4x2 HDMI Matrix

P/N: AV-GM0733-S1

Safety and Notice

The **AV-GM0733-S1** 4x2 HDMI Matrix has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM0733-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.

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INTRODUCTION

The AV-GM0733-S1 4x2 HDMI Matrix 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 four HDMI source devices to the remote 2 displays at the same time. The audio stereo output provides an extra audio path for monitoring through RCA or optical connector. 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 directly!

FEATURES

- Support HDMI Deep Color & 3D
- HDCP 1.1 compliant
- DVI 1.0 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
- Auto HDMI EDID learning
- IR direct code supported
- The matrix can switch every output channel to any HDMI inputs by push buttons, IR remote control, or RS-232 control
- Full frequency (20KHz ~ 60KHz) IR extender
- Individual CEC control 1
- Audio output support including analog stereo and S/PDIF
- Easy installation with wall-mounting designs
- Response time V 5 ~10 seconds for channel switch 2

Note

1 *If both outputs select the same input, CEC control will be default to HDMI output 1.*

2 *The switching time is dependent upon the response of HDMI receivers, the time variation contributed by receivers could be up to 3 ~ 5 seconds.*

PACKAGE CONTENTS

- 1x AV-GM0733-S1
- 1x IR Remote control
- 1x IR receiver
- 1x 5V 4A in-line with C7 power cord

- 1x User Manual

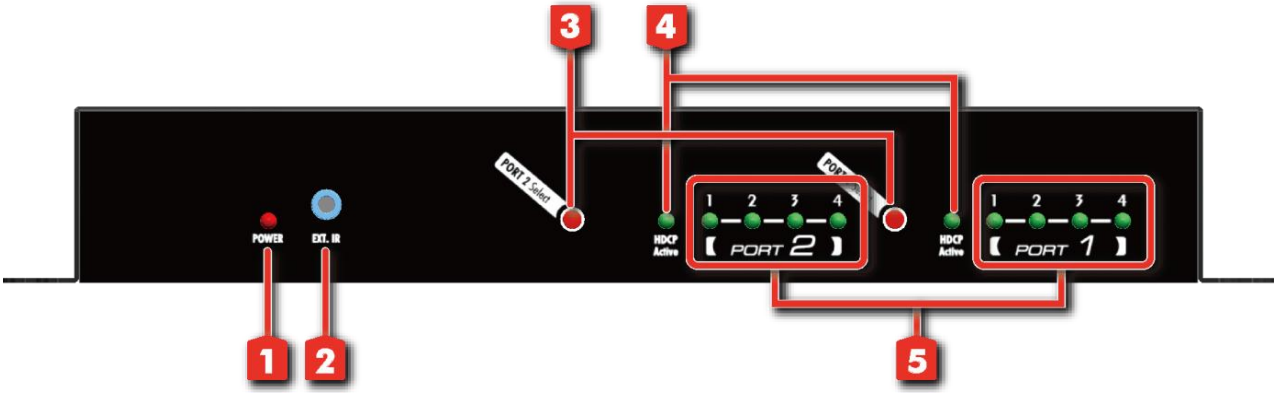
SPECIFICATIONS

Model Name		AV-GM0733-S1
Technical		
Role of usage		True 4x2 matrix switcher
HDMI compliance		HDMI Deep Color & 3D
HDCP compliance		Yes
Video bandwidth		Single-link 225MHz [6.75Gbps]
Video support		480i / 480p / 720p / 1080i / 1080p60 up to 36-bit color
Audio support		Surround sound (up to 7.1ch) or stereo digital audio
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 — ±2kV
PCB stack-up		4-layer board [impedance control — differential 100Ω single 50Ω]
Input		4x HDMI + 1x RS-232 + 1x USB + 1x 3.5mm IR socket
Output		2x HDMI + 1x RCA + 1x Optical
HDMI Input selection		Push button / IR remote control / RS-232 control
IR remote control		Electro-optical characteristics: □ = 25° / Carrier frequency: 20 ~ 60kHz
HDMI connector		Type A [19-pin female]
RJ-45 connector		WE/SS 8P8C with 2 LED indicators
RS-232 connector		DE-9 [9-pin D-sub female]
3.5mm connector		Earphone jack for external IR receiver
DIP switch		4-pin for audio channel selection
Mechanical		
Housing		Metal enclosure
Dimensions [L x W x H]	Model	3105x 250 x 37mm [4.1" x 9.8" x 1.5"]
	Package	495 x 440 x 380mm [1'7" x 1'5" x 1'3"]
	Carton	495 x 440 x 380mm [1'7" x 1'5" x 1'3"]
Weight	Model	730g [1.6 lbs]
	Package	1190g [2.6 lbs]
Fixedness		Wall-mount with screws

