



8x8 HDMI & Full 3D support over CAT5 Matrix with IR Pass-through



AV-GM07H3-S1

To avoid EMI issue, complete STP Cat6 cable is strongly recommended!

P/N: AV-GM07E3-S1



Safety and Notice

The **AV-GM07E3-S1 8x8 HDMI & Full 3D support over CAT5 Matrix with IR Pass-through** has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM07E3-S1** should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device and assure that the placement of this unit is on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

TABLE OF CONTENTS

INTRODUCTION.....	1
FEATURES.....	1
SPECIFICATIONS	2
PACKAGE CONTENTS	4
PANEL DESCRIPTIONS.....	4
DIP SWITCH.....	7
IR PASS-THROUGH.....	9
HARDWARE INSTALLATION.....	10
CONNECTION DIAGRAM	11
OPERATION AND IR CONTROL.....	12
Source Side.....	12
Display Side	18
EDID LEARNING	20
IR DISCRETE CODE	23
FAQ	25
NOTICE	27
WARRANTY	28

INTRODUCTION

The **AV-GM07E3-S1 8x8 HDMI & Full 3D support over CAT5 Matrix with IR Pass-through** provides the most flexible and cost effective solution in the market to route high definition video sources plus multi-channel (up to 7.1-channel) digital audio from any of the eight HDMI source devices to the remote displays at the same time. Through low cost Cat-5/5e/6 UTP/STP cables, not only high quality video and audio can be transmitted to the display sites, but also users can switch among eight HDMI sources using the push-in button or remote control. With single power design at the source site, each remote module is easily installed without power supply. Furthermore, the built-in IR extension function let users can control the HDMI source devices such as the Blu-ray Disc player or satellite receiver at display site directly!

FEATURES

- Support HDMI Deep Color & full 3D
- Re-clocking TMDS single
- HDCP compliant
- 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
- Supports 7.1 channel digital audio
- Supports default HDMI EDID and learns the EDID of displays
- The matrix master can switch every output channels to any HDMI inputs by push-in button, IR remote control, or RS-232 control
- Allows controlling local HDMI sources such as DVD and TiVo by IR extender through control path at remote receiver
- Allows to control main matrix center through control line at remote receiver
- Extends video signal up to 35m (115 feet) over CAT5e at 1080p and likely longer with better HDMI source device, better grade HDMI display, and better quality solid CAT6 cable
- Easy installation with rack-mounting and wall-mounting designs for master and receiver respectively
- Fast response time – 2~5 seconds for channel switch



The length depends on the characteristics and quality of the cables. Higher resolutions and longer transmission distances require low skew cables (<25ns/100m) for best performance. Unshielded CAT6 with metal RJ-45 connectors is recommended.

SPECIFICATIONS

Model Name	AV-GM07E3-S1	
Technical	MA-5188	AV-GM07H3-S1
Role of usage	8x8 true matrix Transmitter [TX]	Receiver [RX]
HDMI compliance	HDMI Deep Color & full 3D	
HDCP compliance	Yes	
Video bandwidth	Single-link 225MHz [6.75Gpbs]	
Video support	480i / 480p / 720p / 1080i / 1080p60	
Audio support	Surround sound (up to 7.1ch) or stereo digital audio	
HDMI over CAT5 transmission range	Full HD (1080p) – 35m (115ft) [CAT5e] / 40m (130ft) [CAT6] HD (720p/1080i) – 50m (165ft) [CAT5e] / 55m (180ft) [CAT6]	
HDMI equalization	N/A	8-level digital rotary control
Input TMDS signal	1.2 Volts [peak-to-peak]	
Input DDC signal	5 Volts [peak-to-peak, TTL]	
ESD protection	[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±8kV	
PCB stack-up	4-layer board [impedance control — differential 100Ω; single 50Ω]	
Input	8x HDMI 1x RS-232	1x RJ-45 [HDMI signal] 1x RJ-45 [Channel control] 1x IR socket for IR receiver
Output	8x RJ-45 [HDMI signal] 8x RJ-45 [Channel control] 9x IR socket for IR blaster	1x HDMI
HDMI Input selection	Push-in button / IR remote control / RS-232	Push-in button / IR remote control
HDMI source control	Controllable via IR pass-through from IR receiver at RX to IR blaster at TX	
IR remote control	Electro-optical characteristics: $\theta = 25^\circ$ / Carrier frequency: 20~60kHz	
HDMI connector	Type A [19-pin female]	
RJ-45 connector	WE/SS 8P8C with 2 LED indicators [TMDS & DDC channels]	
RS-232 connector	DE-9 [9-pin D-sub female]	
3.5mm connector	Earphone jack for IR blaster	Earphone jack for IR receiver

	[IR Main] IR control on all source devices [IR PASS-THROUGH 1~8] IR control on individual source device	[IR RECEIVER] Receives IR commands from remote control
DIP switch [MA-5188]	[SW1~SW8] 2-pin for EDID & audio mode [SW Main] 4-pin for operation & firmware update	

Mechanical		MA-5188	AV-GM07H3-S1
Enclosure		Metal case	
Dimensions (L x W x H)	Model	440 x 291 x 44mm [1'5" x 11" x 1.7"]	84 x 61 x 24mm [3.3" x 2.4" x 1"]
	Package	528 x 398 x 130mm [1'9" x 1'4" x 5.1"]	168 x 112 x 42mm [6.6" x 4.4" x 1.7"]
	Carton	585 x 242 x 565mm [1'11" x 10" x 1'10"]	
Weight	Model	3824g [8.5 lbs]	185g [6.5 oz]
	Package	7000g [15.5 lbs]	
Fixedness		1U rack-mount with ears	Wall-mount with screws
Power supply		AC Power 100-240V	Not necessarily required*
Power consumption		60 Watts [max]	1.5 Watt [max] (provided by MA-5188)
Operation temperature		0~40°C [32~104°F]	
Storage temperature		-20~60°C [-4~140°F]	
Relative humidity		20~90% RH [no condensation]	



*The MA-5188RX has been tested extensively and found that it doesn't require external power supply. If in rare situation you find it cannot work with the MA-5188, please use any +5V power adapter to plug in the power jack and see if it can work. If not, please contact your technical support for further service.

