



8x8 DVI Matrix

User Manual



P/N: AV-GM06Y3-S1



Safety and Notice

The **AV-GM06Y3-S1 8x8 DVI 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-GM06Y3-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-GM06Y3-S1 8x8 DVI Matrix** provides the most flexible and cost effective solution in the market to route high definition video sources from any of the eight DVI sources to the any eight digital displays at the same time. This solution is well suited for digital signage, conference room presentation systems, or other similar setting or application.

FEATURES

- DVI 1.0 compatible (single link)
- 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 default EDID and learns the EDID of displays
- The matrix master unit can switch every output channels to any DVI input via push button, IR remote control, RS-232 control or Ethernet control.
- Easy installation with rack-mounting
- Fast response time – 2~5 seconds for channel switch
- Not HDCP compliant

PACKAGE CONTENTS

- 1x AV-GM06Y3-S1
- 1x IR Remote control
- 2x Rack-mounting ears set
- 1x User Manual

SPECIFICATIONS

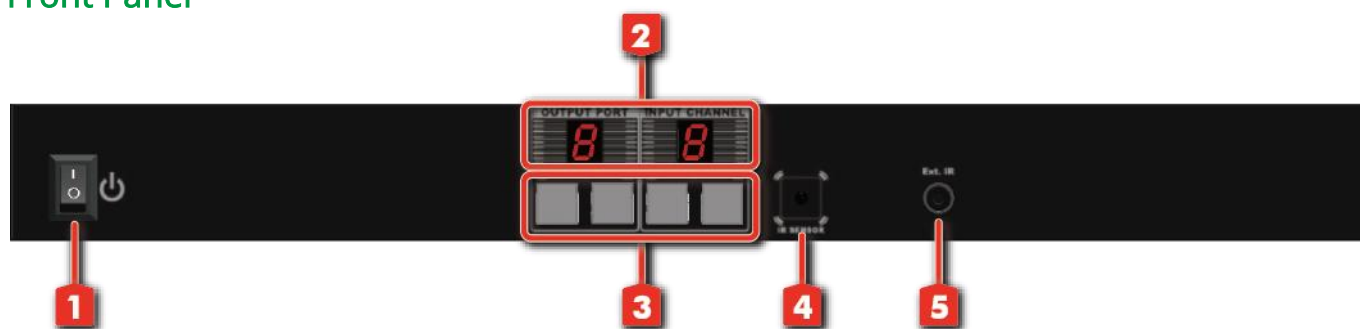
Model Name		AV-GM06Y3-S1
Technical		
Role of usage		True 8x8 matrix switcher
DVI compliance		DVI 1.0
Video bandwidth		[AV-GM06Y3-S1] – Single-link 165MHz [4.95Gbps]
Video support		VGA(640x480)~WUXGA (1920x1200),480p~1080p
ESD protection		[1] Human body model — ±19kV [air-gap discharge] & ±12kV [contact discharge] [2] Core chipset — ±2kV
PCB stack-up		4-layer board [impedance control — differential 100Ω; single 50Ω]
Input		8x DVI + 1x RS-232 + 1x Ethernet
Output		8x DVI
Input selection		Push button / IR remote / RS-232 / Ethernet
IR remote control		Electro-optical characteristics: $\tau = 25^\circ$ / Carrier frequency: 36~40kHz
DVI connector		Type DVI-I [29-pin female]
RS-232 connector		DE-9 [9-pin D-sub female]
DIP switch		[SW Main] 4-pin operation mode & firmware update
Mechanical		
Housing		Metal enclosure
Dimensions [H x W x D]	Model	1RU-440 x 200 x 44mm [1'5" x 7.9" x 1.7"]
	Package	530 x 212 x 158mm [1'9" x 8.3" x 6.2"]
	Carton	543 x 335 x 344mm
Weight	Model	2673g [5.9 lbs]
	Package	4000g [8.8 lbs]
Fixedness		1RU rack-mount with ears and wall hanging holes
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]



USB or RS-232 control must be connected either one at a time. Connecting both types of cables may cause command confusion.

