

# OR-HD44E

4 by 4 HDMI V1.3 Matrix

## Operation Manual



## **Revision History**

<b>Version No.</b>	<b>Date</b>	<b>Summary of Change</b>
<b>v1.01</b>	<b>12/03/13</b>	<b>Updated RS-232 Strings</b>
<b>v1.02</b>	<b>19/04/13</b>	<b>Changed RS-232 Baud Rate</b>

## **Precautions**

Failure to follow the precautions described below may cause damage to HDMI 1.3 Matrix Box and void the warranty.

- DO NOT open the case. Doing so will void the warranty. If you find problem with it, please return back to your retailer or seller who will assist you or provide you with solution.
- DO NOT use third-Party AC adapter or power cord. Doing so may damage HDMI 1.3 Matrix.
- DO NOT bump, jar or drop contents of the products as it may damage it and result in warranty void.
- DO NOT set any liquids or beverages on the drive as they may damage HDMI 1.3 Matrix.

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## **1. Introduction**

While HDMI products are getting more and more popular in the market people usually have more than one HDMI devices and sources in one place. HDMI V1.3 Matrix provides the excellent solution for connecting all the devices and sources together for your convenience use, it also provides you a variety of choices on where to play your images with remote controller. Further, HDMI V1.3 Matrix can transfer Deep Color video and bit stream digital audio with maximum performance and it supports HDMI 1.3, HDCP 1.1 and DVI 1.0.

## **2. Applications**

- Multi-source with multi-display control.
- Home entertainment integration.
- Multi-task project presentation.
- Showroom display.
- Advertising display control.

## **3. Package Contents**

- 4 by 4 V1.3 HDMI Matrix.
- Remote Control CR33 (with Battery)
- IR Receiver
- 5V DC power supply adaptor.
- Operation Manual.

## **4. System Requirements**

HDMI input device(s) and HDMI output device(s).

## **5. Features**

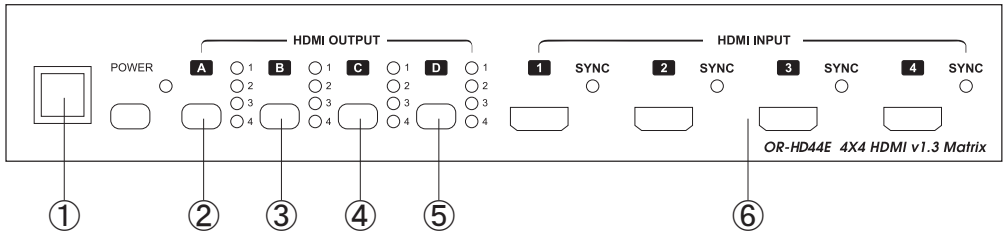
- HDMI 1.3, HDCP 1.1 and DVI 1.0 compliant.
- Supports digital video formats in Deep Color Mode at up to 36 bits (12bits/ color) and new lossless compressed (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio) digital audio and LPCM7.1.
- Supports input source LED indicators on each output select.
- Compatible with all HDMI sources and displays.
- Supports a wide range of PC and HDTV resolutions from VGA to UXGA and 480i to 1080p.
- Supports RS-232 control.
- Supports IR remote control and IR extender.
- Dolby Digital, DTS digital audio transmission (32-192 kHz Fs sample rate).
- HDMI cable distance test with 1080p/8-bit & 12-bit resolution, the input/ output can run up to 15/15 meters.
- High performance Matrix of 4 inputs and 4 outputs.
- Re-timed and level compensated HDMI signal progress through the system.
- Switchable EDID function for choosing EDID to display.

## 6. Specifications

Frequency bandwidth	2.25Gbps (single link)
Input ports	4 x HDMI female ports,
Output ports	4 x HDMI female ports
EDID	Standard, TV/Moving Port 1
HDMI Audio output	PCM2, PCM5.1, PCM7.1, Dolby5.1, DTS5.1, DD+ TrueHD, DTS-HD
HDMI Cable in	1080p 8bit (5M), 1080p 12bit (5M)
HDMI Cable out	1080p 8bit (15M), 1080p 12bit (5M)
Color Space	RGB_24/36, YCbCr 4:4:4_24/36, YCbCr 4:2:2, xvyycc
IR	Yes
IR extender	x 1
Deep Color	1080p 12bit
HDMI Resolution	480I~1080p 50/60, 1080p 24, VGA~UXGA
DVI Resolution	480I~1080p 50/60, 1080p 24, VGA~UXGA
Power Supply	5VDC/3.2A (US/EU standards, CE/FCC/UL certified)
Dimensions (mm)	280(W) x 145(D) x 49(H)
Weight(g)	1190
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0°C ~ 40°C
Power Consumption	13W

