

HDMI MATRIX SWITCHER 4X4
MODEL NO.: HDTVHDMX0404S
USER MANUAL



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Version: 2018_V1

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Safety Instructions

1. Read the user manual completely before start-up.
2. Heed all warnings and follow basic safety precautions.
3. Do not use this equipment near water or moisture.
4. Clean the equipment only with dry cloth.
5. Unplug the power cord before cleaning.
6. Installation site must be well ventilated.
7. Do not block ventilation holes of the device.
8. Do not put object into ventilation holes, it might cause short circuit incident.
9. Do not install the device near heat sources, such as radiator, stoves. etc.
10. Protect the power cords from being walked on or pinched.
11. Do not dismantle the equipment to prevent risk of electrical shock.
12. Treat it as normal electrical wastes for disposal purpose.
13. Refer servicing to your local vendor or qualified service personnel.
14. For your safety and to avoid damaging the product, the device should be repaired and maintained by the professional and qualified personnel in the designated service center.
15. Unplug the power of all the devices when you are connecting them up.
16. Make sure all devices connecting up are properly grounded.
17. Only use accessories specified by the manufacturer.
18. Unplug the equipment when unused a long period of time.

FCC Statements

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.



Introduction

HDMX0404S is 4x4 HDMI Matrix Switcher, supporting HDMI1.4 standard and a maximum resolution of 4K@60Hz (YUV 4:2:0). It allows any of the 4 Input HDMI Channels to be routed to any of the 4 Output HDMI Channels. Switching can be controlled by IR Remote Control, Front Panel Buttons, PC software and RS232. (IP is Optional). It offers an excellent solution for commercial, residential and educational audio video integration, such as in houses, offices, digital entertainment centers, control centers, conference rooms, school and corporate training environments, etc.



Figure 1. Front and Back Panel Review

Features

1. 1U standard chassis, easy installation.
2. Support HDMI1.4
3. HDCP Compliant
4. Support high-definition resolutions including: 4K@30Hz (3840 x 2160P), 1080P@60Hz, 1080i, 720P and other standard video formats.
5. Reading and saving EDID from displays function.

6. With automatic EQ and amplification capabilities.
7. With signal recovery enhancements capabilities.
8. With on-site switching memory protection function.
9. Enhanced ESD electrostatic protection, special lightning protection circuit.
10. Allowing up to 4 channels HDMI audio video sources to be independently switched to 4 HDMI Monitors, HDTV Displays, or Projectors.
11. The front panel LCD screen can display the switching status, input signal characteristics and other information of each channel, which is clear and intuitive.
12. Controllable by IR Remote, Front Panel Buttons, PC Software and RS232. (IP is Optional).

Connection and Operation

Matrix Connection

1. Connect HDMI Sources to HDMX0404S.
2. Connect HDMI Sinks to HDMX0404S.
3. Power On all the Devices.
4. Control the matrix by IR Remote Control, Front Panel Buttons, PC Software and RS232. (IP is Optional).