Power supply	5V 4A DC
Power consumption	8 Watt [max]
Operation temperature	0~40°C [32~104°F]
Storage temperature	-20~60°C [-4~140°F]
Relative humidity	20~90% RH [no condensation]

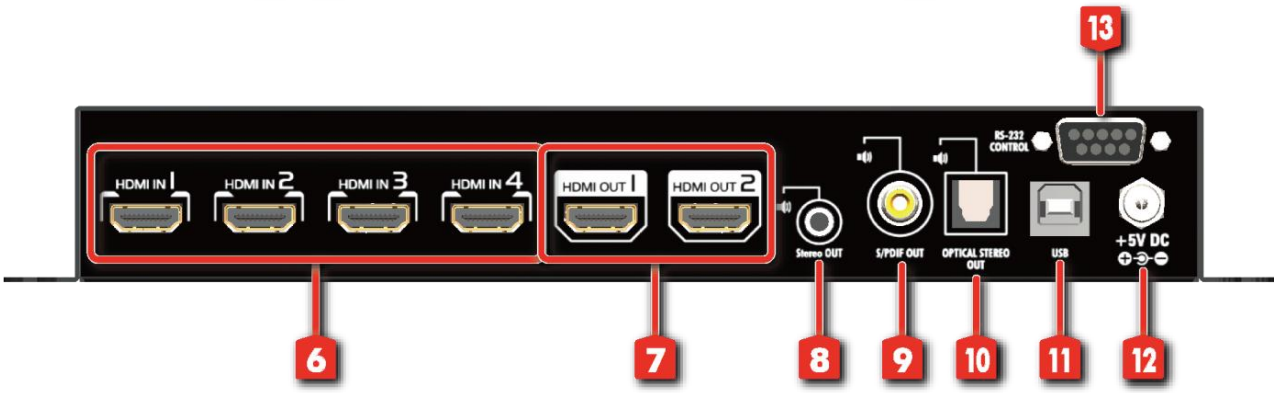
PANEL DESCRIPTIONS

Front Panel



1. **Power:** Power Indicator LED
2. **EXT. IR:** plugging the external IR receiver here
3. **PORT 1-2 Select:** Push button for selecting the HDMI input port showing on HDMI output 1-2
4. **HDCP Active 1-2:** Indicator to show whether HDMI output 1-2 and any input have good HDCP communication
5. **PORT 1-2:** Input indicator LEDs for HDMI output 1-2

