8x8 DVI Matrix Switcher with HDCP Support

P/N: AV-GM06X3-S1

Safety and Notice

The **AV-GM06X3-S1** 8x8 DVI Matrix Switcher with HDCP Support has been tested for conformance to safety regulations and requirements, and has been certified for international use. However, like all electronic equipments, the **AV-GM06X3-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-GM06X3-S1** 8x8 DVI Matrix Switcher with HDCP Support DVI 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 eight DVI/HDMI sources to the any eight displays at the same time. This solution is well suited for use in home theater, conference room presentation systems, or other similar setting or application.

FEATURES

- State-of-the-art Silicon Image (Founder of HDMI) chipset embedded for upmost compatibility and reliability
- DVI 1.0
- HDCP compliant
- Allows any source to be displayed on multiple displays at the same time
- Allows any DVI display to view any DVI source at any time
- Supports 7.1 channel digital audio
- Supports default DVI EDID and learns the EDID of displays
- The matrix master can switch every output channels to any DVI inputs by push-in button, IR remote controller or RS-232 control
- Easy installation with rack-mounting and wall-mounting designs for master and receiver respectively
- Fast response time – 2~5 seconds for channel switch

PACKAGE CONTENTS

- 1x AV-GM06X3-S1
- 1x IR receiver (20-60kHz)
- 1x UL AC C13 power cord
- 1x IR Remote control
- 1x Rack-mounting ear set
- 1x Installation software CD
- 1x User Manual

