



PU-04H4C

v1.3 HDMI 4x4 Matrix with built
in HDMI over CAT6 outputs

OPERATION MANUAL





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1. Introduction

All the PUMA, HDMI over CAT5e/6 transmitters and receivers are the perfect solution to extend HDMI signals via CAT cabling up to 40m. The PU-O products within the PUMA range combine HDMI over CAT5e/6 (PUMA) & HDMI Matrix switcher (ORBIT) to provide versatility to HDMI installations. The PU-O4H4C HDMI matrix has 4 HDMI input and 4 CAT transmitter outputs, designed to be used with PU-1106RX receiver units. Each of the four HDMI sources can be directed to any one of the four CAT outputs, so each display can show the same or a different source.

2. Features

- v1.3 HDMI, HDCP 1.1, DVI 1.0 compliant.
- HDMI 4x4 Matrix with built in HDMI over CAT6 transmitter outputs.
- Resolutions supported: PC - VGA to UXGA ; HDTV - 480i to 1080p + 1080p24fps
- High Definition audio supported: Dolby TrueHD, Dolby Digital Plus, DTS-HD Master Audio + LPCM
- The HDMI input is compensated, clock / phase adjusted, and jitter eliminated so the output is a brand new standard HDMI signal.
- Supports Deep Colour (10/12 bit).
- Selectable EDID settings - TV (downstream) and STD (fixed).
- LED indicators
- Supports 3D signals

3. Package Contents

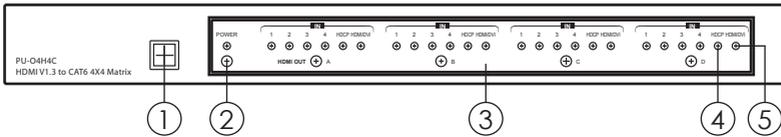
- 4 by 4 HDMI V1.3 Matrix Infrared Repeater Box (CIR-12)
- Remote Control (with Battery)
- 1 x IR Receiver.



- 5 x IR Blaster
- 5V DC Power Supply Adaptor
- Power Cord
- Operation Manual

4. Operation Controls and Functions

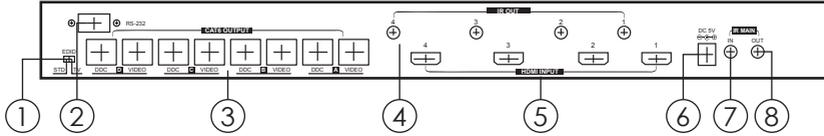
4.1 Front Panel



1. Remote control sensor.
2. Power switch & LED Indicator: This LED will illuminate when the power is turned on.
3. Input Select/Indicators (A/B/C/D): Press each “HDMI out” button repeatedly to switch to your desired source. The LED that illuminates to indicate the input source being selected and routed to HDMI A display.
4. HDCP indicators: This LED will illuminate once the input source being played comes with a HDCP protection.
5. HDMI/DVI indicators: When the input is HDMI content, this LED will illuminate. When playing DVI from the input source, this LED will not illuminate.



4.2 Rear Panel



1. EDID Control Switch: Default factory setting is on TV, leave as it is when the display is displaying properly. Switch to STD to use built-in EDID.

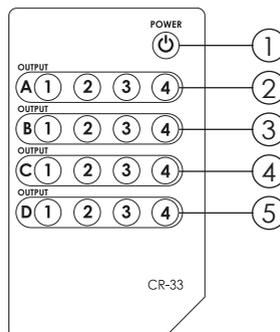
Note:

1. When EDID is switched to TV, the unit will detect the first HDMI output source's EDID and record it in the unit. If the first detected output source is DVI, it will skip onto the next source until the first HDMI source is detected. The detection priority is HDMI v1.3 > HDMI v1.2 > DVI.
 2. When EDID is switched to STD, the unit will use its built-in EDID that supports:
Video 1080p 12-bit (max) supports xyYCC Audio PCM 2CH
 3. The EDID selection will only be activated after the unit is re-plugged and powered on.
2. RS-232: This slot is where you connect a D-Sub 9-pin cable to the PC COM port when controlling the device over RS-232. Detailed specifications are listed in section 9.
 3. Video/DDC CAT 6 outputs: These slots are where you connect two CAT6 cables to a receiver box that has HDMI output and through the HDMI output it can be connect to TV. The receiver box can also be a splitter that provides additional CAT6 outputs when cascading from a HDMI receiver to the display via HDMI cable.



