



# 4x4 HDMI Matrix 4K User's Guide



P/N: Matrix44

G4-0044A



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### **Important Safety Notices**

Please read safety instructions carefully before installation and operation.

- Please pay close attention to all warnings and hints for this device
- Do not expose this unit to rain, heavy moisture, or liquid
- Do not repair the device or open the enclosure without professional guidance to avoid electric shocks. Doing so may void your warranty
- Keep the product in a well-ventilated location to avoid damage from overheating
- Shut off power and make sure environment is safe before installation
- Do not plug the HDMI cables and IR cables in/out when the device is in use to avoid cable damage. Make sure they are plugged into the correct ports
- Use the included DC12V power adapter only. Make sure the specification matches if using 3rd-party DC power adapter



## Package Contents

- 4x4 HDMI Matrix 4K
- IR Receiver Extension Cable
- IR Remote Control
- Power Adapter
- RS-232 Cable
- Plastic Cushions (4x)
- User's Guide

## Introduction

The 4x4 HDMI Matrix 4K allows you to switch between any of the 4 source devices to up to any of the 4 display devices with support for up to 4K@60Hz resolution.

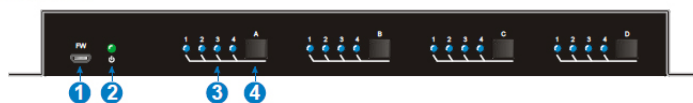
## Features

- Supports HDMI resolution up to 4K/60Hz/4:2:0
- Supports 1080p 3D
- Compliant with HDMI 1.4 and HDCP 2.2 and backward compatible with previous versions
- Smart EDID management to match the connected displays
- Switching via front panel buttons, IR remote, or RS232 control
- Sturdy metal housing with surface-mount mechanism
- Features firmware update option for future compatibility expansion



## Product Layout

Front Panel



No.	Name	Description
1	Firmware	Micro USB port for performing firmware update
2	Power LED	The LED is illuminated when powered on
3	Input LEDs	One LED illuminates to indicate the selected input source
4	Input Select Button	Press the button to cycle through the four input sources

Rear Panel



No.	Name	Description
1	INPUT (1-4)	Connects to your HDMI source devices
2	OUTPUT (A-D)	Connects to your HDMI displays
3	CONTROL	RS232: Connects to your computer's RS232 port using the included RS232 cable IR Eye: Connects to the included IR Receiver Extension cable
4	DC 12V Power Jack	Connects to the included power adapter



## Installation Requirements

1. HDMI source device (computer, DVD player, XBOX, PS3, etc).
2. HDMI display device (SDTV/Monitor, HDTV/Monitor, projector, etc.).

## Hardware Installation

1. Power off all devices including your HDMI source and HDMI display.
2. Connect your HDMI source devices to the HDMI INPUT (1-4) connectors with HDMI cables (HDMI cables not included).
3. Optional: Plug the included RS232 cable into the Matrix 3-Pin RS232 connector then connect the other end to a RS232 serial port of your computer, this connection is needed only if you require device control via a computer system.
4. Connect your HDMI displays to the HDMI OUTPUT (A-D) connectors with HDMI cables (HDMI cables not included).
5. Plug the included **IR Receiver Extension cable** into the **IR EYE** port. This connection is needed only if you require device control using the included IR remote.
6. Plug the included power adapter into the DC-12V power jack then plug the power adapter into a reliable power source.
7. Power on all connected devices.
8. The HDMI Matrix is ready for use.



## Application

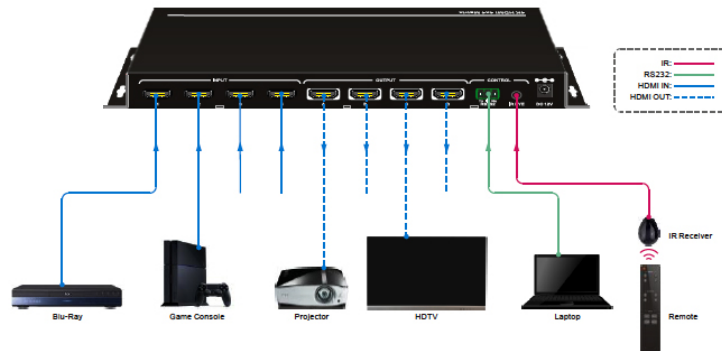


Figure 1: Hardware Connections

## Device Switching

### Front Panel Control

Repeatedly press the **Input Select Button** to cycle through the various inputs.

