8x8 DVI Matrix

Safety and Notice

The **MA-1188D** 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 **MA-1188D** 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 **MA-1188D** 8x8 DVI Matrix 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

- 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 unit can switch every output channels to any DVI input via push button, IR remote control or RS-232 control
- Easy installation with rack-mounting
- Fast response time- 2~5 seconds for channel switch
- Not HDCP compliant

PACKAGE CONTENTS

- 1x MA-1188D
- 1x IR receiver
- 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	MA-1188D
Technical	
Role of usage	True 8x8 DVI matrix switcher
DVI compliance	DVI 1.0
HDCP compliance	Yes
Video support	640x480(VGA)~1920x1200 (WUXGA),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 USB
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 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"]
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]	

PANEL DESCRIPTIONS

Front Panel
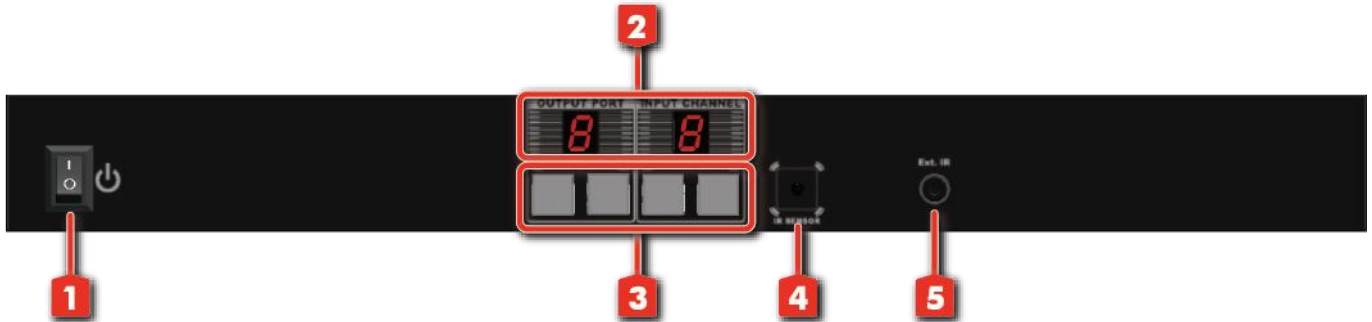
1. **Power:** Power control

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
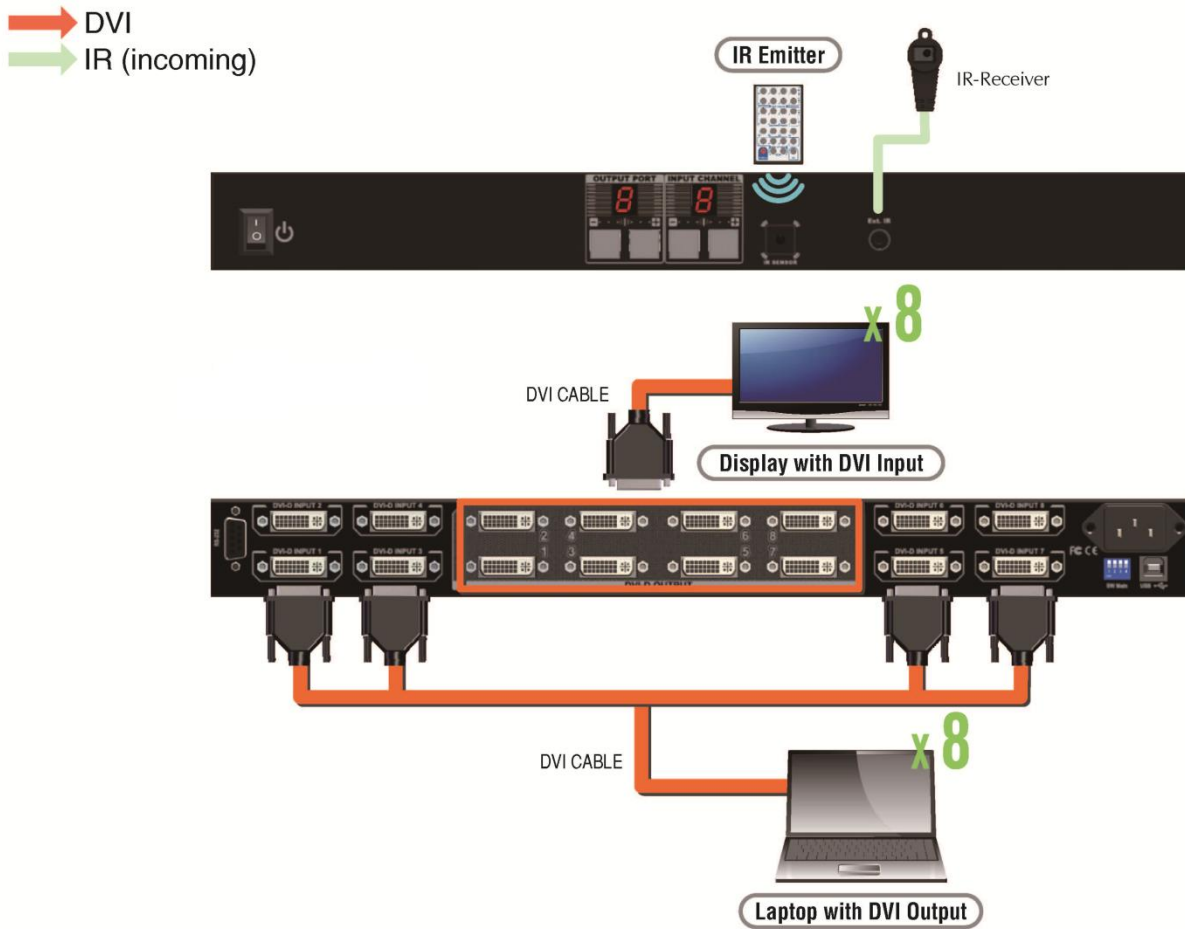
5. **Ext. IR:** IR receiver

Rear Panel
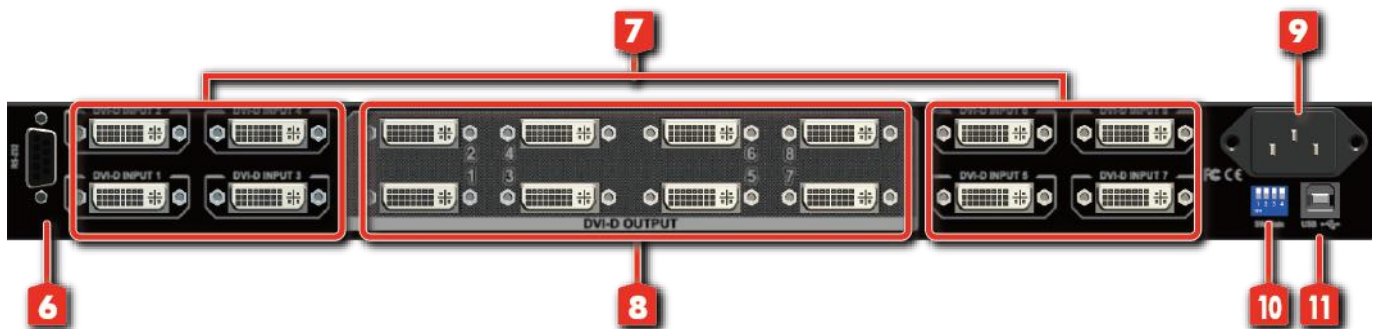
6. **RS-232:** RS-232 control port

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.USB: USB control port

CONNECTION DIAGRAM

HARDWARE INSTALLATION

MA-1188D

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 MA-1188D

DIP SWITCH

The MA-1188D 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 MA-1188D:

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 MA-1188D. Execute the firmware update program on your PC via COM1 port connection to the RS-232 port of the MA-1188D.*

