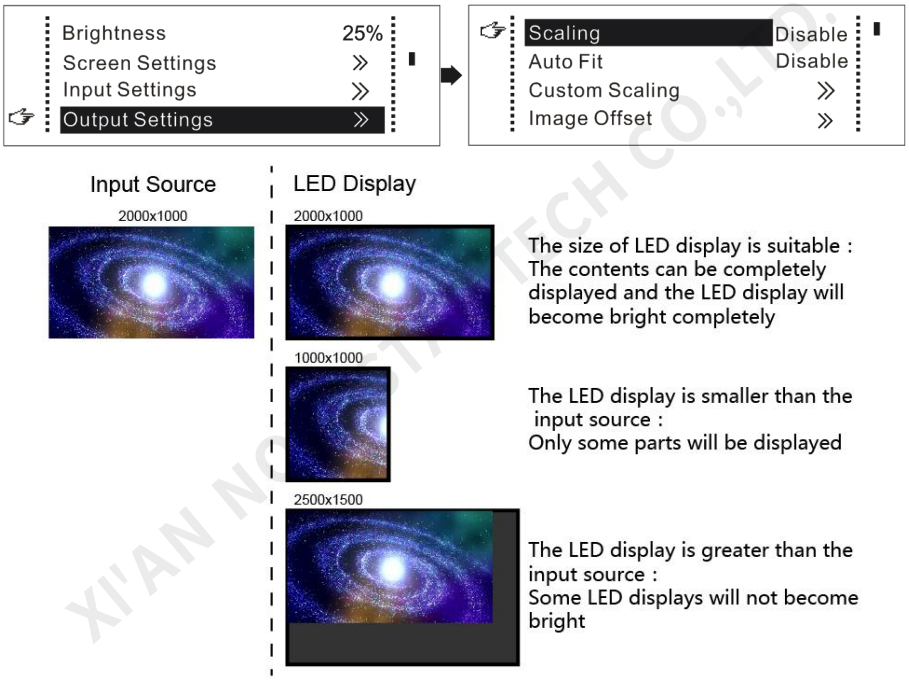
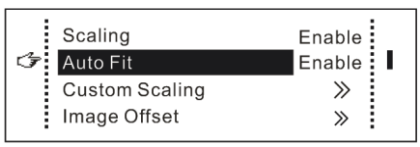


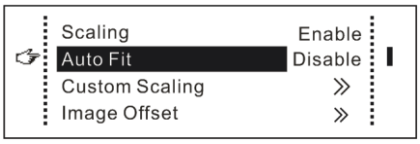
Diagram of display effect of disabling scaling

Second one: Auto Fit . At this point [Scaling] is enabled, and [Auto Fit] is enabled.

When enabling [**Auto Fit]**, the input contents will be fully zoomed to the size of LED display, and the input contents will be adaptive to adapt to the size of LED display. This mode is suitable for full-screen playback of the contents. Setting method is as shown below:

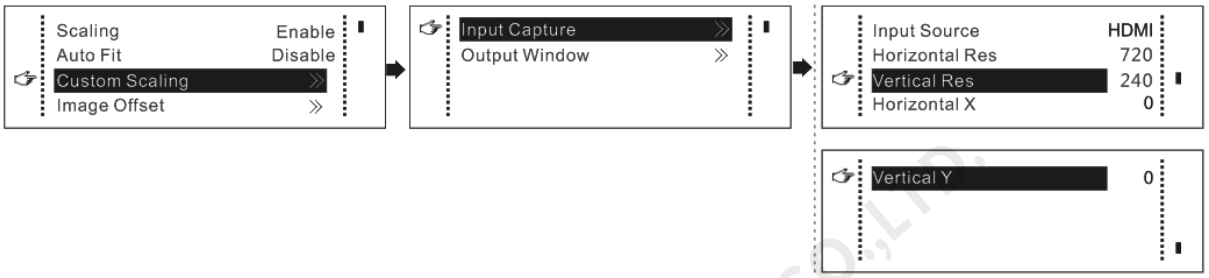


Third one: Custom Scaling. At this point [Scaling] is Enabled, while [Auto Fit] is Disabled.

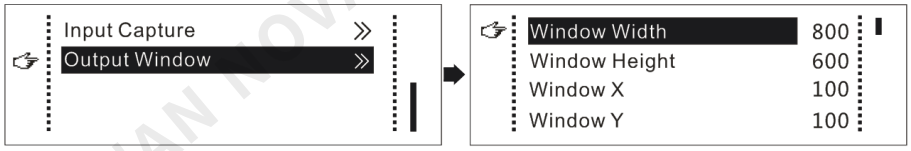


The following steps should be performed for custom scaling:

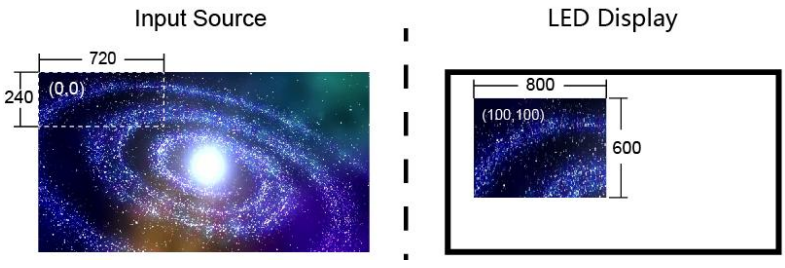
Step 1: Set the input Capture, i.e., capture part of interesting screens from behind one starting point of inputting image and display it on LED display. It is generally required to set Horizontal Res (smaller than or equal to the lateral resolution of input source), Vertical Res (smaller than or equal to the vertical resolution of input source), horizontal X and vertical Y.



Step 2: Set output window, the size of window is smaller than or equal to the size of LED display; after setting the window, the images can only be adaptive to the displayed size within the range of window,. This option is applicable to the application scenarios requiring reserving border at the LED display or restricting playing area.