SPECIFICATIONS

| Model Name	AV-GM06X3-S1
Technical	
Role of usage	True 8x8 matrix
DVI compliance	DVI 1.0 / HDMI
HDCP compliance	Yes
Video bandwidth	Single-link 165MHz [4.95Gbps]
Video support	480i / 480p / 720p / 1080i / 1080p60 12-bit color
Audio support	Surround sound (up to 7.1ch) or stereo digital audio
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 DVI + 1x RS-232 + Ethernet
Output	8x DVI
DVI Input selection	Push button / IR remote / RS-232
IR remote control	Electro-optical characteristics: τ = 25° / Carrier frequency: 36~40kHz
DVI connector	Type A [19-pin female]
RS-232 connector	DE-9 [9-pin D-sub female]
DIP switch	[SW1~SW8] 2-pin for EDID learning, audio/video settings [SW Main] 4-pin operation mode & firmware update
Mechanical		
Housing		Metal enclosure
Dimensions [H x W x D]	Model	88 x 440 x 320mm [3.5" x 1'5.3" x 1']
	Package	592 x 500 x 230mm [1'11" x 1'8" x 9.1"]
Weight	Model	6kg [13.2 lbs] approx.
	Package	7kg [15.4 lbs] approx.
Fixedness		2U rack-mountable
Power supply		AC Power 100-240V
Power consumption		60 Watts [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
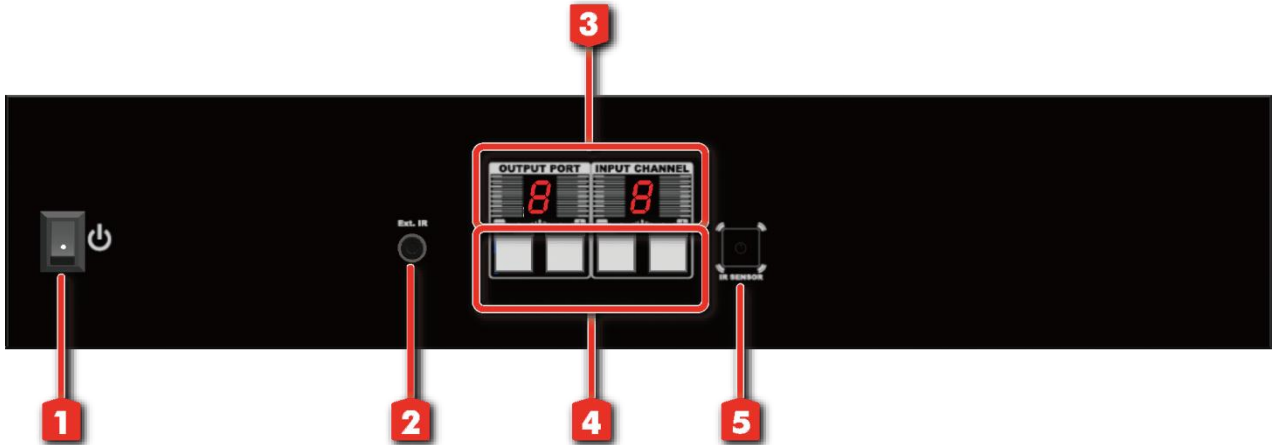
1. **Power:** Power control
2. **Ext. IR:** IR receiver
3. **Seven Segment LED Indicators:** Control display
4. **Push** Front panel push buttons used to select the number of input source and display chann
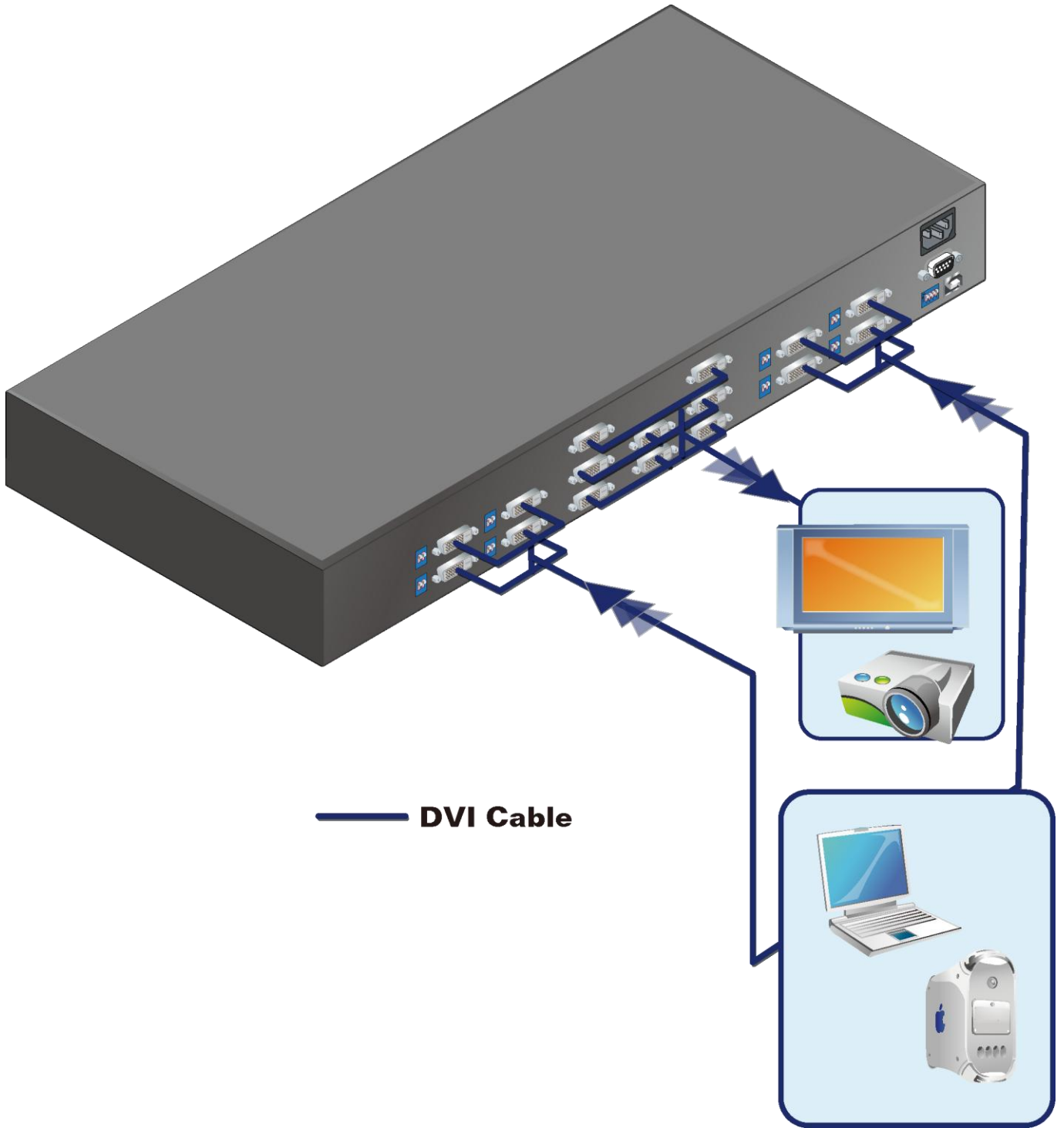5. **IR SENSOR:** IR sensor for receiving the IR commands from the IR remote