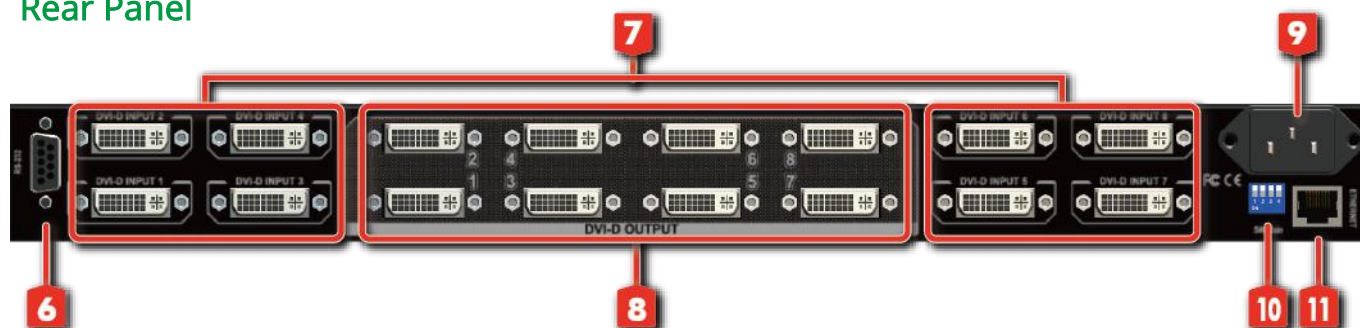
PANEL DESCRIPTIONS

Front Panel



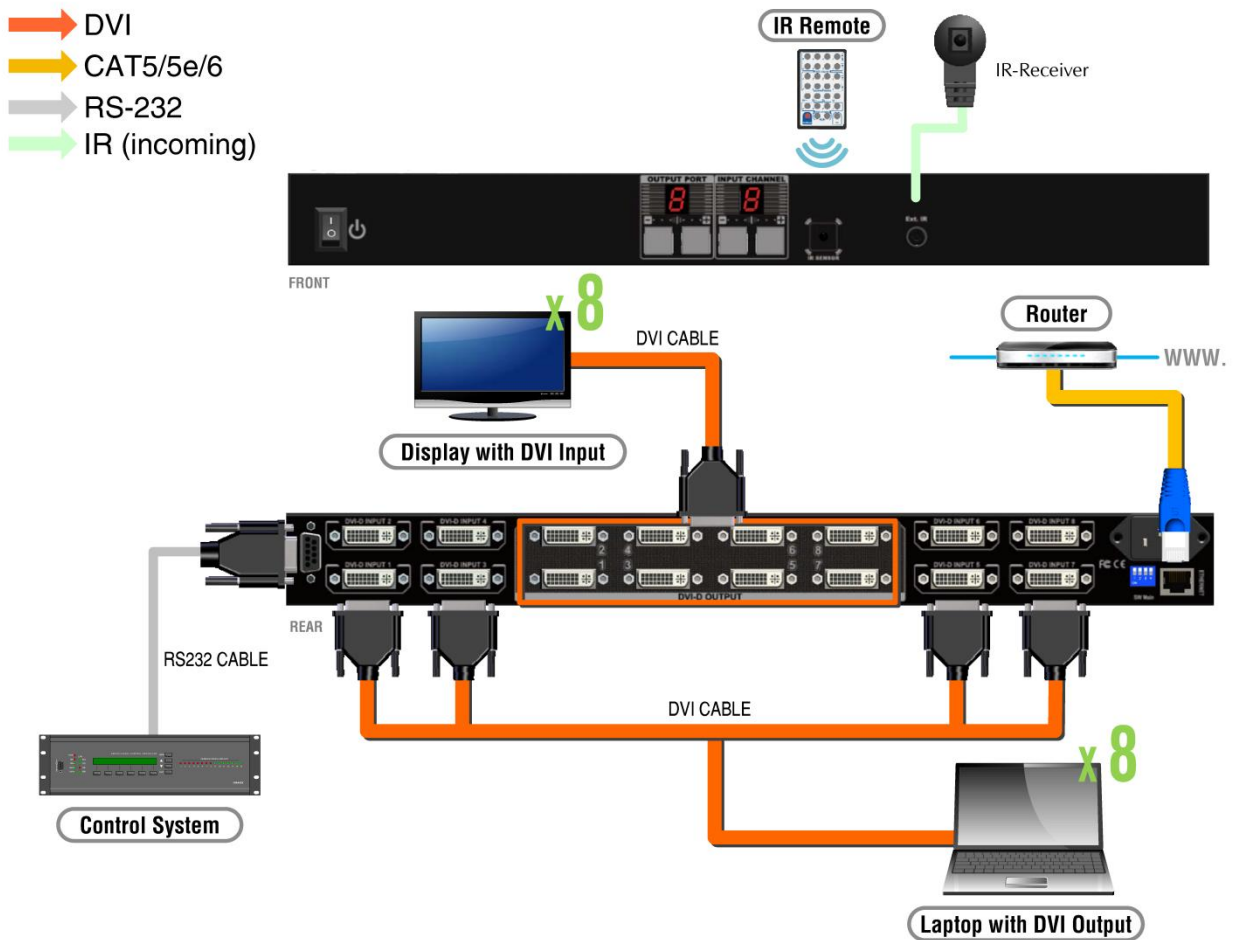
1. **Power:** Power control
2. **Seven Segment LED Indicators:** Control display
3. **Push button:** Front panel push buttons used to select the number of input source and display channel
4. **IR SENSOR:** IR sensor for receiving the IR commands from the IR remote
5. **Ext. IR:** IR receiver