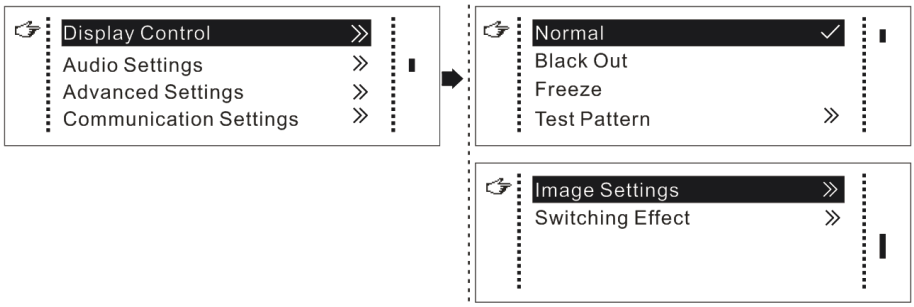


After setting according to the above two steps, the captured contents will only be input and displayed at the set area on the LED display, as shown below:

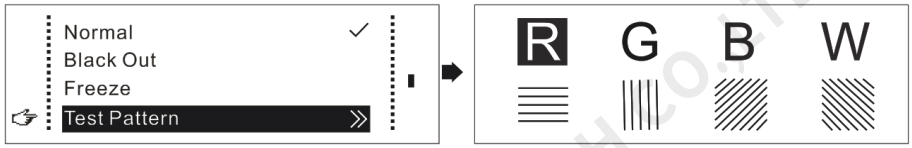


Schematic diagram of custom scaling

9.5 Display Control

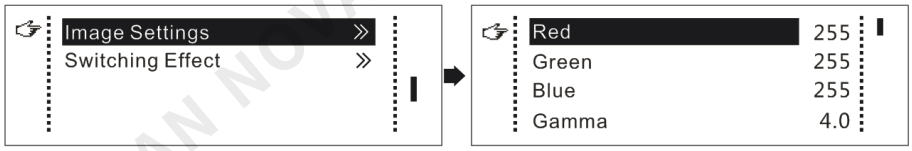


- **Normal** : Normally display.
- **Blank Out**: The display is blank
- **Freeze**: The current play lists are frozen.
- **Testing Pattern**: There are eight kinds of testing screens in total, including pure color and lines.



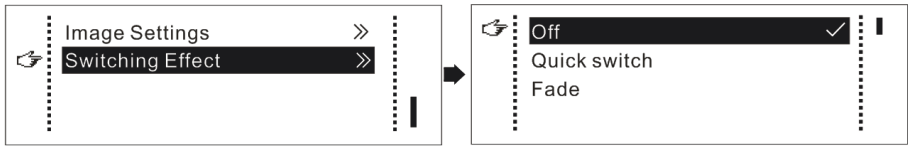
- **Image Settings**

Red, Green, Blue and Gamma value are set according to the requirements. After they are adjusted to satisfaction, the parameters should be saved into receiving card.



- **Switching effect**

Set the effects when switching screens, including Quick switching, fading and turning off. After selecting the desired effect, it will take effect after pressing the knob.

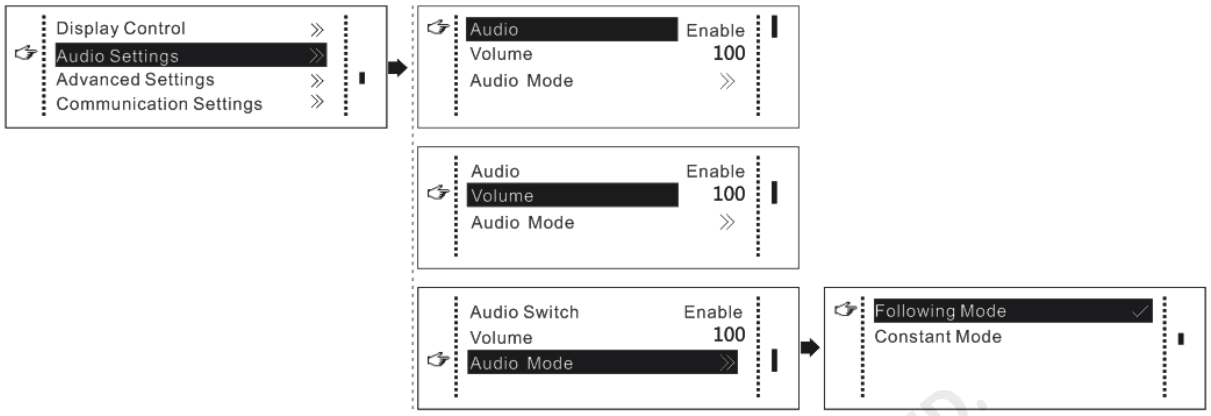


Tips: When enabling PIP function, the switching effect will automatically disappear. Only when PIP function turn off, the special effect function of channel switching can take effect.

9.6 Audio Settings

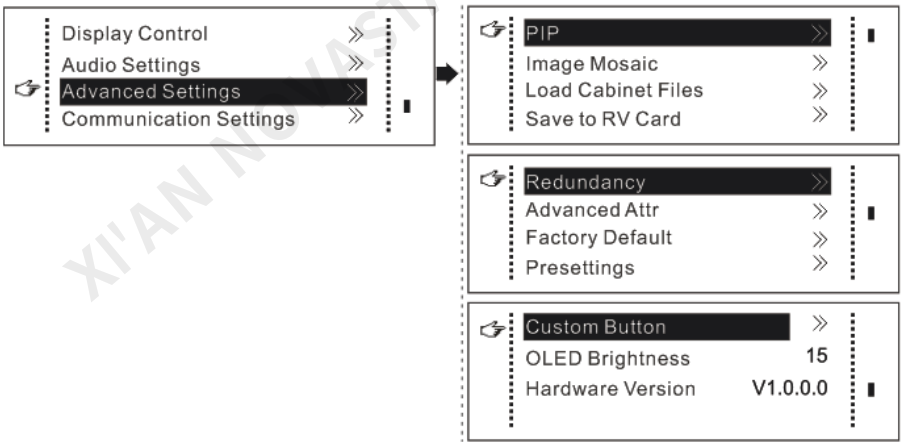
Control the enabling /disenabling of Audio, volume and Audio mode.

For example, when using the audios input via Audio In port, it is required to first enable audios and then select the Audio mode to be fixed; when using the Audio from HDMI, set the Audio mode to be accompanied after enabling audios and then switch source to HDMI, and the Audio we hear comes from HDMI.



9.7 Advanced Settings

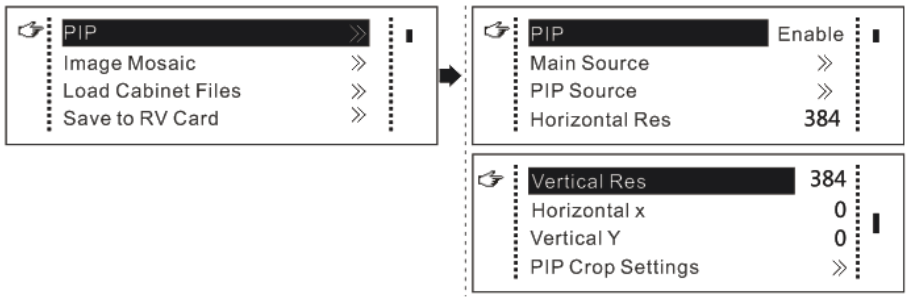
Several setting options of main functions are included in advanced settings, as shown in the figure below, Operation of each function will be detailed for users in the following text.