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 MA-1188D. The firmware update program should begin this update sequence automatically. If not, please check the RS-232 connection status between PC and MA-1188D.*

5. *After the OK message shows up to indicate the firmware update sequence for designated Block is complete, please turn off the MA-1188D.*

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-1188D.*

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
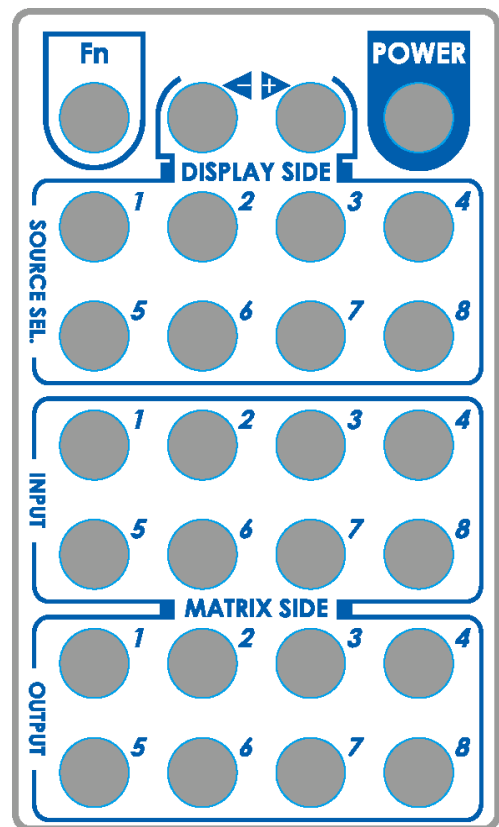
FUNCTION KEY

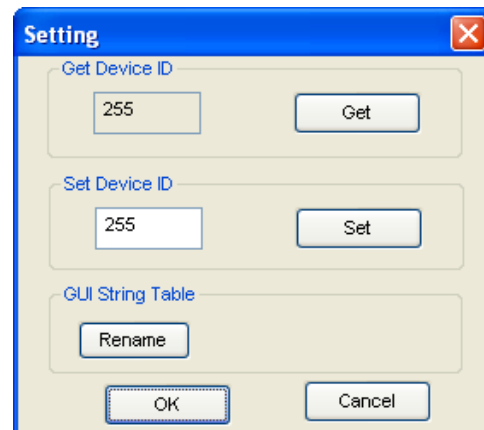|	
FN + SOURCE SEL. 1	Escape System LOCK
FN + SOURCE SEL. 2	Enter System LOCK (most buttons, IR control, and RS-232 control become inactive, except Escape System LOCK command)