Rear Panel



6. **RS-232:** RS-232 control port
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. **SW Main:** DIP switches (*see DIP Switch section*)
11. **ETHERNET**

CONNECTION DIAGRAM



HARDWARE INSTALLATION

AV-GM06Y3-S1

1. Connect all sources to DVI Inputs on the 8x8 DVI Matrix
2. Connect all outputs to DVI devices
3. Connect the power cord to the 8x8 DVI Matrix
4. Power on the 8x8 DVI Matrix AV-GM06Y3-S1

DIP SWITCH

The AV-GM06Y3-S1 has a built-in EDID profiles designed to cover most of the widely used resolutions for the ease of installation.

Default EDID

Native/preferred timing: 1680 x 1050p at 60Hz (16:9)



Detailed timing #1: 1920 x 1200p at 60Hz (16:9)

Standard timings supported:



1920 x 1080p at 60Hz	1152 x 870p at 75Hz
1600 x 1200p at 60Hz	1152 x 864p at 75Hz
1440 x 900p at 60Hz	1024 x 768p at 60Hz, 70Hz, 75Hz, 87Hz
1360 x 765p at 60Hz	800 x 600p at 56Hz, 60Hz, 72Hz, 75Hz
1280 x 1024p at 60Hz, 75Hz	720 x 400p at 70Hz
1280 x 960p at 60Hz	640 x 480p at 60Hz, 67Hz, 72Hz, 75Hz
1280 x 800p at 60Hz	

Learning EDID from front panel

The EDID learning function is only necessary whenever you encounter any display on the DVI output port that cannot play video properly. Because the DVI source devices and displays may have various level of capability in playing video, the general principle is that the source device will output the lowest standards in video resolutions to be commonly acceptable among all DVI displays. In this case, a 1024x768 output would probably be the safest choice. Nevertheless, the user can force the router to learn the EDID of the lowest capable DVI display among others to make sure all displays are capable to play the DVI signals normally by performing the procedures from the front panel of AV-GM06Y3-S1:

1. Select the desired **Output Port** and **Input Channel** that 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 of the display connected to the chosen output will be written to the chosen input.
4. If the operation is successful, the LED of **Input Channel** will show  (OK). If the operation is not successful, it will show  (failure).