9.7.1 PIP

Control the turn-on/off of **PIP**, Set input source of main screen and PIP, as well as the size and position of PIP and PIP Crop.

PIP: Turn on/off setting of PIP is the same as the role of PIP button on front panel and synchronous with it.



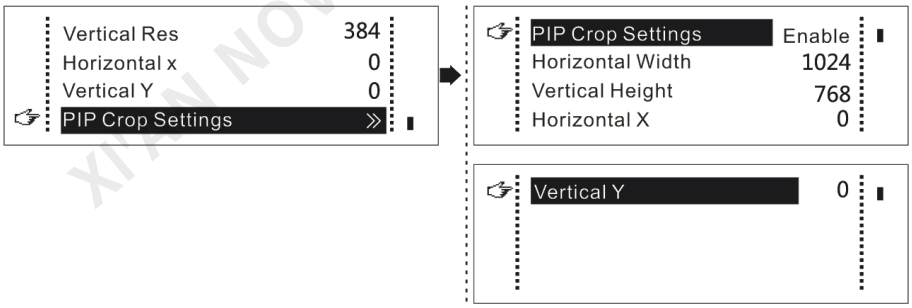
Main source/PIP source: Input source switching of main picture and PIP is the same as the role of input source switching on the front panel.

Horizontal X	Horizontal width of PIP
Vertical Y	Vertical height of PIP
Horizontal Res	Horizontal offset of PIP
Vertical Res	Vertical offset of PIP

PIP Crop Settings

Picture is cropped from the set starting position and is displayed on PIP and its size is set horizontal width and vertical height.

Enable this function and then set horizontal width, vertical height, horizontal X and vertical Y.



The Conflict List of PIP Signal Source(VX4)

		Input Source of Main Channel									
		HDMI	DVI1	DVI2	VGA1	VGA2	VGA3	CVBS1	CVBS2	CVBS3	DP
PIP	HDMI		√	×	√	√	√	√	√	√	√
Input	DVI1	√		√	×	√	√	×	√	√	√
Source	DVI2	×	√		√	√	√	√	√	√	√
	VGA1	√	×	√		√	√	×	√	√	√
	VGA2	√	√	√	√		×	√	√	√	√
	VAG3	√	√	√	√	×		√	√	√	√
	CVBS1	√	×	√	×	√	√		√	√	√
	CVBS2	√	√	√	√	√	√	√		×	√

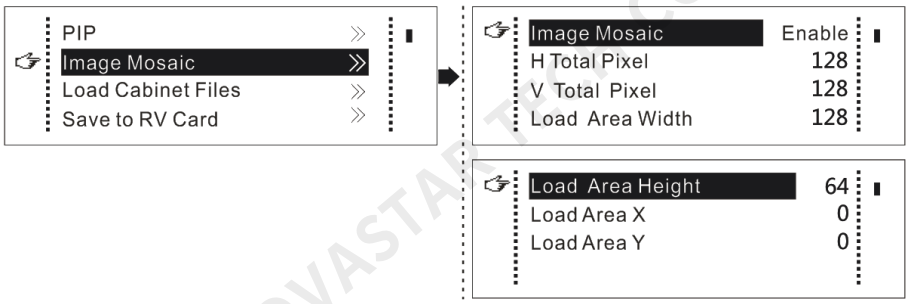
	CVBS3	√	√	√	√	√	√	√	×		√
	DP	√	√	√	√	√	√	√	√	√	

The Conflict List of PIP Signal Source(VX4S)

		Input Source of Main Channel							
		HDMI	DVI	VGA1	VGA2	CVBS1	CVBS2	SDI	DP
PIP Input Source	HDMI		×	√	√	√	√	√	√
	DVI	×		√	√	√	√	√	√
	VGA1	√	√		×	√	√	√	√
	VGA2	√	√	×		√	√	√	√
	CVBS1	√	√	√	√		×	√	√
	CVBS2	√	√	√	√	×		√	√
	SDI	√	√	√	√	√	√		√
	DP	√	√	√	√	√	√	√	

9.7.2 Image Mosaic

When the display screen is huge, two or more VX4 needs to be cascaded for loading the huge screen;

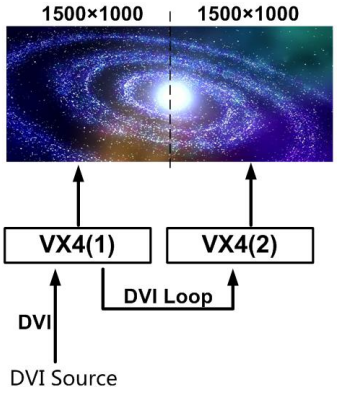


Firstly enable **Image Mosaic** function and then set total number of pixels of huge screen, and lastly set size of load area of each VX4 and starting position.

Total number of pixels is the sum of sizes of load areas of all cascaded VX4.

Image Mosaic example: The total number of pixels of LED display is 3000×1000, exceeding the load capacity of single VX4. two sets of VX4 are used for Image Mosaic processing. The connection method is shown in the right figure, and specific parameter settings are shown in the following table.

	VX4（1）	VX4（2）
Total horizontal points	3000	
Total vertical points	1000	
Horizontal width	1500	1500
Vertical height	1000	1000

Horizontal start	0	1500	 Connection Diagram of Image Mosaic
Vertical start	0	0	

Tips: If you want to enable Image Mosaic, it should be ensured that output setting is the third case-**Custom Scaling**. In other words, [Scaling] is Enabled, while [Auto Fit] is Disabled.

