4K Multi-Window LED Video Controller

LED Video Controller
Multi-Windows Splicer

-- English

User Manual

Multi-Window Controller

www.amoonsky.com

Safety Instructions

This symbol prompts the user, the device user manual has important operating and maintenance instructions.

This symbol warns the user of the equipment inside the enclosure exposed to hazardous voltages, there is the risk of electric shock.

Note

Read the manual• Read and understand all safety and operating instructions before using the equipment.

Save the manual• The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources •

This equipment should be operated only from the power source indicated on the product.

This equipment is intended to be used with a main power system with a grounded (neutral) conductor.

The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Statement

This document is intended to help you understand and use the product. For accuracy and reliability, our company may make improvements and/or changes to this document at any time and without notice. Any problem in use or any good suggestion, please contact us through ways provided in the document. We will do our utmost to solve the problems and adopt the suggestions after evaluation as soon as possible.

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HDMI logo and High-Definition Multimedia Interface (High-Definition Multimedia Digital Interface) are HDMI Licensing LLC. Trademarks.

Contents

Appearance

The 4K LED Multi-Windows LED Video Controller Panel Includes Front Panel And Rear Panel. The Devices With Different Configurations Of The Following As Detailed Description.

1.1 Front Panel

»» **LCD Screen** — Display the menu and parameters of configuration.

»» **Operating button** — Operate the menu system.

- **OK:** "Confirm";
- **ESC:** "Exit operation" or "Return";
- **Knob:** Press down "OK", turn right "+" turn left "-" adjust the parameters on menu.

»» **INPUT SOURCE** — **HDMI1**、**HDMI2**、**HDMI3**、**DP1**、**DP2**、**SDI/USB**、**WiFi** (Extension Required)、**BLACK**、**TEST**, Select the input source signal for current layer.

- **SDI/USB、WiFi:** SDI/USB is a multiplexing key. When user selects to expand SDI, the key is will switch SDI Input; When user selects to expand USB , the key is will switch USB Input; Press the WiFi key will switch to the wireless projection function. Only one of the three functions can be selected;
- **BLACK:** One key black screen button. When this button is selected, all current windows are black screen;
- **Test:** Test function button, open this function, the screen will display test pattern ,total of 11 test patterns；
- The indicator light keep flashing if the selected input no signal.

● The indicator light keep bright if the selected input is signaled.

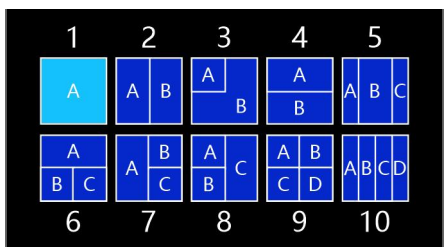
»» FUNCTION

● **FREEZE:** One key freeze screen button. When this button is selected, all current windows are freeze screen;

● **SIZE:** Set the size or position of the selected layer;

Window Size	
Window Select	A
H Start	0
V Start	0
Width	3840
Height	2160

● **LAYER STYLE:** There are 10 styles for selection.as below:



● **MODE:** Recall the preset mode shortcut key. After entering the menu, rotate the corresponding preset template through the knob.

● **A、B、C、D:** 4 layers. After selecting one layer, can adjust the input signal or parameters of the layer.

1.2 Rear Panel

»» **Power Connector:** IEC standard power cable, input 100-240 VAC, 50 -60Hz;

»» **Input Channel**

- HDMI: HDMI1&2&3, HDMI2.0 standard, Support 3840x2160@60Hz and down compatibility;
- DP: DP1&2, DP1.4 standard, Support 76800x2160@60Hzand down compatibility;
- SDI: 3G-SDI/12G-SDI video input, BNC connector (Expanding);
- USB: USB input (Expanding);
- WiFi: Wireless screen projection function (Expanding);

»» **Output Channel**

- EX1000 series has 2 sets of outputs, 8 network ports; (OUTPUT1&2);
- EX2000 series has 4 sets of outputs, 16 network ports; (OUTPUT1&2&3&4）;

OUT1, OUT2 are Gigabit Ethernet ports for each output group, Capacity per port up to 650,000 pixels ,Redundancy between Ethernet ports supported;

»» **Indicator Light**

- STATUS: Red, Power supply indicator light.

