

# HDM2.0-4x4-UHD-II HDM2.0-4x4-UHD-A

## 4x4 UHD with HDR HDMI Matrix

### User Manual

V1.1



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## 1.0 WHAT'S IN THE BOX

QTY	Product
1	HDM2.0-4x4-UHD-II or HDM2.0-4x4-UHD-A
2	Rack Ears
4	Foot Pads
1	IR Receiver Cable
1	Remote Control

## 2.0 Key Features

- Supports resolutions up to UHD@60Hz (4:4:4)
- Supports pixel-clock up to 600 MHz
- Supports HDR
- Supports LPCM, Dolby TrueHD, and DTS-HD Master audio
- HDCP 1.4/2.2 compliant
- Supports 3D pass-through
- EDID management – Copy from output 1 or built-in internal EDID
- Supports RS-232 control
- Supports IP control via Telnet, TCP and built-in web server
- Supports IR remote control for switching (HDM2.0-4x4-UHD-II only)
- Discrete Audio outputs; Digital Optical and Analog (HDM2.0-4x4-UHD-A only)
- Firmware upgradable
- Supports up to 4 presets

## 3.0 Specifications

Function	HDM2.0-4x4-UHD-II
HDMI outputs	4
HDMI inputs	4
RS-232 control	1 x DB9
IP control	1 x RJ45
IR control	1 x 3.5mm stereo jack
IR Matrix outputs	4 x 3.5 mm stereo jack (HDM2.0-4x4-UHD-II only)
IR Matrix inputs	4 x 3.5 mm stereo jack (HDM2.0-4x4-UHD-II only)
Audio outputs	4 x 3.5 mm stereo jack (HDM2.0-4x4-UHD-A only)
Audio outputs	4 x Digital Audio, Toslink (HDM2.0-4x4-UHD-A only)

Display	LCD Module
Maximum resolution	UHD@60Hz (4:4:4 8 bit, 4:2:2/4:2:0 12 bit)
HDCP compliance	HDCP 1.4 / 2.2
Audio support	LPCM, Dolby TrueHD, Dolby Deigital/Plus/Ex, DTS, DTS-HD Master audio
Baud rate	115200 bps; 8 data bits, 1 stop bit, no parity
IP control	Telnet, TP, Web interface
Power supply	90 ~ 240 VAC
Weight	2.5 kg
Dimension	440x198x43 mm

## 4.0 Front Panel

**OUT Buttons:** Specify the HDMI output destination

**IN Buttons:** Specify the HDMI input source

**ALL Button:** This key allows user to set a single source to all outputs destinations

**OFF Button:** Disable LCD Module backlight

**SAVE Button:** Saves all current status to a preset

**LOAD Button:** Load one of the presets

- LOAD + Number key 1 ~ 4 (IN OR OUT)

**EDID Button:** Select the EDID mode for each/all source input

- UHD Mode: EDID Resolution up to UHD
- copy Mode: Copy an Output's EDID to each/all the sources
- FHD Mode: EDID Resolution up to Full HD 1080p.
- 4K30 Mode: EDID Resolution up to 4K30.
- HDR Mode: EDID Resolution up to 4K Ultra HD with HDR.

**MENU Button:** Switches menus to get information or settings. Different menus can display the input / output status, IP address, keypad lock setting, reset to factory default and firmware version.

**ENTER Button:** Confirm the setting of the MENU button

## 5.0 Rear Panel

### HDM2.0-4x4-UHD-II



### HDM2.0-4x4-UHD-A



**Power:** 100V ~240VAC

**RS-232:** To connect a computer/controller's serial port and matrix via RS-232 for control

**LAN:** To connect a computer/controller to the matrix via IP (RJ45)

**IR EXT:** Connect the IR Receiver cable for the matrix's Remote Controller.

**IR Matrix:** (HDM2.0-4x4-UHD-II only) Connect the IR Blaster and IR Receiver cables for IR Matrix from outputs to inputs.