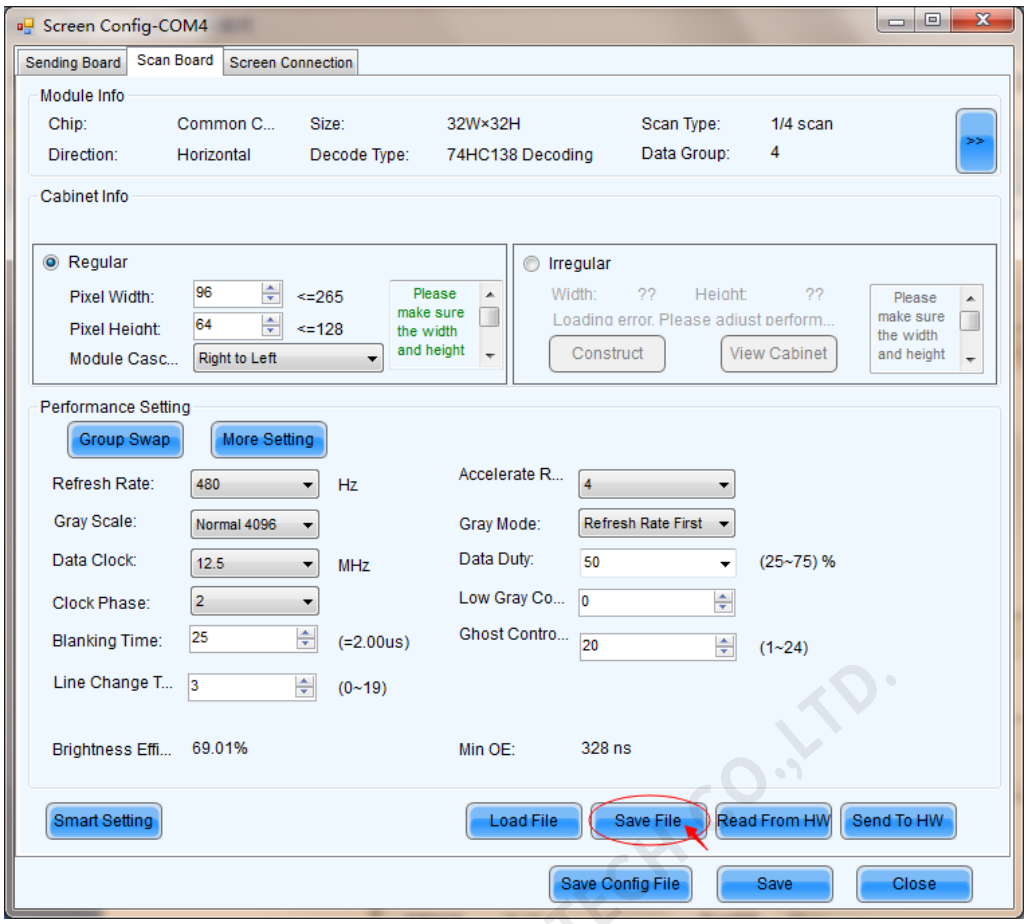
9.7.3 Load Cabinet Files

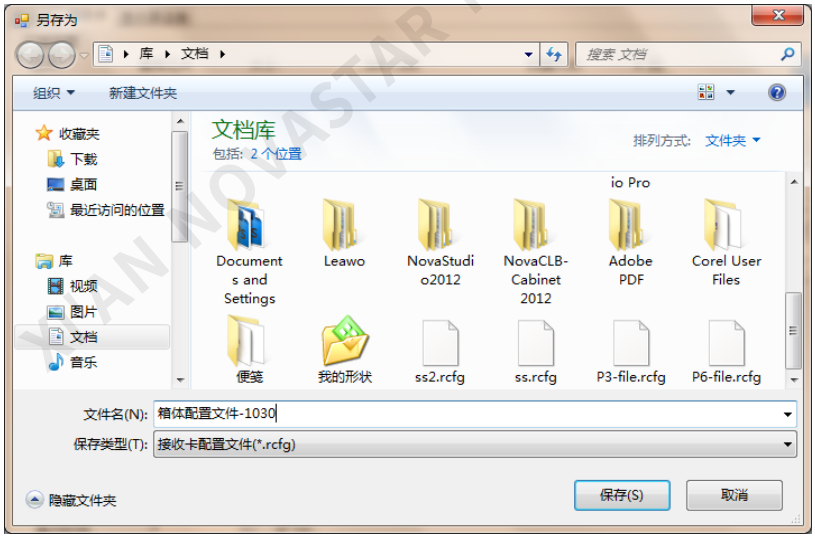
VX4 is connected with PC, NovaLCT-Mars runs on PC and cabinet setting file saved previously is imported into controller.

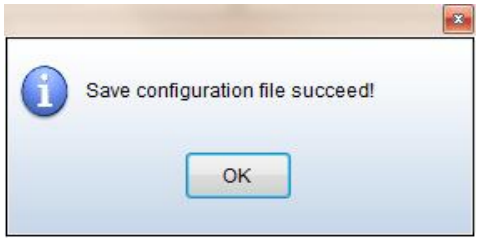
1) Save cabinet configuration file

After receiving card is configured, click 

and save cabinet configuration file (.rcfg) to local file on PC.