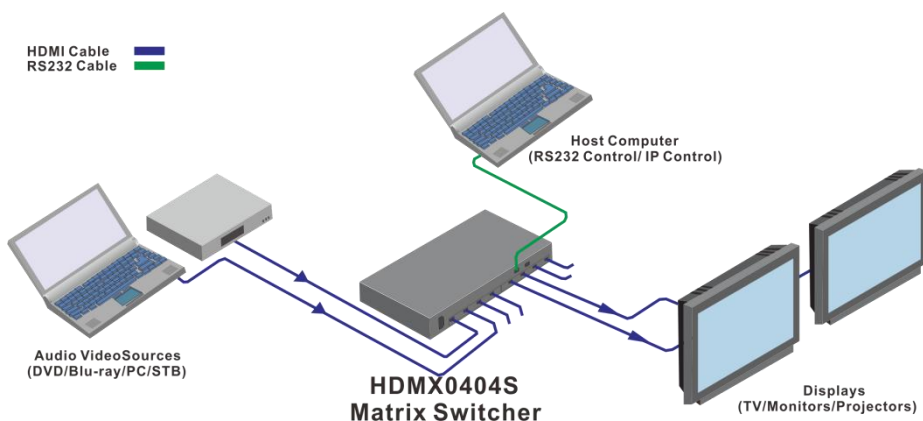


Figure 2. Matrix Connection Diagram

Front Panel Button Control

1. Front Panel Review

- ① *LCD Screen* (Display current status of Input-to-Output,etc.).
- ② *Power Indicator* (Power On/Off status).
- ③ *IR Receiver* (Receive IR signal).
- ④ *Input Channels* (Press button 1 to 4 to select Input Channels,button 0, button 5 to 9 are disabled). Button 5,6,7 can only be used when in EDID Mode.
- ⑤ *IN/OUT Button* (Press to select Input and Output).
- ⑥ *Control Buttons* (MENU, CTRL, ENTER, ESC/ After pressing Input and Output buttons, press ENTER button to execute the operation, press ESC to cancel the operation.)

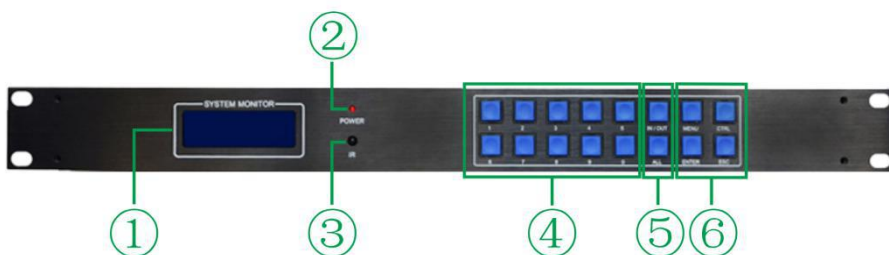


Figure 3. Front Panel Review

2. Rear Panel Review

- ① Power On/Off
- ② Grounding (Connect to the ground)
- ③ Input Channels (Connect to Sources)
- ④ Output Channels (Connect to Sinks)
- ⑤ RS232 In (Connect to PC and Central Control)
- ⑥ RS232 Out (Connect to another serial port control device)
- ⑦ IP Control (Optional, device can be connected to router and being controlled through the internet).

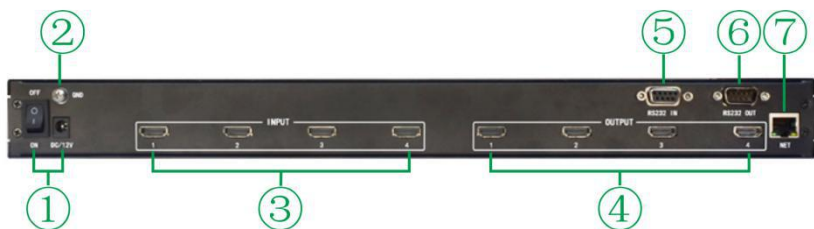


Figure 4. Rear Panel Review

3. LCD Screen Display Menu

- ① IN: Press IN/OUT Button to select Input Channels (As shown in the figure below, press the IN/OUT button to enter the input channel selection interface)



- ② OUT: Press IN/OUT Button to select Output Channels (As shown in the figure below, press the IN/OUT button to enter the output channel selection interface)



- ③ As shown in the following figure, the signal status on the LCD display indicates that the Input Channels are routed out to Output Channels, that is, 1-1, 2-2, 3-3, 4-4.

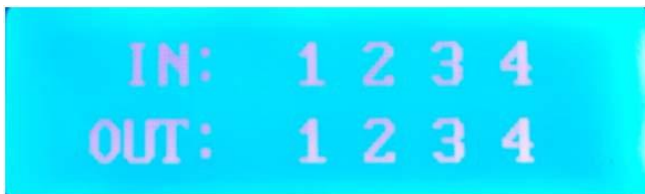


Figure 5. Matrix IN and OUT Status Display

④ Switching Display Menu

As shown in the following figure, it means that the input port 1 switches to ALL output ports.

