

# **4K 5x1 Multi-format Scaler Switcher**

**User Manual**

# Thank you for purchasing this product

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

## Surge protection device recommended

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the service life of your equipment.

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# 1. Introduction

The Multi-inputs with HDMI output scaler box supports 5 inputs of 4xHDMI and 1xVGA(YPbPr,CVBS). The input source is capable to switch and scale to adopt resolution then transmit over HDMI output. The HDTV resolution is achievable. The system could be controlled and configure by easily operation of panel button, IR remote and RS-232. This scaler box is a suitable solution for presentation purpose at classroom and conference room.

## 2. Features

- ✧ Compliant with HDMI2.0/1.4b, HDCP2.2/1.4;
- ✧ Support multi inputs: 4 x HDMI, 1 x VGA ( YPbPr, CVBS);
- ✧ Support HDMI input resolutions up to 4K UHD 4:4:4 @50/60;
- ✧ Support output resolutions up to 4K UHD 4:4:4 @60;
- ✧ Support two input switching modes: auto or manual;
- ✧ Support EDID management;
- ✧ Support pass-through of PCM 2CH;
- ✧ Device could be controlled via touch panel button, IR remote and RS-232;
- ✧ Support USB online software upgrading;

## 3. Package Contents

- ✧ 1xMulti-format Scaler Switcher
- ✧ 2xMounting ears
- ✧ 1xRemote Control Unit
- ✧ 1xIR Receiver Cable
- ✧ 1x12V/1A Power Adapter

- ✧ 1x3RCA(Female) to D-SUB(Male) Cable
- ✧ 1x3.5mm jack(Male) to 2RCA(Female) Cable
- ✧ 1xUser Manual

## 4. Specifications

| Technical                      |                                                                                                                                                     |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HDMI Compliance</b>         | HDMI 2.0/1.4b                                                                                                                                       |
| <b>HDCP Compliance</b>         | HDCP 2.2/1.4                                                                                                                                        |
| <b>Video Input Resolutions</b> | HDMI: up to 4K2K@50/60Hz(4:4:4)                                                                                                                     |
|                                | C-Video: PAL/NTSC3.58/NTSC4.43/SECAM/PAL M/PAL N                                                                                                    |
|                                | YPBPR: 480i to 1080p                                                                                                                                |
|                                | VGA: 640x480 to 1920x1200                                                                                                                           |
| <b>HDMI Output Resolutions</b> | 4K2K60,4K2K30,1920X1080p/50, 1920X1080p/60, 1280X720p/50, 1280X720p/60 1024x768/60,1280x800/60, 1360x768/60,1400x1050/60,1680x1050/60,1920x1200/60; |
| <b>Audio Formats</b>           | LPCM 2.0CH                                                                                                                                          |
| <b>ESD Protection</b>          | Human body model — ±8kV (air-gap discharge) & ±4kV (contact discharge)                                                                              |
| Connections                    |                                                                                                                                                     |
| <b>Input ports</b>             | 4x HDMI Type A [19-pin female]<br>1x VGA[female]<br>1x3.5mm mini jack                                                                               |
| <b>Output ports</b>            | 1x HDMI Type A [19-pin female]<br>1x3.5mm mini jack                                                                                                 |
| <b>Control interfaces</b>      | 1x IR in<br>1x RS-232<br>1x USB service(update)                                                                                                     |

|                              |                                                          |
|------------------------------|----------------------------------------------------------|
| <b>Mechanical</b>            |                                                          |
| <b>Housing</b>               | Metal                                                    |
| <b>Color</b>                 | Black                                                    |
| <b>Dimensions</b>            | 110mm [W] x 288mm [D] x 32mm [H]                         |
| <b>Weight</b>                | 880g                                                     |
| <b>Power Supply</b>          | DC 12V/1A Adaptor (US/EU standards, CE/FCC/UL certified) |
| <b>Power Consumption</b>     | 9W(max)                                                  |
| <b>Operation Temperature</b> | 32 - 104°F / 0 - 40°C                                    |
| <b>Storage temperature</b>   | -4 - 140°F / -20 - 60°C                                  |
| <b>Relative Humidity</b>     | 20 - 90% RH (no condensation)                            |

## 5. Operation Controls and Functions

### 5.1 Front Panel



#### 1 Power button and indicator:

Switches between standby and work mode. When this device is switched to the standby mode, the indicator turns red. When switching to work mode, the indicator turns blue.

