



HD Quad Video Multiplexers

LM-SH41

Usre Manual

HD Quad Video Multiplexers

Operating Instructions

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1th . Installation Notes

For your safety and equipment security, please be sure reading the safety instructions carefully before using the machine.

If you have doubts in the use, please read this manual first. Described in detail in the body of the device operation. If you still have questions, please contact us, we will give you a satisfactory answer as soon as possible.

Specifications subject to release to change without notice, please understand.

When installing, please note the following:

1, power supply:

Please use with protection to single-phase three-wire AC 100-240V power supply, and ensure that the entire engineering system using the same protected. You can not use unprotected power, the power cord ground pin can not be destroyed.

2, Power:

When you need to move equipment or other work must outage, to shut off all power, including the power switch, unplug the power plug, so as to ensure the safety of your equipment.

3, Cable:

The items can not put pressure on the power supply lines, signal lines, communication lines, cable should keep from trample or extrusion, to prevent the risk of leakage or short circuit.

4, Signal cable:

Inserting or pulling the signal line to the device, the device needs outage, so as not to damage the device. Hot plug caused damage not covered under warranty.

5, Vents:

The outer surface of the device may have openings for heat dissipation, do not block these openings, in order to avoid heat build-up, the risk of damage to the equipment or cause fire.

6, Equipment placement:

Should a reasonable settlement for devices such as standard rack mount, chassis, cabinets, or placed on a stable flat work surface to prevent the unit from dropping.

7, surroundings:

Equipment working environment should pay attention to dust, moisture, in particular, to prevent the liquid from soaking and splashing into the interior of the device.

8, service:

All repairs should be done by qualified service personnel , untrained Never attempt to repair equipment. To prevent the risk of electric shock, do not open the cabinet.

9, Safety Precautions:

9.1, the internal high-voltage equipment, non-professional maintenance personnel shall not open the case, to avoid danger;

9.2, non-dripping or splashing, prohibited place any container with liquid items on the device;

9.3, for the prevention of fire, forbidding a device near the fire;

9.4, for adequate ventilation, equipment should be maintained at least 20CM void of the front and rear panels;

9.5, devices should be immediately unplug the power cord and handled by professional maintenance personnel such as eerie noise, smell or smoke;

9.6, In the case of lightning or unused for long periods, unplug

the power cord;

9.7, not stuffed any object to ventilation holes of the device to avoid damage to the equipment or electric shock;

9.8, not to place the device near water or other damp places;

9.9, the device should not be placed near heat sink or other high temperature places;

9.10, properly organize the power cord to prevent breakage;

9.11, the following conditions should unplug the device power cord, handled by qualified service personnel:

- 1) the power cord is damaged or frayed;
 - 2) When the liquid has been spilled into the device;
 - 3) The device is dropped or the cabinet damaged;
 - 4) This device malfunction or significant performance changes.
 - 5) Regularly check the fan whether is working properly, if the fan does not work you should turn off the device and disconnect the power supply immediately, and by professionals to deal with;
- This device is not suitable for non-professionals to operate the debugger, users are subject to professional training and guidance.

Please read carefully before using and this manual should be properly preserved for later use.

2th . Product Introduction

1 product description

is a high-performance HD quad video multiplexers, the main function is to enter the 4-way BNC, VGA, HDMI signals into one HD HDMI and VGA output, make four digital signals at the same time displayed on a high-definition display unit, and to achieve HDMI signal and a USB device (such as a mouse, keyboard) synchronous switching. HD Quad video multiplexers support projectors, LCD, DLP, plasma, full-color LED display unit etc with high-definition interface.