PACKAGE CONTENTS

- 1x MA-5188
- 8x IR receiver
- 1x Rack-mounting ear set
- 1x IR Remote control*
- 1x User Manual
- 8x AV-GM07H3-S1
- 1x IR blaster*
- 1x UL AC C13 power cord
- 1x Installation software CD

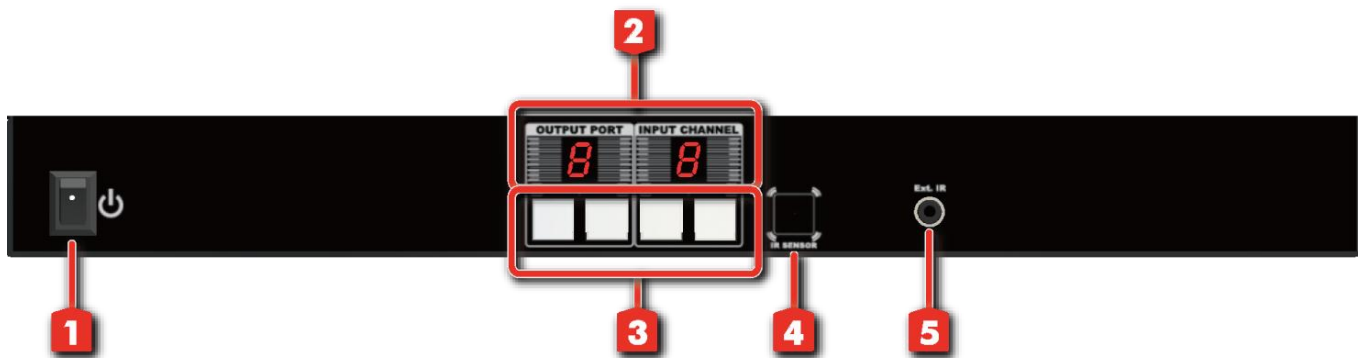




* Additional IR remote control and IR blaster cable can be purchased as optional accessories to control the HDMI sources located separately.

PANEL DESCRIPTIONS

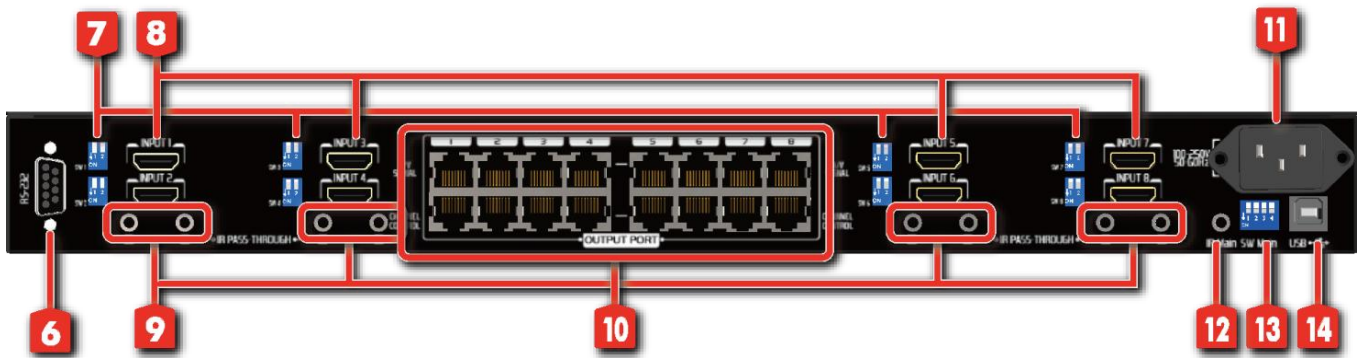
Transmitting unit ► AV-GM07E3-S1-TX

Front Panel



1. Power On/Off control switch
2. 7-segment LED: LED display for output ports and input channels
3. Push button: Front panel push buttons used to select the number of input source and display channel
4. IR SEN  sensor for receiving the IR commands from the IR remote
5. Ext. IR  receiver

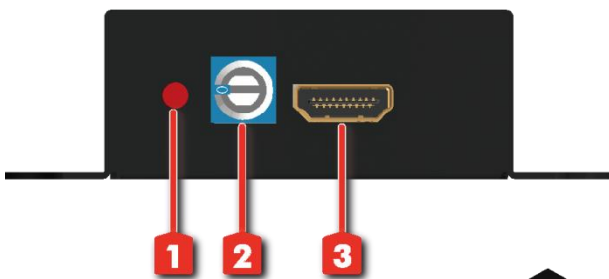
Rear Panel



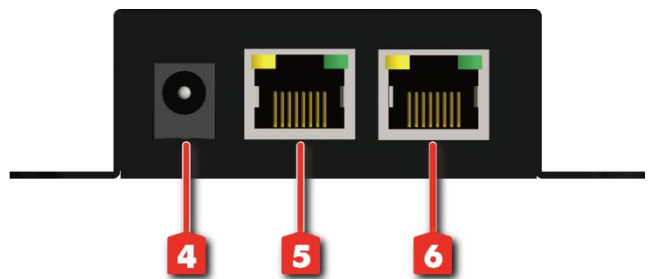
- 6. RS-232: RS-232 control port
- 7. SW 1-8: DIP switch (*see DIP Switch section*)
- 8. INPUT 1-8: HDMI inputs
- 9. IR PASS-THROUGH 1-8: 3.5mm IR blaster socket for individual HDMI source control
- 10. OUTPUT PORT 1-8: RJ-45 outputs for each output channel
- 11. AC Power: 100-240V
- 12. IR Main: 3.5mm IR blaster socket for HDMI source control on all 8 inputs [default socket for IR blaster]
- 13. SW Main: DIP switches (*see DIP Switch section*)
- 14. USB: HDMI local output

Receiving unit ► AV-GM07H3-S1

Front Panel



Rear Panel



1. **INPUT SELECT:** Push button for switching input source channel in sequential order
2. **Signal Level 0-7:** Adjust the 8-level equalization control to the received HDMI signals. The HDMI signal level varies from 0 (strongest) to 7 (weakest) for respective transmission length from longest possible range to short distance. Please adjust the signal level from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
3. **HDMI Output:** Connect to HDTV with a HDMI cable
4. **+5V DC:** Spare power jack for over 60m transmission when the RX may need external power to work*.
5. **A/V SIGNAL:** Plug in the CAT5 connected to the respective **A/V SIGNAL** port on the MA-5188
6. **CHANNEL CONTROL:** Plug in the CAT5 connected to the respective **CHANNEL CONTROL** port on the MA-5188
7. **IR RECEIVER:** Plug in IR receiver
8. **INPUT CHANNEL:** Display the current showing HDMI source channel



* The MA-5188RX has been tested extensively and found that it doesn't require external power supply. If in rare situation you find it cannot work with the MA-5188, please use any +5V power adapter to plug in the power jack and see if it can work. If not, please contact your technical support for further service.

DIP SWITCH

SW1-SW8 for EDID/Audio

DIP Switch Position		Video	Audio	Description
Pin#1	Pin#2			
OFF [□]	OFF [□]	Up to 1080p	Surround	Default Mode 1 1 – EDID up to 1080p video & surround sound audio output up to 7.1ch (DTS-HD Master & Dolby TrueHD)
OFF [□]	ON [□]	Up to 1080p	Stereo 2	Default Mode 2 – EDID up to 1080p video and stereo audio for basic compatibility among HDTVs
ON [□]	OFF [□]	Up to 720p/1080i	Stereo	Safe Mode 3 – EDID up to 720p/1080i video and stereo audio for basic compatibility among HDTVs
ON [□]	ON [□]	Bypass 4	Bypass 4	EDID Learning Mode 5 – for learning EDID from the display while playing any received HDMI audio format

Note

- 1 Factory default setting of [SW1]-[SW8] is pin-1 at OFF [▲] & pin-2 at OFF [▲] for 1080p video and surround sound audio.
- 2 If the HDTV shows video but without audio, please try to set audio mode to stereo.
- 3 If you encounter any unsolved audio/video output problem during system installation, please turn any [SW1]-[SW8] to pin-1 at ON [▼] & pin-2 at OFF [▲] for safe mode to select the system EDID up to 720p(1080i) video and stereo audio for system check. However, the safe mode cannot be initiated if your HDMI source is set to enforce 1080p output. In this case, please reconfigure your HDMI source to all resolution output for troubleshooting.
- 4 Bypass means the matrix will maintain playing the original format of HDMI signals in video and perhaps audio. By setting at this mode, the users may encounter compatibility issue among different kinds of HDMI sources and displays. If you cannot get the audio and/or video output normally at the system installation, please change the DIP switch setting to default mode or even safe mode to verify the functionality of the device.
- 5 To learn the EDID of HDMI display for respective HDMI source devices, please see the **[EDID Learning]** section in the next page for more information.