#### 2 IR Window:

Receiving IR signal from remote control unit which come with scaler switcher

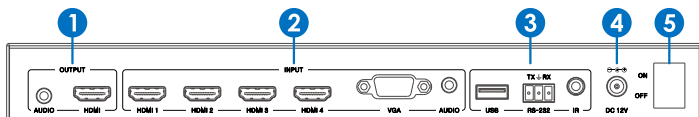
### 3 Input Source & Auto buttons:

Press these buttons for source selection. The active source will be light to corresponding indicators on the front panel. AUTO button for auto-switching or manual-switching mode, when the indicator turns blue, the device switch to auto-switching mode, when the indicator turns off, the device switch to manual-switching mode.

### 4 Output Resolution buttons:

Press these buttons for output resolutions selection. Select between 4K60, 4K30, 1080P60, 720P60; for more other resolutions options, Please use remote control or RS-232 control tools.

## 5.2 Rear Panel



### 1 Output:

Connect to an HDMI display or AV Receiver for video and audio output. Connect the L/R stereo audio output to the analog audio input port of your amplifier.

### 2 Input:

The input ports include 4 HDMI & 1 VGA input ports. The VGA ports supports YPbPr, C-video and VGA input formats.

### 3 Control:

#### USB

USB port connects with USB flash disk or other storage that contains the software update file to update the system firmware.

## RS232

Serial control port, 3p captive screw connector, connects with a control device (such as a computer) to control the scaler switcher.

## IR

Connects with IR receiver, to receive IR signals sent by the IR remote or remote controller of other device.

### 4 Power:

Plug the 12V DC power supply into the unit and connect the adaptor to an AC outlet.

### 5 ON/OFF:

Power ON/OFF switch.

## 5.3 OSD MENU

The scaler switcher provides a powerful OSD operation menu. Press MENU button on IR remote to enter in OSD menu, The users can change some settings through the OSD menu.

### 5.3-1 Main MENU

The Main MENU includes Picture, Aspect ratio, Screen, EDID and Software update options.



### 5.3-2 Picture

The user can adjust picture

contrast(default:50),brightness(default:50),color(default:30),sharpness(default:10) etc.



### 5.3-3 Aspect Ratio

The user can adjust picture output aspect ratio to 4:3 or 16:9 .



### 5.3-4 Screen

The screen MENU adjust for VGA input only. The user can adjust horizontal, vertical position, size and Phase



### 5.3-5 EDID

The EDID adjust MENU for HDMI input only. EDID1.4 for HDMI1.4 standard. EDID2.0 for HDMI2.0 Standard, and EDID AUTO for copy the display EDID Mode.



### 5.3-6 Software update

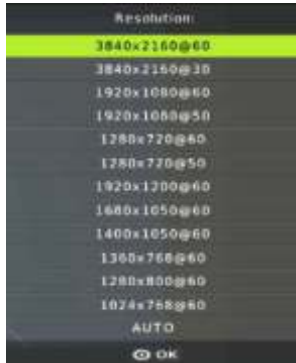
The scaler switcher supports software updates via USB flash disk. The procedure is as follows:

- 1) Copy the file "MERGE.bin" to the root directory of a USB flash disk. (Make sure the file is copied to the root directory. The "MERGE.bin" file is provided/authorized by our engineering department or from our website)
- 2) Plug the USB flash disk to the scaler switcher USB port on its rear panel.
- 3) Press the MENU -->software update-->YES enter to start the update.the OSD will display the update process.

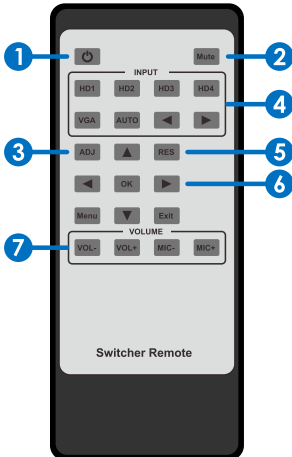


### 5.3-7 Resolution

The scaler switcher HDMI output resolutions support multiple modes. Press the "RES" button on the IR remote, the resolution menu will display. The user can select suitable resolution for HDTV or monitor. Auto means that the HDMI resolutions based on the EDID information read from the display device.



## 5.4 Remote Control



- 1 Press this button to power on the scaler switcher or set it to standby mode.
- 2 Press this button for mute or unmute the audio output.
- 3 Press this button for operate VGA input auto adjustment function;
- 4 Press these buttons for select the input sources.
- 5 Press this button for select HDMI output resolution. (Press and hold 5 seconds or more, the HDMI output resolution will reset to 720p60Hz.)

## **6** Menu operation buttons:

MENU: press to enter in OSD menu.

EXIT: press to exit OSD menu.

OK: confirm button.

