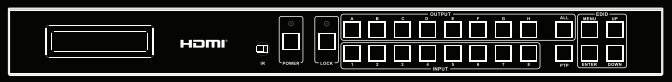
MONOPRICE

User's Manual



Blackbird 4k 8x8 Matrix

EDID, RS232, IR, Coaxial and Audio Out

PN **15748**

1. Introduction

The 8x8 HDMI Matrix with EDID control connects eight HDMI sources to eight displays. This matrix provide eight HDMI outputs and each HDMI output is supporting 1080p Full HD up to 4K plus all 3D formats and supporting independent EDID control. It works with Blu-Ray players, Set-Top boxes, Home Theater PCs, and game consoles that connect to an HDMI display. Any source is accessible at all times by any display by selecting it via the supplied IR Remote Control, RS-232, TCP/IP or by using the selection buttons on the front panel.

2. Features

- HDMI V1.4 supports: 4K x 2K@30Hz,1080P@120Hz,and 1080P 3D@60Hz.
- Deep Color support 48/36/30/24-bit.
- Supports LPCM 7.1CH, Dolby True HD, Dolby Digital Plus and DTS-HD Master Audio transmission.
- Allows any source to be displayed on multiple displays at the same time.
- Allows any HDMI display to view any HDMI source at any time.
- 8-input ports support independent EDID.
- Supports IR matrix and coaxial output.
- Supports RS-232, remote control, on-panel control and TCP/IP Control.
- Front-panel LCD display for status feedback.

3. Package Contents

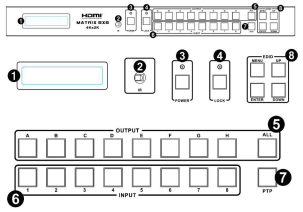
• 8x8 HDMI Matrix	1pcs
• 12V/2.5A DC power adapter	1pcs
• Operation Manual	1pcs
• HDMI Matrix IR Remote	1pcs
• Mounting ears	2pcs
• RS232 cable	1pcs
• Wideband IR Tx calbe	8pcs
• Wideband IR Rx cable	9pcs

4.Specifications

Video Bandwidth	297 MHz
Support Video Resolution	480i,576i,480p,576p,720p,1080i,1080p @24/30/50/60Hz, 4K@30Hz, 1080P3D@60Hz
Input Ports	8×HDMI, 1×RS-232, 1xRJ-45(Control) 9xIR Receiver Jack
Output Ports	8×HDMI, 8xCoaxial, 8xIR Receiver Jack
ESD Protection	Human-body Model: ± 8kV (Air-gap discharge) ± 4kV (Contact discharge)
Power Supply	12 V/2.5A DC (US/EU standards, CE/FCC/UL certified)
Dimensions	440 mm (W)×200 mm (D)×45 mm (H)
Weight	2310 g
Chassis Material	Metal
Silkscreen Color	Black
Operating Temperature	0 °C~40 °C/32 °F~104 °F
Storage Temperature	−20 °C~60 °C/−4 °F~140 °F
Relative Humidity	20~90 % RH (non-condensing)
Power Consumption	23 W(max)/0.5w(Standby)

5. Panel Functions

5.1 Front Panel



1. LCM: Show the status of input-output selection, EDID info and so on.
2. IR receiver window: Receive the IR from the remote control of 8x8.
3. POWER: Press this button to power the device on/off. The LED will illuminate green when the power is on, red when it is in 'Standby' mode.
4. LOCK: Press this button to lock all the buttons on the panel, press again to unlock. The red LED will illuminate when the button is locked, on the contrary, turn dark when unlock.
5. HDMI output selection button area: HDMI output selection button 1 to 8: Press to select the output from 1 to 8. All button for HDMI outputs: Press to select all of the outputs from 1 to 8.

6. HDMI input selection button area: HDMI input selection button 1 to 8: Press to select the input from 1 to 8.
7. PTP button: Press to mirror all inputs and outputs (e.g. output 1 to input1, output 2 to input2 and so on).
8. EDID control area:
Menu button: Press to enter EDID set mode.
Enter button: Press to confirm and save the setting.
UP button: Press to change segment's value.
Down button: Press to change segment's value.