HD video multiplexers is currently use a relatively large number of standard products on the market, products are mainly used in video conferencing, teaching, exhibition, stock where need a single display unit simultaneously display multiple HD signals

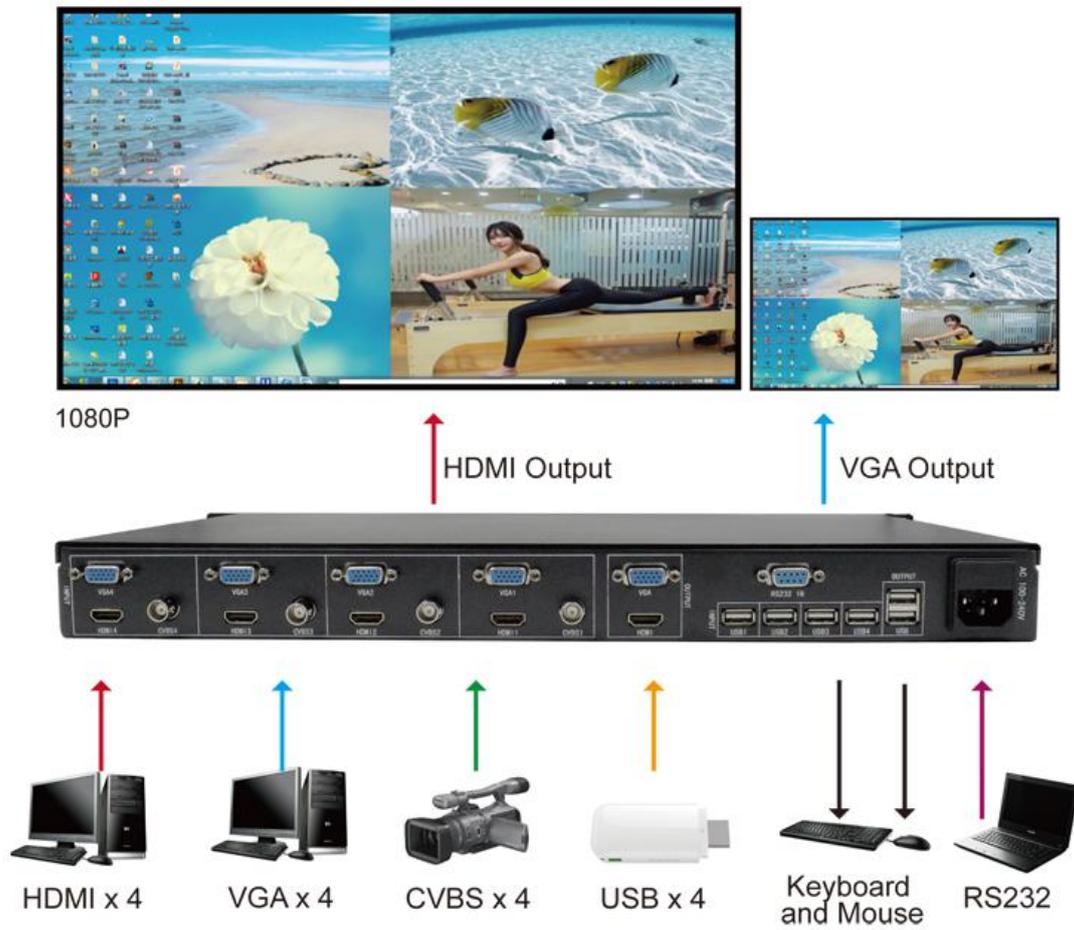
Meanwhile, Quad video multiplexers is the only one on the market to increase USB Salvo, when a computer signal is switched to full-screen by button or remote control, the corresponding host computer USB Salvo, reach to functional requirements of video conference the needs of Salvo mouse, keyboard.

2 The main function

- support a single display unit simultaneously display four high-definition or analog signals;
- 4 composite video, 4-channel VGA, 4-way HDMI, in total 12-channel signal input;
- 1 channel HDMI and 1 VGA output synchronously;
- 4-way USB signal inputs, 2 USB signal output, USB connection support mouse and keyboard;

- can achieve USB mouse and keyboard with video image switch synchronization, realize KVM function;
- compatible with various input signal resolution, supports 1920 * 1080 ultra-high resolution output signal;
- support PIP, POP, window, overlay, roam, images of any size and location ;
- support transparency adjustment of image, you can see the bottom image through the above picture;
- widely support 90V ~ 264V AC input, can be common to any country worldwide;
- standard 19-inch 1U wire drawing chassis, directly on standard cabinet;
- support chassis buttons, IR remote control, RS-232 serial control and in control;
- High-quality HD Quad video multiplexers tailored Designed for video projects;