Rear Panel
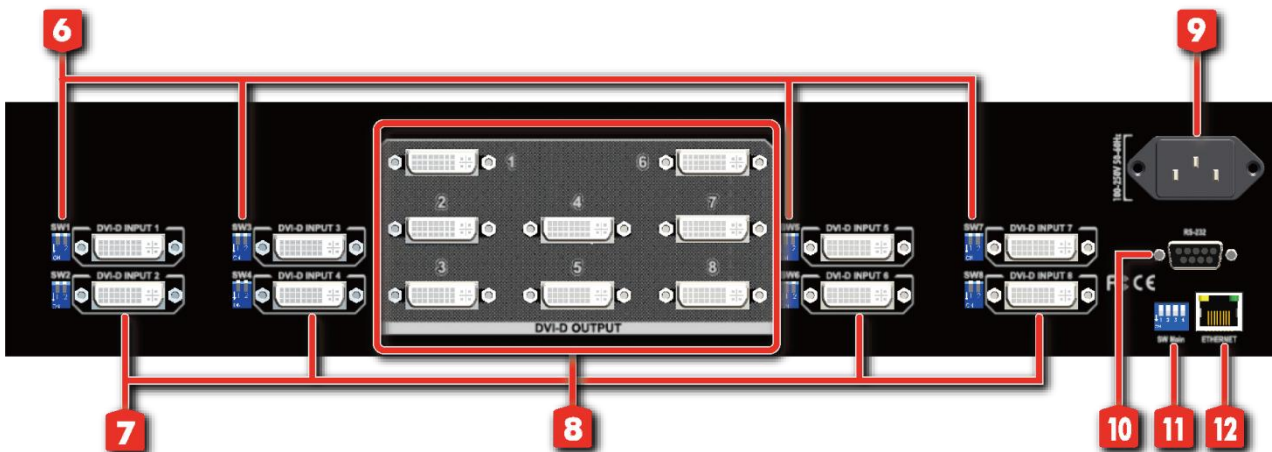
6. **SW 1–8:** DIP switch *(see DIP Switch section)*
7. **DVI-D INPUT 1 –8:** DVI inputs

8. **DVI-D OUPUT 1–8:** DVI outputs for each output channel
9. **AC Power:** DC 12V
10. **RS-232:** RS-232 control port
11. **SW Main:** DIP switches *(see DIP Switch section)*
12. **ETHERNET**

DVI Cable

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

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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 AV-GM06X3-S1. Execute the firmware update program on your PC via COM1 port connection to the RS-232 port of the AV-GM06X3-S1.*

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 AV-GM06X3-S1. The firmware update program should begin this update sequence automatically. If not, please check the RS-232 connection status between PC and AV-GM06X3-S1.*

5. *After the OK message shows up to indicate the firmware update sequence for designated Block is complete, please turn off the AV-GM06X3-S1.*