4. IR OUT: These slots are where you connect with IR blaster cables included in the package. Place it near each designate source equipment for infrared signal sending.
5. HDMI inputs: These slots are where you connect input ports to the HDMI or DVI output of your source equipments such as DVD player or set-topbox with HDMI cables.
6. Power: Plug the 5VDC power supply into the unit and connect the adaptor to an AC wall outlet.
7. IR MAIN IN: This slot is where you connect the IR receiver cable included in the package. Connecting the IR receiver cable allows you to source equipments through the existing remote controls.
8. IR MAIN OUT: This slot is where you connect the IR blaster cable included in the package. Place it near both the device and/or source equipments for infrared signal sending.

4.3 Remote Control



1. Power: Press this 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.

5. Pin Definitions

PU-04H4C		Remote Control Console	
PIN	Definitions	PIN	Definitions
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

5.1 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



6. 3.5mm Connectors Pin Definitions

6.1 IR IN Pin Definitions

Pin	Assignment
1	Power 5V
2	IR Signal
3	GND

6.2 IR OUT Pin Definitions

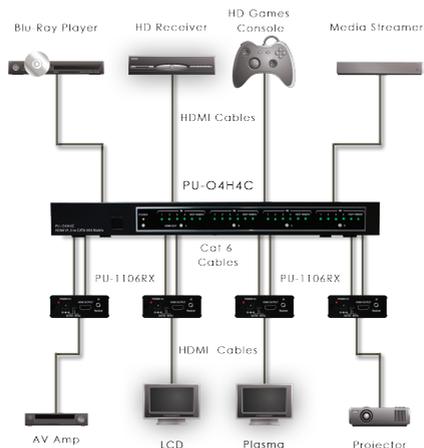
Pin	Assignment
1	IR Blaster Signal
2	Power 5V
3	IR Blaster Signal

6.3 RJ-45 Pin Definitions

Pin	Video	DDC
1	TX2+	DDC Bus Clock
2	TX2-	NC
3	TX1+	DDC Bus Data
4	TX0+	Power 5V
5	TX0-	GND
6	TX1-	IR IN
7	TXC+	HPD
8	TXC-	NC



7. Connection Diagram



8. Specifications

Frequency Bandwidth	2.25Gbps (single link)
EDID	Standard, TV/Moving Port 1
ESD Protection	Human body model: $\pm 10\text{kV}$ (air-gap di charge) $\pm 6\text{kV}$ (contact discharge)
HDMI Audio Output	PCM2, PCM5.1, PCM7.1, Dolby5.1, DTS5.1, DD+, D-TrueHD, and DTS-HD
HDMI Cable In	1080p 8-bit (15M), 1080p 12-bit (15M)
HDMI Cable Out	1080p 8-bit (15M), 1080p 12-bit (15M)
CAT 6 Cable Out	1080p 8-bit (45M), 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~1080p50/60, 1080p24, VGA~UXGA



DVI Resolution	480i~1080p50/60, 1080p24, VGA~UXGA
Input Port	4 x HDMI female ports. 1 x IR Jack
Output Port	8 x CAT5e/6 (2 for each output) 1 x IR Jack, 1 x RS-232
Power Supply	5V/6A, DC (US/EU standards, CE/FCC/UL certified)
Dimensions (mm)	60(W) x 50(D) x 25(H)
Weight (g)	unit only - 2260; unit PSU & accessories 3080
Chassis Material	Aluminium
Silk Skin Colour	Black
Operating Temperature	Operating from 0°C ~ 40°C



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