3 System topology



4 Machines pictures and size



5 HD video multiplexers Specifications

Name	Specification
HDMI/DVI input	
Input port	4BNC、4VGA、4HDMI、4USB
Resolution	Support 1920*1080 ultrahigh highest resolution and downward compatibility all kinds of resolutions
Color depth	24bit,1677 ten thousand
Zoom and display	unlimited
Video input	
Identify pattern	automatic
Image adjust	Move、transformate、brightness、contrast、color temperature;
output	
interface	1 HDMI 、 1VGA synchronic output;2USB connect mouse 、 keyboard or other equipment
Resolution	1920*1080/60HZ, can customize downward this resolution
frequency	60HZ
Color depth	24bit,1677 ten thousand
Control mode	RS232、 IR、 case key
Control software	HD video multiplexers professional control sofeware
voltage	AC 90~260V
dimension	442mm(L)*45mm(H)*242mm(W)
Power	No more than 15w

3th . Machine installation

1 Unpacking

Check the host and accessories. Including the host, CD, power cable, remote control, warranty card, manual.

2 Install the machine

Setting display unit : HD Quad video multiplexers support 1 VGA and 1 HDMI output synchronization, if you use HDMI input, set input signal to HDMI of the display unit; if the user using a VGA port input, TV set to VGA.

output port with display unit is connected: completing placing the video multiplexers, the signal output via HDMI cable or VGA cable docking with the display unit

Input Signal Connection: Via HDMI cable ,VGA cable or video line connect the computer or other signal source output devices with splitter input port

3. Power on

After finishing connecting the cables that we have talked above , insert the 100~240V AC power supply, turn the machine, if the power LED is red, the device is in working condition;

4th . Remote Control Description

After completion of the above hardware connection and turn on the power switch, the display unit may also display no image, then we can through the control software or an infrared remote control debug and settings. If you need a small numbers display mode, we can set up the machine by remote control, this chapter, we first explain our remote control.

1 Remote Button Function



2 Remote settings:

- 1, first the battery loaded correctly into random distribution remote control, so the remote control can work properly;
- 2, the front end of remote control to IR port of the machine press the 0 key.

3, setting the signal source:

Press the MENU key so display unit pop-up the main menu as shown in Figure 1, press the right navigation key then pop up sub-menu as shown in Figure 2, by the left and right navigation keys to select the input signal, the input signal contain HDMI, VGA and VIDEO ,after finishing selecting access the type of signal source of per channel ,press MENU key to save and exit to complete the setup. the screen can display 4 images under 4 split mode. The input signal is VGA, the screen may show the offset, color cast and display incomplete for the first time access, , but can be corrected by remote control AUTO key.

Note: The menu operation mode and other settings are the same way as the signal source, not reproduced here!

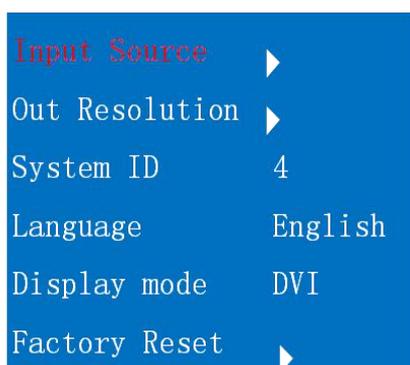


figure 1

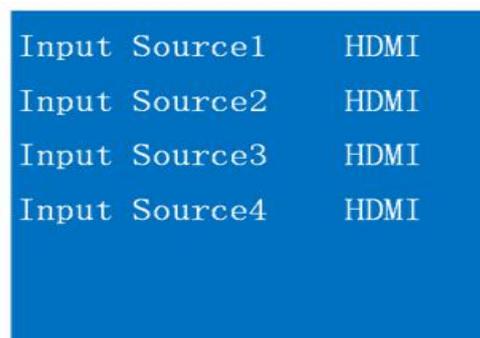


figure 2

4, Output resolution:

The factory setting output resolution is 1920 * 1080 of device, if the display unit less than 1920 x 1080 resolution and can not display properly, you can reduce the resolution by the output resolution menu causing the display unit to display properly, the device output resolution can be optional of 1920 * 1080, 1024 * 768, 1280 * 1024, 1280 * 720.