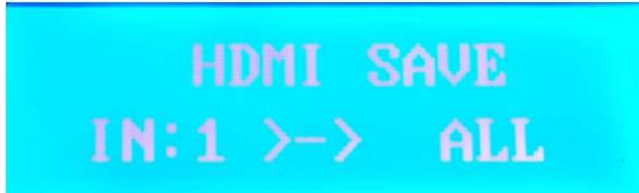


Figure 6. Matrix Switching Status Display

IR Remote Control

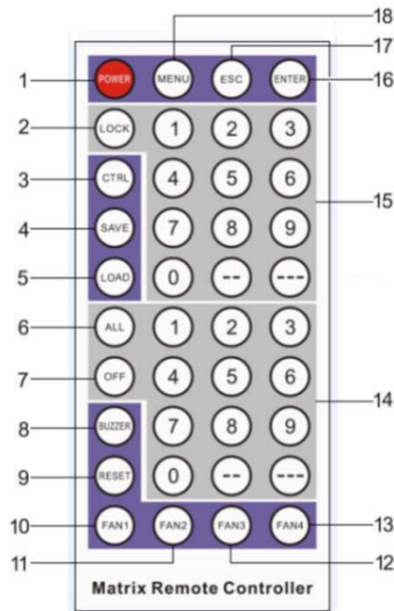


Figure 7. IR Remote Control

Item	Button	Function
1	POWER	Disabled
2	LOCK	Disabled
3	CTRL	Disabled
4	SAVE	Disabled
5	LOAD	Disabled
6	ALL	Select all the Output channels
7	OFF	Disabled
8	BUZZER	Disabled
9	RESET	Disabled
10	FAN1	Disabled
11	FAN2	Disabled
12	FAN3	Disabled
13	FAN4	Disabled
14	OUTPUT BUTTON	Select the Output Channels
15	INPUT BUTTON	Select the Input Channels
16	ENTER	Confirm the Operation
17	ESC	Disabled
18	MENU	Disabled

EDID Management

The matrix has two ways to read the EDID. The factory default setting is Automatic Read Mode.

1. Automatic Read Mode

HDMX0404S matrix can automatically read EDID. When the matrix output port is connected to the display devices, the matrix will automatically read the Sinks EDID information, and then analyse all the Sinks EDID information, combine a most suitable EDID and send it to the Inputs. As long as the output ports has a plug-in and plug-out actions, the matrix will

re-analyse and re-combine the EDID based on the latest EDID information.

2. Manually Read EDID

Long press the CTRL button and the LCD screen displays the current EDID mode of the Matrix. As shown below: ALL Input Channels select the First Mode: Automatic Read Mode.

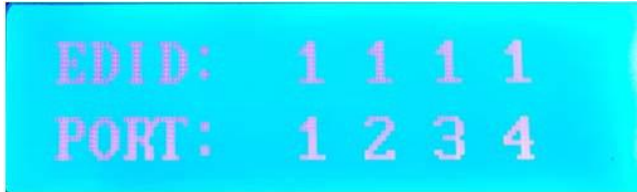


Figure 8. EDID Automatic Read Mode

Long press the CTRL button again, the Matrix enters the EDID SET mode. As shown below: defaulted as Automatic Read Mode (Mix Mode).



Figure 9. EDID Automatic Read Mode

When the matrix enters the EDID SET mode, The EDID 1 to EDID 7 corresponds to 7 different EDID modes respectively. PORT numbers corresponds to the Input Port that needs to set. Press button IN/OUT to enter channel selection mode or EDID selection mode. After selecting PORT and EDID mode, press ENTER to confirm the selection.