SW MAIN for firmware update (for technical support only)

DIP Switch Position		Pin#1	Pin#2	Pin#3	Pin#4
Normal Operation Mode [via RS-232 port] 6		OFF [☐]	OFF [☐]	OFF [☐]	OFF [☐]
Firmware Update Mode 7	Block A [main]	ON [☐]	OFF [☐]	OFF [☐]	OFF [☐]
	Block B [remote]	ON [☐]	OFF [☐]	ON [☐]	OFF [☐]
	Block C [HDMI]	ON [☐]	ON [☐]	OFF [☐]	OFF [☐]

Note

6 Factory default for **SW Main** is pin#1-OFF [▲], pin#2-OFF [▲], pin#3- OFF [▲], & pin#4-OFF [▲].
PLEASE MAINTAIN THIS SETTING AT ANYTIME FOR REGULAR USE!

7 Sequence for firmware update

WARNING!

[Firmware update only can be done via RS-232 port and connection to PC set at COM1)

1. Power off the MA-5188. Execute the firmware update program on your PC via COM1 port connection to the RS-232 port of the MA-5188.
2. Set the pin#1 of **[SW Main]** at ON [▼] for firmware update mode.
3. Set pin#2 and pin#3 at respective positions to assign which Block to be updated.
4. Power on the MA-5188. The firmware update program should begin this update sequence automatically. If not, please check the RS-232 connection status between PC and MA-5188.
5. After the OK message shows up to indicate the firmware update sequence for designated Block is complete, please turn off the MA-5188.
6. Repeat step 3 ~ step 6 if you want to update the firmware of the remaining Blocks.
7. Set the **[SW Main]** switch position to Normal Operation Mode.
8. Power on the MA-5188.

IR PASS-THROUGH

IR Extenders

IR Blaster



IR Receiver



IR Sockets

MA-5188

IR Main: The default location for IR blaster to transmit all IR command signals received from any of the four remote receivers to all of the HDMI sources.

IR PASS-THROUGH 1-8: IR blaster connected here can only transmit IR command signals from the remote receivers that are setting at respective input channel from 1 to 8.

AV-GM07H3-S1

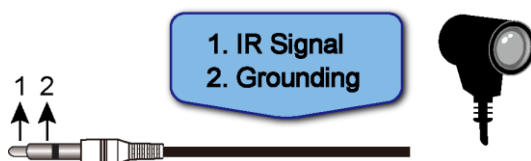
IR RECEIVER: IR receiver connected here can receive all IR command signals from the IR remote controls of MA-5188 and all other HDMI source devices.

CAUTION!

Incorrect placement of IR Blaster and Receiver may result in the failure of the IR extenders. Please check carefully before plugging in the IR extender to the respective IR sockets. Warranty will not cover the damage.

Definition of IR Earphone Jack

IR Blaster



IR Receiver





You can buy any IR extension cables in the market that are compatible to the definition of the IR sockets for the matrix if necessary for replacement use. However, IR cables longer than 2m (6-ft) may not work.

HARDWARE INSTALLATION

MA-5188 as master

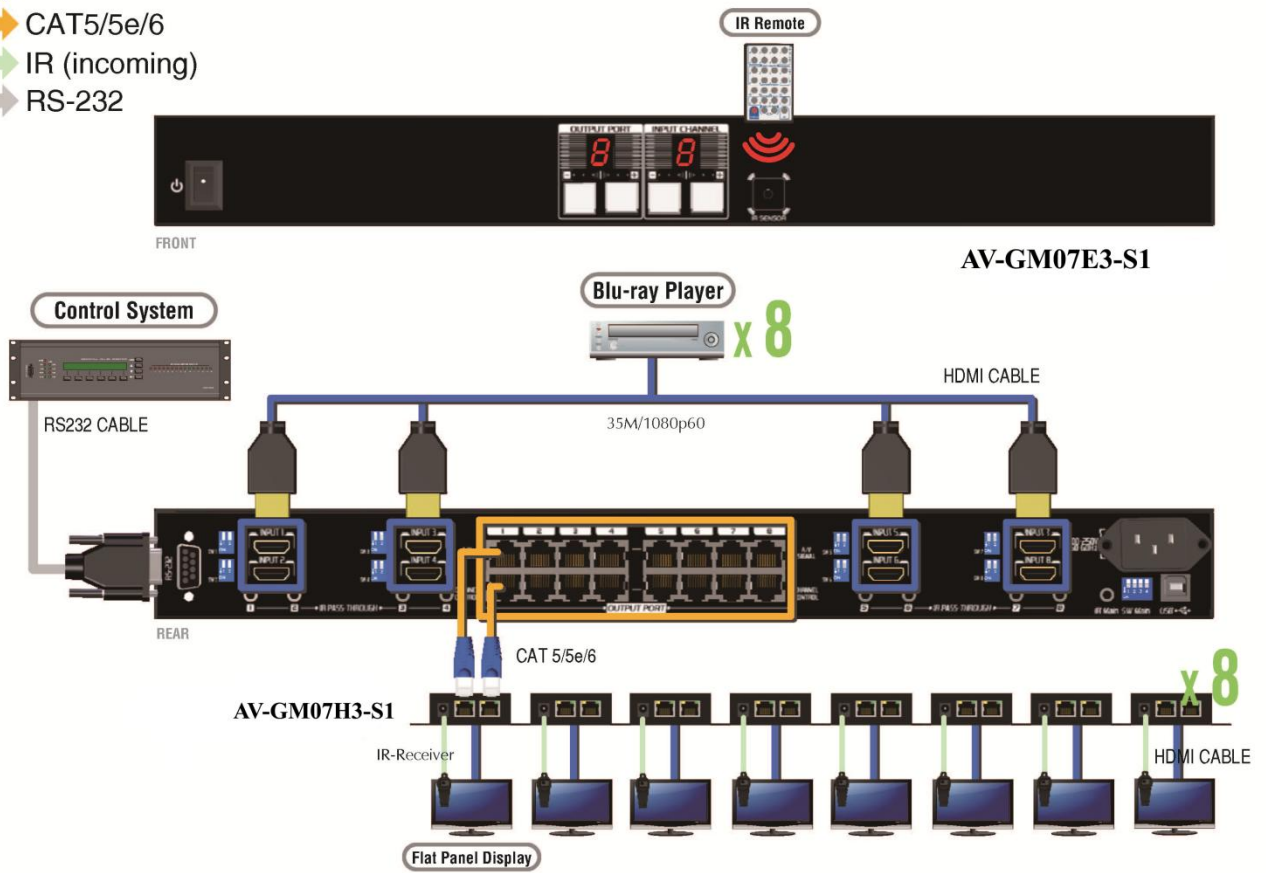
1. Connect all sources to HDMI Inputs on the 8x8 HDMI over CAT5 matrix master MA-5188.
2. Connect each **CHANNEL CONTROL** output port on the MA-5188 to respective **CHANNEL CONTROL** port on the remote receiver AV-GM07H3-S1.
3. Connect each **AV SIGNAL** output port on the MA-5188 to respective **AV SIGNAL** input on the remote receiver AV-GM07H3-S1.
4. Connect IR blaster to the **IR MAIN** jack of MA-5188 and direct the IR blaster to the built-in IR receiver of the sources.
5. Connect the +5V 6A DC power supply to the MA-5188.
6. Power on all HDMI sources.
7. Power on the MA-5188.

