

CMLUX-4H4CAT

4 by 4 HDMI V1.3
over CAT 5 Matrix

Operation Manual



Revision History

| <i>Version No.</i> | <i>Date</i> | <i>Summary of Change</i> |
|---------------------------|------------------------|-----------------------------------|
| <i>V1</i> | <i>20090610</i> | <i>Preliminary Release</i> |

Precautions

Failure to follow the precautions described below may cause damage to 4 by 4 HDMI V1.3 over CAT 5 Matrix 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 4 by 4 HDMI V1.3 over CAT 5 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 4 by 4 HDMI V1.3 over CAT 5 Matrix.

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1. Introduction

This high performance HDMI Matrix over CAT 5 with remote control is compatible with HDMI v1.3 specifications. A cutting-edge technology which defines the supports to transfer Deep Color (10 bits/color) video and new lossless compressed (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio) digital audio. It offers you maximum convenience in HDMI signal distribution when you have multiple HDMI sources and displays to connect together. Each of the four HDMI sources can be directed to any one of the four displays. When HDMI signal progresses through the system, it is re-timed, and level-compensated. Further, since signal is transferred over CAT 5 the distance can be extended at the lowest cost yet with same quality. Moreover, with built-in IR system users can control the sources with existing remote controls from the display side and EDID switch allowing users to choose display resolution. Last but not least, the RS-232 function easy system control over PC which make this device in a perfect form.

2. Applications

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

3. Package Contents

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

4. System Requirements

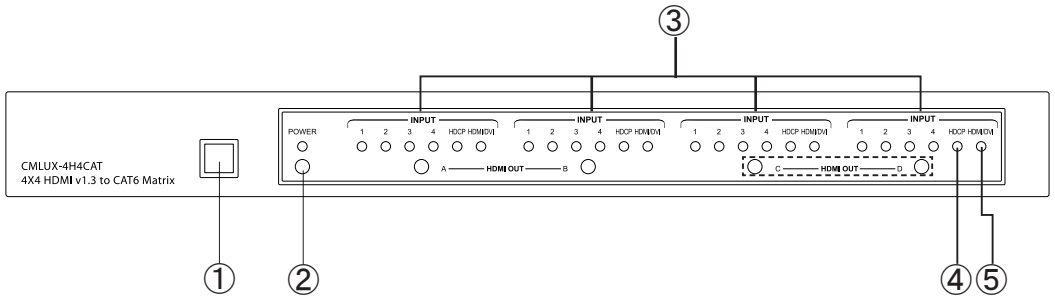
Input source equipment(s) and output display device(s) with HDMI cables and CAT 5 to HDMI receiver.

5. Features

- HDMI 1.3, HDCP 1.1 and DVI 1.0 compliant.
- Supports digital video formats in Deep Color Mode at up to 30 bits (10bits/color) and new lossless compressed (Dolby TrueHD, Dolby Digital Plus and DTS-HD Master Audio) digital audio.
- The HDMI input is compensated, clock / phase adjusted, and jitter eliminated so the output is a brand new standard HDMI signal.
- 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 with IR extender and blaster.
- Dolby Digital, DTS digital audio transmission (32-192 kHz Fs sample rate).
- Supports LPCM7.1 channels output from each independent HDMI ports.
- HDMI cable distance test with 1080p/8 bits resolution, the Input/Output can run up to 20/15 meters. With 1080p/10 bits the Input/Output can run up to 15/15 meters.
- Switchable EDID function for choosing the native resolution to display.
- Define HDCP, HDMI and DVI source with LED light.
- Re-timed and level-compensated with HDMI signal progress.
- High performance HDMI 1.3 Matrix allowing full entertainment enjoyment on movies, music, games and TV at once.

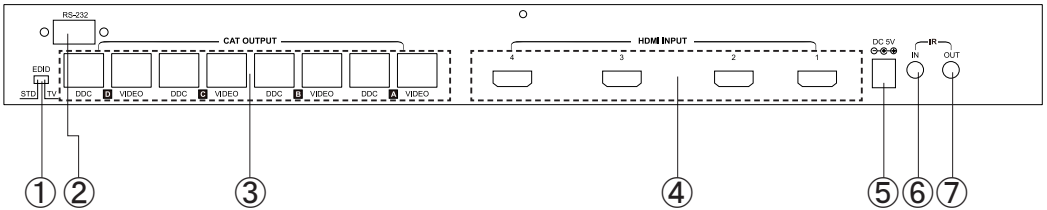
6. Installation

6.1 Front Panel



- ①. Remote control sensor.
- ②. Power switch & LED Indicator: The LED will illuminate when the power is turned on.
- ③. Input Select/Indicators (A/B/C/D): 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 display.
- ④. HDCP indicators: When the input source is with the HDCP protection the HDCP LED will illuminate.
- ⑤. HDMI/DVI indicators: LED will illuminate when input source is HDMI content, when the input source is DVI the LED will not illuminate.

6.2 Rear Panel



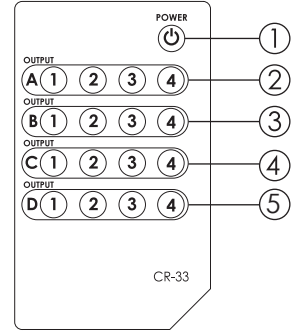
- ①. EDID Control Switcher: Default factory setting is TV, leave as if the display is properly. Switch to STD to use built-in EDID.