If the power supply is normal, The indicator light will turn on;

If the no power supply or abnormal, The indicator light will turn off;

- RUN: Green,Signal indicator light. Different control cards have different corresponding rules;
- Example -- Novastar:

Slow Flashing (Flashing once in 2s) _ No video input is available;

Normal Flashing (Flashing 4 times in 1s) _ The video input is available;

Fast flashing (Flashing 30 times in 1s) _ The screen is displaying the startup image;

Breathing _ The Ethernet port redundancy has taken effect;

»» **USB:** LED Sending Card debugging interface, USB 2.0 (Type-B, square port);

Each output(OUT1/2) is debugged separately, After debugging is completed, need saving the parameters to hardware;

»» **Control Interface**

- USB: Type-A, Used for upgrading internal programs of the machine; Or expand USB player input.
- RS-232: Used to connect the PC control port,s such as central control devices, referring to the provided communication protocol for the upper computer;
- NET: The computer is connected to the machine network interface through the network cable to realize the web version upper computer control;

»» **MONITOR:** Monitor output interface, connect HDMI signal input display device to monitor device output content in real-time.

»» **Audio:** 3.5mm audio output interface, left and right channels, capable of decoding a set of audio outputs.

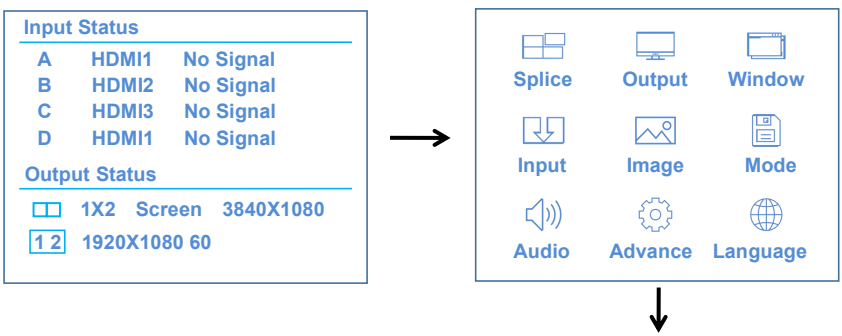
»» **WIFI Antenna:** Can receive wireless screen projection signals from mobile phones or tablets

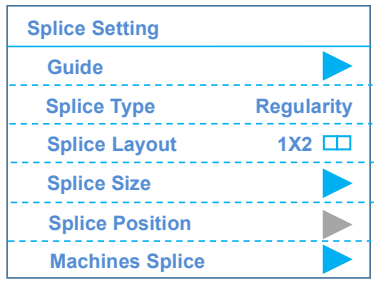
»» **EXT、ANT:** Used for external grounding to enhance anti-interference.

Quick Splice Wizards

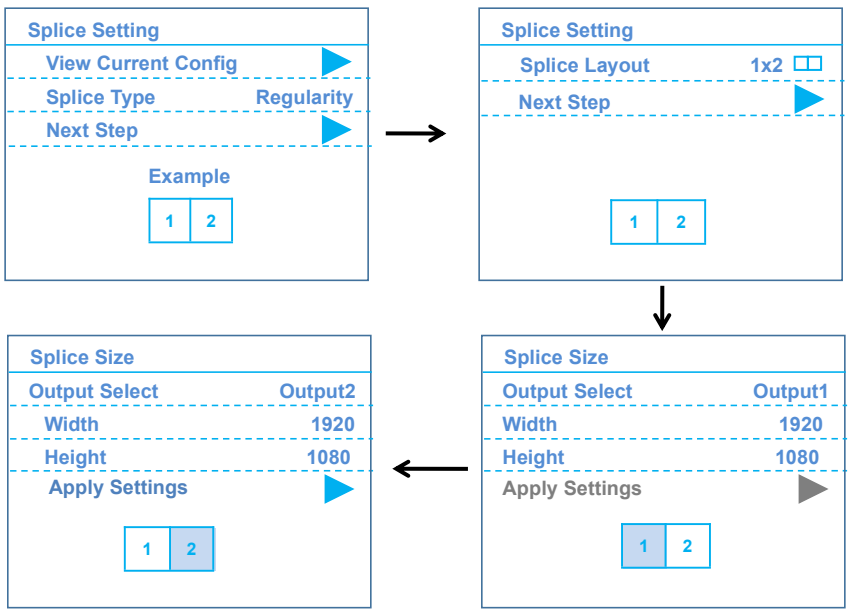
2.1 Enter The Splice Wizards

In The Power On State,Press "OK" Or "Knob" To Select "Splice " In The Main Menu.After entering, Find"'Guide ” this option;