If the user wants to restore the default EDID profile to any specified input, please follow the steps:

1. Select the desired input that needs to restore the default EDID profile matching the LED on the **Output Port** (not **Input Channel**!).
2. Press the “+” button of the **Output Port** and the “+” button of the **Input Channel** at the same time for 2 seconds.
3. Release these two buttons. The default EDID profile will be restored to the input port selected and display on the LED of **Output Port**. If the operation is successful, the LED of **Input Channel** will show  (OK). If the operation is not successful, it will show  (failure).

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] 1		OFF [□]	OFF [□]	ON [□]	OFF [□]
Firmware Update Mode 2	Block A [main]	ON [□]	OFF [□]	ON [□]	OFF [□]
	Block B [remote]	ON [□]	ON [□]	ON [□]	OFF [□]

Note

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

2 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-GM06Y3-S1. Execute the firmware update program on your PC via COM1 port connection to the RS-232 port of the AV-GM06Y3-S1.
2. Set the pin#1 and pin#3 of **[SW Main]** at ON [↓] for firmware update mode.
3. Set pin#2 at respective positions to assign which Block to be updated.
4. Power on the AV-GM06Y3-S1. The firmware update program should begin this update sequence automatically. If not, please check the RS-232 connection status between PC and AV-GM06Y3-S1.
5. After the OK message shows up to indicate the firmware update sequence for designated Block is complete, please turn off the AV-GM06Y3-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.

CHANNEL CONTROL

Method A: Push Button

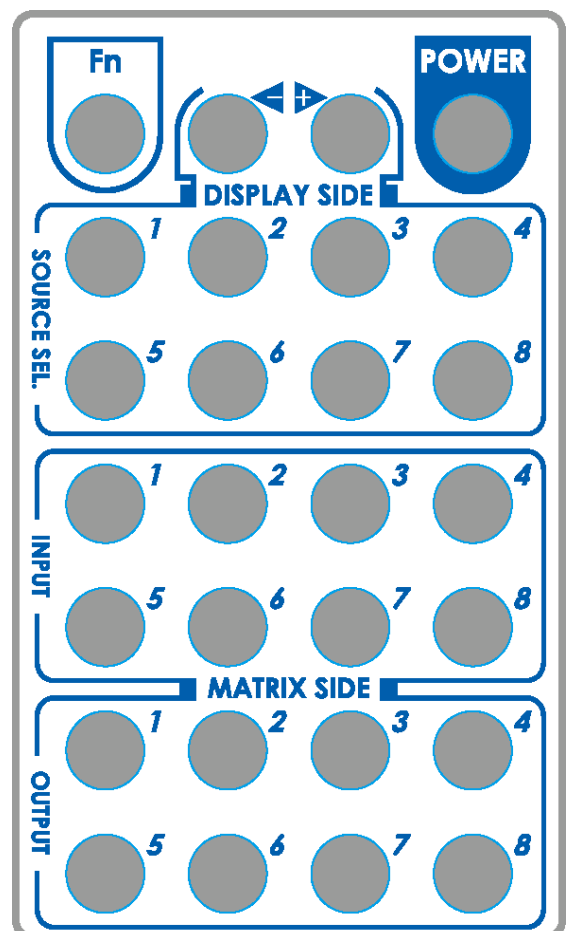
1. Use the “+” or “-” channel button on output port to select which port to be changed.
“+”: change selected output port in ascending order
“-”: change selected output port in descending order
2. Push the “+” or “-” channel button on Input channel to select the HDMI input source you want to display on 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