AV-GM07H3-S1 as receiver

1. Connect each HDMI output to HDMI displays.
2. Connect the **AV SIGNAL** port on the AV-GM07H3-S1 to the **AV SIGNAL** port on the MA-5188.
3. Connect the **CHANNEL CONTROL** port on the AV-GM07H3-S1 to the **CHANNEL CONTROL** port on the MA-5188.
4. Connect IR receiver and place the IR receiver at the appropriate position that can receive the IR command signals sent from the users.
5. Dial the 8-level rotary control switch to adjust the HDMI signal level until the picture and sound are clear. It is recommended to dial from 7 to 0 to find the optimal visual experience.

CONNECTION DIAGRAM

- HDMI
- CAT5/5e/6
- IR (incoming)
- RS-232



OPERATION AND IR CONTROL

Source Side

Method A: Push Button

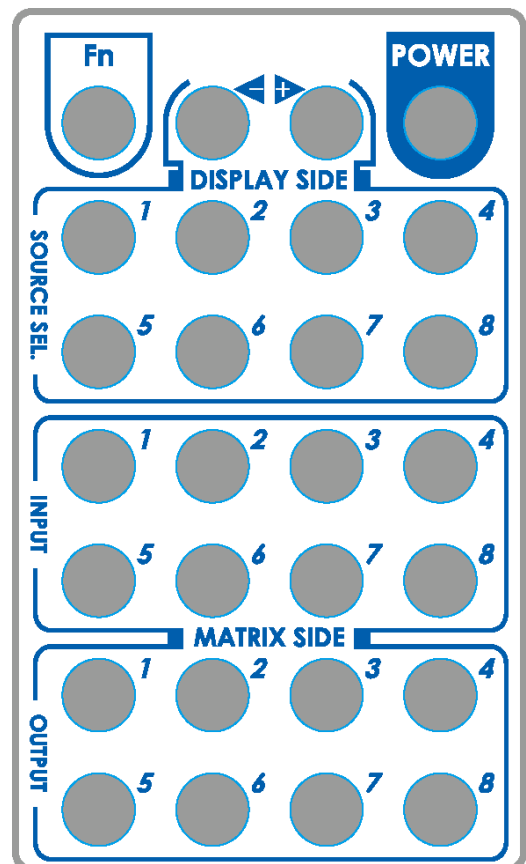
1. Use the “+” or “-” channel button on output port to select which port to be changed.
“+”: change selected output port in ascending order
“-”: change selected output port in descending order
2. Push the “+” or “-” channel button on Input channel to select the HDMI input source you want to display on this selected output port in step 1 in sequential order. Once you reach the desired input channel you want to display on this selected output port, leave it and the setting will be effective in a few seconds.

Method B: IR Remote Control

Firstly please push one of the INPUT buttons to choose which HDMI input source you are going to setup. After that, you can have multiple outputs playing the same content from the selected INPUT #1 - #8 by pushing the corresponding OUTPUT buttons. The setting will be effective in a couple of seconds.