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.*

HARDWARE INSTALLATION

MX-1088DH

1. Connect all sources to DVI Inputs on the 8x8 DVI Matrix

2. Connect all outputs to DVI devices

3. Connect the +5V 6A DC power supply to the 8x8 DVI Matrix

4. Power on the 8x8 DVI Matrix AV-GM06X3-S1

Use CV-117+CV-17 for DVI over CAT5 transmission

Long distance: 35m (115ft) under Full HD (1080p), or 55m (180ft) under HD (720p/1080i)

1. Plug CV-117 into DVI outputs

2. Plug CV-17 into DVI display

3. Use Cat-5/5e/6 cables to connect devices in between

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
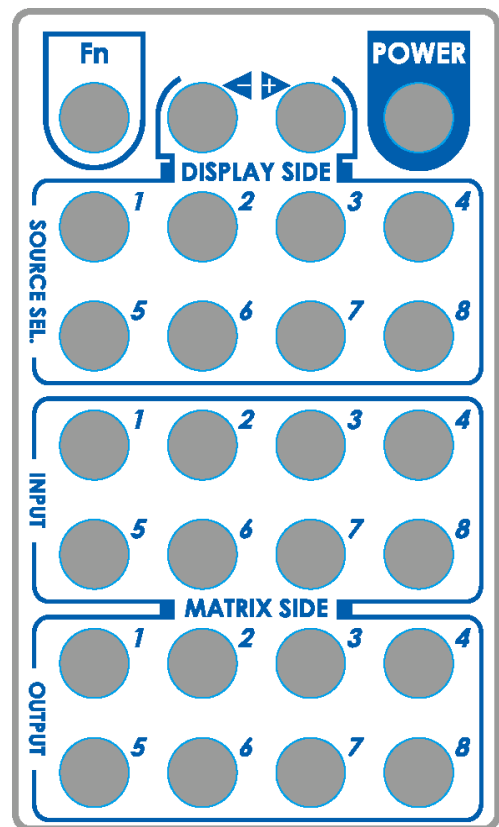
FUNCTION KEY

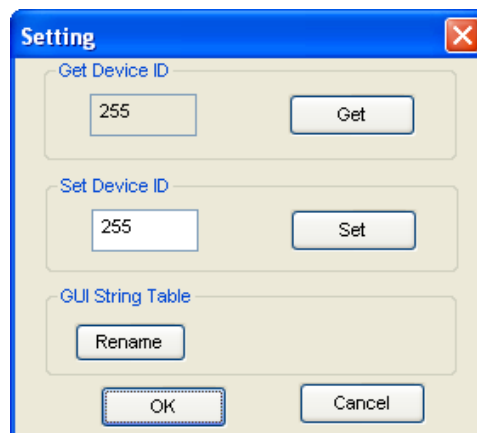| FN + SOURCE SEL. 1	Escape System LOCK
FN + SOURCE SEL. 2	Enter System LOCK (most buttons, IR control, and RS-232 control become inactive, except Escape System LOCK command)

