



Video Upscaling Rotary Controller

HD-721

User Manual



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Chapter I 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's 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. Product description:

Product Features	HD-721
The highest signal input of 3840 * 2160	√
3840 * 2160 resolution output	×
1920 * 1080 resolution output	√
image rotation of 90,180,270 degree	√
FIG cutting function for smart phones	√
HDMI compatible MHL signal input	√

2. Power supply:

This device uses 12V / 3A external power supply, power supports 100-240V AC input voltage, in order to enable the device to work properly, please do not easily replace the brand outside the company and power specifications.

3. 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.

4. Cable:

Do 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.

5. Signal cable:

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

6 .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.

7.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.

8 .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.

9. 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.

10. Safety Precautions:

1. The internal high-voltage equipment, non-professional maintenance personnel shall not open the case, to avoid danger.
2. Non-dripping or splashing, prohibited place any container with liquid items on the device.
3. For the prevention of fire, forbidding a device near the fire.
4. For adequate ventilation, equipment should be maintained at least 20CM void of the front and rear panels.
5. Devices should be immediately unplug the power cord and handled by professional maintenance personnel such as eerie noise, smell or smoke
6. In the case of lightning or unused for long periods, unplug the power cord.

7. Not stuffed any object to ventilation holes of the device to avoid damage to the equipment or electric shock.
8. Not to place the device near water or other damp places.
9. The device should not be placed near heat sink or other high temperature places.
10. Properly organize the power cord to prevent breakage.
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 is working properly, if the fan does not work you should turn off the device and disconnect the power supply immediately, handled by the professionals.

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.

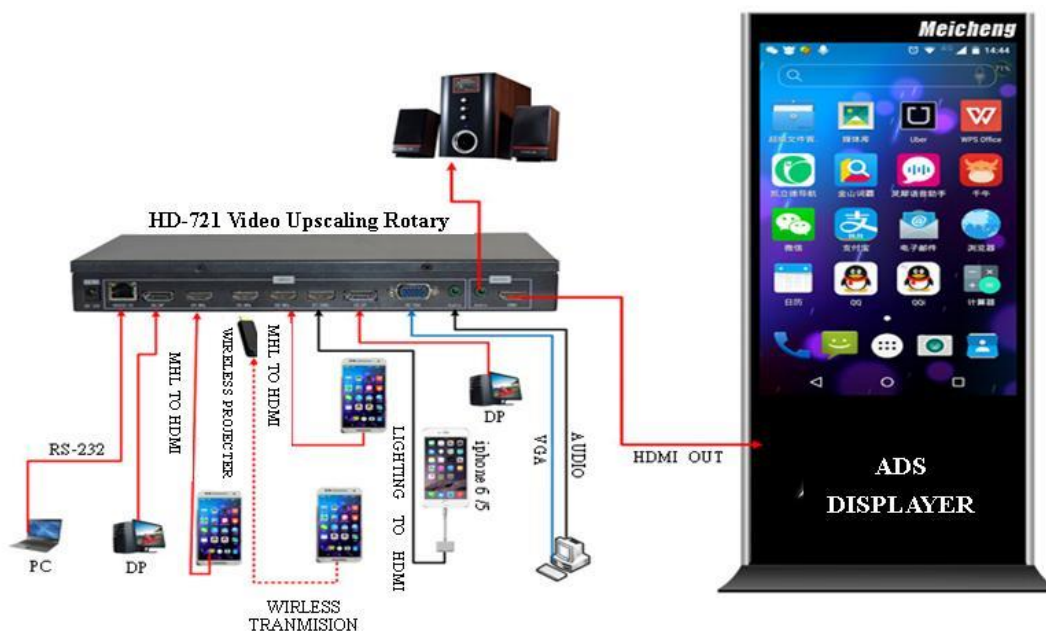
Chapter II Product Introduction

1. Overview:

HD-721 Video Upscaling Rotary Controller is a high quality and high performance image upscaling rotary switch, use the high speed image processor chip. This product is main function is that can supports HDMI, DP, Mobile MHL and VGA signal input and switch any one of the input signals to HDMI output.