Rear Panel



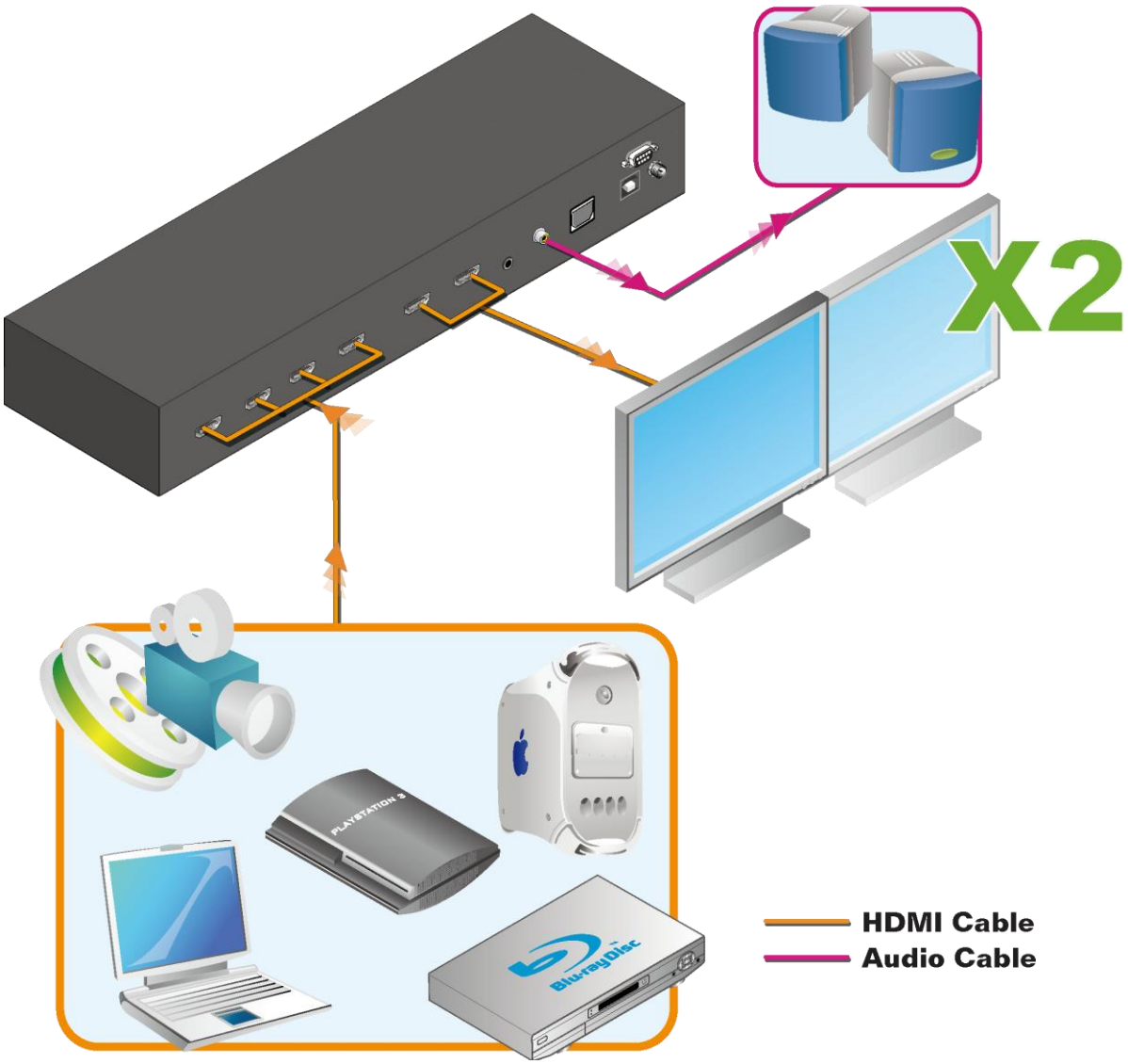
6. **HDMI IN 1-4:** HDMI input ports

7. **HDMI OUT 1-4:** HDMI output ports
8. **Stereo OUT:** Analog stereo audio output
9. **S/PDIF OUT:** S/PDIF digital stereo audio output
10. **OPTICAL STEREO OUT:** Optical stereo audio output
11. **USB:** USB port for technical support only
12. **+5V DC:** +5V DC interlocking power jack that connects to the external power supply unit
13. **RS-232 CONTROL:** RS-232 port for channel control via PC

HARDWARE INSTALLATION

1. Connect all sources to HDMI Inputs on the 4x2 HDMI of AV-GM0733-S1.
2. Connect IR receiver to the earphone jack of AV-GM0733-S1.
3. Connect the +5V 4A DC power supply to the AV-GM0733-S1.
4. Connect each HDMI output to HDMI displays.
5. Power on all HDMI sources.
6. Power on the AV-GM0733-S1.

CONNECTION DIAGRAM



IR PASS-THROUGH

IR Extenders

IR Receiver

IR Sockets

IR RECEIVER: plug in the IR receiver to receive all IR command signals from the IR remote controls of the corresponding devices.

Definition of IR Earphone Jack

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.

DIP SWITCH

DIP Switch Position				Description
Pin 1	Pin 2	Pin 3	Pin 4	
ON [□]	OFF [□]	OFF [□]	OFF [□]	Select the 1st pair of multi-channel audio
OFF [□]	ON [□]	OFF [□]	OFF [□]	Select the 2nd pair of multi-channel audio
OFF [□]	OFF [□]	ON [□]	OFF [□]	Select the 3rd pair of multi-channel audio
OFF [□]	OFF [□]	OFF [□]	ON [□]	Select the 4th pair of multi-channel audio

Only 1 pair can be selected to audio output and only HDMI output 1 supports such a function. Keep only one pin of DIP switch ON position at all times.

For firmware update, there are 2 paths for updating new firmware, and each path is responsible for different components. USB port is designed for HDMI related chipset control and RS-232 port is mainly for the IR, RS232 and control flow.