※**Note: The EDID mode table**
1. #1 submenu: EDID mode table

Number	EDID Description
1	1080i, 2CH AUDIO
2	1080i, DOLBY/DTS 5.1
3	1080i, HD AUDIO
4	1080p, 2CH AUDIO
5	1080p, DOLBY/DTS 5.1
6	1080p, HD AUDIO
7	3D,1080p, 2CH AUDIO
8	3D, 1080p,DOLBY/DTS 5.1
9	3D,1080p, HD AUDIO
10	4k*2k, 2CH AUDIO
11	4k*2k, DOLBY/DTS 5.1
12	4k*2k, HD AUDIO
13	DVI1024x768
14	DVI1920X1080
15	DVI1920X1200
16	Copy from HDMI OUTPUT A
17	Copy from HDMI OUTPUT B
18	Copy from HDMI OUTPUT C
19	Copy from HDMI OUTPUT D
20	Copy from HDMI OUTPUT E
21	Copy from HDMI OUTPUT F
22	Copy from HDMI OUTPUT G
23	Copy from HDMI OUTPUT H

2. #2 submenu: Input ports selection

Number	Input port Description
1	Input 1
2	Input 2
3	Input 3
4	Input 4
5	Input 5
6	Input 6
7	Input 7
8	Input 8
9	Input ALL

EDID. What is it and what is it used for?
Under normal circumstances, a source device (digital and analog) will require information about a connected device/display to assess what resolutions and features are available. The source can then cater its output to send only resolutions and features that are compatible with the attached device/display. This information is called EDID (Extended Display Information Data)
And a source device can only accept and read one EDID from a connected device/display. Likewise, the source can only output one resolution for use by a connected device/display.

Why is EDID so important with the HDMI Matrix ?
The Matrix is complex piece of technology that replicates and switches between multiple inputs and outputs. Each connected source device will require one EDID to read. EDID management is carefully handled by HDMI Matrix to provide a single EDID for each source to read.

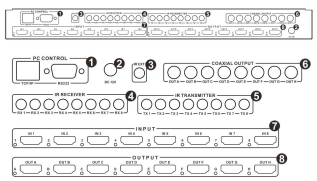
What options do I have to manage the EDID in the HDMI Matrix ?
First, it is important to note that each source device can only output one video/audio signal type. This includes resolutions and timings. When multiple devices/displays are used, such as with the HDMI Matrix, it is important to use devices/displays that have similar or compatible resolutions/features. This will ensure that the single video/audio signal produced by the source device is accepted by all of the connected output devices/displays. The user has the option, through the EDID management window, to choose how the unit will manage the EDID from multiple HDMI devices/displays. Therefore the user has some control over the resolutions/features that the source devices will output. The HDMI Matrix for has a multiple EDID management modes that will control how the EDID information from multiple devices/displays are combined, ignored, and routed.

How to operate the HDMI Matrix?

1. How to select Output and Input Port?
Q. OUTPUT-X select INPUT-Y:
A. Press OUTPUT-X (X means 1 to 8 of outputs, including ALL)
Press INPUT-Y (Y means 1 to 8 of inputs)

2. How to change INPUT-Y EDID
Q. Fixed EDID to INPUT-Y/ALL:
A. Press MENU button to enter EDID set mode.
Press UP/DOWN button to select the EDID you want.
Press ENTER button ensure and enter Input port submenu.
Press UP/DOWN button to select Input port you want.
Press ENTER button ensure and save the setting.