Below are 7 types of EDID modes:

① Mix Mode

Press the Input button 1 to select Mix Mode (Automatic Read EDID Mode). As shown below:

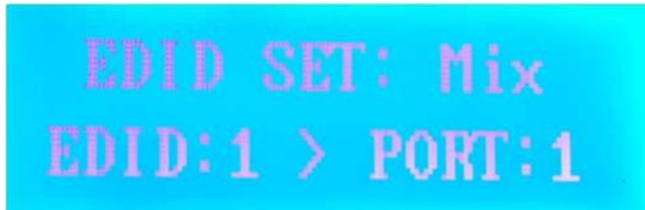


Figure 10. EDID 1 Mix Mode

- ② Copy Mode
- Press the Input button 2 to select Copy Mode. In this mode, by default, the matrix reads the EDID information of the Sink connected to a single Output Channel in a sequence from Port 1 to Port 4 till it detects the first valid EDID information, and send it to the Inputs. As shown below:

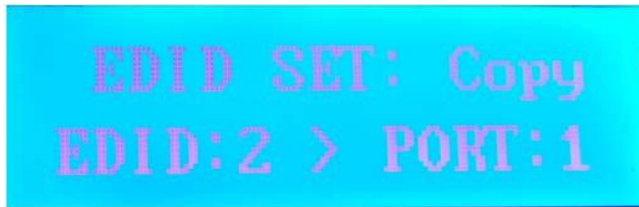


Figure 11. EDID 2 Copy Mode

- ③ Rx-PC Mode
- Press the Input button 3 to select Rx-PC Mode. In this mode, the matrix EDID information is controlled by host PC software. As shown below:



Figure 12. EDID 3 Rx-PC Mode

④ 4K Mode

Press the Input button 4 to select 4K Mode. As shown below:



Figure 13. EDID 4 4K Mode

⑤ 1080P Mode

Press the Input button 5 to select 1080P Mode. As shown below:



Figure 14. EDID 5 1080P Mode

⑥ 720P Mode

Press the Input button 6 to select 720P Mode. As shown below:



Figure 15. EDID 6 720P Mode

⑦ 480P Mode

Press the Input button 7 to select 480P Mode. As shown below:

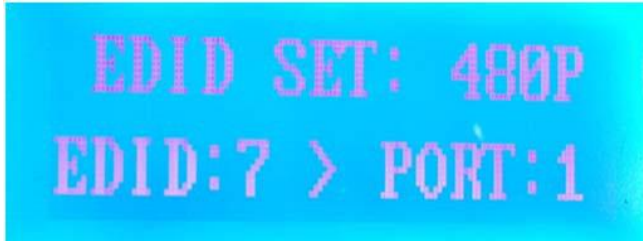


Figure 16. EDID 7 480P Mode

Each Input Channel Port can choose the same or different EDID Mode. Just select the Input buttons to set it up. If all Input Channel Ports need to be set up the same EDID Mode, then select the ALL button in the matrix output button area. As shown below:

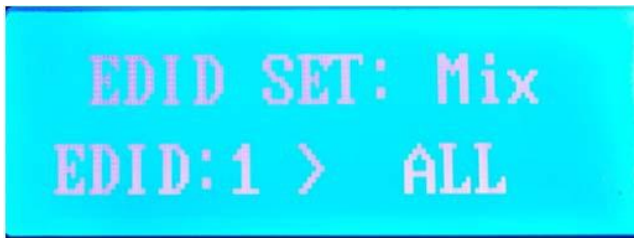


Figure 17. Input Channel Port EDID Mode

Factory Reset

Press ESC + MENU buttons to restore the factory settings. The factory default Input-to-Output Channels are shown as below:



Figure 18. Factory Reset

RS232 Control

The matrix provides two serial ports: RS-232 IN and RS-232 OUT (See Figure 18). RS232 IN port connects with PC, while RS232 Out port connects to other devices that require communication to PC through RS232 protocols. This matrix can cascade with multiple devices, signal input through RS-232 IN, output through RS-232 OUT to other devices, so that all the cascade devices can be controlled by the same Host PC or Central Control, which saves extra serial ports.