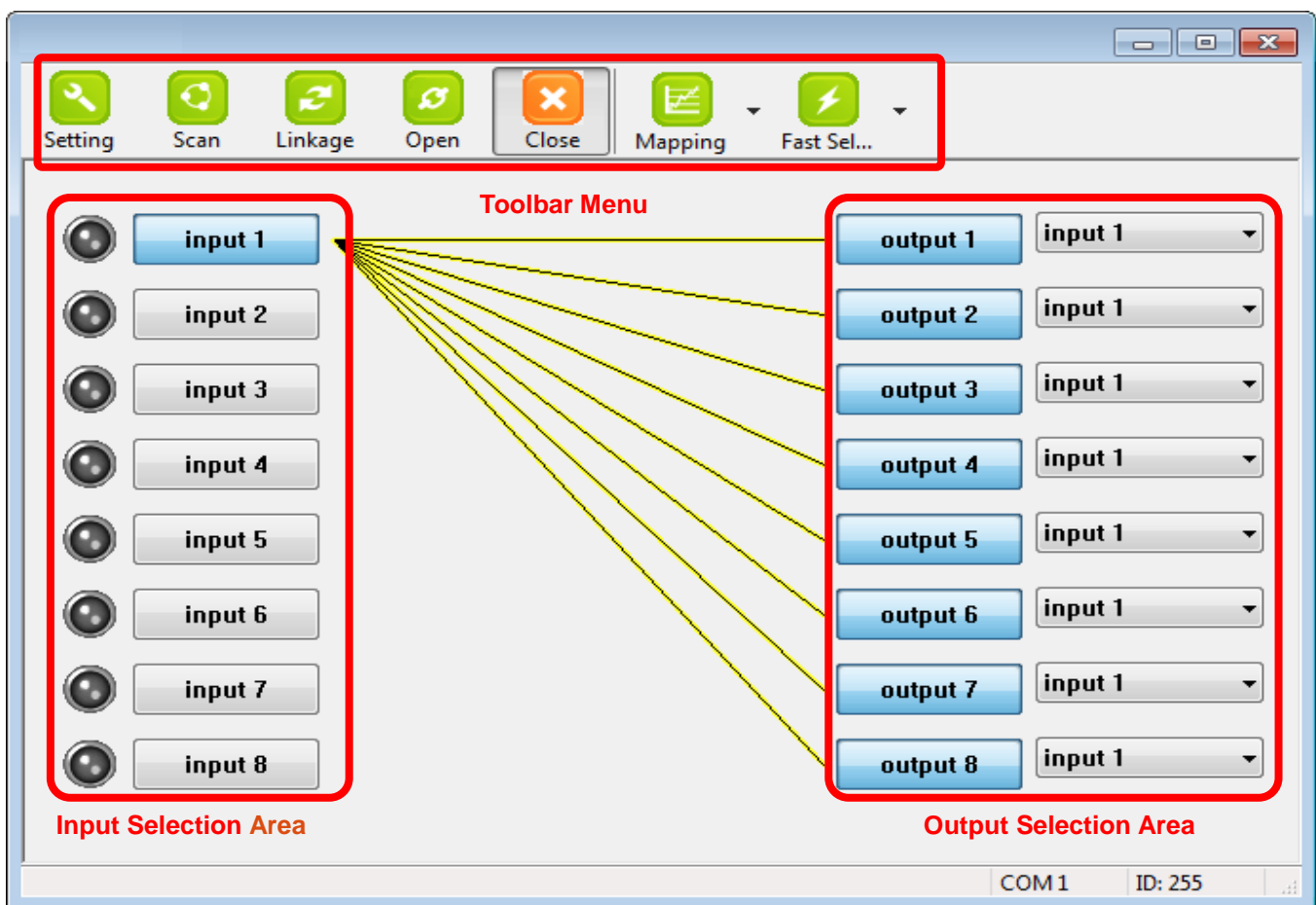
FUNCTION KEY

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 Ethernet

Using the control software located on the included software CD, it is possible to fully control the matrix switch by either RS-232 or Ethernet connection.