2.2 Regularity Splice Setting Steps

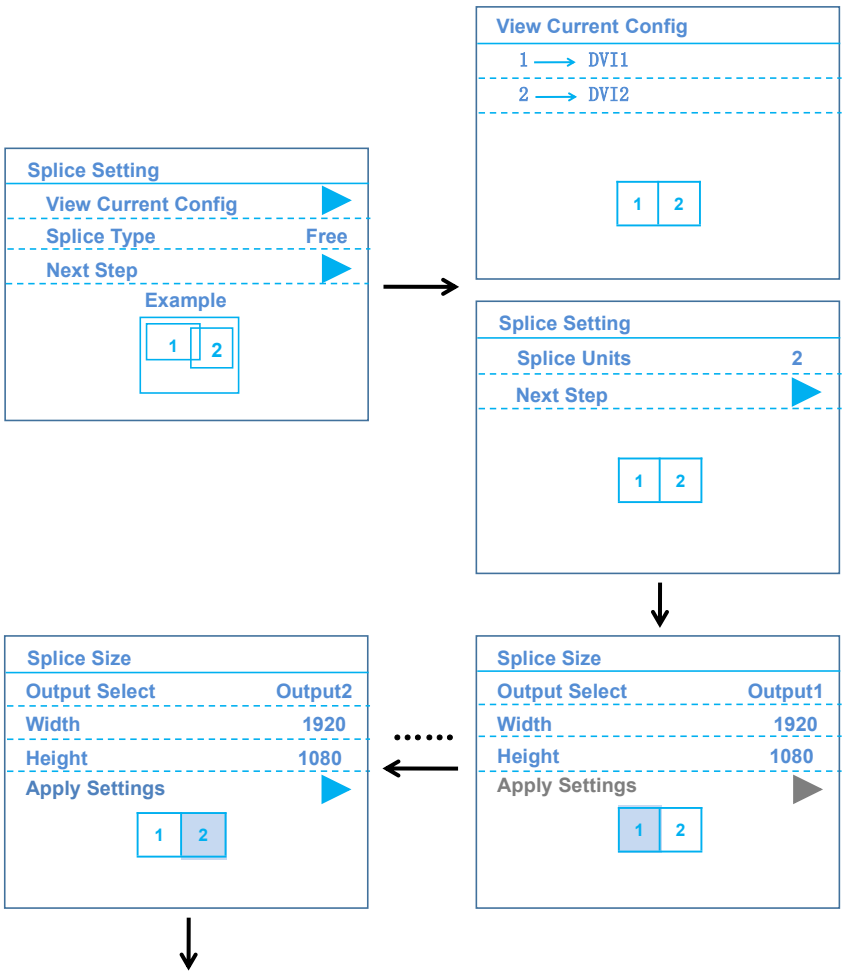


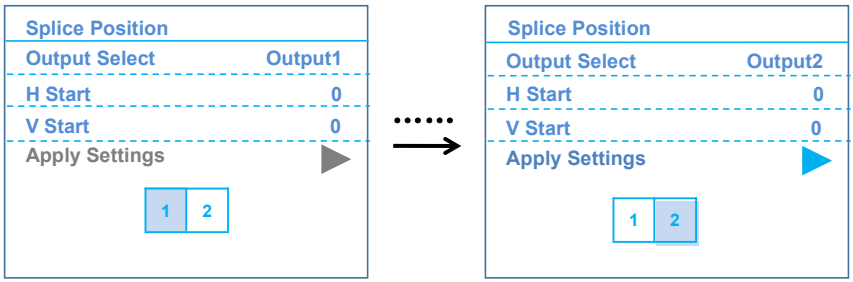
- Splice Layout: 1x1, 2x1, 1x2 ;
- In The Splice Size Interface, Set The Width&Height (Actual Control Pixel Of Each Output Port) Of Output1,Output2 Respectively. After Setting, Select (Apply Settings) And Click ”OK” To Complete The Splicing Display.
- Open the control system setting software,First Step, setting the sending card resolution to

match the controller output resolution; Second Step, send and check the led display single cabinet whether display correct; Step Three, setting the cabinet connection files based on the actual network cable connection ,If displayed correctly, please saving the parameters to hardware;

2.3 Free Splice Setting Steps

(Recommended)



