DV-HMSW4K-88 Matrix Manual

Based on firmware revision 1.20

244 Bergen Blvd Woodland Park NJ 07424   973-785-4347   www.fsrinc.com

PROPRIETARY INFORMATION

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UNPACKING

The DV-HMSW4K-88 8x8 Matrix Switcher package includes the following items;

- DV-HMSW4K-88 8x8 HDMI Switcher

- Power supply: 12VDC 5A

- 9 IR Receivers

- 8 IR Transmitters

- IR Remote Control

- Rack Ears

- CD with GUI, User's and Protocol Manual

HƆMI™
HIGH DEFINITION MULTIMEDIA INTERFACE

HDMI is a trademark of HDMI licensing, LLC.

Dolby is a trademark Dolby Laboratories

DTS is a trademark of DTS, Inc

Specifications may be changed without any notice in order to improve the function of the product.

LIMITED WARRANTY

The DV-HMSW4K-88 Matrix is warranted against failures due to defective parts or faulty workmanship for a period of three years after delivery to the original owner. During this period, FSR will make any necessary repairs or replace the unit without charge for parts or labor. Shipping charges to the factory or repair station must be prepaid by the owner, return-shipping charges (via UPS Ground) will be paid by FSR.

This warranty applies only to the original owner and is not transferable. In addition, it does not apply to repairs done by other than the FSR factory or Authorized Repair Stations.

This warranty shall be cancelable by FSR at its sole discretion if the unit has been subjected to physical abuse or has been modified in any way without written authorization from FSR. FSR's liability under this warranty is limited to repair or replacement of the defective unit.

FSR will not be responsible for incidental or consequential damages resulting from the use or misuse of its products. Some states do not allow the exclusion of incidental or consequential damages, so the above limitations may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Warranty claims should be accompanied by a copy of the original purchase invoice showing the purchase date (if a Warranty Registration Card was mailed in at the time of purchase, this is not necessary). Before returning any equipment for repair, please read the important information on service below.

SERVICE

Before returning any equipment for repair, please be sure that it is adequately packed and cushioned against damage in shipment, and that it is insured. We suggest that you save the original packaging and use it to ship the product for servicing. Also, please enclose a note giving your name, address, phone number and a description of the problem.

NOTE: all equipment being returned for repair must have a Return authorization (RMA) Number. To get a RMA Number, please call the FSR Service Department (1-800-332-FSR1). Please display your RMA Number prominently on the front of all packages.

CONTACT INFORMATION

FSR INC.

244 Bergen Blvd.

Woodland Park, NJ 07424

Phone: (973) 785-4347

Order Desk Fax: (973) 785-4207

E-mail: sales@fsrinc.com

Web Site: *http://www.fsrinc.com*

SURGE PROTECTION DEVICE RECOMMENDED

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

SAFETY

- All the safety and user manual should be read before the appliance is operated.

- The safety and operating instructions should be retained for future reference.

- Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

- Do not use this equipment near wet place.

- This product should be operated only from the type of power sources indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your local power company.

- This equipment may be equipped with a 3 wire grounding-type plug, a plug having a third (grounding) pin. This pin will only fit in to a grounding type power outlet. This is a safety feature. If you are unable to insert the plug in to the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

- Openings on the case are provided for ventilation and to ensure reliable operation of the equipment and to protect it from overheating. The openings should never be blocked.

- Do not use any damaged power cords or plugs, or loosed outlets, this may cause electrical shock or fire.