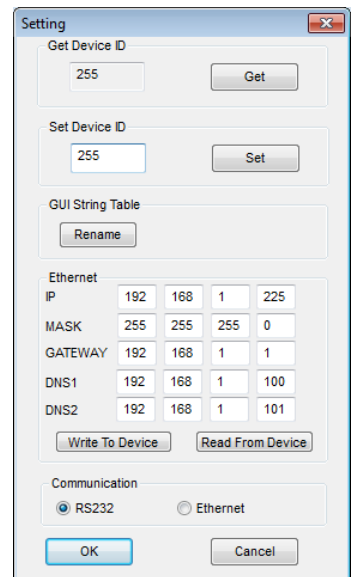
There are three primary sections of the control software interface: the toolbar at the top, the input selection area on the left and the output selection area on the right. The input and output selections are intuitive. The Toolbar details are explained below.



Setting

The “Setting” button brings up the communication configuration menu with the following controls:

- The “Get” button reads the connected device’s ID number.
- The “Set” button assigns a new device ID number to the connected device.
- The “Rename” button opens up the String Table menu which allows you to assign custom names to inputs and outputs within the software.
- The “Ethernet” section allows the user to read and write Ethernet settings from/to the unit. Ethernet setting changes must be made while under RS-232 control. Select the “Write To Device” button to store your setting changes.
- The “Communication” section allows the user to select between RS-232 and Ethernet control.



The Setting dialog box contains the following sections:

- Get Device ID:** A text field showing '255' and a 'Get' button.
- Set Device ID:** A text field showing '255' and a 'Set' button.
- GUI String Table:** A 'Rename' button.
- Ethernet:** A table for configuring network settings.

IP	192	168	1	225
MASK	255	255	255	0
GATEWAY	192	168	1	1
DNS1	192	168	1	100
DNS2	192	168	1	101

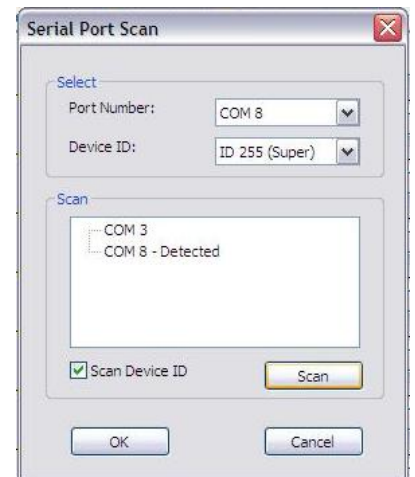
Below the table are 'Write To Device' and 'Read From Device' buttons.
- Communication:** Radio buttons for 'RS232' (selected) and 'Ethernet'.
- Buttons:** 'OK' and 'Cancel' at the bottom.

Note: After making changes to the Ethernet settings the user must power cycle the unit for the new settings to become effective. If the unit receives commands from both Ethernet and RS-232 ports at the same time the Ethernet commands will have priority.

Scan

The “Scan” button brings up the Serial Port Scan menu which allows the user to scan the computer’s COM ports for connected units.

- The “Select” section allows you to manually select the COM port and Device ID of the unit you wish to control.
- The “Scan” button will cause the software to scan all available COM ports and display which ports have connected devices.
- After you have selected the device you wish to control, click on “OK” to finalize your selection.



The Serial Port Scan dialog box contains the following sections:

- Select:** Dropdowns for 'Port Number' (set to 'COM 8') and 'Device ID' (set to 'ID 255 (Super)').
- Scan:** A list box showing 'COM 3' and 'COM 8 - Detected'.
- Buttons:** A checked checkbox for 'Scan Device ID', a 'Scan' button, and 'OK' and 'Cancel' buttons at the bottom.