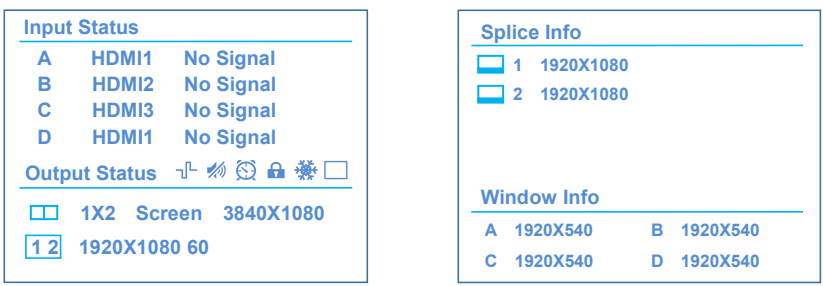


- Splice Layout: 1x1, 2x1, 1x2;
- In The Splice Size Interface, Set The Width&Height (Actual Control Pixel Of Each Output Port) Of Output1,Output2 Respectively, After Setting, Enter The Next Step;Set The Output H Start（Horizontal Start Position）& V Start（Vertical Start Position）, After Setting, Select (Apply Settings) And Click ”OK” To Complete The Splicing Display;
- Open the control system setting software,First Step, setting the sending card resolution to match the controller output resolution; Second Step, send and check the led display single cabinet whether display correct; Step Three, setting the cabinet connection files based on the actual network cable connection ,If displayed correctly, please saving the parameters to hardware;

Menu System

3.1 Boot Menu

The Boot Menu is As Follow Picture, Press "ESC" Key Can Be Switched .



Boot Menu

»» **Menu Icon:** The following icons are not displayed by default. Once the corresponding function is enabled, they will be displayed in real-time in the standby menu. If cancelled, they will not be displayed;

Machines Spice: The icon indicates that the multi Machines Spice function is enabled;

Mute: The icon indicates that the Audio mute function is enabled;

Time& Tasks: The icon indicates that the scheduled tasks function is enabled;

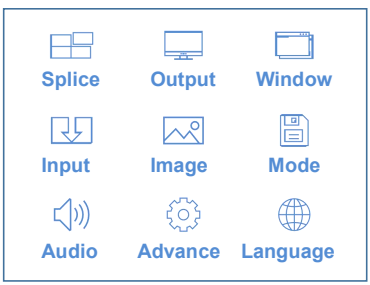
Keypad Lock: The icon indicates that the keypad is locked, and can be unlocked or locked by long pressing the ESC key for 2 seconds;

Freeze: The icon indicates that the display freezing function is enabled;

Black: The icon indicates that the black screen function is enabled;

3.2 Main Menu

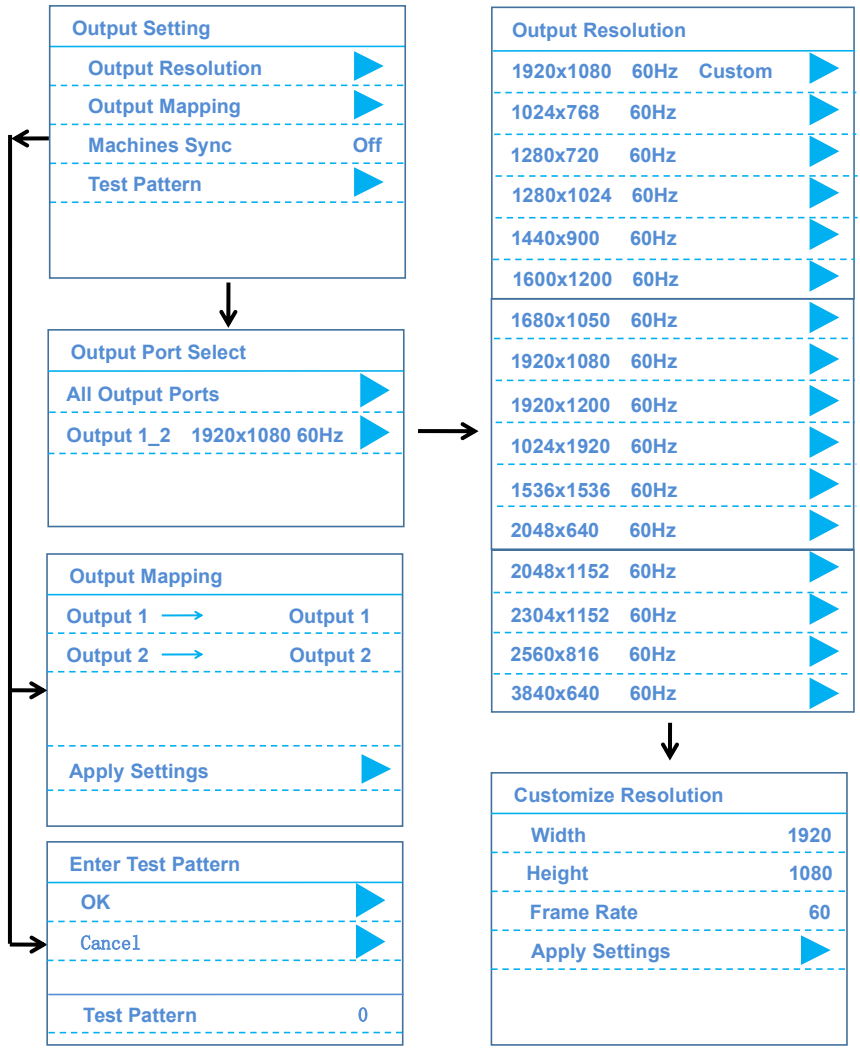
The LCD Screen Displays The Input Source And Resolution Information Of All Layers. Press The "OK" Key To Enter.