5, System ID:

Reservation function, need not to be provided;

6, System Language:

Can be set to Chinese or English;

7, Display Mode:

The default setting is DVI mode, as if some of the display unit is HDMI interface does not support DVI signal, you can change the DVI mode to HDMI mode;

8, Factory Reset:

Wrong mode of operation, some time will cause the device is not working properly, you can factory reset so that the normal operation of the device;

9 Remote control shortcut mode description

Key 0: 4 split screen display mode;

1 key: the first screen full-screen display, USB mouse, keyboard Salvo to the first mainframe computer;

2 key: the second screen full-screen display, USB mouse, keyboard Salvo to the second host computer;

3 keys: 3 screen full screen display, USB mouse, keyboard Salvo to the third mainframe computer;

4 keys: fourth screen full-screen display, USB mouse, keyboard Salvo to the fourth mainframe computer;

5-9 keys: user-defined mode, according to their needs you can do personalized display mode and save to 5-9 key, by 5-9 shortcut keys to call;

UA1: Under quad display mode, the mouse, keyboard, switch to the first window;

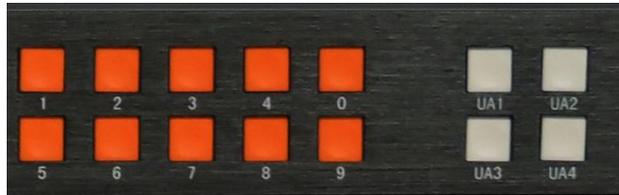
UA2: Under quad display mode, the mouse, keyboard, switch to the second window;

UA3: Under quad display mode, the mouse, the keyboard switches to the third window;

UA4: Under quad display mode, the mouse, the keyboard switch to the 4th windows;

5th . Key Instructions

Through the chassis button, you can easily call in quick mode, the remote controller corresponds to chassis key, the image and each button function call as follows:



Key 0: 4 split screen display mode;

1 key: the first screen full-screen display, USB mouse, keyboard Salvo to the first mainframe computer;

2 key: the second screen full-screen display, USB mouse, keyboard Salvo to the second host computer;

3 keys: the 3rd screen full screen display, USB mouse, keyboard Salvo to the third mainframe computer;

4 keys: the fourth screen full-screen display, USB mouse, keyboard Salvo to the fourth mainframe computer;

5-9 keys: user-defined mode, according to their needs you can do personalized display mode and save key to 5-9 key, by 5-9 shortcut keys to call;

UA1: Under quad display mode, the mouse, keyboard, switch to the first window;

UA2: Under quad display mode, the mouse, keyboard, switch to the second window;

UA3: Under quad display mode, the mouse, the keyboard switches to the third window;

UA4: Under quad display mode, the mouse, the keyboard to switch to the 4th windows;

6th . Software Control

By remote control, the keypad setup and operation, to meet the needs of most users. Users need to use windows superimposed roaming or store some special split screen mode, you need to operate by the control software to achieve, here are some steps and methods through software control.

1, Connect the RS232 serial line

Firstly, through RS232 serial cable to connect the computer and HD video multiplexers, as there is no RS-232 serial in computer you need a USB to RS-232 adapter cable and install the relevant driver.