Note: Selecting Device ID 255(Super) will cause the software to send commands that will affect units with any Device ID on the selected COM port.

Linkage

The “Linkage” button will cause the software to re-read the active Input and Output routes on the matrix switch. You may need to use this if you have made changes to the matrix switch by some method other than the control software.

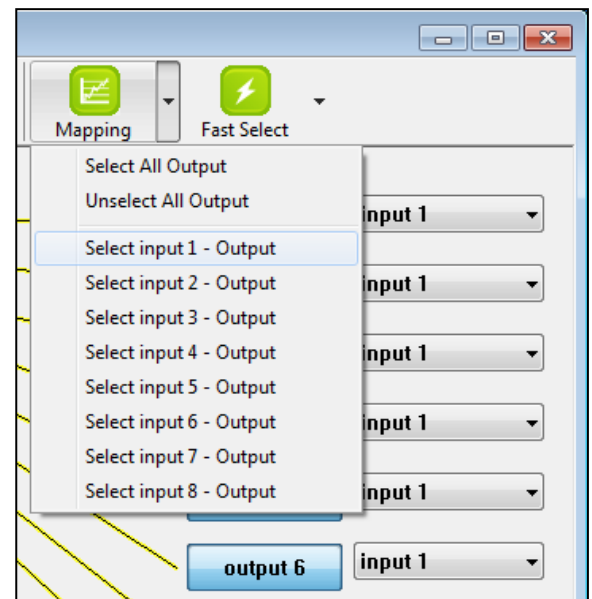
Open/Close

The “Open” and “Close” buttons are used to open and close the COM port or Ethernet connection to the matrix switch.

Mapping

The “Mapping” button provides an alternate method for selecting the Outputs you wish to begin connecting your Input to.

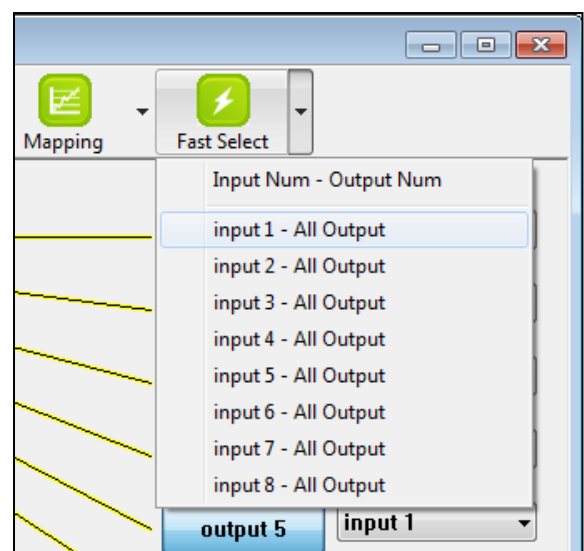
- Choose the “Select All Output” menu item then select an Input from the Input Selection Area on the left side to send that Input to all Outputs.
- Choose the “Unselect All Output” menu item to de-select all currently selected Outputs from the currently selected Input.
- Choose one of the “Select Input n” menu items to make that Input your active input. Then select all of the Outputs you wish to send that Input to from the list of Outputs in the Output Selection Area on the right side.