UP/DWON/LEFT/RIGHT button:for OSD value setting.

## **7** VOL-/+:decrease or increase audio volume, MIC-/+: Unused.

## **5.5 Auto-Switching function**

The scaler switcher have auto-switching mode and manual-switching mode.when the user select auto-switching mode, It will follows the following principles:

### **5.5-1 New input principle**

Once a new input signal is detected, the scaler switcher will switch to this new signal automatically.

### **5.5-2 Power rebooting principle**

The scaler switcher offers the function to remember the signal last used after rebooting. Once rebooted, it will automatically enter auto-switching mode, and then detect all inputs and memorize their connection status for future reboots. If the last used input signal is still available, then it will choose that signal. If not, it will detect all input signals with priority on HDMI1->HDMI2->HDMI3->HDMI4->VGA(YPbPr/CVBS).

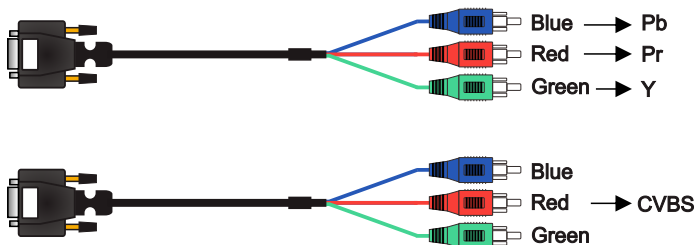
### **5.5-3 Signal removing principle**

Once the current signal is removed, the scaler switcher will detect all input signals with priority on HDMI1->HDMI2->HDMI3->HDMI4->VGA(YPbPr/CVBS). It will transfer the first signal detected to the output

**Notice:** Auto-switching function works only when there is a new input signal or if an input signal is removed..

## 5.6 VGA/YPbPr/CVBS input

The VGA input port is a multiple format port , It can compliant with VGA/YPbPr/CVBS input signal. The scaler switcher will auto detect the input signal type and format. The user can use the convert cable for YPbPr or CVBS signal input.



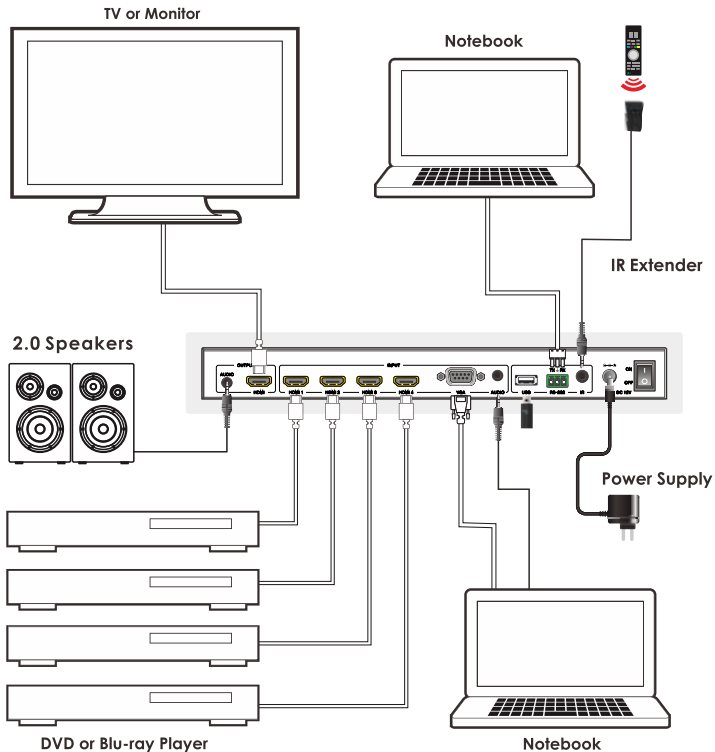
## 5.7 Operations of RS232 Control

Please connect the scaler switcher with input devices and output device needed, then connect it with a computer that is installed with RS232 control software.

Double-click the software icon to run this software on your computer. The interface of the control software is showed as below:



## 6. Connection Diagram



1. Connect HDMI source devices (e.g. Blu-ray DVD) to HDMI input ports of the scaler switcher with HDMI cable. Connect VGA source device (eg.PC/note-book) to VGA input ports of the scaler switcher with a VGA cable.
2. Connect HDMI display device to the HDMI output port of the scaler switcher with a HDMI cable.
3. Connect speaker, headphone or specialized amplifier to AUDIO output port of the scaler switcher.
4. Connect control device (e.g. PC) to RS232 port of the scaler switcher.
5. Connect DC12V power adaptor to the power port and power on.