**Digital Audio outputs:** (HDM2.0-4x4-UHD-A only) Digital audio (toslink) for each output.

**Analog Audio outputs:** (HDM2.0-4x4-UHD-A only) 3.5mm Audio jacks for each output.

**HDMI IN:** Matrix inputs (HDMI)

**HDMI OUT:** Matrix outputs (HDMI)

#### **DIP Switch:**

Pin 1: Switch RS-232 port connection.

Pin 2: Switch LAN port connection.

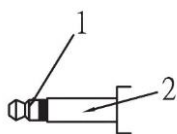
Pin 3: Reserve.

Pin 4: Reset the web server IP address to the factory default value. The IP address will restore to the default: 192.168.0.3

The steps are as follows:

1. Adjust pin 4 to ON then power cycle
2. After the matrix is powered on for about 10 seconds.
3. Adjust pin 4 to OFF then power cycle again
4. The IP address will be restored to the default: 192.168.0.3

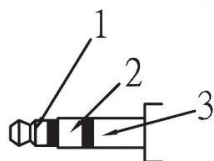
## 5.1 IR Blaster Pin Definitions



1: IR LED+

2: IR LED-

## 5.2 IR Receiver Pin Definitions



1: Signal

2: GND

3: +5V

## 5.3 RS-232

Follow these steps to log onto the matrix with a RS-232 terminal emulation program (the example as below is Hyper Terminal):

1. Please switch the DIP Switcher PIN 1 to ON for RS-232 control.
2. Connect the matrix to your control PC with RS-232 cable.
3. Power on both Matrix Switcher and PC.
4. Launch a terminal emulation program (e.g. HyperTerminal) on your PC.
5. New Connection – Hyper Terminal screen will appear. Input the connection name and select a representative icon. Then click OK.
6. Select the connecting port that you want to use, click OK. Default port is COM1.
7. Set the Baud Rate to 115200, Data Bits to 8 (Default), Parity to None (Default), Stop bits to 1 (Default) and Flow Control to None from the drop-down list, click OK.

Description	Setting
Baud Rate	115200
Data Bits	8
Parity	None
Stop bits	1
Flow Control	None

Note: The RS-232 connection is defined by DCE, only TXD, RXD, and GND pins are used.



## 5.4 Network Configuration

The matrix supports IP-based control using Telnet, TCP, or the built-in Web Server interface. Network settings can be configured via web or Telnet command. The default network settings are as follows:

<b>Description</b>	<b>IP Address / Port</b>
IP Address	192.168.0.3
Subnet Mask	255.255.255.0
Gateway	192.168.0.1
DNS Server	8.8.8.8
DHCP Client	Disable
TCP Port	5000
Telnet Port	23
HTTP Port	80

Note: Depending upon the network, all related IP, Telnet, and TCP settings will need to be assigned. Consult your network administrator to obtain the proper settings.

## 5.5 Telnet

You can operate and configure the matrix via a remote terminal session using Telnet.

Follow the steps as below to log onto the matrix by Telnet session:

1. Switch the DIP Switch PIN 2 to ON for LAN configuration.
2. Connect the matrix's to LAN port of your network with RJ45 cable.
3. Power on both Matrix Switcher and control PC.
4. Launch a terminal session (command line) on your control PC.
5. Type in the matrix's IP address as below:

```
telnet [IP Address]:192.168.0.3
```

6. Press Enter

Note: Telnet port is 23.

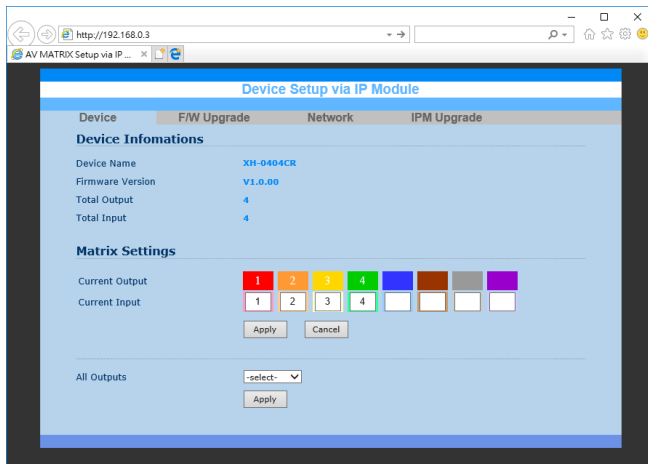
## 5.6 TCP

For programmer familiar with network communication, you can program your own TCP/IP application to control Matrix Switcher.