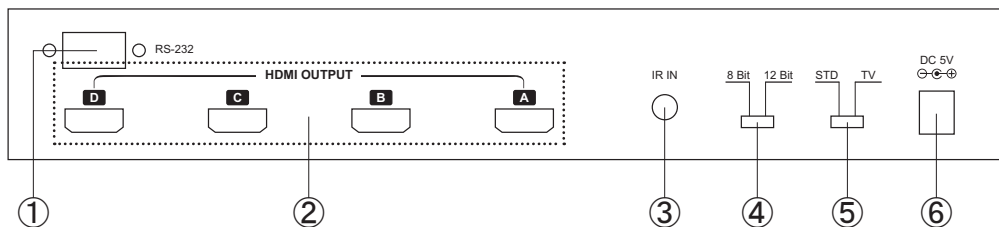
## 7. Installation

### 7.1 Front Panel



- ① . Remote control sensor.
- ② . Input Select/Indicators (A): Press the HDMI out “A” button repeatedly to switch to your desired source and the LED will illuminate to indicate which input source is being selected and routed to HDMI A output.
- ③ . Input Select/Indicators (B): Press the HDMI out “B” button repeatedly to switch to your desired source and the LED will illuminate to indicate which input source is being selected and routed to HDMI B output.
- ④ . Input Select/Indicators (C): Press the HDMI out “C” button repeatedly to switch to your desired source and the LED will illuminate to indicate which input source is being selected and routed to HDMI C output.
- ⑤ . Input Select/Indicators (D): Press the HDMI out “D” button repeatedly to switch to your desired source and the LED will illuminate to indicate which input source is being selected and routed to HDMI D output.
- ⑥ . HDMI inputs: Connect input ports to the HDMI or DVI output of your source equipment such as DVD player or set-top-box. When the input connection has been detected the SYNC LED will illuminate.

## 7.2 Rear Panel



- ① . RS-232 communication port: Connect the COM port of your PC for the distant control over RS-232 channel. Detail Specifications in section 8.
- ② . HDMI outputs: Connect each of these output ports to the HDMI display(s). The device supports repeater function and each output port can supports 16 key sets of KSV and 4 outputs can support a total of 64 key sets of KSV.
- ③ . IR IN: Place the IR receiver cable in front of the displays and then using sources remote control to control sources through IR receiver cable.
- ④ . 8/12 bits switcher – Supports 8 or 12 bit's deep color function. This selection is only available when EDID is in STD mode.

### **Note:**

When HDMI output has both 8-bit and 12-bit displays, to ensure all output will display, switch to 8-bit is imply with the first HDMI output of 8 bit's displayer. On the other hand, when all output are with the same bit's displayer of 12-bit or 8-bit then switch the function to 12-bit or 8-bit will be proper. The splitter will not function according to different bits' of display on HDMI outputs simultaneously.

- ⑤ . EDID Control Switcher: Default factory setting is TV, leave as it is when the displays are working properly. Switch to STD to use built-in EDID.

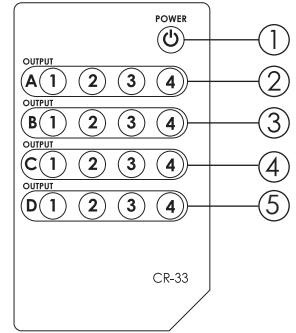
### **Note:**

1. STD means internal EDID, TV means external EDID.
  2. When EDID swtich to TV, the unit will detect the first DVI output source's EDID and record in the unit. If the first detected output source is HDMI it will pass to next source, until the first DVI been detected. The detection priority is HDMI v1.3 < HDMI v1.2 < DVI.
  3. When EDID is on STD: unit use built-in EDID  
Video Support ->1080p 12-bit (max)  
Audio Support ->PCM2.
  4. EDID switching during display will cause image pause do to EDID resetting and image re-position.
- ⑥ . Power: Plug the 5VDC power supply into the unit and connect the adaptor to AC wall outlet.



## 8. Remote Control

1. Power: Press the button to turn on/off the unit.
2. Input Select for HDMI OUT A: Press 1, 2, 3 or 4 to select the desired input source for HDMI OUT A.
3. Input Select for HDMI OUT B: Press 1, 2, 3 or 4 to select the desired input source for HDMI OUT B.
4. Input Select for HDMI OUT C: Press 1, 2, 3 or 4 to select the desired input source for HDMI OUT C.
5. Input Select for HDMI OUT D: Press 1, 2, 3 or 4 to select the desired input source for HDMI OUT D.



## 9. RS-232 Protocol Pin Definition

OR-HD44E			Remote Control Console	
PIN	Definition		PIN	Definition
1	NC		1	NC
2	TxD		2	RxD
3	RxD	→	3	TxD
4	NC		4	NC
5	GND		5	GND
6	NC	←	6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

\* RS-232 transmission format:

Baud Rate: 9600 bps

Data Bit: 8 bits

Parity: None

Stop Bit: 1 bit

Flow Control: None

## 9.1 Commands

<b>COMMAND</b>	<b>ACTION</b>
POWER 00	Power Off (standby)
POWER 01	Power On
PORT 11	Output A select Input1
PORT 12	Output A select Input2
PORT 13	Output A select Input3
PORT 14	Output A select Input4
PORT 21	Output B select Input1
PORT 22	Output B select Input2
PORT 23	Output B select Input3
PORT 24	Output B select Input4
PORT 31	Output C select Input1
PORT 32	Output C select Input2
PORT 33	Output C select Input3
PORT 34	Output C select Input4
PORT 41	Output D select Input1
PORT 42	Output D select Input2
PORT 43	Output D select Input3
PORT 44	Output D select Input4
ST	Display the current matrix status and F/W version

# 10. Connection and Installation