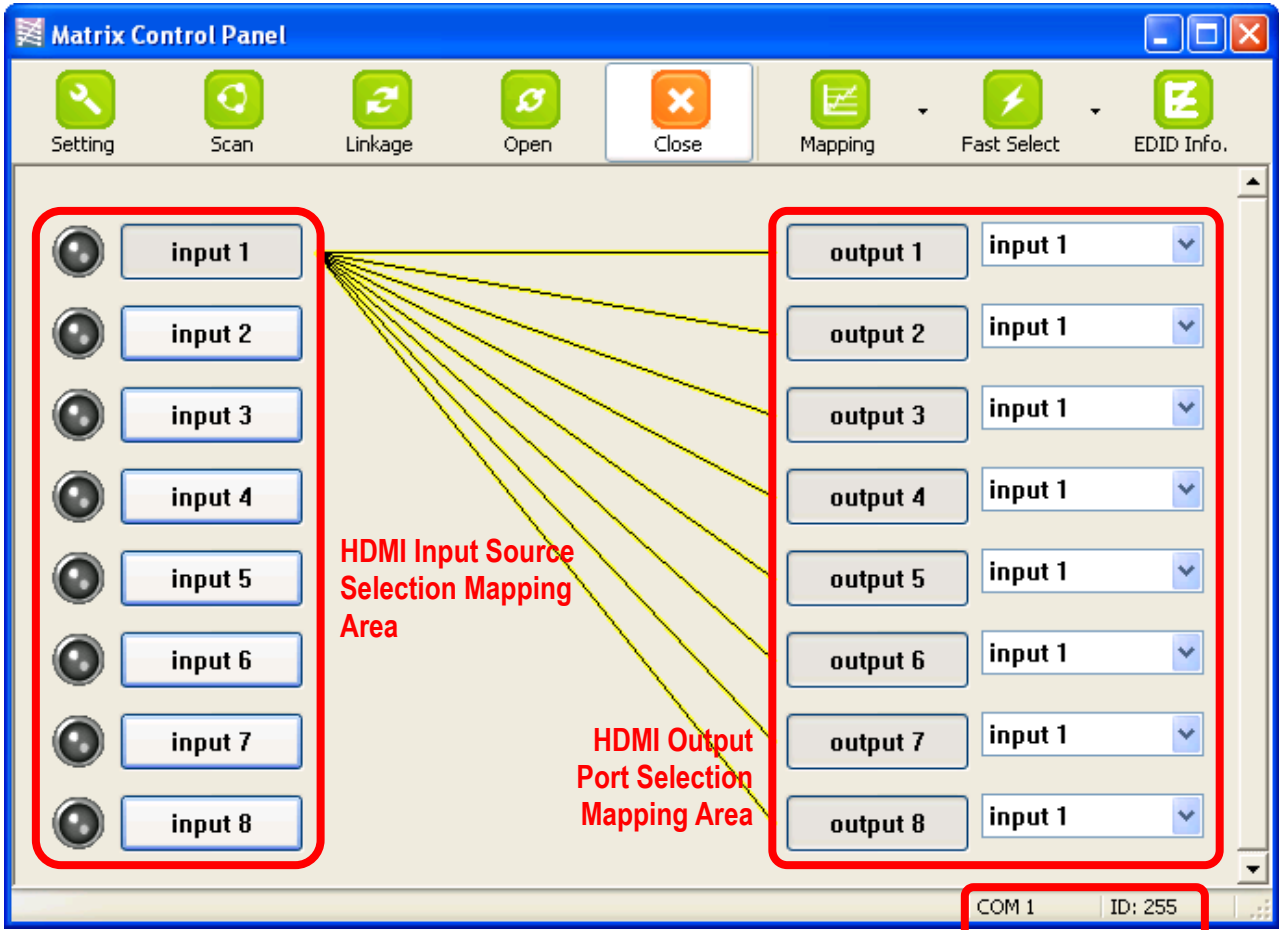
INPUT & OUTPUT MAPPING

INPUT 1	HDMI input port #1
INPUT 2	HDMI input port #2
INPUT 3	HDMI input port #3
INPUT 4	HDMI input port #4
INPUT 5	HDMI input port #5
INPUT 6	HDMI input port #6
INPUT 7	HDMI input port #7
INPUT 8	HDMI input port #8
OUTPUT 1	HDMI output port #1
OUTPUT 2	HDMI output port #2
OUTPUT 3	HDMI output port #3
OUTPUT 4	HDMI output port #4
OUTPUT 5	HDMI output port #5
OUTPUT 6	HDMI output port #6



OUTPUT 7	HDMI output port #7
OUTPUT 8	HDMI output port #8

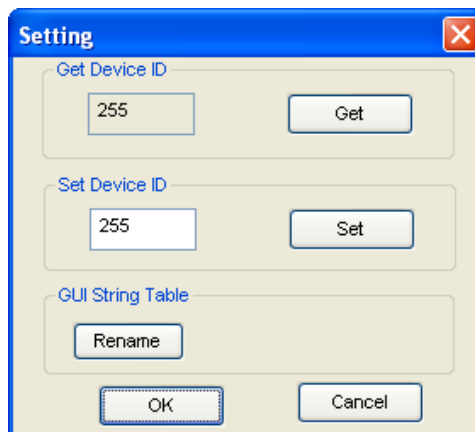
Method C: Software Control through RS-232 port



Software Control Menu

Status Indicator

1. Setting button:



Click Get button to read back device ID.

Click Set button to write device ID.

Click Rename button to open the String Table.

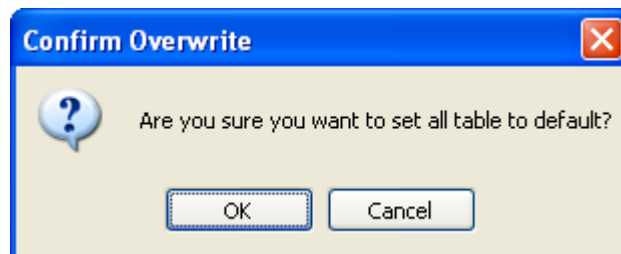
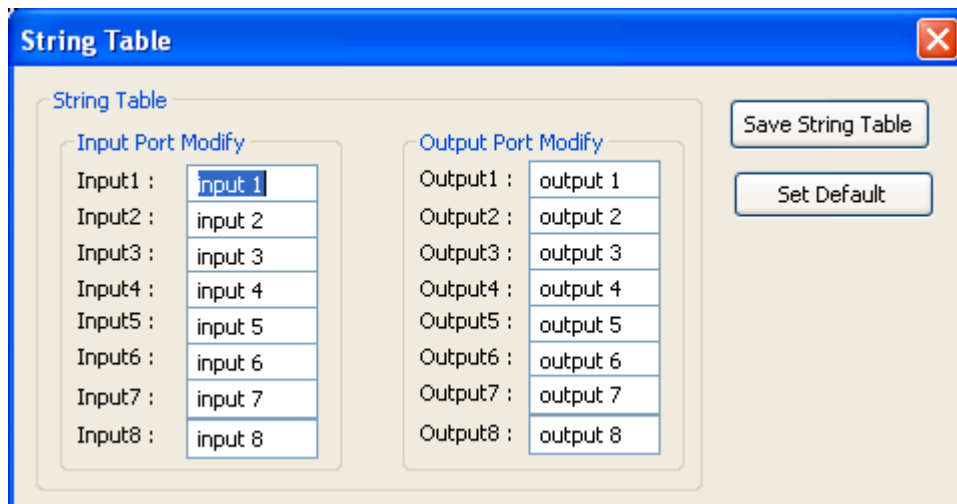
In the String Table, assign the captions for each input and output port for easy recognition.

For example

Rename the Input1 to "Blu-ray player", Input2 to "Sat. receiver," input3 to "Game console," input4 to "AV receiver," input5 to "HDMI camcorder," ... etc., and rename output1 to "Conf. RM1," output2 to "Conf. RM2," output3 to "Lobby," output4 to "Main projector," ... etc.

Click Save String Table to save the caption setting (turn effective after program restart).

Click Set Default to pop up the confirmation message below to erase the captions and reset the string table back to default setting (turn effective after program restart).



2. Scan button:

Serial Port Scan

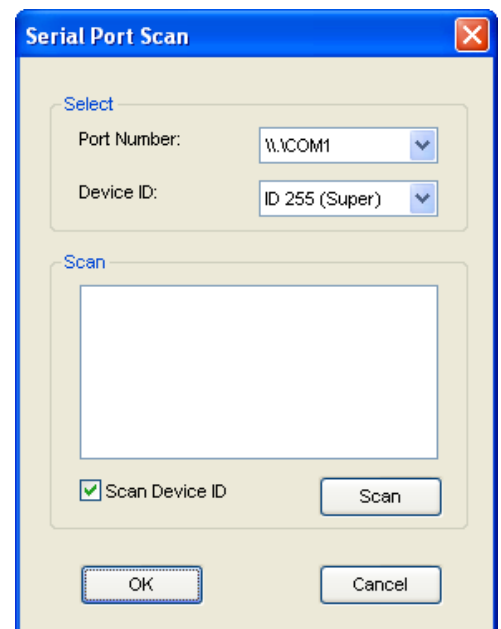
Click Scan button, the machine will scan the all COM port and show them.

Select the RS232 serial port connected to the Matrix switch.

And set device ID 255 is for all device.

Only the same device id or 255 can get the command you sent.

Click OK. Get the new status from the Matrix switch (the port you select.)