3.3 Sub-Menu

● Output Setting

(Select "Output Setting" In Main Menu And Press "OK" To Enter The Interface Below);



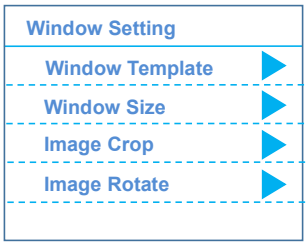
Note: Output Resolution: If Change The Item, All Output Ports Will Be Set To The Same Resolution;

Grouping Output Resolution: The Output Ports 1&2 Or 3&4 Are Must Same Of The Resolutions;

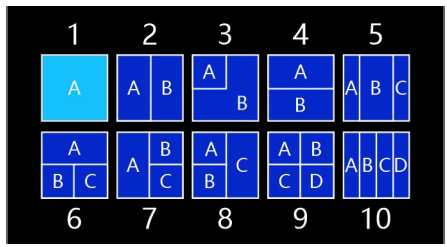
Output Mapping: Map The Output Ports (1-4)To The Physical Interfaces (Output1-4) According To The Requirements, As Long As They Correspond One By One.

● Window Setting

(Select "Window Setting" In Main Menu And Press "OK" To Enter The Interface Below)



Window Setting Menu



10-Windows Style

»» **Windows Template:** 10 Kinds Of Windows Preset, Which Can Be Directly Recall By Users;

»» **Window Size**

Window Size	
Window Select	A
H Start	0
V Start	0
Width	1920
Height	1080

Window Select:

Window A,B,C,D Respectively Correspond To A,B,C,D Keys In The Function Area;

Change Window Signal: First Select The Corresponding Window (A, B, C, D), And Then Select The Corresponding Signal Source;

Change Window Size: First Select The Corresponding Window (A, B, C, D)+ "Size" Key.

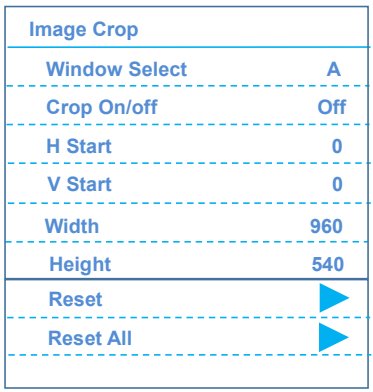
H Start: Adjust The Horizontal Start Position Of The Corresponding Window;

V Start: Adjust The Vertical Start Position Of The Corresponding Window;

Width: Adjust The Horizontal Size Of The Corresponding Window;

Height: Adjust The Vertical Size Of The Corresponding Window;

»» **Image Crop:** Select "Image Crop" In Main Menu And Press "OK" To Enter The Interface Below



Window Select: Select To Crop The Current Window(A,B,C,D), And The Captured Signal Is The Input Signal Selected For The Current Window;

Switch: "On" or "Off", "On" Means To Open The Image Crop Function;

H Start: Corresponding To The Horizontal Start Position Of the Crop Signal;

V Start: Corresponding To The Vertical Start Position Of the Crop Signal;

Width: Corresponding To The Horizontal Size Of the Crop Signal;

Height: Corresponding To The Vertical Size Of the Crop Signal;

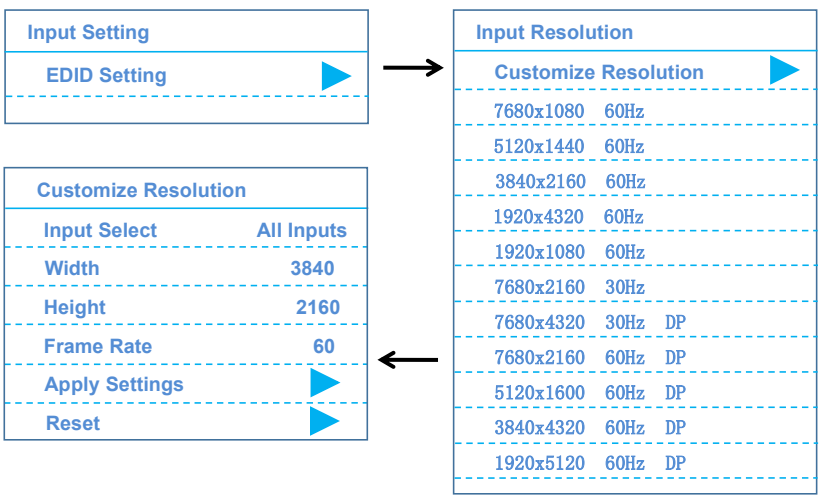
Reset: Reset The Parameters Of The Input Signal Selected In The Current Window;

Reset All: Reset The Parameters Of The Selected Input Signals In All Windows.