Method C: Software Control through RS-232 or USB port
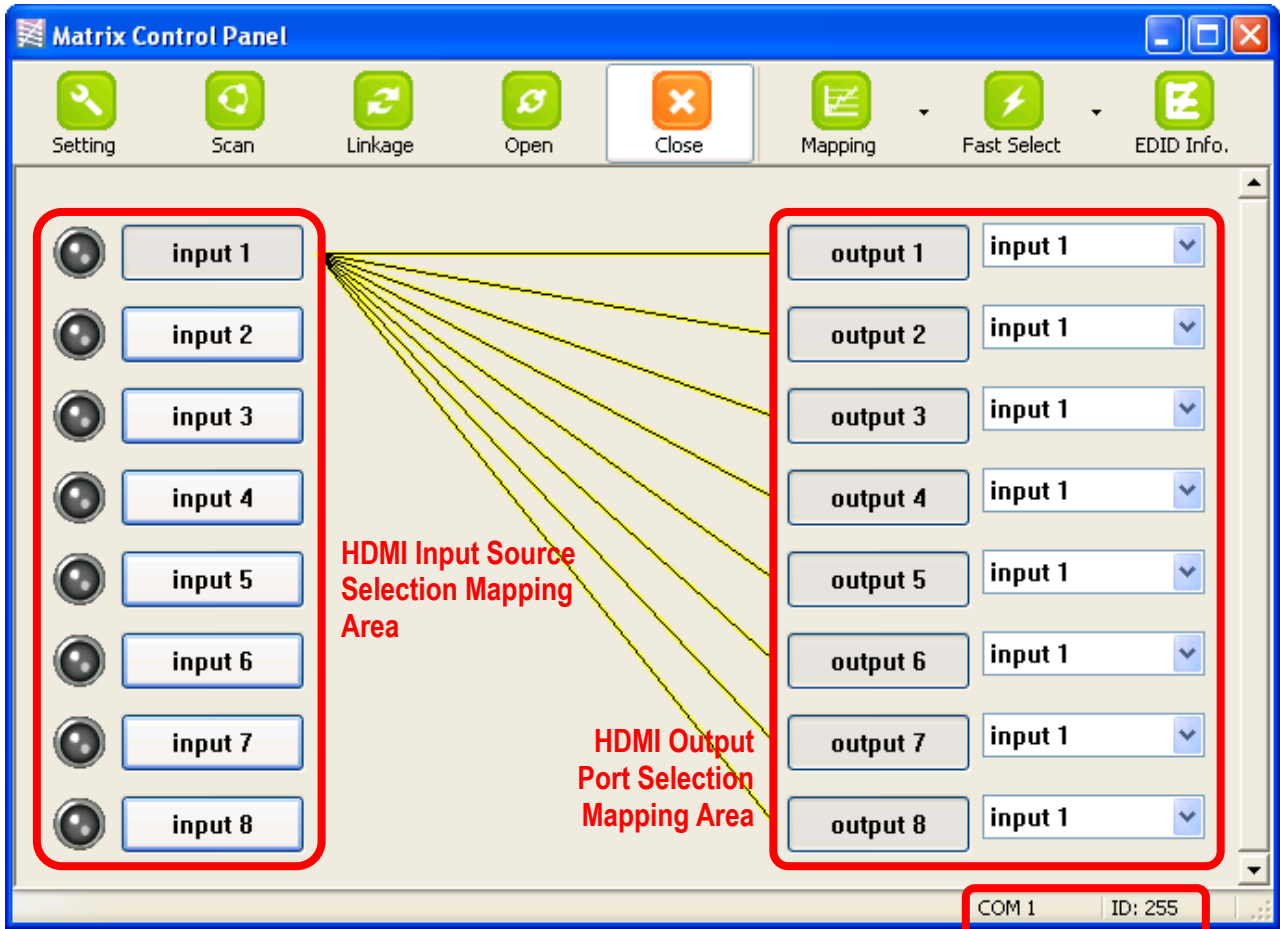
Software Control Menu