CHANNEL CONTROL

Method A: Push Buttons

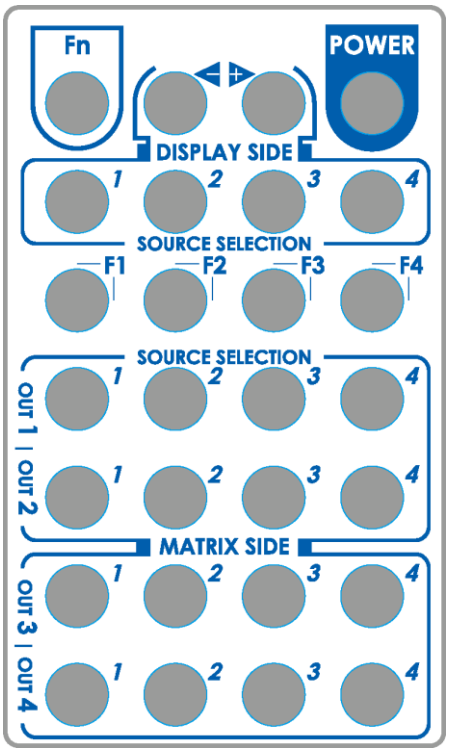
Push the HDMI input switch buttons on the front panel, the source will be sequentially changed.

Method B: IR Remote Control

Please push the desired input channel for each output port. The setting will take effect within 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
OUTPUT 1	HDMI output port #1
OUTPUT 2	HDMI output port #2



IR DISCRETE CODE

Custom Code: IR3 0x12 0x21

Custom Code: 0x12 0x21		
	Output Port 1	Output Port 2
Source 1	0xA1	0xB1
Source 2	0xA2	0xB2
Source 3	0xA3	0xB3
Source 4	0xA4	0xB4

Custom Code: IR4 0x13 0x31

Custom Code: 0x13 0x31		
	Output Port 1	Output Port 2
Source 1	0xAE	0xBE
Source 2	0xAD	0xBD
Source 3	0xAC	0xBC
Source 4	0xAB	0xBB

Note: Using terminal to set Custom Code

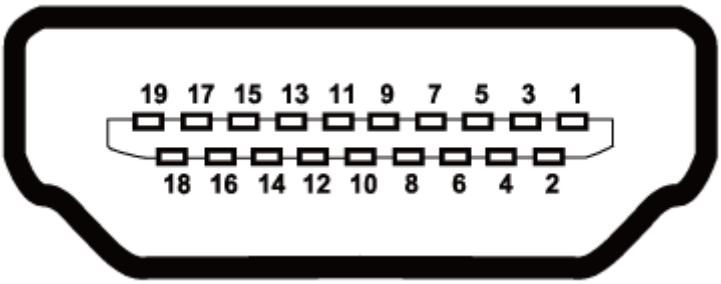
Example: Set custom code from 0x01 0xEE to 0x13 0x31

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

>> IR4 ---------- echo

Command	Custom Code
IR3	0x12 0x21
IR4	0x13 0x31

HDMI PIN DEFINITION



Type A (Receptacle) HDMI

Pin 1	TMDS Data2+	**Pin 8**	TMDS Data0 Shield	**Pin 14**	Reserved (N.C. on device)
Pin 2	TMDS Data2 Shield	**Pin 9**	TMDS Data0–	**Pin 15**	SCL
Pin 3	TMDS Data2–	**Pin 10**	TMDS Clock+	**Pin 16**	SDA
Pin 4	TMDS Data1+	**Pin 11**	TMDS Clock Shield	**Pin 17**	DDC/CEC Ground
Pin 5	TMDS Data1 Shield	**Pin 12**	TMDS Clock–	**Pin 18**	+5V Power
Pin 6	TMDS Data1–	**Pin 13**	NC	**Pin 19**	Hot Plug Detect
Pin 7	TMDS Data0+				

NOTICE

1. If the DVI or HDMI device requires the EDID information, please use CV-1001 or CV-5005H EDID Reader/Writer to retrieve and provide DVI or HDMI display EDID information.
2. All HDMI over CAT5 transmission distances are measured using Belden 1583A CAT5e 125MHz UTP cable and ASTRODESIGN Video Signal Generator VG-859C & VG-870B.
3. 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.
4. EIA/TIA-568-B termination (T568B) for Cat-5/5e/6 cables is recommended.
5. To reduce the interference among the unshielded twisted pairs of wires in Cat-5/5e/6 cable, one can use double shielded STP cables to improve EMI problems, which is worsen in long transmission.
6. Because the quality of the category 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.

7. 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.

WARRANTY

The SELLER warrants the AV-GM0733-S1 4x2 HDMI Matrix 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-GM0733-S1 features and specifications is subject to change without further notice.

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

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