»» **Image Rotate:** The Select Include: OFF, H-Flip, V-Flip, 90°, 180°,270° ; The User Selects B The Corresponding Options According To The Actual Requires;

● Input Setting

(Select "Input Setting" In Main Menu And Press "OK" To Enter The Interface Below)



(Open" Input Custom Resolution", Need Enter The Menu)

EDID Setting: Selected Input Signals (All Input, HDMI1/2/3, DVI1/2, DP) For EDID Setting;

● Image Quality

(Select " Image" In Main Menu And Press "OK" To Enter The Interface Below)

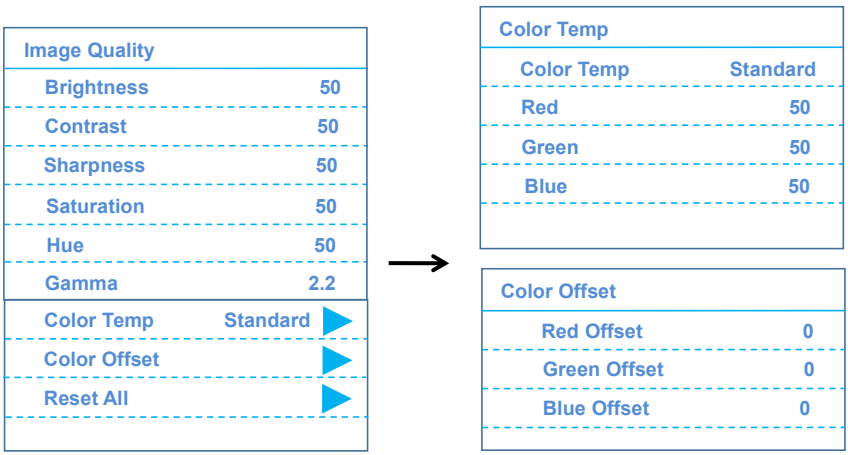
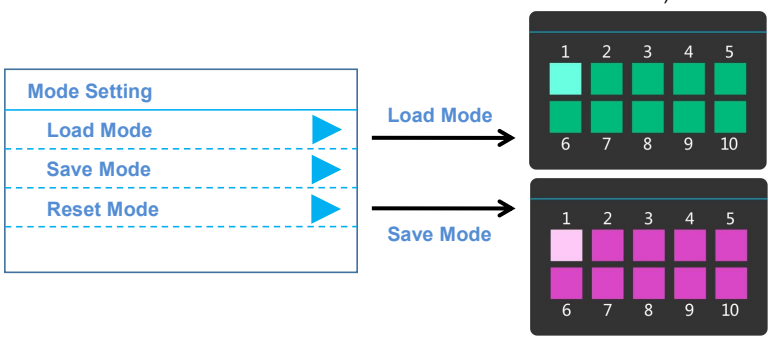


Image Quality: Brightness, Contrast, Sharpness,Saturation, Hue, With An Interval Value Of 0-100;

Color Temp: Standard, Cool, Warm, User; Can Be Adjusted According To User Requires;

● Mode Setting

(Select " Mode " In Main Menu And Press "OK" To Enter The Interface Below)



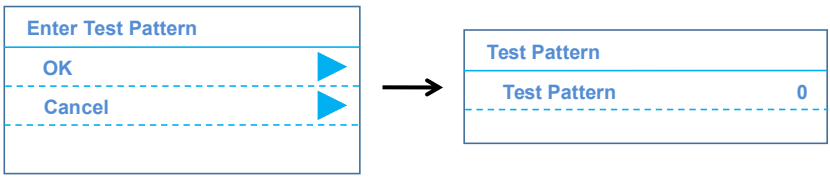
Load Mode: Enter The Load Interface And Press The "Number Key"To Load The Preset Mode;

Save Mode: Enter The Save Interface To save The Current Preset Mode;

Reset Mode: Clear The Preset Mode Saved By User.