This product supports video and audio synchronous switch of different signal formats, and setting the image 90 degree, 180 degree and 270 degree rotation. Multi-control mode: users can control the device via chassis button, IR remote, RS232 control to operate it.

2. The system topology:



Chapter III Machine Installation

1. Unpacking:

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

2. Install the machine:

2.1 Setting the display unit :

The LCD TV or other display device's input signal is set to HDMI status;

2.2 Output connections:

The HDMI cable allows HDMI input port of device's OUTPUT box and HDMI input port of the display unit is connected; if you need to use an external sound, insert an external stereo's 3.5mm headphone jack into Audio port of OUTPUT box .

2.3 Connect input signal:

Product support 1 channel VGA, 2-way DP, 4-way HDMI and 1 left and right channel audio with binding VGA signal input. D1, D2, D3, D4 port can connect directly with PC, Blue-ray DVD and other equipment through ordinary HDMI cable; D2, D3, D4 can be connected with a simple Micro USB transferred HDMI cable, so that smart phones with MHL-enabled can display on display unit , Micro USB transfer HDIM line as shown below:




2.4 Power on:

After finishing connecting the cables that we have talked above , insert the 12DC power supply, booting Via POWER button of infrared remote control,

NOTE: Red is on standby, the green light is turned on.

Chapter IV Product Settings

1. Power:

Starting up through the power button  of remote control, if the corresponding port is connected with the video signal, the display unit will immediately display video images; if no image display or without any prompts on screen, please switch to resolution that match with the display unit by continuous pressing **SOURCE** key.





2. Signal switching:

2.1 One key switch function:

Number keys of remote control with number keys of the chassis are corresponding, will respectively call out different port's video signal by pressing 1,2,3,4,5,6,7 keys, the corresponding signal port for calling by number keys as follows:

- 1: VGA signal of AO port.
- 2: DP signal of D0 port.
- 3: HDMI signal of D1 port.
- 4: HDMI or MHL signal of D2 port.
- 5: HDMI or MHL signal of D3 port.
- 6: HDMI or MHL signal of D4 port.
- 7: DP signal of D5 port.

2.2 Through the **SOURCE** button to switch:

Press the **SOURCE** button of remote control pop-up below menu, the ,  navigation keys move the red mark cursor to the signal source you desired, then click **OK** button to select the signal source, the menu as follows:  

A0:VGA
D0:DP
D1:HDMI
D2:MHL
D3:MHL
D4:MHL
D5:DP

2.3 Menu settings:

Clicking the **MENU** key of remote control or cabinet, bring up the following menu, the device can be set through the menu, introduction of each menu's function as shown below:

Source	A0:VGA
Resolution	1080P@60HZ
Auto	▶
Brightness	50
Contrast	50
Rotate	270
Reduce	ZOOM2
Language	English

1) Source:

This menu item displays the current signal source channel of switching, is not recommended to switching signal source go through this.

2) The output resolution:

By **↑**、**↓** navigation keys move to this item so that display the red font, and then by **←**、**→** navigation keys to switch different resolution to match the resolution of the physical unit.

Switching by this method may make device's output resolution higher than the physical resolution of the display unit, can not display images correctly, we can also conduct quick switch resolution by **SWITCH** key of remote control until the output resolution of the device match with display unit.

3) Automatic adjustment

For not full screen, the image deviation of VGA input signal, a key correction by left or right navigation keys.



4) Brightness

By   navigation keys to adjust the brightness of the image.

5) Contrast

By   navigation keys to adjust the contrast of the image.

6) Flip

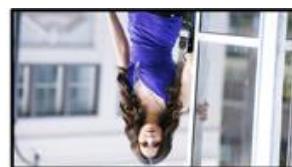
By   key to achieve 90 degrees, 180 degrees, 270 degree rotation of the image.