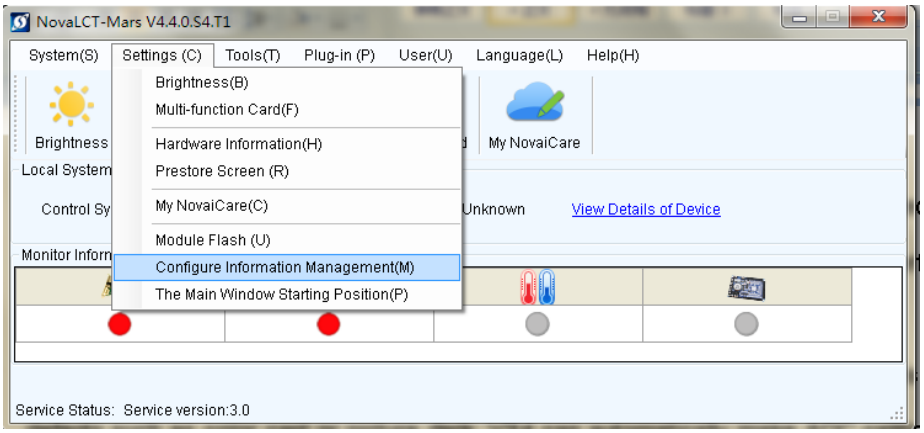


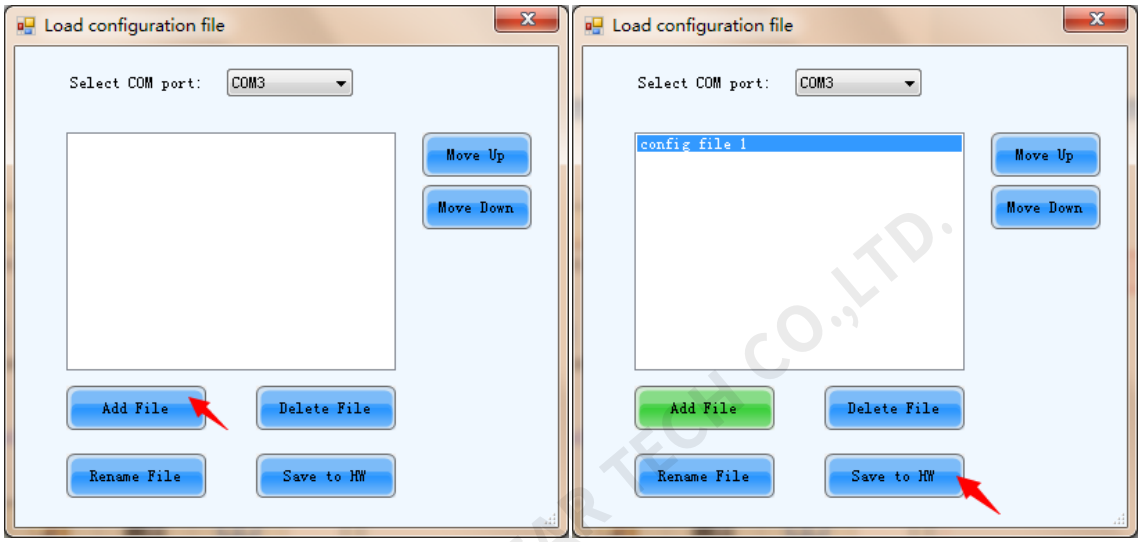




2) Cabinet configuration file is imported into VX4.

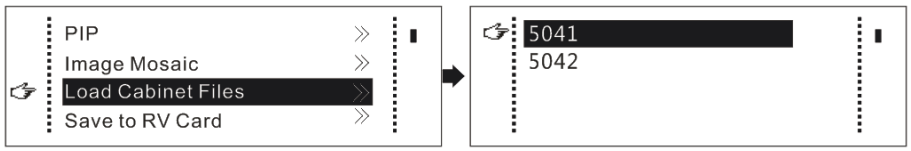
Operation steps are shown in the figure below:





Tips: NovaLCT-Mars automatically reads the existing configuration files in the controller. The NovaLCT-Mars can perform operations such as modification of file name, adjustment order of file and delete these files.

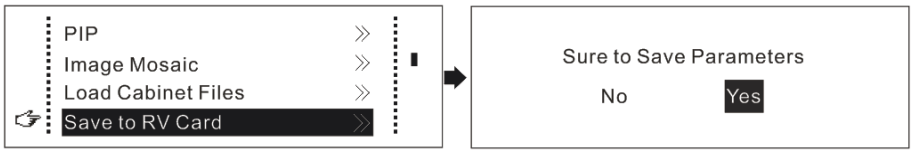
3) Load Cabinet Files.



4) Save the configuration file of cabinet into receiving card. See detailed operation in 9.7.4 Save to RV Card .

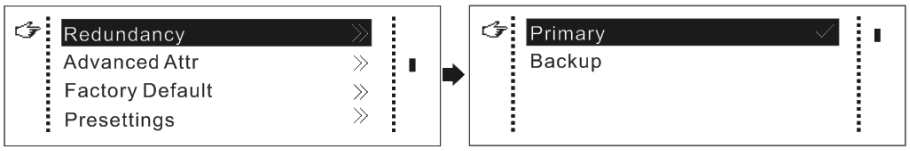
9.7.4 Save to RV Card

All current configurations of VX4 are saved into receiving card and will not be lost after power fault.

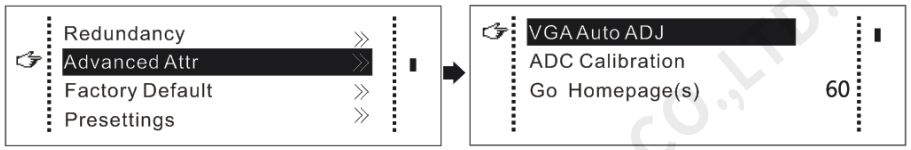


9.7.5 Redundancy

Set this controller as primary or backup mode.



9.7.6 Advanced Attribute



Including the following functions:

VGA Auto ADJ: Sampling parameters of VGA input signal are automatically adjusted so that VGA picture is clear and complete. Select this menu and then press the knob once and perform VGA automatic adjustment once. (VGA1 does not support this feature)

ADC calibration: when analog signal accesses, processors that ADC calibration is not made may have defects such as color cast or picture dark. VX4 can automatically make ADC calibration based on input analog signal (including CVBS and VGA) to solve the above problems. Select this menu and then press the knob once and perform ADC calibration once.

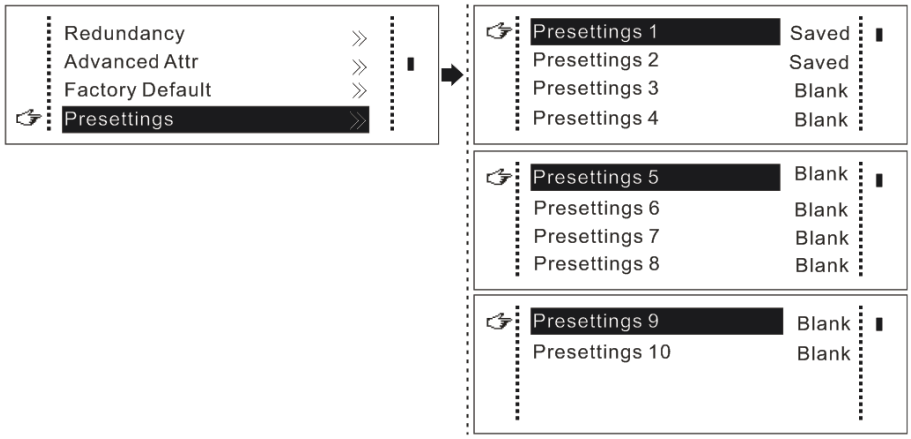
Go Homepage(s): The time period during which the system stops at current interface and then automatically returns to home screen when there is no operation. The system default value is 60s.

9.7.7 Factory Default

VX4 is reset to factory default setting.

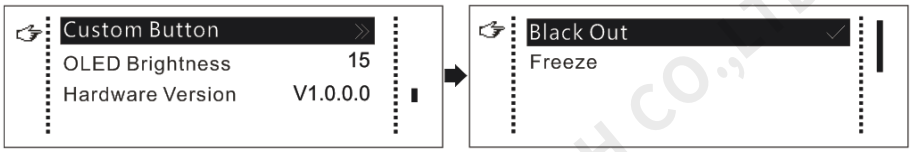
9.7.8 Presettings

Save the current configuration parameters as Presettings. The Presettings can be directly loaded next time, and 10 Presettings are saved by default.



9.7.9 Custom Button

The functions of custom button include **Black Out**, **Freeze**. Press Fn key to directly conduct function switch.



9.7.10 OLED Brightness

Adjust the gray scale of OLED display. The adjustment range is 0-15.