### IR Remote Control

- Press the **Standby (1)** button to enter or exit Standby mode
- To switch an input to one or more outputs, first press the number corresponding to the desired **INPUT**, then press one or more **OUTPUTS** or the **ALL** button, then press the **ENTER** button to execute the command





### Examples

Send the source device on input 3 to the display on output 2

**INPUTS:** Press button 3

**OUTPUTS:** Press button 2

**MENU:** Press ENTER to execute the command

Send the source device on input 1 to the displays on outputs 1 & 4

**INPUTS:** Press button 1

**OUTPUTS:** Press both buttons 1 & 4

**MENU:** Press ENTER to execute the command

Send the source device on input 4 to all of the displays

**INPUTS:** Press button 4

**MENU:** Press the All button

**MENU:** Press ENTER to execute the command

Set the EDID for one or more source devices to the EDID of a specific output

**MENU:** Press the EDID button

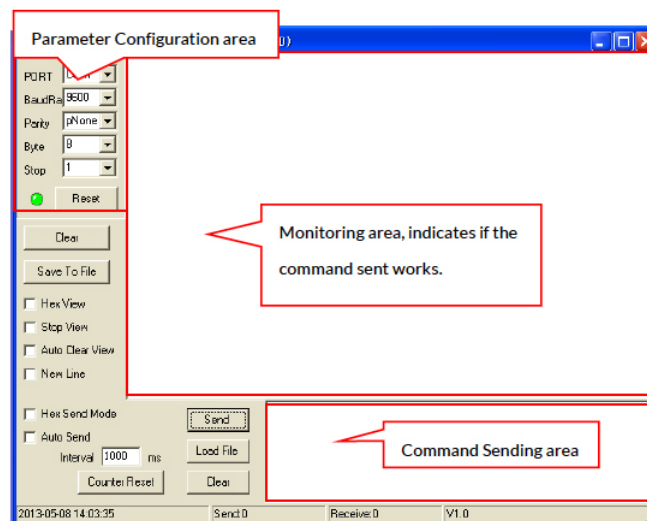
**INPUTS:** Press the desired button(s) or the ALL button

**OUTPUTS:** Press the button corresponding to the desired display

**MENU:** Press the ENTER button to execute the command

## RS232 Control

The HDMI Matrix can be controlled from a Windows PC using an RS232 connection with a 3rd party RS232 control software such as **CommWatch** shown below. Please use the same configuration settings for the RS232 control software of your choosing.



Select the COM port, baud rate, data bit, stop bit, and parity correctly.

### RS232 Settings

- Baud rate: 9600
- Data bit: 8
- Stop bit: 1
- Parity: None

## RS232 Commands

### System Commands

Command	Description	Command Example and Response
/^Type;	Report system model.	/^Type; CE-MX44
/%Lock;	Lock front panel buttons.	/%Lock; System Locked!
/%Unlock;	Unlock front panel buttons.	/%Unlock; System UnLock!
/^Version;	Report software version.	/^Version; V1.0.0
Undo.	Cancel the current operation and return to previous switching status.	Undo. Undo Ok!
PWON.	Power on the system.	PWON. PWON
STANDBY.	Turn the system to standby mode.	STANDBY. STANDBY
%9961.	Report the system locking status.	%9961. System UnLock! System Locked!
%9962.	Report the system power status.	%9962. PWON
%0911.	Reset to factory default.	%0911. Factory Default

### Signal Switching

Command	Description	Command Example and Response
[x]All.	Switch input [x] AV to all output. x=1~4.	2All. 02 To All.
All#.	Switch all input signal to the corresponding output channel.	All#. All Through.
All\$.	Switch off all output.	All\$. All Closed.
[x]#.	Switch input [x] to output [x]. x=1~4.	1#. 01 Through.
[x]\$.	Turn off output [x]. x=1~4.	1\$. 01 Closed.
[x]@.	Turn on output [x]. x=1~4.	1@. 01 Open.
All@.	Turn on all outputs.	All@. All Open.
[x]V[y1].	Switch input [x] to outputs [y]. x=1~4, y=1~4.	1V1,2,3,4.