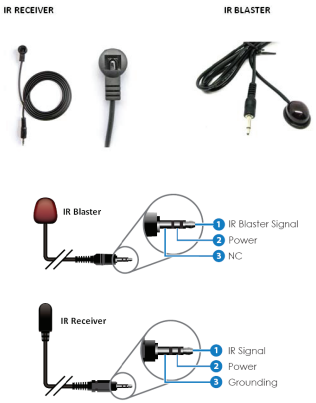
5.2 Rear Panel



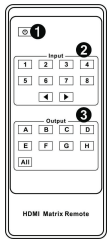
1. PC CONTROL: Show the status of input-output selection, EDID info and so on.
TCP/IP: This port is the link for TCP/IP controls, connect to an active Ethernet link with an RJ45 terminated cable.
RS232: Connect to a PC or control system with D-Sub 9-pin cable for the transmission of RS-232 commands.
2. Power port: Use included DC adaptor to power the matrix switcher.
3. IR EXT: This port is local IR receiver for extending the IR signal. Connect with Wideband IR Rx.
4. IR RECEIVER: These ports are IR Matrix input ports. Connect with Wideband IR Rx.
5. IR TRANSMITTER: These ports are IR Matrix output ports. Connect with Wideband IR Tx.
6. COAXIAL OUTPUT: Audio output area, each ports are come from HDMI output port. For example: the audio signal of coaxial out A is come from HDMI output A.
7. HDMI INPUT Area: Connect HDMI sources. LED 1-8 illuminate when the HDMI signal plug in corresponding input port with HDMI cable.
8. HDMI OUTPUT Area: Output for displays, AVR etc. LED A-H illuminate when the displays plug in corresponding output port with HDMI cable.

IR BLASTER (TX)
To control the source: Plug IR Blaster into IR TX port of transmitter unit; place blaster in front of the IR eye of the source.
To control the display: Plug IR Blaster into IR TX port of receiver unit; place blaster in front of the IR eye of the display.

IR RECEIVER (RX)
To control the source: Plug IR Receiver into IR RX port of receiver unit; place receiver at or near display.
To control the display: Plug IR Receiver into IR RX port of transmitter unit; place receiver in position where it is able to receive remote signals.



6.Remote Controla



1. Power on /Standby: Press this button for power on the matrix or set it to standby mode.
2. Input port selection area: Press these buttons to select input 1-8. Press forward/backward button will cycle from input 1-8.
3. Output port selection area: Press these buttons to select output A-H, including ALL.

How to operate the Matrix Remote?
1. Power on and standby
Q. How to power on and standby?
A. Press Power on /Standby button and wait a while.

2. How to select Output and Input Port?
Q. OUTPUT-X select INPUT-Y:
A. Press OUTPUT-X (X means 1 to 8 of outputs, including ALL)
Press INPUT-Y (Y means 1 to 8 of inputs)

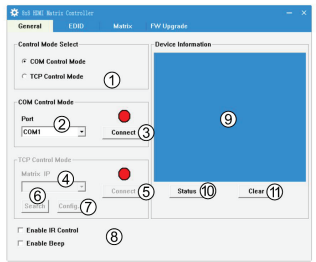
7. PC controller user guide

Installation
Matrix controller is a green software. Just copy MatrixController.exe to PC which is used to control the Matrix by RS232 COM port or TCP/IP to complete installation.

Preparation
■ Connect PC and Matrix by RS232 cable (headers of both sides of cable should be FEMALE) or TCP/IP(local area network)
■ Power-up Matrix
■ Double click MatrixController.exe icon to run it

How to control Matrix

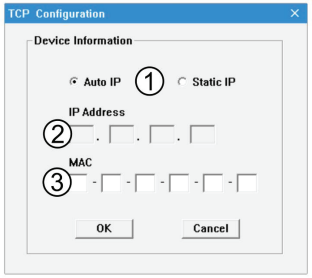
◆ **"General" page**



1. Select RS232 COM or TCP mode.
2. Select RS232 COM port.
3. Click to connect or disconnect PC and Matrix.
4. Select Matrix IP.
5. Connet to Matrix IP.
6. Search Matrix IP.
7. Configure Matrix IP and MAC.
8. Enable or disable IR /beep.
9. Device information display area
10. Click to refresh device status: include device information displayed in 9 area and Input/Output Settings on "Matrix" page

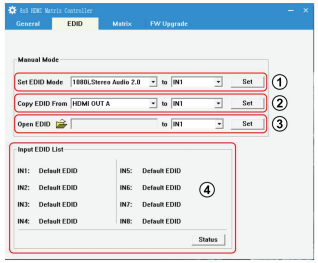
◆ **Configure TCP**

After action of ⑦, edit form will pop-up as below:



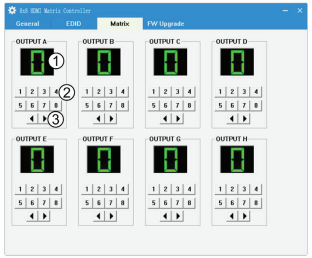
1. Select auto or static IP
2. Rewrite the Matrix IP
3. Rewrite the Matrix MAC