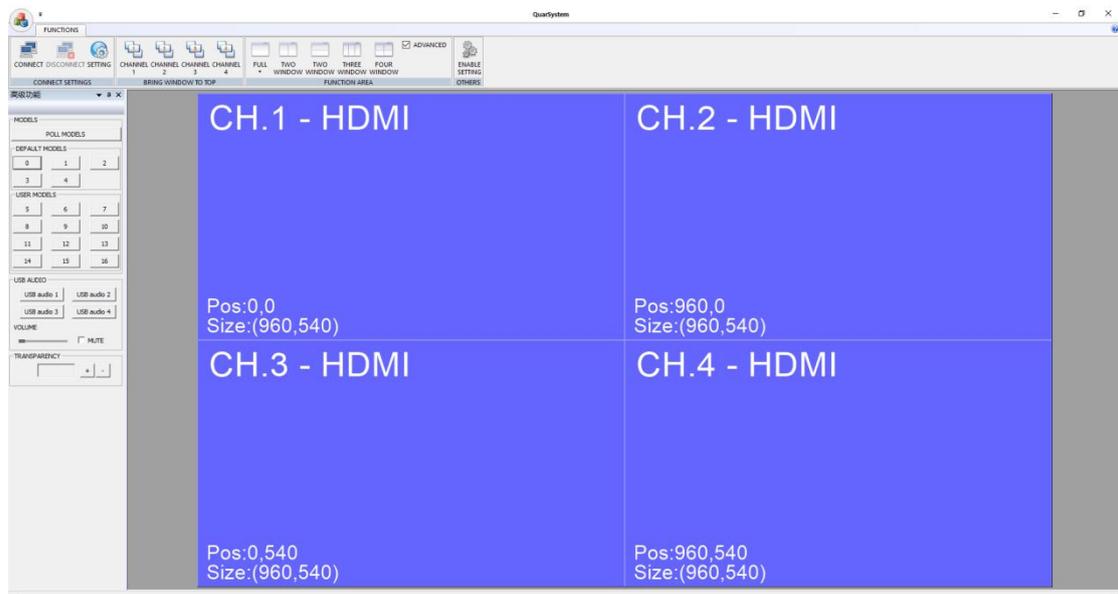
2, check the computer settings

View computer equipment's COM port is normal to see these steps: Right-click the desktop "My Computer" - "Properties" - "Device Manager", as shown below COM Port number:



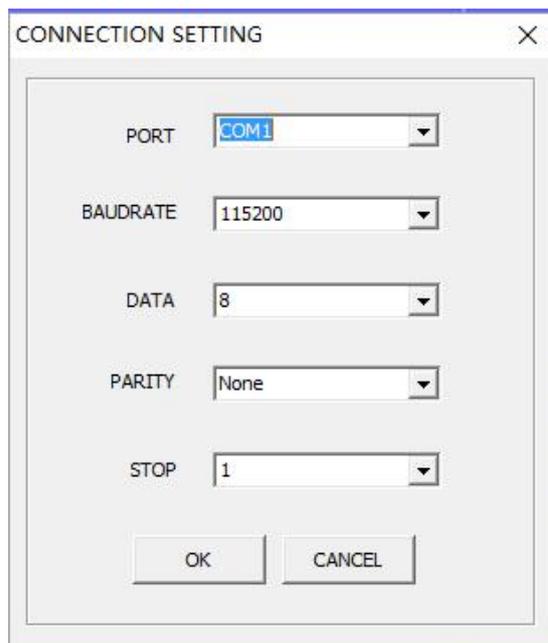
3, run the software

The random distribution of the CD-ROM control software folder copy to control computer, and open QuarSystem file, such as on the following screen:



4, Communication Settings

Open the software upper left corner of the "Settings", check the port numbers are consistent with the control computer equipment manager port number, after confirmation click OK, the following chart is settings interface:



5, Communication Connections

Click the top left corner of the control software "Connect", the computer can communicate with the HD video multiplexers and multi function control;

6, Profiles

Profiles are divided into default scenario, the custom scene and USB audio.

