XH-0404CR / XH-0602CR / XH-0808CR

4K UHD with HDR HDMI Matrix Switcher User Manual

V1.1

XH-0404CR

XH-0602CR

XH-0808CR

■ Package Contents

- 1 x XH-0404CR or XH-0602CR or XH-0808CR
- 1 x User Manual
- 1 x AC Power Cord
- 4 x Foot Pads
- 1 x IR Receiver
- 1 x Remote Control
- 2 x Rack-Mount Bracket
- 6 x Screws (for Bracket)

■ Overview

The XH-0404CR/XH-0602CR/XH-0808CR is a high performance HDMI Matrix switcher equipment. It is used for input/output cross switching of signals or transmit input signal to each output equipment. It provides high performance video and audio up to 4K Ultra HD 60Hz resolution and supports 5 EDID modes select. Beside it also supports RS-232, IR and LAN communication ports enable convenient communication with remote control equipment to switch the image signals.

■ Features

- Supports resolution up to 4K Ultra HD 60Hz (4:4:4).
- Supports pixel clock up to 600MHz.
- Supports HDR.
- Supports LPCM, Dolby TrueHD, and DTS-HD Master Audio.
- HDCP 1.4/2.2 compliant.
- Supports 3D pass-through.
- EDID Management can use the Output 1 EDID or built-in internal EDID.
- Supports RS-232 control.
- Supports IP control via Telnet, TCP, and the built-in Web server interface.
- Support IR Remote Control to routing Inputs to Outputs.
- Support IR matrix switch is based on HDMI switched by controller.
- Supports firmware upgrade.
- Supports Preset can up to 4 sets.
- 1U rack.

■ Specifications

Function	XH-0404CR	XH-0602CR	XH-0808CR
HDMI Output	4	2	8
HDMI Input	4	6	8
RS-232 control	DB9 x 1		
LAN control	RJ45 x 1		
IR control	Stereo Jack x 1		
IR Matrix OUT	Stereo Jack x 4	Stereo Jack x 6	Stereo Jack x 8
IR Matrix IN	Stereo Jack x 4	Stereo Jack x 2	Stereo Jack x 8
Display	LCD Module		
Max. Resolution	4Kx2K 60Hz (4:4:4 8bit, 4:2:2/4:2:0 12bit)		
HDCP Compliance	HDCP 1.4 / 2.2		
Audio Support	LPCM, Dolby TrueHD, Dolby Digital/Plus/EX, DTS, DTS-HD Master Audio		
Baud Rate	115200 bps; 8 data bits, 1 stop bit, no parity		
IP control	Telnet, TCP, Web		
Power Supply	100V~240VAC		
Weigh	2.5Kg	2.3Kg	3.2Kg
Dimensions	440x198x43mm		

■ **Front Panel**
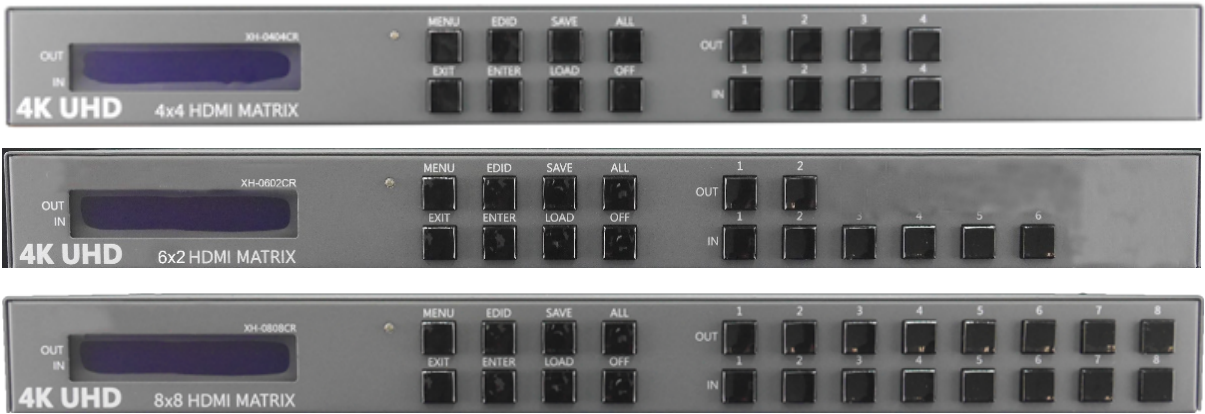
OUT Keys: Specify the Channel for HDMI signal Output.