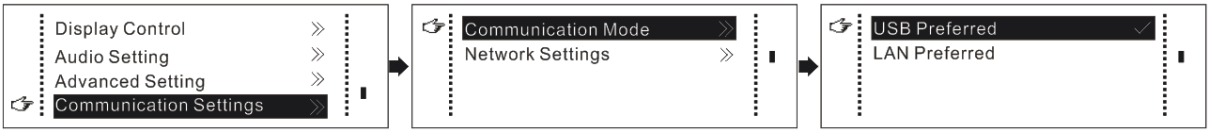
9.7.11 Hardware Version

View the hardware version of VX4. If new version has been published, LCT-Mars can be connected via PC and the hardware program of VX4 can be upgraded. View **10 Firmware Update** for detailed operations.

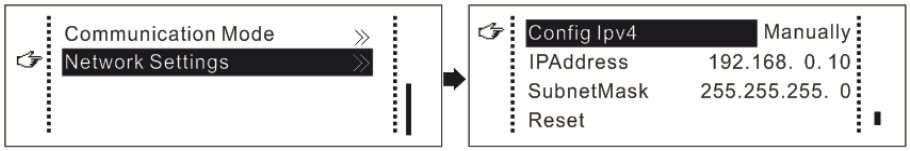
9.8 Communication Settings

Set the communication mode and network parameter of VX4.

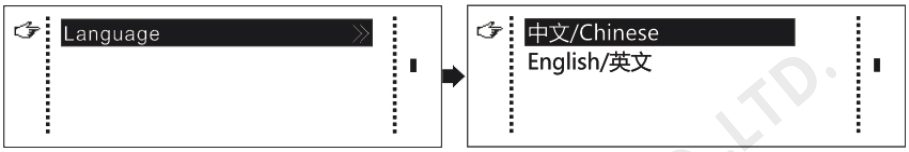
The communication modes include USB priority and interconnected LAN (local area network) priority. When VX4 is connected to USB control and LAN control interface simultaneously, USB takes priority in the settings, adopts USB control; otherwise, LAN takes priority in the settings.



The network parameter can be set both manually and automatically. Ensure that IP address not conflict with other equipment when setting parameter manually.