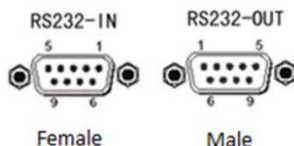


Figure 19. RS232 Control Ports

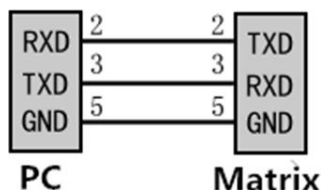


Figure 20. RS232 IN Pinout

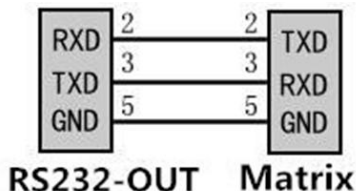


Figure 21. RS232 OUT Pinout

RS232 IN Port (D-SUB9F) Function Description

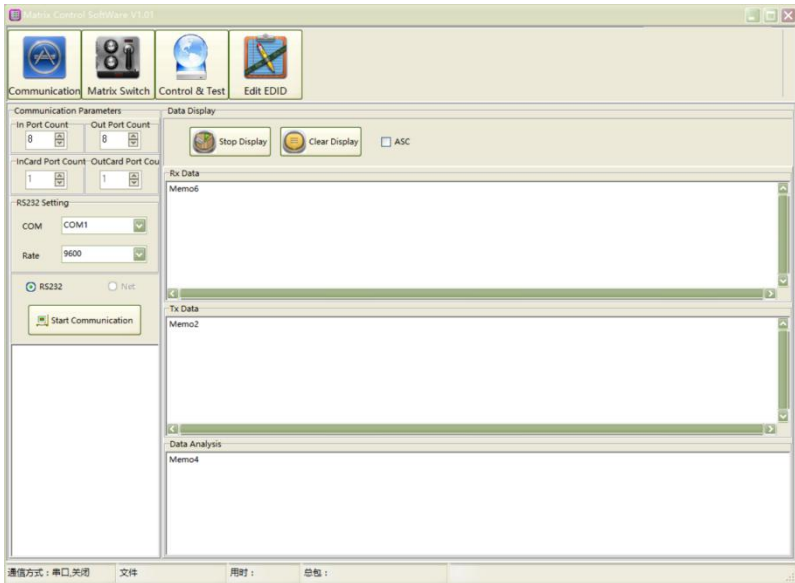
Pin	Function
1	--
2	TXD
3	RXD
4	--
5	GND
6	--
7	--
8	--
9	--

RS232 OUT Port (D-SUB9F) Function Description

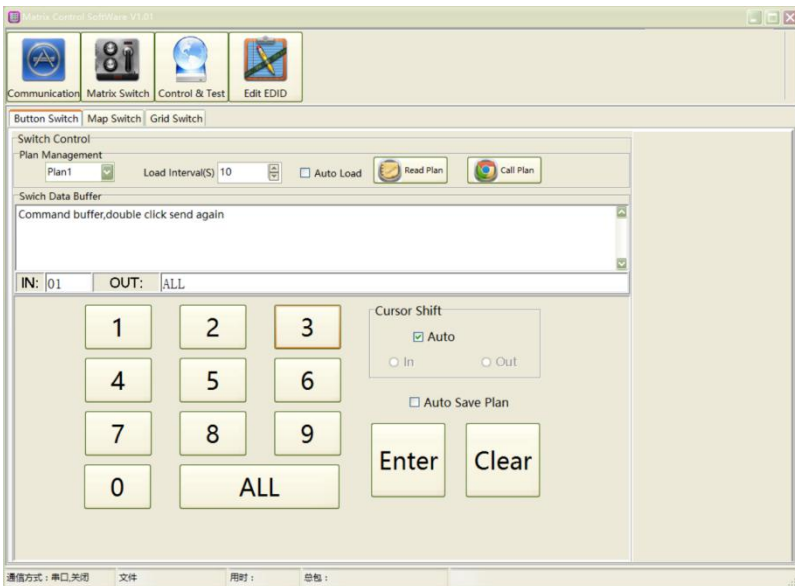
Pin	Function
1	--
2	RXD
3	TXD
4	--
5	GND
6	--
7	--
8	--
9	--