Command	Description	Command Example and Response
[y2],[y3],[y4].		AV:01->01,02,03,04
Status[x].	Report the input channel on output [x]	Status1. AV: 01->01
Status.	Report the input channel on output channel one by one.	Status. AV:01->01 AV:01->02 AV:01->03 AV:01->04
%9971.	Get the input link status.	%9971. In 01 02 03 04 Connect Y Y Y Y
%9972.	Get the output link status.	%9972. Out 01 02 03 04 Connect Y Y Y Y
%9975.	Get the switching status.	%9975. Out 01 02 03 04 In 01 02 03 04

## Preset Setting

Command	Description	Command Example and Response
Save[y].	Store the current switching status to present [y], y=0~ 9.	Save3. Save To F3
Recall[y].	Recall present [y], y=0~ 9.	Recall9. Recall From F9
Clear[y].	Clear the present [y].	Clear9. Clear F9

## EDID Management

Command	Description	Command Example and Response
EDIDPCM[x].	Set the audio format of input [x] to PCM. x=1~ 4.	EDIDPCM1. EDIDPCM1
EDIDG[x].	Get the EDID data from output [x], x=1~ 4.	EDIDG1.
EDIDMInit.	Reset factory default EDID to all input ports.	EDIDMInit. EDIDMInit.
EDIDM[x]B[y].	Set the EDID data of output [x] to input [y]. If the EDID data is not available, the matrix will set it to initial EDID data.	EDIDM2B1. EDIDM2B1.
EDIDH[x]B[y].	Set the EDID data of output [x] to input [y]. If the EDID data is available and the audio part supports not only PCM format, then force-set it to only support PCM. If the EDID data is not available, it will set to initial EDID.	EDIDH2B1. EDIDH2B1
EDIDUpgrade[ x].	Upgrade the EDID data of the input port [x]. When the command applied, system prompts to upload the EDID file (.bin). Operation will be cancelled in 10 seconds	EDIDUpgrade1. Please send the EDID file !EDID Upgrade OK!
GetInPortEDID [x].	Get the EDID of input [x], x=1~ 4.	GetInPortEDID1.

## HDCP Management

Command	Description	Command Example and Response
/[%[y]]/[x]:[z].	HDCP management. y=0 is for output port; x=1~4 is the number of the output port, if the x=ALL, it means all ports; z=1/0 is for HDCP compliant status, the value may be 1 (HDCP compliant) or 0 (not HDCP compliant).	/%O/ALL:0. /%O/ALL:0.
%0801.	Auto HDCP management mode.	%0801. %0801
%9973.	Get the HDCP status of input ports.	%9973. In 01 02 03 04 HDCP Y Y Y Y
%9974.	Get the HDCP status of output ports.	%9974. Out 01 02 03 04 HDCP Y Y Y Y
%9978.	Reports the HDCP compliance status of the inputs.	%9978. In 01 02 03 04 HDCPEN Y Y Y Y



## Audio Setting

Command	Description	Command Example and Response
DigitAudioON[x].	Turn on the HDMI digital audio of output [x]. x=1~ 4. When x=5, it means to turn on all outputs.	DigitAudioON1. DigitAudio ON with Output 1
DigitAudioOFF[x].	Turn off the HDMI digital audio of output [x]. x=1~ 4. When x=5, it means to turn off all outputs.	DigitAudioOFF1. DigitAudio OFF with Output 1
%9977.	Get HDMI digital audio status of outputs.	%9977. Out 01 02 03 04 Audio Y Y Y Y

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