◆ **"EDID control" page**



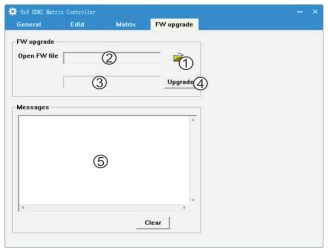
The controller have 3 methods to set the EDID mode. Manual mode, Copy mode and open EDID file mode.
1. Select the needed EDID to input port and click set button the EDID will write to the selected HDMI input ports.
2. Copy the selected HDMI output or HDBT output EDID and click set button to write to the selected HDMI input ports.
3. Open the user define EDID file and click set button to write to the selected HDMI input ports.
4. Click the status button to refresh input EDID status.

◆ **"Matrix" page**



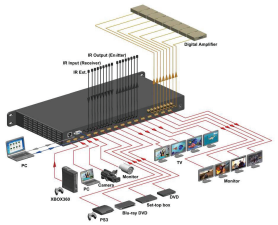
1. LED which display Input number for respective Output.
2. Click to select Input port for respective Output port.
3. Click to select previous or next Input port for respective Output port.

◆ **"FW upgrade" page**



1. Click to open FW file(file extension is ".fw").
2. Display the FW file path.
3. Displaying the progress of the software upgrade.
4. Click to upgrade the Matrix software.
5. Display the message of the software upgrade.
6. Clear the message of the software upgrade.

8. Operate and Connect



1. Connect up to 8 sources such as a Blu-Ray Player, game console, A/V Receiver, Cable or Satellite Receiver, etc. to the HDMI inputs on the unit. Do not hot plug! Insert and extract cables carefully with the power SWITCHED OFF. Connecting and disconnecting while the unit is powered can result in damage to circuitry.

2. Connect the HDMI output ports to high-definition displays such as an HDTV or HD projector that use HDMI inputs. Note that high-speed HDMI cables are recommended for the distances that are required for each connection.

3. For power, plug in the source first, followed by the Matrix Selector Switcher (power supply included), followed by each output connected.

4. Power on each device in the same sequence. At this point each display connected should display the assigned source (input 1 at default when powered on initially), scroll through each of the sources on each display to ensure everything is in working order. Use included IR remote to test switching function. If a display is having difficulty receiving signal, access the display's menu and adjust the resolution (lowest to highest until signal is displayed). A 24 Hz vertical refresh rate may work better than 60 Hz or higher.

MAINTENANCE

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner of benzine to clean this unit.

PRODUCT SERVICE

1. **Damage requiring service:**
The unit should be serviced by qualified service personnel if:
(a) The DC power supply cord or AC adaptor has been damaged;
(b) Objects or liquids have gotten into the unit;
(c) The unit has been exposed to rain;
(d) The unit does not operate normally or exhibits a marked change in performance;
The unit has been dropped or the cabinet damaged.
2. **Servicing Personnel:** Do not attempt to service the unit beyond that described in these operating instructions. Refer all other servicing to authorized servicing personnel.
3. **Replacement parts:** When parts need replacing ensure the servicer uses parts specified by the manufacturer or parts that have the same characteristics as the original parts. Unauthorized substitutes may result in fire, electric shock, or other Hazards.
4. **Safety check:** After repairs or service, ask the servicer to perform safety checks to confirm that the unit is in proper working condition.

TECHNICAL SUPPORT

Monoprice is pleased to provide free, live, online technical support to assist you with any questions you may have about installation, setup, troubleshooting, or product recommendations. If you ever need assistance with your new product, please come online to talk to one of our friendly and knowledgeable Tech Support Associates. Technical support is available through the online chat button on our website www.monoprice.com during regular business hours, 7 days a week. You can also get assistance through email by sending a message to tech@monoprice.com

REGULATORY COMPLIANCE

Notice for FCC

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Modifying the equipment without Monoprice's authorization may result in the equipment no longer complying with FCC requirements for Class B digital devices. In that event, your right to use the equipment may be limited by FCC regulations, and you may be required to correct any interference to radio or television communications at your own expense.

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 in a residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice for Industry Canada

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.