The default scene: the factory default settings cured, can not be changed;

Custom scene: the user can according to their needs, custom personalized scene;

USB Audio: Factory default settings, just switching USB following channel ;

6.1 Default profile

Like the keys and the remote control, press 0 for the standard quad, press 1, 2, 3, 4 is 1, 2, 3, 4 window full-screen display, and USB mouse, keyboard Salvo;

6.2 Custom Profiles

After user-defined screen alignment pattern, it can be saved in any of a 5-16 numeric keys, and then by clicking the mouse button shortcut call. As saving in 5, then setting the screen arranged press and hold the CTRL key, and then click the mouse 5, the model is saved in 5 mode, you can directly through the remote control, buttons or click on the software you can call out the 5 mode;

6.3 USB Audio:

Under Quad mode, a separate switch mouse, keyboard simultaneously control four mainframe computer, the product no audio;

6.4 Volume control: No;

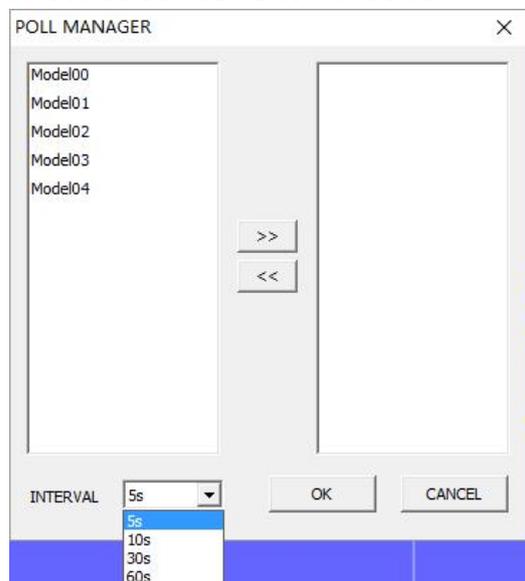
The image shows a control panel interface with several sections:

- MODELS**: A section containing a sub-section **POLL MODELS**.
- DEFAULT MODELS**: A section with five buttons labeled 0, 1, 2, 3, and 4.
- USER MODELS**: A section with a 4x3 grid of buttons labeled 5 through 16.
- USB AUDIO**: A section with four buttons labeled USB audio 1, USB audio 2, USB audio 3, and USB audio 4.
- VOLUME**: A section with a horizontal volume slider and a checkbox labeled MUTE.
- TRANSPARENCY**: A section with a small rectangular input field and two buttons labeled + and -.

6.5 Transparency adjustment: by adjusting the transparency, you can see the bottom screen through the superimposed images;

7, polling

After the user finishing setting a good number of split screen mode, by setting the polling, a plurality of screen display mode is automatically switched at regular intervals of time. Click on the software interface "round robin" to enter the round robin, you choose a good pre-stored profile, and then choose a good polling interval, click OK to make the split screen mode polling state. When using the polling function, the computer operating software interface can not be closed. Round Robin management interface is shown below:



8 .Window lift

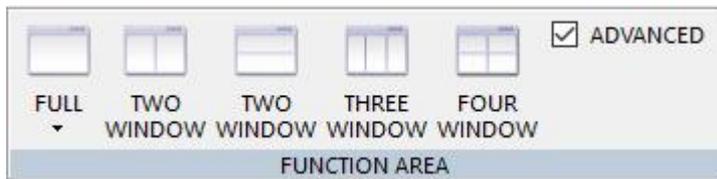
By lifting the window, so to speak
As a window on top of the channel, so that
Software control is more convenient;



9. Ribbon

Quick to set up single-screen display, the left and right or

up and down two split screen display, three split screen display, four-split screen display;