Note: TCP port is 5000.

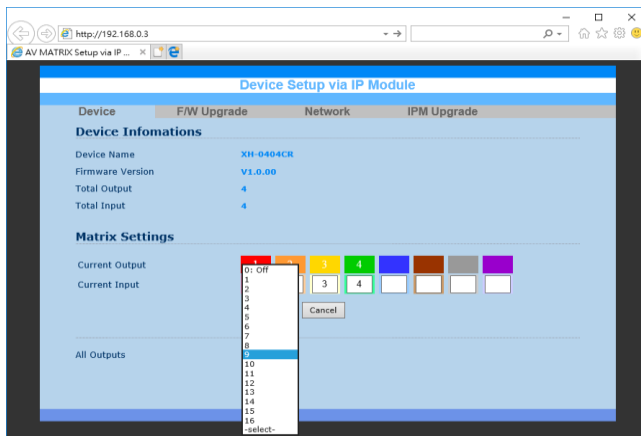
## 5.7 Web

1. Open a **Browser** on your PC and type in the default IP address <http://192.168.0.3/> to connect the **IPM** web.



**Note: HTTP port is 80**

2. Type in the selected input number in the Matrix Settings Current **Input** fields, and then click "**Apply**" button.
3. To switch all Outputs to the same Input, select from the All Outputs drop-down menu at the bottom, and then click "**Apply**" button.



## 5.8 RS-232 amd TCP/IP commands

These commands are based on ASCII code for RS-232, Telnet and TCP Interfaces. Every command must include a carriage return (0d) at the end to execute the command. If a new command is received, a prompt will appear

### 1. Command List

Once the connection with matrix is established, type "help" in the Hyper Terminal screen, and then press "Enter" Key to show the command list.

Command	Description
help	Display help information
reset	Reset the device
info	Display device information
status	Display device status
r	Set routing status
rs	Display routing status
save	Save the current status to Preset
load	Load settings from Preset
edid	Select input EDID mode
default	Reset to factory default settings

For more information, type '/h' or '?' after each command

### 2. Command descriptions

#### 2-1 command "r"

Usage:

r x y: Set Input x to Output y

r x: Set all Outputs to Input x

r Displays the current route status

r x y1 .. yn : Set Input x to Output y1, .. , yn

x = [0-1] (0: disable), y = [0-n] (0: all outputs)

Examples: r 1 2

Examples: r 0

## 2-2command "rs"

### Usage:

rs: Displays the current route status

rs x: Displays the Preset x route status

rs x y: Displays the Preset x Output y route status

x = [0-0] (0: current status)

y = [0-4] (0: all outputs)

Examples: rs

Examples: rs 0

## 2-3command "save"

### Usage:

save x: Save current route status to Preset x

x = [1-4] (Preset Position x)

Examples: save 1

## 2-4command "load"

### Usage:

load x: Load the route status from Preset x

x = [1-4] (Preset Position x)

Examples: load 1

## 2-5command "edid"

### Usage:

edid: Display input EDID mode x

edid x: Select input EDID mode x

x = [0-4] 0: 4K Ultra HD

1: Copy from Output 1

2: Full HD

3: 4K30

4: 4K HDR

Examples: edid 0

3. Other commands have no parameters.

## 4. TCP/IP Configuration (Telnet Console Only)

ipconfig

Display the TCP/IP configuration

setip	Renew the IP Address
setmask	Renew the Subnet Mask
setgateway	Renew the Default Gateway
setdns	Renew the DNS Servers
setdhcp	Set DHCP client Enable or Disable