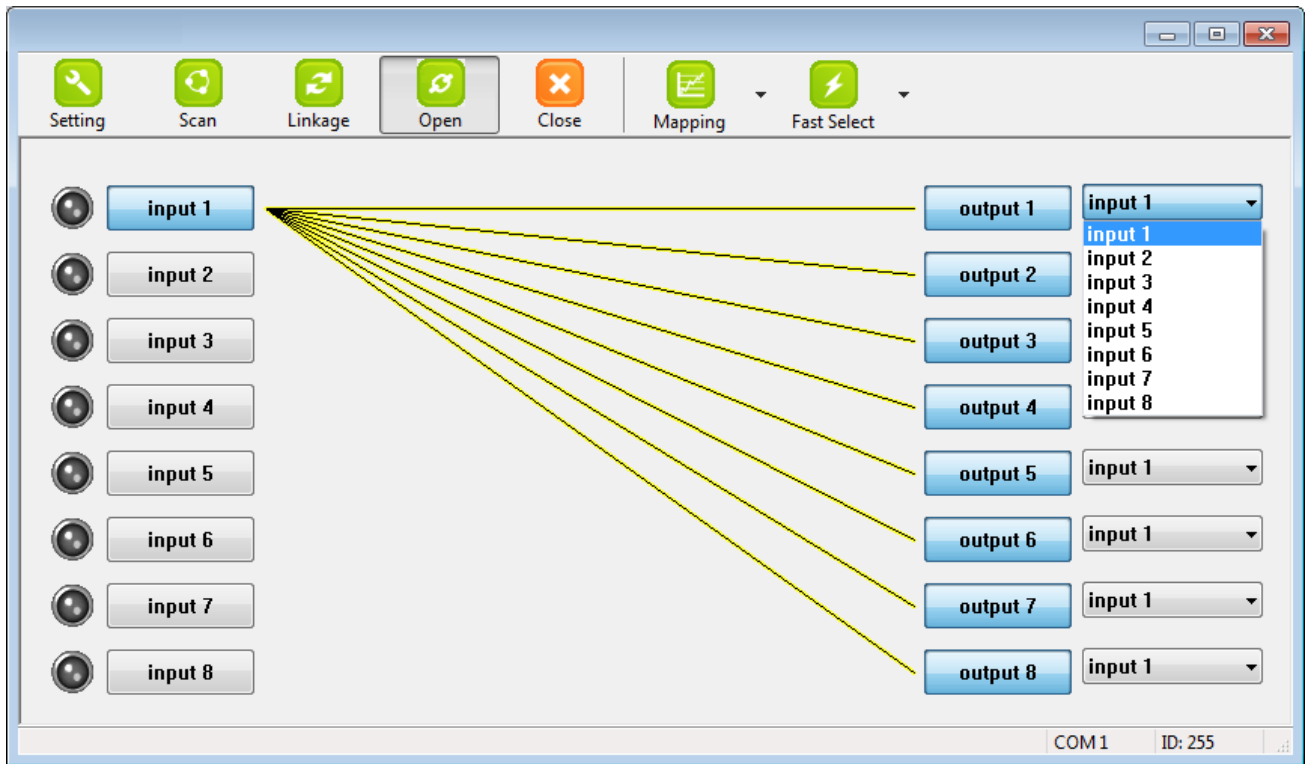


Fast Select

The “Fast Select” drop down allows you to quickly route single Inputs to single Outputs (1:1 mapping) or a single Input to all Outputs.

- Choose the “Input Num - Output Num” menu item to set each Input to route to the Output of the same number. (Input 1 to Output 1, Input 2 to Output 2, etc.)
- Choose one of the “Input n - All Output” menu items to send the selected Input to all Outputs.





Direct Input/Output Selection Area

It is also possible to directly select Inputs and Outputs using the buttons and drop down menus located in the Input and Output Selection Areas to the left and right.

- To directly send an input to an output, open up the drop down menu to the right of the Output and select the Input to route to it. The connection line will move to indicate the new route.
- To route an Input to more than one Output, select the Outputs you wish to affect in the Output Selection Area on the right (each button will turn grey to indicate it is selected). After you have selected all of the Outputs you wish to affect, select the Input you wish to send to those Outputs from the buttons in the Input Selection Area on the left. The connection lines will move to indicate the new routes.

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

WARRANTY

The SELLER warrants the **AV-GM06Y3-S1 8x8 DVI Matrix** to be 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-GM06Y3-S1** features and specifications is subject to change without further notice.

Support

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