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).
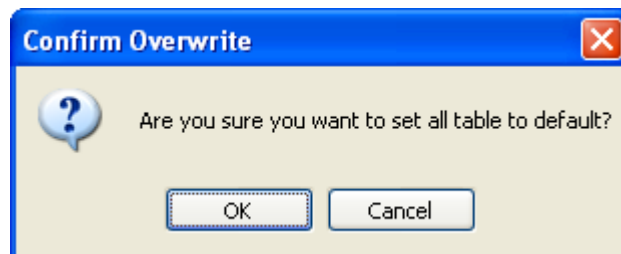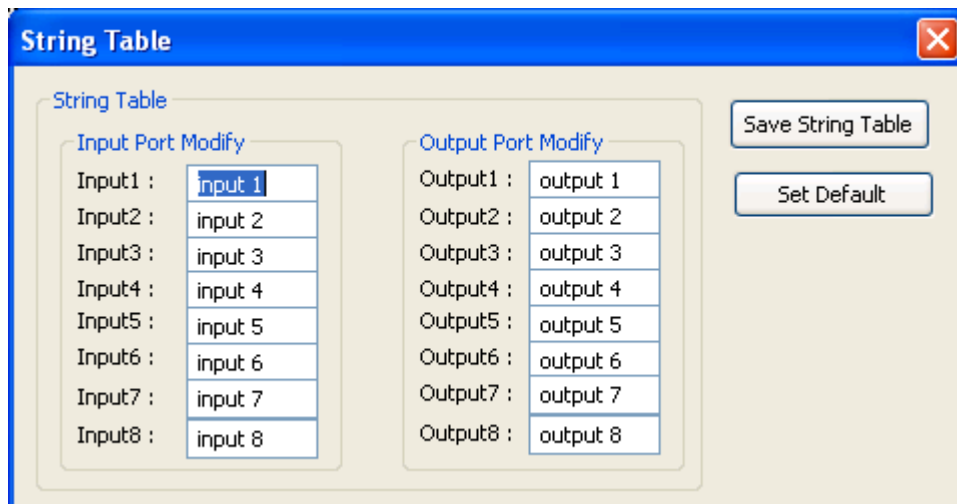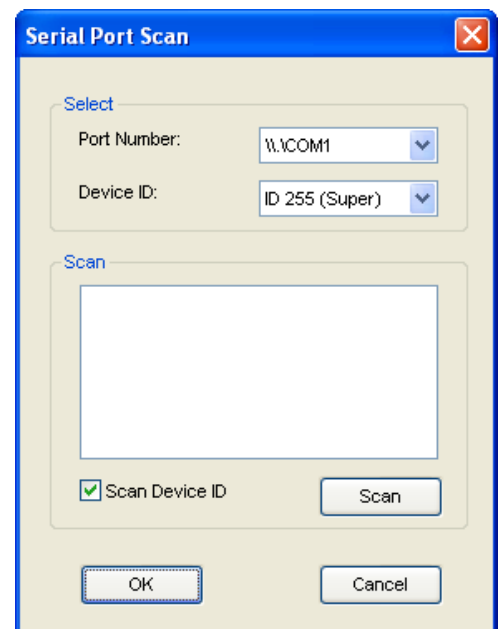

2. Scan button:

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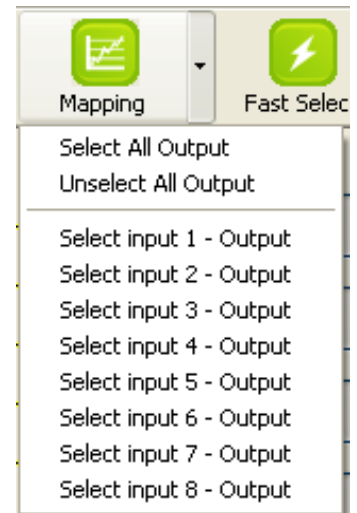Click OK. Get the new status from the Matrix switch (the port you select.)

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
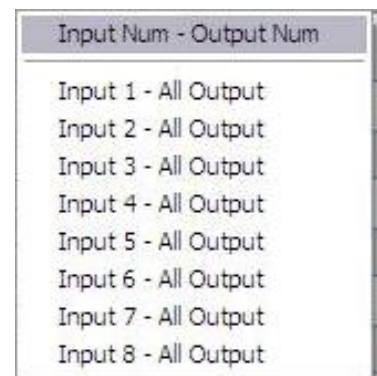   Input two > Output Port two
    .....

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
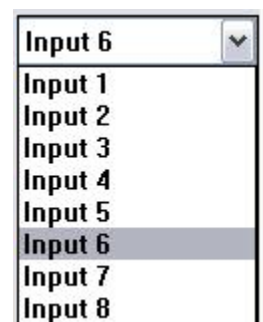   Send the same source to all output.

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

The SELLER warrants the **AV-GM06X3-S1** 8x8 DVI Matrix Switcher with HDCP Support 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-GM06X3-S1** features and specifications is subject to change without further notice.

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

April, 2018