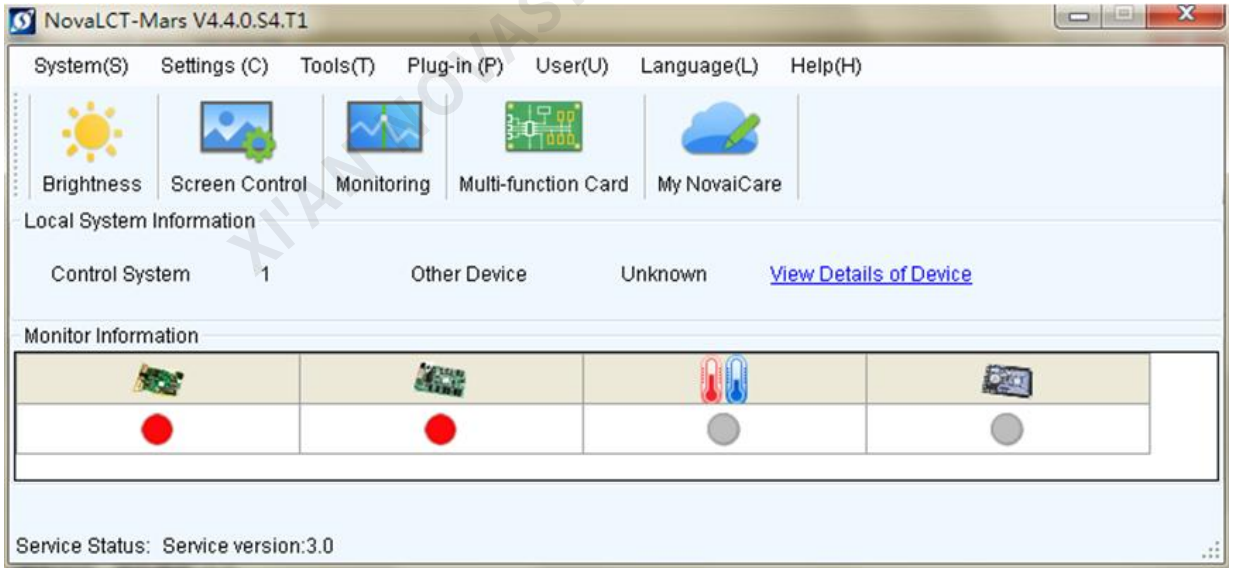


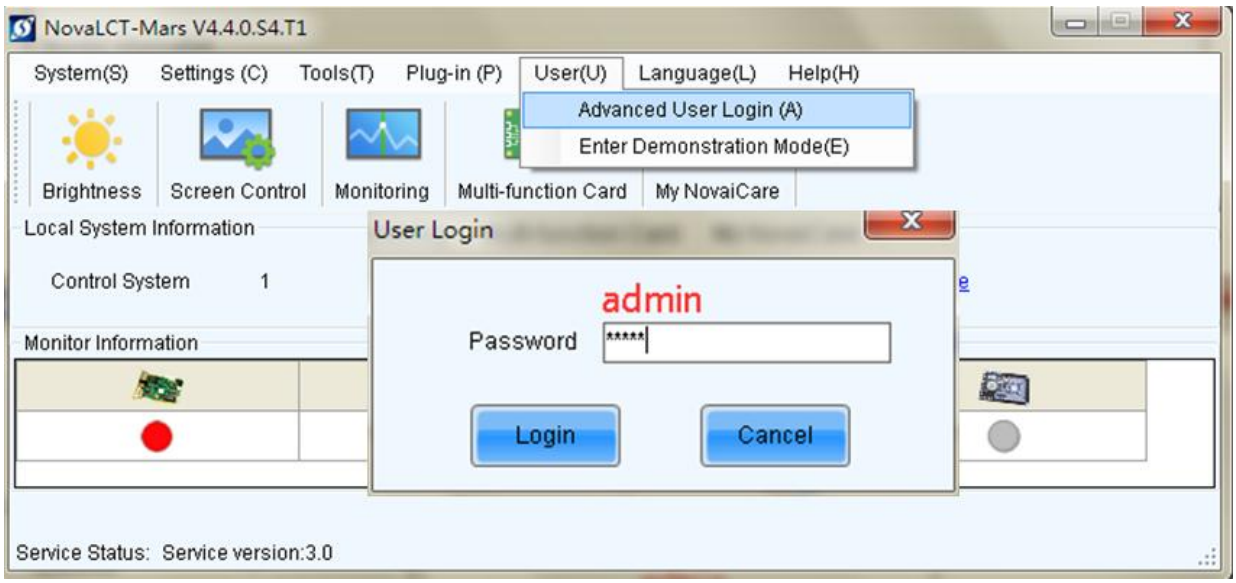
9.9 Language

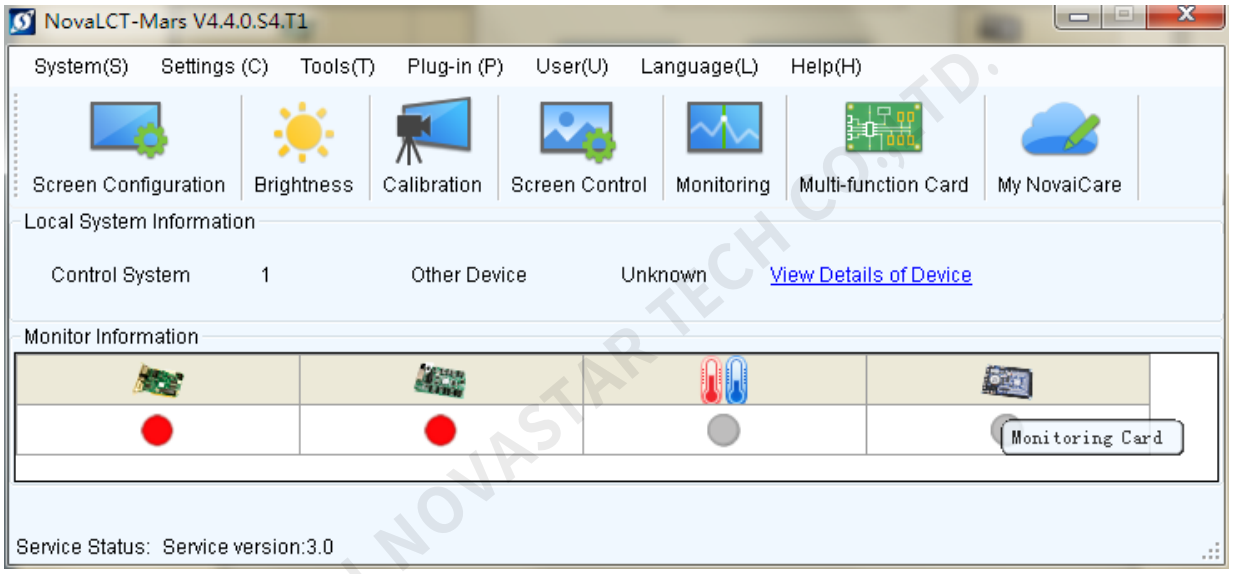


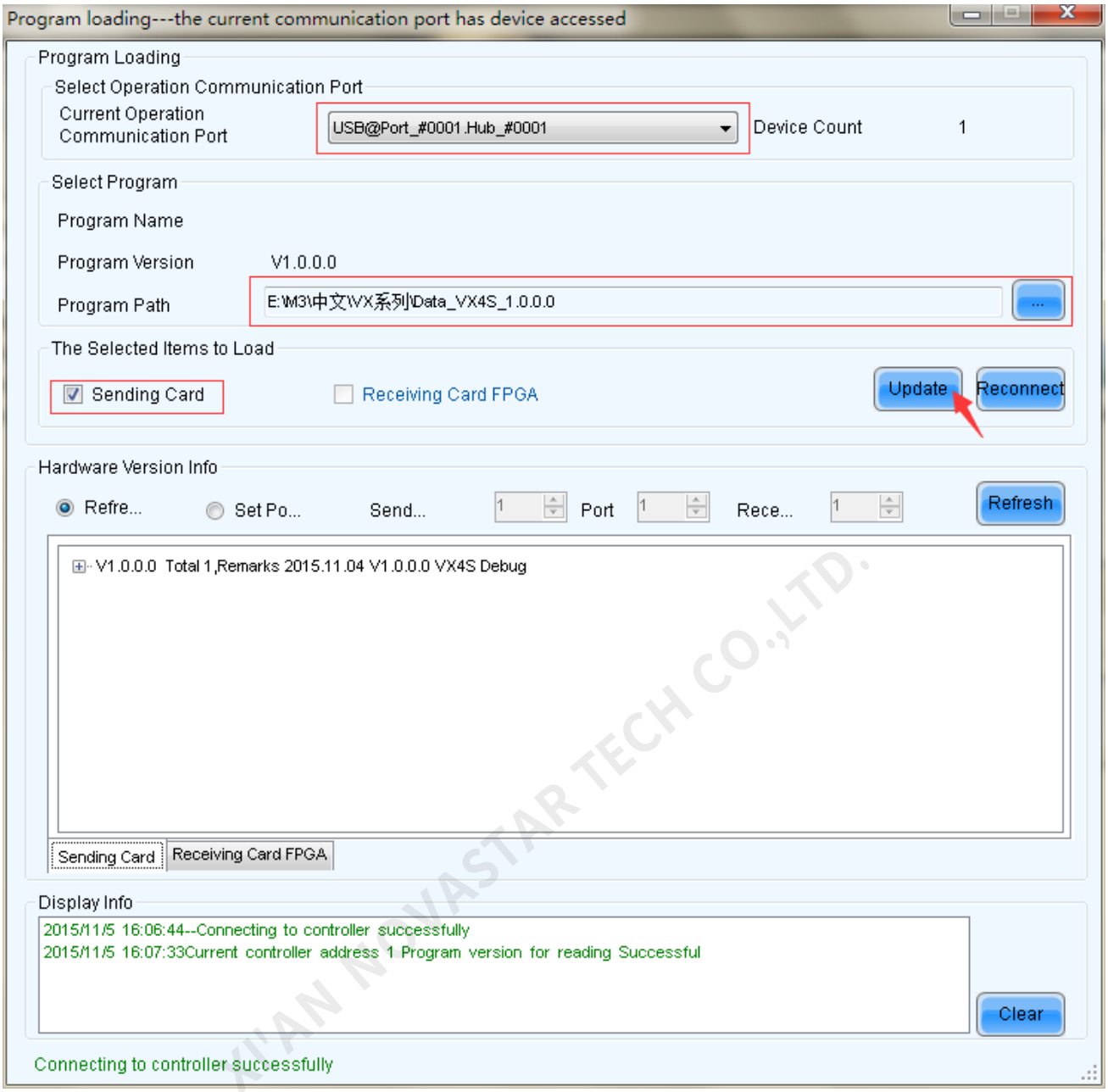
10 Firmware Update

VX4 connect to a computer , and run NovaLCT-Mars on this computer, Login as an advanced user , the password is **admin**, then type in **admin** on keyboard to open the page for updating the hardware program.