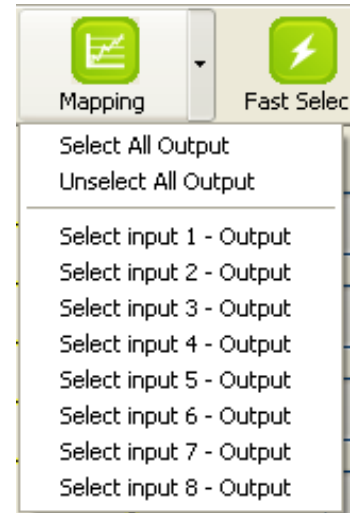


3. Linkage button:

Click Linkage button to read back all status.

4. Open/Close button:

Click this button to close or open COM port.



5. Mapping button:

Select All Output

Select "set all output", and then select the source on main menu. You can quickly set all output to the same source.

Unselect All Output

Release output selection.

Select Input1~8-Output

Select Input Source. Then select the output port icon.

For example

Select input source 1. Then select output ports one and two. The video and audio will be sent to ports one and two.

6. Fast Select button:

Click Fast select button. Quick setting.

Input one > Output Port one

Input two > Output Port two

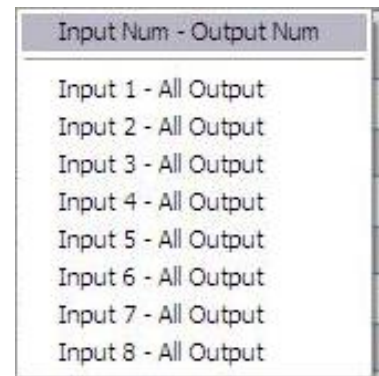
.....

Click Fast select pull down menu.

Select Input Num-Output Num

Input source #1 > Output port #1

Input source #2 > Output port #2
.....



Select Input* - All Output

Send the same source to all output.

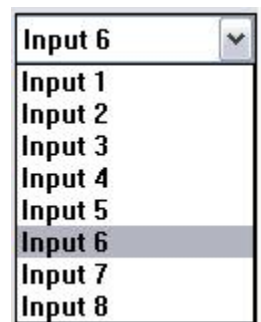
7. Output Port:

Pull down menu and select which source to be sent to this output port.

One by one setting

On main menu screen

First select input source. Then select the output ports which you want to send the video and audio from this source. When you select the input source, the source will change to gray. When you select the



output port one by one, the selected output port will change to gray.
The linking line will change to yellow.

Group setting

First select output ports one by one. Then select the input source. The selected output ports change the setting at the same time.

By using Terminal:

Baud rate: 9600
Data length: 8bit
Parity check: No
Stop bit: 1

Command Set:

COMMAND	ACTION	COMMAND	ACTION
ST	System Status	VR	Firmware Version
A1	Output A selects Input 1	E1	Output E selects Input 1
A2	Output A selects Input 2	E2	Output E selects Input 2
A3	Output A selects Input 3	E3	Output E selects Input 3
A4	Output A selects Input 4	E4	Output E selects Input 4
A5	Output A selects Input 5	E5	Output E selects Input 5
A6	Output A selects Input 6	E6	Output E selects Input 6
A7	Output A selects Input 7	E7	Output E selects Input 7
A8	Output A selects Input 8	E8	Output E selects Input 8
B1	Output B selects Input 1	F1	Output F selects Input 1
B2	Output B selects Input 2	F2	Output F selects Input 2
B3	Output B selects Input 3	F3	Output F selects Input 3
B4	Output B selects Input 4	F4	Output F selects Input 4
B5	Output B selects Input 5	F5	Output F selects Input 5
B6	Output B selects Input 6	F6	Output F selects Input 6
B7	Output B selects Input 7	F7	Output F selects Input 7
B8	Output B selects Input 8	F8	Output F selects Input 8
C1	Output C selects Input 1	G1	Output G selects Input 1
C2	Output C selects Input 2	G2	Output G selects Input 2
C3	Output C selects Input 3	G3	Output G selects Input 3
C4	Output C selects Input 4	G4	Output G selects Input 4
C5	Output C selects Input 5	G5	Output G selects Input 5

C6	Output C selects Input 6	G6	Output G selects Input 6
C7	Output C selects Input 7	G7	Output G selects Input 7
C8	Output C selects Input 8	G8	Output G selects Input 8
D1	Output D selects Input 1	H1	Output H selects Input 1
D2	Output D selects Input 2	H2	Output H selects Input 2
D3	Output D selects Input 3	H3	Output H selects Input 3
D4	Output D selects Input 4	H4	Output H selects Input 4
D5	Output D selects Input 5	H5	Output H selects Input 5
D6	Output D selects Input 6	H6	Output H selects Input 6
D7	Output D selects Input 7	H7	Output H selects Input 7
D8	Output D selects Input 8	H8	Output H selects Input 8

Display Side

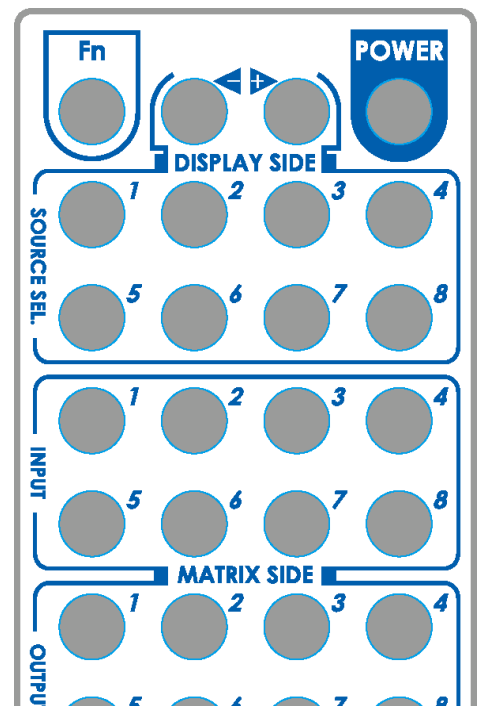
Method A: Push button for switching input channels

Press the **INPUT SELECT** push button to switch the input source on the respective output port connected to the matrix receiver in sequential order. The selected input source will be displayed on the seven segment display of **INPUT CHANNEL**.

Method B1: IR remote control for switching input channels


Please decide which input channel to be selected by pressing Source Selection 1 to Source Selection 8. Or you can use left ◀ and right ▶ button to enter IR control mode and select the input channel in ascending and descending order respectively. The setting will be effective in a couple of seconds.


◀	Switch input port in descending order*
▶	Switch input port in ascending order*
SOURCE SEL. 1	Switch the display channel at the remote site to input port 1
SOURCE SEL. 2	Switch the display channel at the remote site to input port 2
SOURCE SEL. 3	Switch the display channel at the



	remote site to input port 3
SOURCE SEL. 4	Switch the display channel at the remote site to input port 4
SOURCE SEL. 5	Switch the display channel at the remote site to input port 5
SOURCE SEL. 6	Switch the display channel at the remote site to input port 6
SOURCE SEL. 7	Switch the display channel at the remote site to input port 7
SOURCE SEL. 8	Switch the display channel at the remote site to input port 8

Note

Right () button to switch input source in ascending order (1, 2, 3, 4, 5, 6, 7, 8, 1, 2 ...)