The initial image



Rotate 90°





Rotate 180°



Rotate 270°

7) Cut

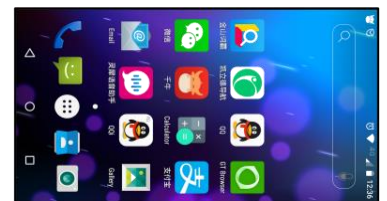
Achieving image cropping by   key, intercepting the image and display the middle part of the image, mainly for smart phones full-screen display on a vertical advertisement player or vertical display unit after rotating, as shown below:



Phone interface without rotation



After rotating 90°



After rotation and screenshot

Note:

Input sources can be mobile phone, tablet, laptop, PC...etc. However if the input sources are not 16:9 image format which whether the vertical or horizontal image, the HD-721 will not able to display as full screen or the edge of images will be cropped.

Chapter V RS-232 serial control

Except for product can be controlled by the remote control and buttons of chassis, also can be controlled by RS-232 serial, that is the user can switch the signal, mode selection, output resolution of the machine through enter code after download serial assistant, the following are the serial setting and frequently-used control codes:

Baud Rate	9600
Data Bit	8
Parity Check	None
Stop Bit	1
Flow Control	None

BYTE0~BYTE1 : Start code.

BYTE2 : Data.

BYTE3 : Check code, sum of BYTE2 + BYTE1.

BYTE4 : End code.

Description	Command (hex)
#define _RS232_MENU_MSG	0x22 0x10 0x10 0x20 0x33
#define _RS232_LEFT_MSG	0x22 0x10 0x11 0x21 0x33
#define _RS232_RIGHT_MSG	0x22 0x10 0x12 0x22 0x33
#define _RS232_EXIT_MSG	0x22 0x10 0x13 0x23 0x33
#define _RS232_POWER_MSG	0x22 0x10 0x14 0x24 0x33
#define _RS232_UP_MSG	0x22 0x10 0x15 0x25 0x33
#define _RS232_DOWN_MSG	0x22 0x10 0x16 0x26 0x33
#define _RS232_OUTPUT_1080P	0x22 0x10 0x41 0x51 0x33
#define _RS232_MUTE	0x22 0x10 0x45 0x55 0x33
#define _RS232_VOL_DEC	0x22 0x10 0x46 0x56 0x33
#define _RS232_VOL_INC	0x22 0x10 0x47 0x57 0x33
#define _RS232_VGA_MESSAGE	0x22 0x10 0x48 0x58 0x33
#define _RS232_DP1_MESSAGE	0x22 0x10 0x49 0x59 0x33
#define _RS232_HDMI1_MESSAGE	0x22 0x10 0x4A 0x5A 0x33
#define _RS232_HDMI2_MESSAGE	0x22 0x10 0x4B 0x5B 0x33

#define _RS232_HDMI3_MESSAGE	0x22 0x10 0x4C 0x5C 0x33
#define _RS232_HDMI4_MESSAGE	0x22 0x10 0x4D 0x5D 0x33
#define _RS232_DP2_MESSAGE	0x22 0x10 0x4E 0x5E 0x33
#define _RS232_ROTATE_0_MESSAGE	0x22 0x10 0x4F 0x5F 0x33
#define _RS232_ROTATE_90_MESSAGE	0x22 0x10 0x50 0x60 0x33
#define _RS232_ROTATE_180_MESSAGE	0x22 0x10 0x51 0x61 0x33
#define _RS232_ROTATE_270_MESSAGE	0x22 0x10 0x52 0x62 0x33
#define _RS232_ZOOM_OFF_MESSAGE	0x22 0x10 0x53 0x63 0x33
#define _RS232_ZOOM_1_MESSAGE	0x22 0x10 0x54 0x64 0x33
#define _RS232_ZOOM_2_MESSAGE	0x22 0x10 0x55 0x65 0x33
#define _RS232_Auto_MESSAGE	0x22 0x10 0x56 0x66 0x33

Statement:

* All product and brand names may be trademarks or registered trademarks of the corresponding manufacturer. TM and R may be omitted in this manual.

The picture and the picture of the product mentioned in this manual may be slightly different, the effect of the demonstration and schematic diagram for reference only (picture for the synthesis, schematics), the appearance of the product (including but not limited to color) please prevail in kind.

Meicheng Always strive to provide the best quality products to customers, so the product software and hardware will keep upgrading. The information contained in this manual is subject to change without notice.

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