[Note]:

1. When EDID switch to TV, the unit will detect the first HDMI output source's EDID and record in the unit. If the first detected output source is DVI it will pass to next source until the first HDMI source been detected. The detection priority is HDMI v1.3 > HDMI v1.2 > DVI.
 2. When EDID switch to STD the unit will use built-in EDID which supports:
Video →1080p 12-bit (max) but not supports xvYCC
Audio →PCM 2CH
 3. The EDID selection will only activated when the unit is re-plug and power on.
- ②. RS-232: Connect to the COM port of your PC for the distant control over RD-232 channel. Detail specification in section 8.
 - ③. Video/DDC CAT 5 outputs: Connect each of these output ports with CAT 5 cables to CAT 5 to HDMI receiver and then to display with HDMI cable.
 - ④. HDMI inputs: Connect input ports to the HDMI or DVI output of your source equipment such as DVD player or set-top-box.
 - ⑤. Power: Plug the 5VDC power supply into the unit and connect the adaptor to AC wall outlet.
 - ⑥. IR IN: Place the IR receiver cable in front of the display and then use the existing remote controls to control both sources and display.
 - ⑦. IR OUT: Place the IR blaster cable in front of the sources and then use the existing sources remote controls to control the source equipments.

7. 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.



8. RS-232 Protocol

8.1 Pin Definition

| CMLUX-4H4CAT | | | 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: 9600bps

Data Bit: 8 bits

Parity: None

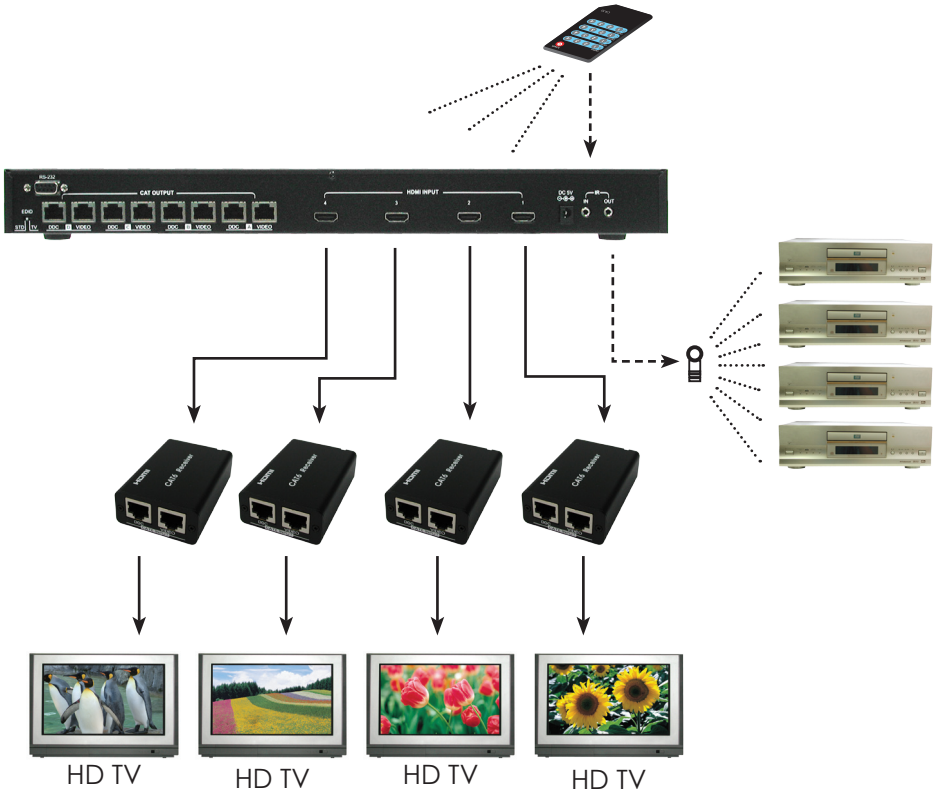
Stop Bit: 1 bit

Flow Control: None

8.2 Commands

| COMMAND | ACTION |
|----------------|------------------------|
| 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 |

9. Connection and Installation



10. Specifications

| | |
|-----------------------|---|
| Frequency bandwidth | 2.25Gbps (single link) |
| Input ports | 4 x HDMI female ports, |
| Output ports | 4 x Video/DDC CAT 5 ports |
| EDID | Standard, TV/Moving Port 1 |
| HDMI Audio output | PCM2, PCM5.1, PCM7.1, Dolby5.1, DTS5.1, DD+, D-TrueHD, DTS-HD |
| HDMI Cable in | 1080p 8-bit (15M), 1080p 12-bit (15M) |
| HDMI Cable out | 1080p 8-bit (15M), 1080p 12-bit (15M) |
| Color Space | RGB_24/36, YCbCr 4:4:4_24/36, YCbCr 4:2:2, xvYCC |
| IR IN/OUT | Yes/Yes |
| Deep Color | 1080p 12-bit |
| HDMI Resolution | 480i~1080p 50/60, 1080p 24, VGA~UXGA |
| DVI Resolution | 480i~1080p 50/60, 1080p 24, VGA~UXGA |
| Power Supply | 5VDC/5A (US/EU standards, CE/FCC/UL certified) |
| Dimensions (mm) | 438(W) x 175(D) x 44(H) |
| Weight(g) | 2150 |
| Chassis Material | Aluminum |
| Silkscreen Color | Black |
| Operating Temperature | 0°C ~ 40°C |



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