IN Keys: Specify the Channel for HDMI signal Input.

ALL Key: This key allows user to set single input channel to all outputs channels.

OFF Key: Disable LCD Module backlight or with the OUT Keys to use.

The usage of ALL key is the same as output keys.

- Press the OUT keys or ALL key. (LCD will flash to indicate selection)
- Select the one of the IN keys or OFF Key.

The selected IN x key will transfer the input signal to the selected outputs. You can also press the ALL key and then press the OFF key to disable all the displayed switching settings.

SAVE Key: The saves all current output/input corresponding relations up to 4 sets.

LOAD Key: The key can load all settings that are saved in the preset.

- Press the OUT keys or IN keys to selected preset.

EDID Key: The key can the selected EDID mode for all input channels.

- UHD Mode: EDID Resolution up to 4K Ultra HD.
- OUT1 Mode: Copy Output1 the EDID to all the input channels.
- 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 Key: This key can switch menus to get information or settings. Different menus can display the input / output link status, auto down scaling setting (XH-0808CR only), IP address, keypad lock setting, reset to factory default and firmware version.

ENTER Key: Confirm the setting with the MENU Key to use.

EXIT Key: Press this key to go back to main screen.

*Auto Down: Automatically down scaling to 1080p based on each output EDID (XH-0808CR only).

■ Rear Panel

Power Port: The Power Port is applicable for 100V ~240VAC connected to the outlet of power source.

Power Switch: Power ON/OFF.

RS-232: Use a 9-pin RS-232 cable to connect both computer serial port and Matrix Switcher RS-232 communication port. The computer can be deployed to control the Matrix Switcher.

LAN: Use the RJ45 connection cable to connect the Internet and the Matrix Switcher. The entire PCs at the same network can control the Matrix Switcher through the LAN port.

IR EXT: Used to connect the IR Receiver Cable for the Matrix Switcher Remote Controller.

IR Matrix: Used to connect the IR Blaster and IR Receiver Cable for IR Matrix from outputs to inputs.

HDMI IN: Matrix Switcher Input jacks are connected to HDMI source devices such as the Blu-ray players, DVD players, PC, and more.

HDMI OUT: Matrix Switcher Output jacks are connected to HDMI sink devices such as HDTVs, projectors, and more.

DIP Switcher:

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 be restored to the default value: 192.168.0.3

The steps are as below:

1. Please adjust the pin 4 to ON and reboot the Matrix Switcher.

2. After the Matrix Switcher power on about 10 seconds.

3. Please adjust the pin 4 to OFF and reboot the Matrix Switcher again.

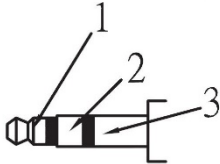4. The IP address will be restored to the default value: 192.168.0.3

■ IR Blaster Pin Definitions:
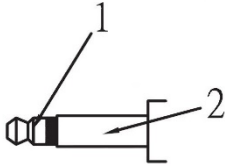
1 : IR LED+

2: IR LED-

■ IR Receiver Pin Definitions:

1: Signal

2: GND

3: +5V

■ RS-232 Configuration

Follow the steps as below to log into the Matrix Switcher by means of a RS-232 terminal emulation program (the example as below is for Hyper Terminal):

1. Please switch the DIP Switcher PIN 1 to ON for RS-232 control.
2. Connect the Matrix Switcher 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. The 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 Connector is defined by DCE and only TXD, RXD, and GND pins are used.