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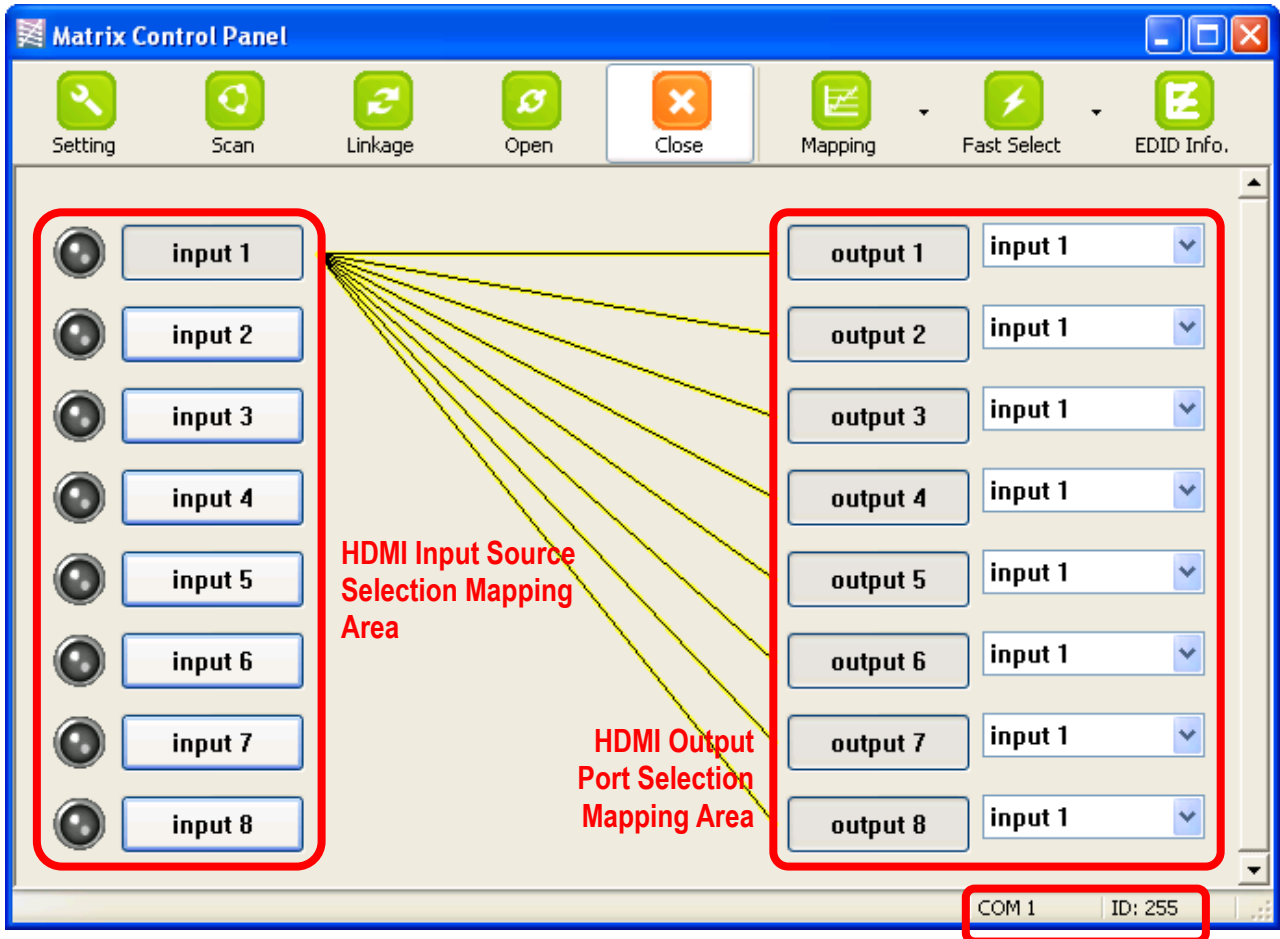
Software Control Menu

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).
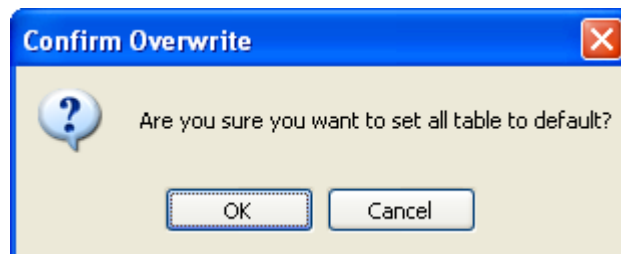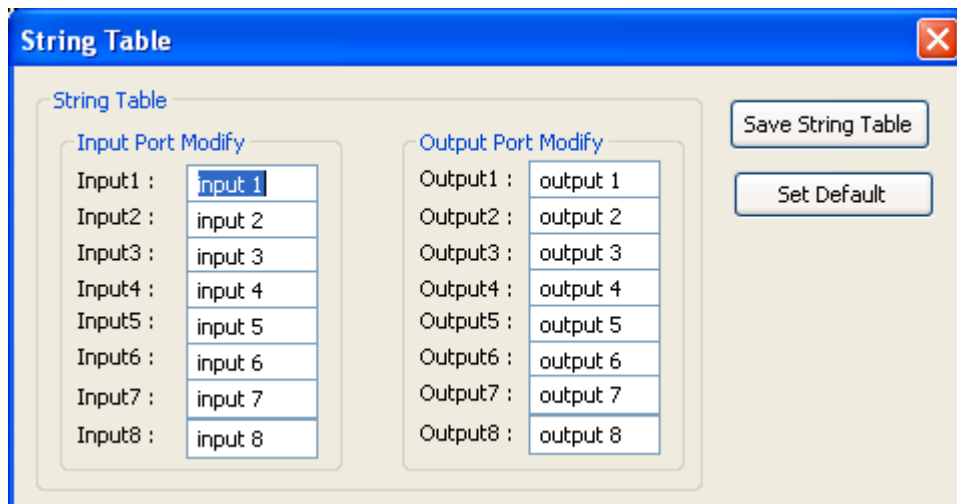
2. Scan button:

Serial Port Scan

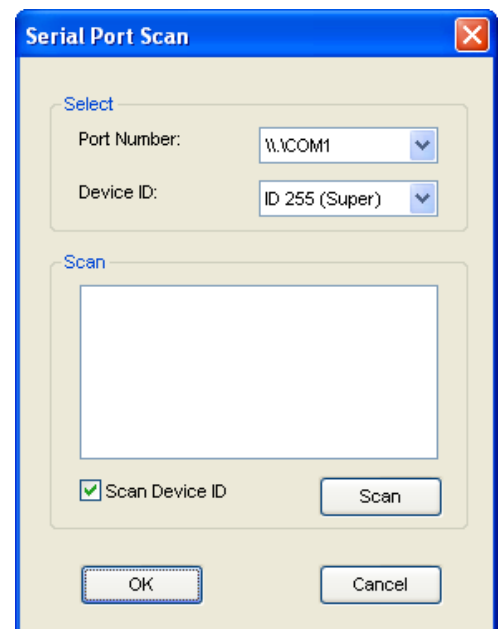Click Scan button, the machine will scan the all COM port and show them.
Select the RS232 serial port connected to the Matrix switch.
And set device ID 255 is for all device.
Only the same device id or 255 can get the command you sent.
Click OK. Get the new status from the Matrix switch (the port you 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.
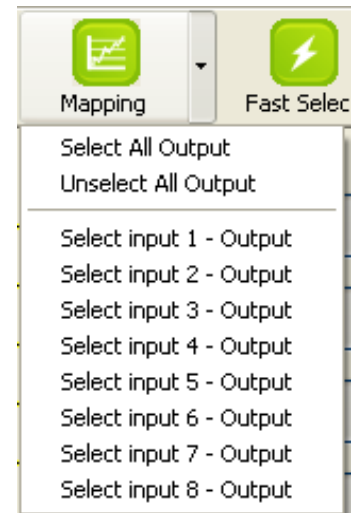
Unselect All Output
Release output selection.

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.
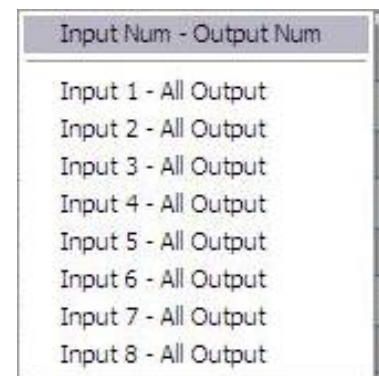
7. Output Port:

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:

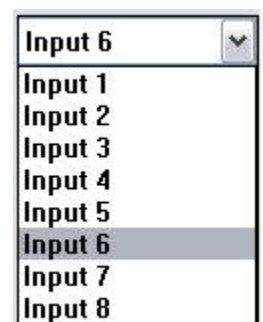Baud rate: 9600
Data length: 8bit
Parity check: No
Stop bit: 1

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

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.

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 **MA-1188D** 8x8 DVI Matrix free from defects in the material and workmanship for 1 year from the date of purchase from the SELLER or an authorized dealer. Should this product fail to be in good working order within 1 year 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 MA-1188D 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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