Current operation communication port： The serial port under which the hardware program needs update.

Program Path： Select the hardware program needs to be updated currently.

Sending Card： Check to update the program of sending card.

Receiving Card FPGA： Check to update the FPGA program of sending card.

Update： Update the hardware program into hardware equipment.

Refresh All： Select the option and click refresh button to refresh the software, thus displaying all the programs of sending cards and receiving cards under current serial interface.

Set Refresh： Click the refresh button to display the version information of a specified receiving card.

Refresh： Refresh the display to show the version information of hardware so as to confirm whether the

hardware program has been correctly updated.

11 Frequently asked questions and considerations

Questions	Processing mode
LED display is off	Inspect whether the power connection is correct and the switch has been turned on; Play the Self test image and confirm whether the connection of LED is correct and works normally; Inspect whether VX4 output has signal and shows blank screen; Inspect whether the mode and parameter of screen configuration are correct;
Monitoring port output is abnormal	Check whether there is image input in input channel and whether it is correctly displayed; Check whether **PIP** has been turned on, whether there is signal input in 2 channel and whether it is correctly displayed; Check whether monitoring output is connected correctly and it is not loose; Please confirm whether Monitor supports the output resolution of VX4; Try to cut off the power of equipment and restart it, reset VX4 and operate again;
Phase of VGA input offset	Perform **VGA Auto ADJ**;
PIP display is abnormal	Check whether there is signal input in 2 channel and it is normally displayed; Check PIP and confirm whether parameter setting is normal;
Fading is abnormal	Check whether Switching effect has been enable;
Image Mosaic is abnormal	Check whether the VX4 **Image Mosaic** switch has been turned on and whether **Image Mosaic** parameters settings is correct;

	Check whether input signal source is normal;
Sound is abnormal	Check whether the **volume** settings is appropriate; Check whether the **Audio mode** setting is correct; Confirm VX4 is well connected to multifunction card, and the corresponding output port icon on the main interface has been highlighted; confirm whether the audio output mode of multifunction card is HDMI mode (it is required to connect LCT for confirmation and setting);

Please preliminarily investigate problems according to the above steps; if you cannot eliminate the problems, please contact the local dealer or our company's customer service personnel.

There is high voltage inside the machine. In order to guarantee your safety, please do not maintain the processor by yourself.

12 Specification

Input Index			
Port	Number		Resolution Specification
Port	VX4	VX4S	Resolution Specification
VGA	3	2	VESA Standard, support max 1920×1200@60Hz input
DVI	2	1	VESA Standard (support 1080i input), support HDCP
CVBS	3	2	PAL/NTSC
HDMI	1	1	EIA/CEA-861 standard, in accordance with HDMI-1.3 standard, support HDCP
DP	1	1	VESA Standard
SDI	0	1	480i、576i、720p、1080i/p

Output Index		
Port	Number	Resolution Specification

	VX4	VX4S	
DVI LOOP	1	1	Consistent with DVI input
VGA	1	1	1280×1024@60Hz 1440×900@60Hz 1680×1050@60Hz 1600×1200@60Hz 1600×1200@60Hz – Reduced 1920×1080@60Hz 2560×816@60Hz 2048×640@60Hz 1920×1200@60Hz 2304×1152@60Hz 2048×1152@60Hz 1024×1280@60Hz 1536×1536@60Hz Self-defined output resolution (Bandwidth optimization) Horizontal resolution maximum 3840 pixels Vertical resolution maximum 1920 pixels
DVI	1	1	
SDI (SDILOOP)	0	1	Consistent with SDI input

Specification of complete machine	
Input Power	AC 100-250V, 50/60Hz
Overall Power Consumption	16W
Operating Temperature	-20~60℃
Size	482.6×251.5×45（mm）
Weight	2.55 Kg

13 Dimension

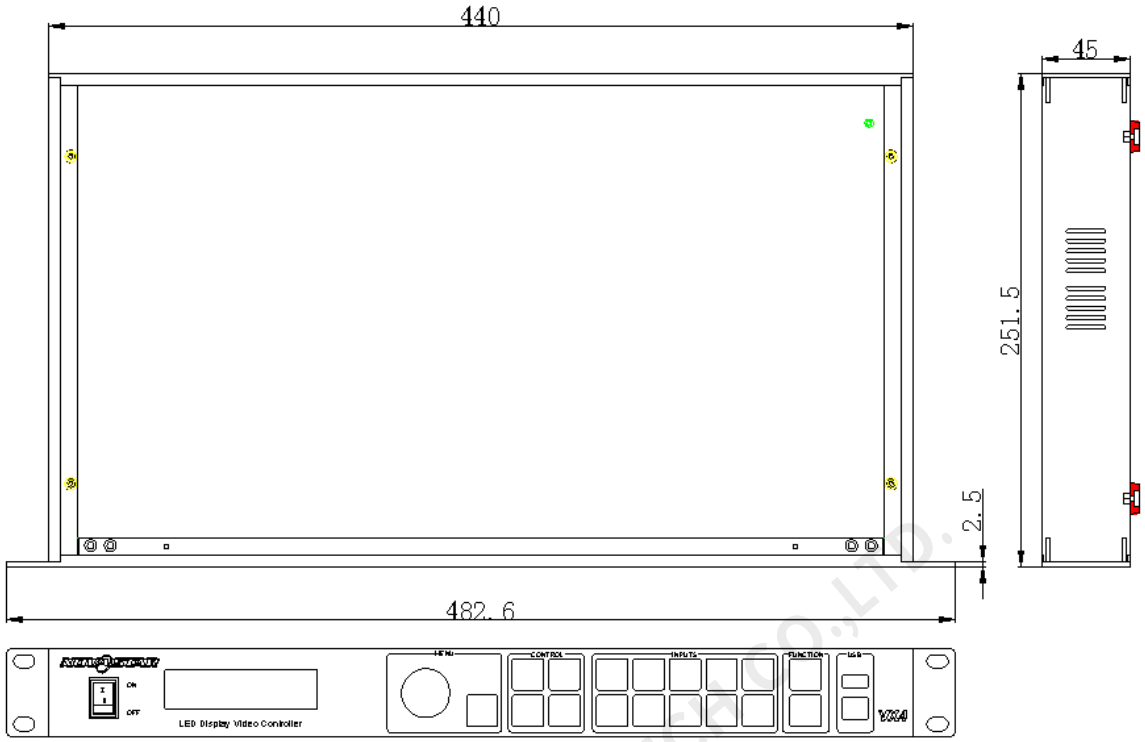


Fig. 13-1 VX4 's dimension（Unit：mm）