Steps:

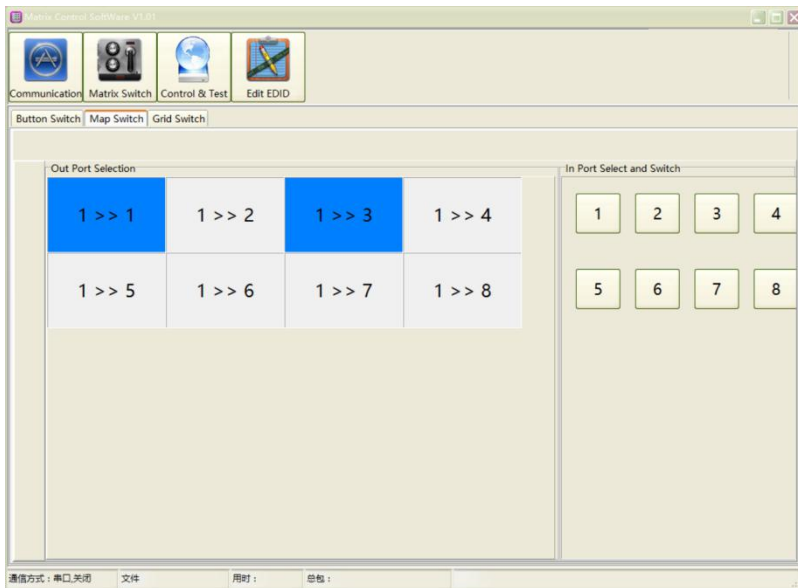
1. Connect the Matrix Switcher to the PC through the RS232 cable.
2. Select the correct Serial Port in the Host Computer, and control the Matrix Switcher by the Host Computer Software. Or integrate RS232 protocols into your Central Control System.
3. Matrix Control Software
 - ① Communication



② Matrix Switch (Button Switch)



③ Matrix Switch (Map Switch)



④ Matrix Switch (Grid Switch)

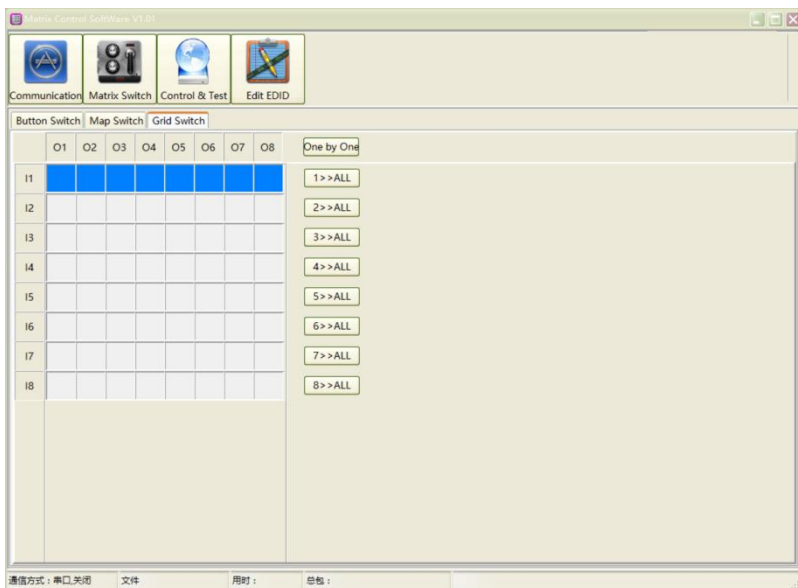


Figure 22. Matrix Control Software (①②③④)

4. RS232 Serial Port Control Protocols

Baud Rate: 9600

Data Bits: 8

Start Bit: 1

Stop Bit: 1

Parity Bit: None

Matrix Compatible Protocols:

Protocol	Example	
*IXOY(!	*I01O02(!	1 input>>2 output
	*I01ONN(!	1 input>> ALL output
XVY.	01V02.	1 input>>2 output
	01VNN.	1 input>> ALL output
*Y<X!	*02<01!	1 input>>2 output
	*NN<01!	1 input>> ALL output
X*Y!	01*02!	1 input>>2 output
	01*NN!	1 input>> ALL output
X*Y%	01*02%	1 input>>2 output
	01*NN%	1 input>> ALL output
<X,Y,V>	<1,2,V>	1 input>>2 output
	<1,NN,V>	1 input>> ALL output
XVY%	01V02%	1 input>>2 output
	01VNN%	1 input>> ALL output
X,Y,V	1,2,V	1 input>>2 output
	1,NN,V	1 input>> ALL output

Technical Specifications

INPUT	4xHDMI (Female) Minimum Level: 0.5Vp - p Maximum Level: 1.0Vp - p Differential Impedance: 100Ω Return Loss: - 30db@5MHz
OUTPUT	4xHDMI (Female) Input Level: 0.7Vp - p Differential Impedance: 100Ω Return Loss: - 30db@5MHz DC Compensation: 5mV(Max)
SIGNAL TYPE	HDMI1.4 specification HDMI - A all - digital T.M.D.S. signal
PROTOCOL	Support HDMI1.4 Protocol, compatible with DVI1.0 Protocol
BANDWIDTH	Up to 340Mhz
SIGNAL RATE	Up to 10.2Gbps
RESOLUTION	MAX 4K@60Hz (4:2:0)
VIDEO FORMAT	3840x2160P/1080P/1080i/720P/576P/480P/576i/480i
CONTROL	Panel Button/RS232/Remote Controller/PC software control
POWER CABLE	ACIN 176V - 264V
POWER CONSUMPTION	30~50W
OPERATION TEMPERATURE	0--45℃
RELATIVE HUMIDITY	10%-90% RHL non-condensing
ESD PROTECTION	Human - body Model: ±8kV(Air - gap discharge)/±4kV(Contact discharge)

PRODUCT DIMENSION	440mmx285mmx44mm (Lx W x H)
PACKING DIMENTION	560mmx330mmx155mm (Lx W x H)
WEIGHT	/
PACKING LIST	Matrix Switcher x1 Power Cable x1 RS232 Cable x1 User Manual x1

Troubleshooting & Maintenance

1. No Power

- ① Check if the power cable is properly plugged into a power outlet.

2. No Image

- ① Check that the Input signal source devices are turned on and well connected to the Matrix Switcher.
- ② Check that the displays are turned on and well connected to the Matrix Switcher.
- ③ Check the system connection status.
- ④ Check the all wiring cables are in a good condition.
- ⑤ Check whether the IR Remote Control and Front Panel Buttons are correctly functioned.
- ⑥ Check the quality of the wired HDMI cable, whether the HDMI cables meet HDMI 1.4 standard.

3. Image Blurring

- ① Reconnect the connectors to prevent poor socket contact.
- ② Check the quality of the wired cable, whether the HDMI cables meet HDMI 1.4 standard.

4. IR Remote Control No Response

- ① Check if the remote control battery pack is removed.
- ② Check if the remote control battery is no electricity.

After-Sales Service

1. Product Warranty:

We guarantee that our device will be free from defects in materials and workmanship for one year. The warranty period starts from the shipment delivery date as per the purchase order. Proof of purchase in the form of bill of sale or receipted invoice which are evidences that the device is within the warranty period must be presented to obtain warranty service.

Damages and malfunctions caused by deliberate actions, incorrect operations, self-dismantle repairing or force majeure etc. are not within the warranty policy. Device that exceeds the warranty period for repairing will be charged for a repairing fee and two way shipment freight.

2. Technical Support:

For more questions or technical issues, please try to get help from the importer or your local distributor.