10. Enable settings

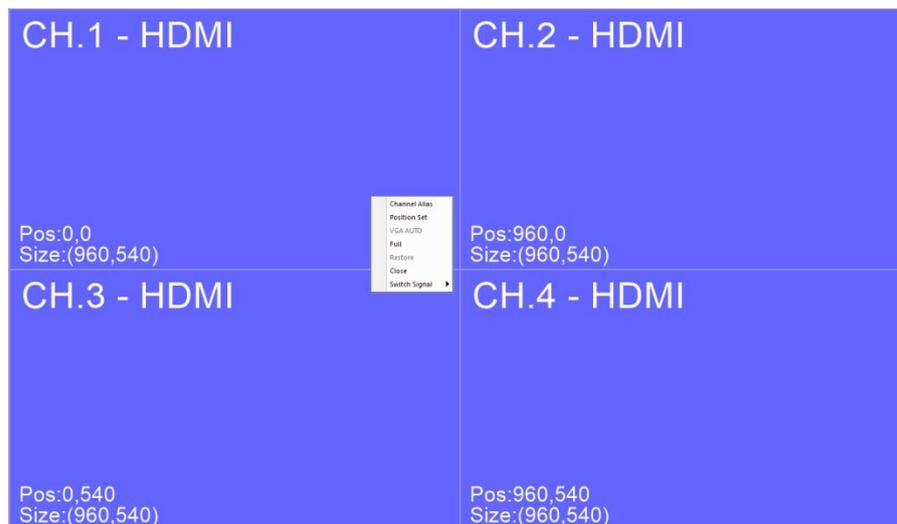
By enabling setting video multiplexers output resolution And selection of DVI or HDMI mode



11. Custom split mode settings

11.1 by the mouse dragging Window position, resize the window; or right-click to close or new window, signal switching, channel settings such as aliases;

11.2 Multiple display modes can be set freely and by CTRL plus the number keys to save, save mode quickly call by remote control, chassis button or in the control;



11.3 Position, fine-tune window

By right-clicking on the appropriate window, after pop-up

settings menu, sub menu can see the position of the adjustment, by adjusting the position option can be entered digitally pinpoint the exact location and the window screen to adjust the screen size, as shown:



11.4 You can set picture mode, for example

By controlling the software can be set to various split mode, such as PIP, POP, window superimposed multiple roaming, a large screen and other three small etc various patterns. Here are some common arrangement



7th . The control codes

Baud rate: 115200 , Data bits: 8, stop bits: 1, Parity: NONE

HDMI/DVI MODE :FF D0 00 01(00) 34 45 FF

4 Split display:

[00015572] IRP_MJ_WRITE Length: 0007, Data: FF 91 00 00 23 25
FF

Channel 1, 2, 3, 4 Full screen:

[00001136] IRP_MJ_WRITE Length: 0007, Data: FF 92 00 00 23 25
FF

[00008776] IRP_MJ_WRITE Length: 0007, Data: FF 93 00 00 23 25
FF

[00001136] IRP_MJ_WRITE Length: 0007, Data: FF 94 00 00 23 25
FF

[00008776] IRP_MJ_WRITE Length: 0007, Data: FF 95 00 00 23 25
FF

2 Split Mode 1 (left and right split)

Length: 0007, Data: FF C5 00 00 23 25 FF

2 Split Mode 2 (vertical division)

Length: 0007, Data: FF C6 00 00 23 25 FF

3 split mode

Length: 0007, Data: FF C7 00 00 23 25 FF

Save Custom Mode 5 (6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)

Length: 0007, Data: FF B8 (B9, BA, BB, BC, BD, BE, BF, C0, C1, C2, C3) 00 00 23 25 FF

Load Custom Mode 5 (6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)

Length: 0007, Data: FF 96 (97, 98, 99, B0, B1, B2, B3, B4, B5, B6, B7) 00 00 23 25 FF

Transparency adjustment window 1, 2, 3, 4

Length: 0008, Data: FF AC (AD, AE, AF) 00 00 01(00--15) 78 79 FF

Adjust resolution 1024 * 768 1280 * 1024 1280 * 720 1080P

Length: 0008, Data: FF 0C 00 00 00 (00-03) 78 79 FF

USB1 switch: [00001138] IRP_MJ_WRITE Length: 0006, Data: FF CC 00 35 45 FF

USB2 switch: [00001138] IRP_MJ_WRITE Length: 0006, Data: FF CD 00 35 45 FF

USB3 switch: [00001462] IRP_MJ_WRITE Length: 0006, Data: FF CE 00 35 45 FF

USB4 switch: [00001512] IRP_MJ_WRITE Length: 0006, Data: FF CF 00 35 45 FF