■ Network Configuration

The Matrix Switcher 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:

Description	IP Address / Port
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.

■ Telnet Configuration

You can operate and configure the Matrix Switcher via a remote terminal session using Telnet. Follow the steps as below to log into the Matrix Switcher by means of a Telnet session:

1. Please switch the DIP Switcher PIN 2 to ON for LAN configuration.

2. Connect the Matrix Switcher 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. Key in the Matrix Switcher's IP address as below:

   telnet [IP Address]:192.168.0.3

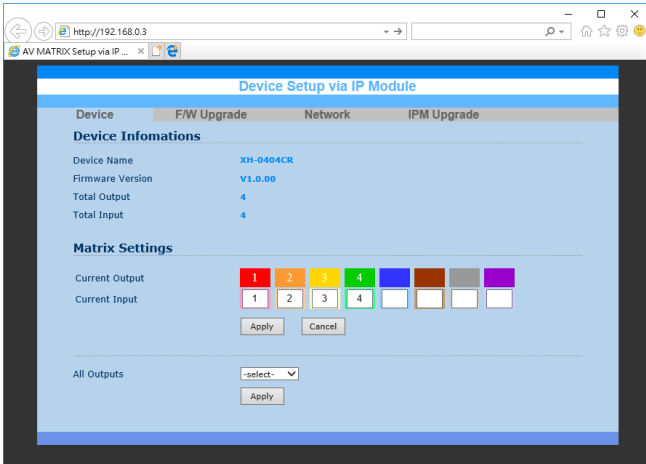6. Press Enter

Note: Telnet port is 23.

■ TCP Configuration

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

Note: TCP port is 5000.

■ Web Control

1. Open the **Browser** such as Internet Explorer on your PC and key in the Website default IP address **http://192.168.0.3/** to connect the **IPM** web.

   Note: HTTP port is 80.

2. Please key 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.
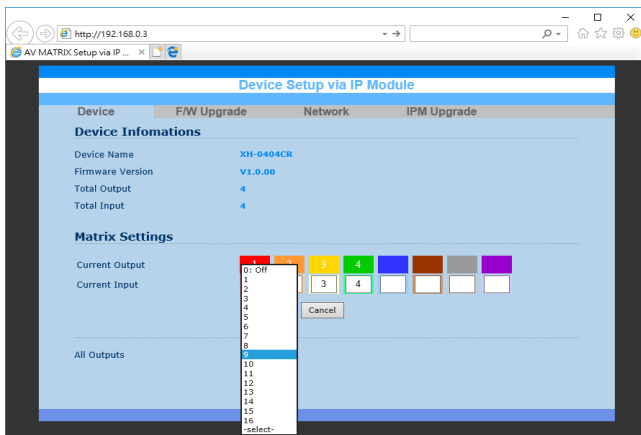
■ Installation

Connect the HDMI cable with the BD player or PC and the <IN> port.

Connect the HDMI cable with the UHDTV and the <OUT> ports.

Connect the power cord and turn on the matrix series.

Turn on the BD player or PC and UHDTV.

Trademarks:

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■ RS-232 and TCP/IP Console Command

This command is based on ASCII code for RS-232, Telnet and TCP Interfaces. Every command must include a carriage return (0d) at the end to be executed the command. If a new command is received, a prompt should be sent back.

1. Command List

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

```
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Command    Description

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help     : Display help information

reset    : Reset the device

info     : Display device information

status   : Display device status


r        : Set the routing status

rs       : Display the routing status

save     : Save the current settings to Preset

laod     : Load settings from Preset

edid     : Select input EDID mode

default  : Reset to factory default settings


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

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```

2. Command Usage Description

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

2-2 command "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

2-3 command "save"

Usage:

```
 save x : Save current route status to Preset x
    x = [1-4] (Preset Position x)
```

Examples: save 1

2-4 command "load"

Usage:

```
 load x : Load the route status from Preset x
    x = [1-4] (Preset Position x)
```

Examples: load 1

2-5 command "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.
```