● Test Pattern

(Select "Output" In Main Menu, Enter The Sub-menu And Select "Test Pattern" Press "OK" To Enter The Interface Below)



Test Pattern: Test Screen Without Input Of Signal Source,Test Pattern:0-10;

● Audio Manager

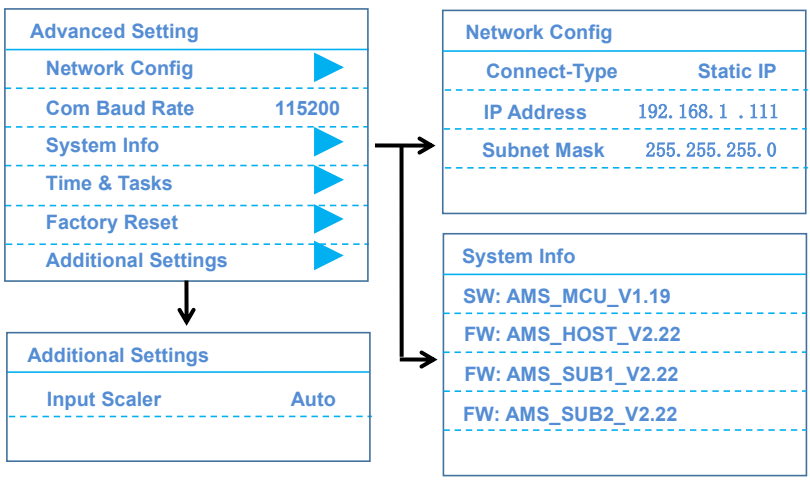
(Select "Audio" In Main Menu And Press "OK" To Enter Interface Below)

Volume: 0--100 Level;

Window Select: A, B, C, D;

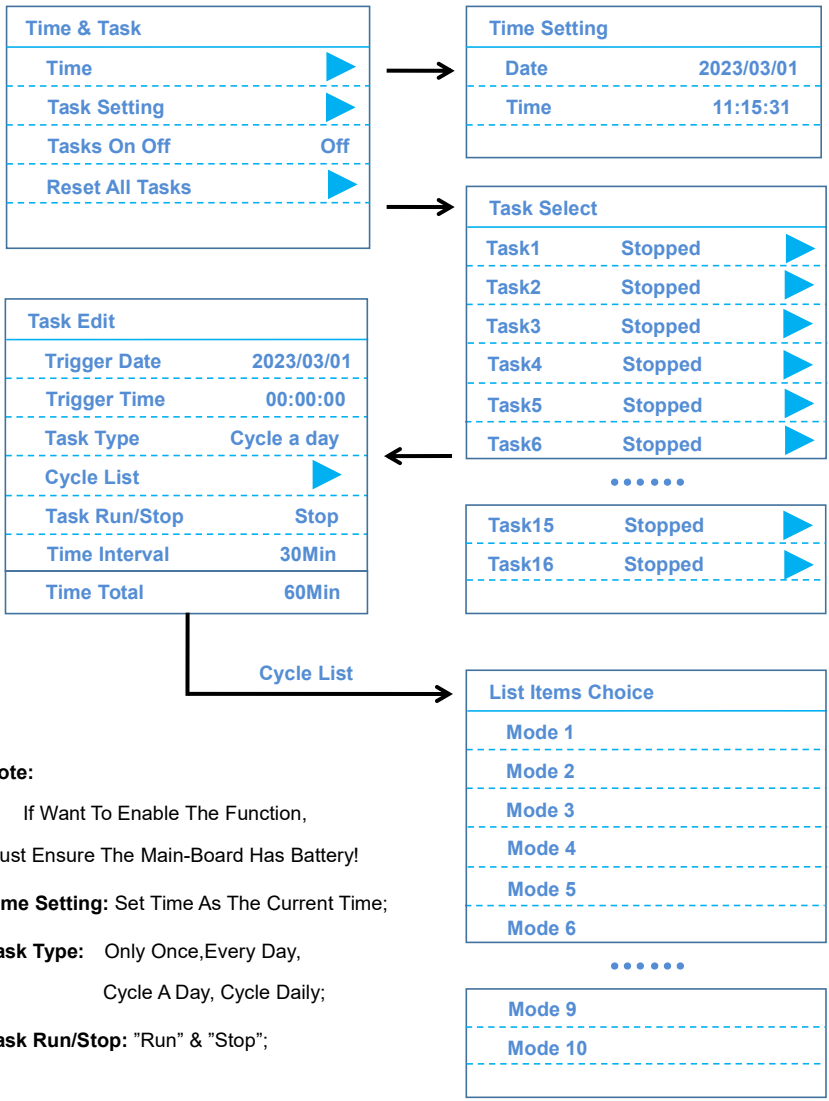
● Advance Setting

(Select "Advance" In Main Menu And Press "OK" To Enter The Interface Below)



● Time&Task

(Select "Advance" In Main Menu, Enter The Sub-menu And Select "Time & Tasks" Press "OK" To Enter The Interface Below)



Note:

If Want To Enable The Function,

Must Ensure The Main-Board Has Battery!