Left () button to switch input source in descending order (1, 8, 7, 6, 5, 4, 3, 2, 1, 2 ...)

Method B2: IR remote control for controlling the HDMI sources

Users can use the corresponding IR remotes to control respective BD players, DVD players, or any HDMI input devices including MA-5188 itself with IR control at any display site.

EDID LEARNING

The EDID learning function is only necessary whenever you encounter any display on the HDMI output port that cannot play audio and video properly. Because the HDMI source devices and displays may have various level of capability in playing audio and video, the general principle is that the source device will output the lowest standards in audio format and video resolutions to be commonly acceptable among all HDMI displays. In this case, a 720p stereo HDMI signal output would be probably the safest choice. Nevertheless, the user can force the matrix to learn the EDID of the lowest capable HDMI display among others to make sure all displays are capable to play the HDMI signals normally by performing the procedures stated below.

Note

SW1-SW4 Pin#1 and Pin#2 must be set "ON" & "ON" for EDID Learning Mode

<i>DIP Switch Position</i>		<i>Video</i>	<i>Audio</i>	<i>Description</i>
<i>Pin 1</i>	<i>Pin 2</i>			
ON [↓]	ON [↓]	<i>Bypass</i>	<i>Bypass</i>	<i>EDID Learning – for learning EDID from the receiver</i>

Method 1: Manually connect HDMI displays to HDMI input ports

1. Power up the matrix master unit. Connect the HDMI display that its EDID needs to be learned to any of the HDMI **INPUT1 – INPUT8** port where your source device has trouble to show the picture normally.
2. To learn the display's EDID for source device connected to respective HDMI **INPUT1 – INPUT8** port, pull both pins of respective DIP switch **SW1 – SW8** up-and-down to stay at ON [] - ON [] and wait for about 5 seconds to complete the EDID learning process. You DON'T NEED to pull up the DIP switch again unless you want to learn another display's EDID by pulling both DIP switch pin-1 & pin-2 of **SW1 – SW8** up-and-down one more time.
3. Repeat step1 & step2 if you want to learn the EDID of this HDMI display on any other HDMI input ports that have same trouble playing the audio/video properly.

Method 2: Use the front panel of the master unit

Button	Function
Output Port	EDID will be read from display via the connected receiver unit from the respective output port
Input Channel	The EDID will be sent to the input source connected to respective HDMI input port

One by One learning

1. Select the desired **Output Port** and **Input Channel** that you want the EDID of the display connected to this specified output port can be learned for the specified input channel.
2. Press the "+" button of the **Output Port** and "-" button of the **Input Channel** at the same time for 2 seconds.
3. Release these two buttons. The EDID will be read from the receiver unit connected to the display and sent the **Output Port** then written to the chosen **Input Channel**.
4. If the operation is successful, the Input Channel will show "O" (OK). If the operation is not successful, it will show "F" (failure).

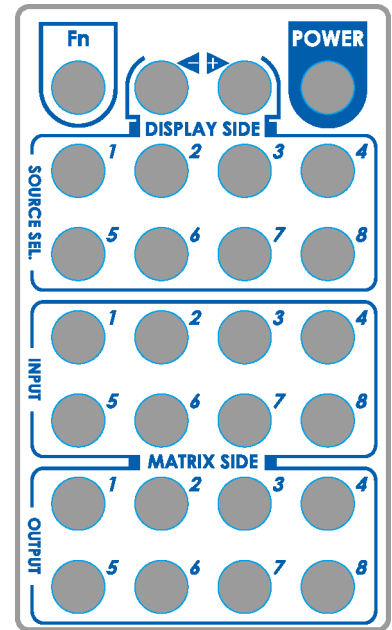
One to All learning

1. Press the "+" button of the **Output Port** and the "+" button of the **Input Channel** at the same time for 2 seconds.
2. Release these two buttons. . The EDID will be read from the receiver unit connected to the display and sent the **Output Port** then written to all eight **Input Channels**.
3. If the operation is successful, the Input Channels will show "O" (OK). If the operation is not successful, it will show "F" (failure).

IR DISCRETE CODE

Default Custom Code - IR2 Code: 00 FF

Function 0x17	◀ 0x0A	▶ 0x0C	POWER 0x02
SOURCE SEL. 1 0x54	SOURCE SEL. 2 0x55	SOURCE SEL. 3 0x56	SOURCE SEL. 4 0x01
SOURCE SEL. 5 0x57	SOURCE SEL. 6 0x58	SOURCE SEL. 7 0x59	SOURCE SEL. 8 0x06
INPUT 1 0x18	INPUT 2 0x5B	INPUT 3 0x19	INPUT 4 0x07
INPUT 5 0x1B	INPUT 6 0x5A	INPUT 7 0x1A	INPUT 8 0x04
OUTPUT 1 0x0E	OUTPUT 2 0x0D	OUTPUT 3 0x12	OUTPUT 4 0x05
OUTPUT 5 0x1C	OUTPUT 6 0x1D	OUTPUT 7 0x1F	OUTPUT 8 0x1E



Custom Code - IR3 Code: 0x12 0x21

Custom Code: 0x12 0x21								
	Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Output 7	Output 8
Source 1	0xA1	0xB1	0xC1	0xD1	0xE1	0xF1	0x11	0x21
Source 2	0xA2	0xB2	0xC2	0xD2	0xE2	0xF2	0x12	0x22
Source 3	0xA3	0xB3	0xC3	0xD3	0xE3	0xF3	0x13	0x23
Source 4	0xA4	0xB4	0xC4	0xD4	0xE4	0xF4	0x14	0x24
Source 5	0xA5	0xB5	0xC5	0xD5	0xE5	0xF5	0x15	0x25
Source 6	0xA6	0xB6	0xC6	0xD6	0xE6	0xF6	0x16	0x26
Source 7	0xA7	0xB7	0xC7	0xD7	0xE7	0xF7	0x17	0x27
Source 8	0xA8	0xB8	0xC8	0xD8	0xE8	0xF8	0x18	0x28

Custom Code - IR4 Code: 0x13 0x31

Custom Code: 0x13 0x31								
	Output 1	Output 2	Output 3	Output 4	Output 5	Output 6	Output 7	Output 8
Source 1	0xAE	0xBE	0xCE	0xDE	0xEE	0xFE	0x1E	0x2E
Source 2	0xAD	0xBD	0xCD	0xDD	0xED	0xFD	0x1D	0x2D
Source 3	0xAC	0xBC	0xCC	0xDC	0xEC	0xFC	0x1C	0x2C
Source 4	0xAB	0xBB	0xCB	0xDB	0xEB	0xFB	0x1B	0x2B
Source 5	0xAA	0xBA	0xCA	0xDA	0xEA	0xFA	0x1A	0x2A
Source 6	0xA9	0xB9	0xC9	0xD9	0xE9	0xF9	0x19	0x29
Source 7	0xA8	0xB8	0xC8	0xD8	0xE8	0xF8	0x18	0x28
Source 8	0xA7	0xB7	0xC7	0xD7	0xE7	0xF7	0x17	0x27

Note: Using terminal to set Custom Code

Example: Set custom code from 0x01 0xEE to 0x13 0x31

>> IR4 ----- command (using RS-232 terminal command mode)

>> IR4 ----- echo

Command	Custom Code
IR2	0x00 0xFF
IR3	0x12 0x21
IR4	0x13 0x31

For further information, please check the installation CD.

FAQ

Q The quality of output video is not good enough, how can I do?

A Please adjust the 8-level equalization on the receiver units. The HDMI signal level varies from 0 (strongest) to 7 (weakest) for respective transmission length from longest possible range to short distance. It is recommended to switch from 7 to 0 to find the optimal visual experience.

Q Can I use any kind of LAN cable?

A Please check the NOTICE section for more information about how to pick up a suitable cable.

Q Can every TV work with the HDMI matrix?

A Basically, the answer is YES. But if your TV can not support 1080p, please refer the EDID LEARNING section to learn EDID from your TV

Q What is EDID? Why do I need to learn EDID?

A EDID contains the whole information of the display such as the resolution and audio setting which this display can support. Therefore, based on the EDID information, media player will pick up the most suitable resolution and audio setting to the display. In order to faithfully transmit the EDID information from display to the media player, learning EDID from display to this device is necessary.

Q What should I do to learn EDID for the matrix?

A Due to the limitation of HDMI, the source device can only output one format of video and audio. In other words, the source device cannot output 720p and 1080p video at the same time, or output stereo and surround sound at the same time. Therefore, you may need to manually setup the DIP switch for each HDMI input for desirable audio/video output format. The mechanism of EDID Learning is to pick up the HDMI display with the lowest capability among the ones you would use for this input source. For example, if user would like to play the Input-2 upon output-3, output-5 and output-8, and only output-5 cannot support 1080p [support up to 720p only], please learn the EDID from the display connected to the output-5 at the Input-2 port. Of course, if output-5 could get the HDMI signals from every HDMI input, please learn EDID information from output-5 to all eight HDMI inputs. For more information about EDID Learning, please refer to EDID LEARNING section.

Q My TV can support 1080p, but why there is no audio?

A The default setting of this device is 1080p & 7.1ch audio, so there would be a problem if the TV cannot support 7.1ch audio. Please change the DIP switch of the chosen input from Default Mode to Safe Mode.

Q When I set an audio amplifier (AV receiver) between TV and the matrix to extract 7.1ch audio, but why there is still no audio?

A Basically, the default DIP switch setting of the chosen input can support 7.1ch audio, but the problem is that the EDID of the amplifier still cannot match the default setting. Therefore, the best method is to learn EDID from the amplifier directly. Please refer to EDID LEARNING section and follow the steps to learn the EDID. When learning EDID from the amplifier, user just needs to connect the matrix and amplifier. Please don't connect HDMI cable between amplifier and TV when the EDID learning is proceeding.

Q When I play the same content upon multi-displays, why only the TV equipped with amplifier can have 7.1ch audio, and the others don't have 7.1ch audio even no stereo?

A Due to the limitation of HDMI, the source only can choose one video and one audio format to play, which can be either 1080p and 7.1ch or 1080p and stereo audio. It means when the user sets the matrix at 1080p and 7.1ch, the source will only play the content under this format. Therefore if the TV cannot decode 7.1ch audio, there is definitely no audio.

Q Is there an easier method that can allow this matrix switcher to work properly?

A Please refer to the third method of EDID learning to switch among different default EDID profiles at the remote side. Through the switching from 1st to 5th default EDID profile, stay with the one that can get the audio and video as you wish.

NOTICE

1. When adjusting the signal level on the receiver unit, please dial the rotary control switch from 7 to 0 and stop turning the rotary switch whenever the audio/video is playing normally. Inappropriate signal level setting may cause overpowering issue that would shorten the product life significantly!
2. If the DVI or HDMI device requires the EDID information, please use EDID Reader/Writer to retrieve and provide DVI or HDMI display EDID information.
3. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C & VG-870B.
4. The transmission length is largely affected by the type of Cat-5/5e/6 cables, the type of HDMI sources, and the type of HDMI display. The testing result shows solid UTP cables (usually in the form of 300m [1,000ft] bulk cables) can transmit a lot longer signals than stranded UTP cables (usually in the form of fixed length patch cords). Shielded STP cables are better suited than unshielded UTP cables. A solid UTP Cat-5e cable shows longer transmission range than stranded STP Cat-6 cable. For long extension applications, solid UTP/STP cables are the only viable choice.
5. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended for better performance.
6. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use shielded STP cables to improve EMI problems, which is worsen in long transmission.
7. Because the quality of the CAT5/6 cables has the major effect on how long the transmission limit can achieve and how good is the received picture quality, the actual transmission range is subject to one's choice of Cat-5/5e/6 cables. For desired resolutions greater than 1080i or 1280x1024, a Cat-6 cable is recommended.
8. If your HDMI display has multiple HDMI inputs, it is found that the first HDMI input [HDMI input #1] generally can produce better transmission performance among all HDMI inputs.
9. The AV-GM07H3-S1 has been tested extensively and found that it doesn't require external power supply. If in rare situation you find it cannot work with the MA-5188, please use any +5V power adapter to plug in the power jack and see if it can work. If not, please contact your technical support for further service.
10. Additional IR remote controls and IR blaster cables can be purchased as optional accessories to control the HDMI sources located separately.



WARRANTY

The SELLER warrants the **AV-GM07E3-S1 8x8 HDMI & Full 3D support over CAT5 Matrix with IR Pass-through** free from defects in the material and workmanship for 3 years from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 3 years warranty period, The SELLER, at its option, repair or replace the unit, provided that the unit has not been subjected to accident, disaster, abuse or any unauthorized modifications including static discharge and power surge. This warranty is offered by the SELLER for its BUYER with direct transaction only. This warranty is void if the warranty seal on the metal housing is broken.

Unit that fails under conditions other than those covered will be repaired at the current price of parts and labor in effect at the time of repair. Such repairs are warranted for 90 days from the day of reshipment to the BUYER. If the unit is delivered by mail, customers agree to insure the unit or assume the risk of loss or damage in transit. Under no circumstances will a unit be accepted without a return authorization number.

The warranty is in lieu of all other warranties expressed or implied, including without limitations, any other implied warranty or fitness or merchantability for any particular purpose, all of which are expressly disclaimed.

Proof of sale may be required in order to claim warranty. Customers outside Taiwan are responsible for shipping charges to and from the SELLER. Cables and power adapters are limited to a 30 day warranty and must be free from any markings, scratches, and neatly coiled.

The content of this manual has been carefully checked and is believed to be accurate. However, The SELLER assumes no responsibility for any inaccuracies that may be contained in this manual. The SELLER will NOT be liable for direct, indirect, incidental, special, or consequential damages resulting from any defect or omission in this manual, even if advised of the possibility of such damages. Also, the technical information contained herein regarding the **AV-GM07E3-S1** features and specifications is subject to change without further notice.

Support

For more info or tech support
<http://www.siig.com/support>