Time Setting: Set Time As The Current Time;

Task Type: Only Once,Every Day,

Cycle A Day, Cycle Daily;

Task Run/Stop: "Run" & "Stop";

- Factory Reset:

(Select "Advance" In Main Menu, Enter The Sub-menu And Select "Factory Reset" Press "OK" To Enter The Interface Below)

If Click OK, The Device Will Reset To Factory Parameters;

- Language

(Select "Language/语言" In Main Menu And Press "OK" To Enter The Interface Below)

Languages Include: English, Simplified Chinese, Traditional Chinese, Korean, Vietnamese, Thai, Spanish, Portuguese.

Basic Operation

4.1 Splicing Operation

EX1000 Series Supports **2-Channel** Splicing (Can Be Built-in With The 2 Large Sending Card_Novastar • MSD600-1 / Linsn • TS902 / Huidu • T902);

EX2000 Series Supports **4-Channel** Splicing (Can Be Built-in With The 2 Large Sending Card_Novastar • MSD600-1 / Linsn • TS902 / Huidu • T902);

Select "Splice" In Main Menu And Press "OK", Advise To Use The "Guide" To Enter The Setting Wizards For Quickly Complete The Splicing!

First Step: Set The Output Resolution (Menu -- Output -- Output Resolution)

This Resolution Is Set According To The One With The Highest Actual Resolution Among The 2 channels.The Best Way Is The Output 1, 2 With The Same Resolution.

For Example::The Actual Output Resolution Is Output 1:1852x1216, Output2:1728x1216, Or It Can Be Larger Than 1852x1216, As Long As It Does Not Exceed 2.6 Megapixel. After Setting, The Resolution Of Output 1~2 Is 1852x1216.

Notes: Output 1&2 Are Group Output; The Output Resolution Of The Same Group Must Be Consistent!

Second Step: Set The Output Resolution (Menu -- Splice -- Guide)

Select Splicing Type(Free) And Select Splicing Quantity;

Adjust The Horizontal Width And Vertical Height Controlled By Each Output;

Adjust The Horizontal Starting Position And Vertical Starting Position Of Each Output Port.

4.2. Layer Setup

The Multi-Windows Video Controller Has 4 Layers, And Each Layer Can Be Configured With Parameters Such As Input Source, Position, Size, Rotation Mode, Layer Layout. The Layers Button Is Arrayed On The Front Panel.

If The Layer Cannot Be Operated, Please Confirm Whether The Windows Style Is Correct.

- Select Input Source

First Select A Button In The Corresponding Layer A, B, C, D, And Then Press The Input Indication Button Which Array In “ INPUTS ” Area On The Front Panel, For Example, Set The Input Of Layer B to DP1.

1. Select Layer 2. Choose Input Source

Note: When Window B Is Closed, Window B Cannot Be Selected, And The Signal Source Of Window B Cannot Be Selected. Other Windows Are Similar. If The Window Is Closed, Go To Window Settings And Select The Corresponding Windows Style Menu To Open It.

- Layer Style

Press The "Layer Style" Key Can Help Users Quickly Configure Layers. After Selecting The Corresponding Mode, Press The "Size" Key Can Adjust The Layer Position, Layer Size, Image Rotation etc. User Can Select A Similar Mode For Further Fine Adjustment.

4.3 LED Control Card Setting

- Note

According The Actual Needs, Please Note Your Requires Sending Card Brand With Our Salesperson Before Placing An Order Of The Controller, Please Download The Newest Software From The LED Control System Official Website, And After Successful Installation, Can Connect USB Cable To Start Settings;

When Connecting The USB Cable For Debugging Or Setting Control Parameters, Each Output Channel Should Be Separately To Setting（One By One）, Don't Connect 4 USB Cable At The Same Time For Setting To Avoid Software Conflicts;

- Setup Steps

»» First Step

Open The Control System Software, Enter The Setting Interface, And Set The Resolution Of The Sending Card To Be Consistent With The Output Resolution Of The Controller;

»» Second Step

Send The Single Cabinet Control File To Check Whether The LED Cabinet Display Are Normal, At The Same Time, Save The Cabinet Control Parameters To Receiving Cards;

»» Step Three

According AT The Actual Application To Set The Cabinet Connection, Must To Be Ensure That The Capacity Per Port No More Than 650,000 Pixels, After Set The Net-cable Connection By The LED Display Is Completed, Please Check Whether The LED Display Is Normal, If The LED Display Is Normal, Save The Display Control&Connection Parameters, Export The Setting File And Make The Files For Backups!