- Do not put heavy articles such as other equipments on this product. Keep it away from liquid, magnetic and flammable substances.
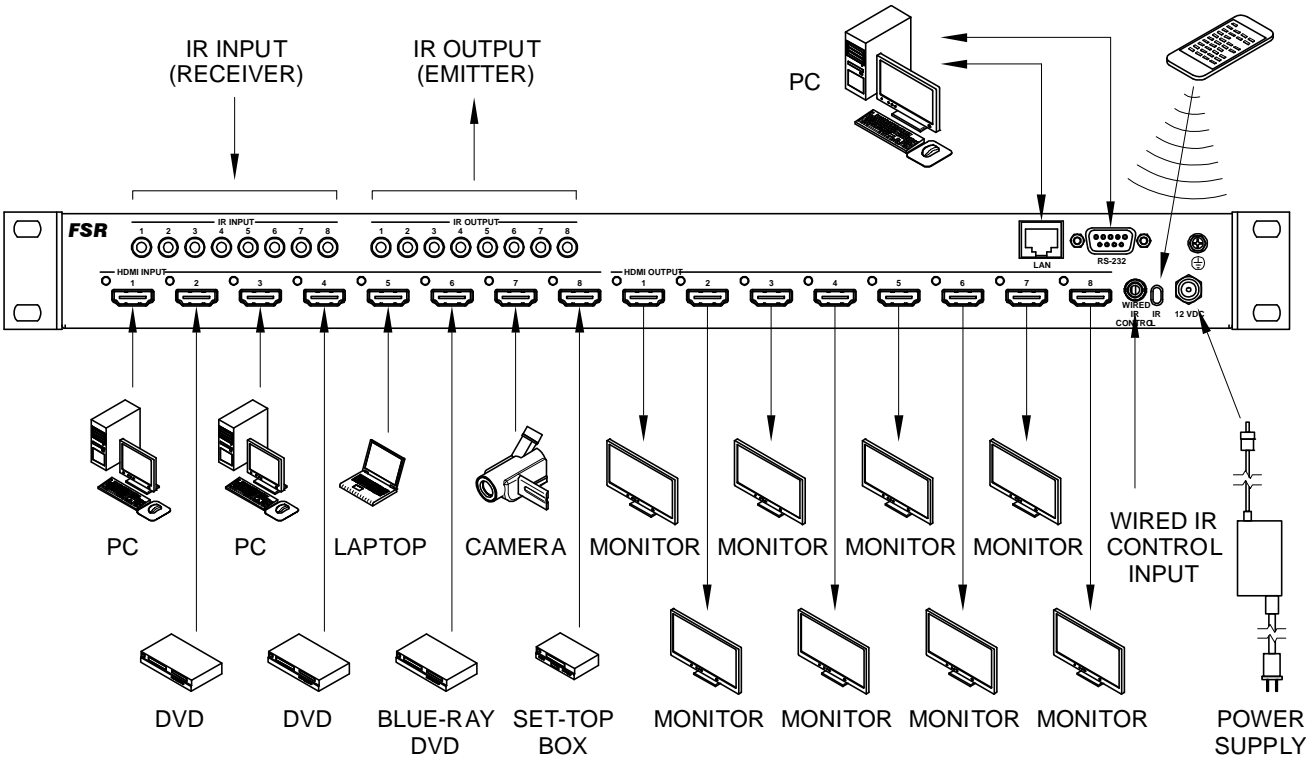
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DESCRIPTION

The DV-HMSW4K-88 8x8 HDMI Matrix routes eight HD sources to any eight HDTV displays.   The unit supports 1080p Full HD up to 4K plus all 3D formats, along with multichannel digital audio formats such as PCM, Dolby® True HD and DTS-HD® Master Audio™.   Switching and other commands can be implemented using the front-panel push buttons, IR remote control, RS-232, and via TCP/IP.

Features:
- Supports resolutions up to 1080p @ 60Hz, 48-bit deep color, 4k @ 30Hz
- 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
- PCM, Dolby TrueHD and DTS-HD master audio pass through HDMI output
- Multiple switching mode, Front Panel push-buttons, IR remote control, RS-232 control, and TCP/IP control
- Easy installation with rack-mounting ears
- Full 3D pass through
- HDCP compliant
- Includes 9 IR receivers, 8 IR Transmitters and a handheld IR Remote

APPLICATION DIAGRAM

IR INPUT
(RECEIVER)

IR OUTPUT
(EMITTER)

PC

FSR

IR INPUT
1 2 3 4 5 6 7 8

IR OUTPUT
1 2 3 4 5 6 7 8

LAN

RS-232

HDMI INPUT
1 2 3 4 5 6 7 8

HDMI OUTPUT
1 2 3 4 5 6 7 8

WIRED
IR
CONTROL

IR

12 VDC

PC

PC

LAPTOP

CAMERA

MONITOR

MONITOR

MONITOR

MONITOR

WIRED IR
CONTROL
INPUT

DVD

DVD

BLUE-RAY
DVD

SET-TOP
BOX

MONITOR

MONITOR

MONITOR

MONITOR

POWER
SUPPLY

DIMENSIONS

DV-HMSW4K-88

IR   POWER   ─── INPUT SELECT ─── 1T1   MENU   UP   ESC   **FSR**

DV PRO - HDMI 8x8 4K MATRIX SWITCHER

LOCK   ─── OUTPUT SELECT ─── ALL   SELECT   DOWN   ENTER

1.25   1.74

18.34

19.02

17.32 CHASSIS WIDTH

FSR   IR INPUT   IR OUTPUT   LAN   RS-232
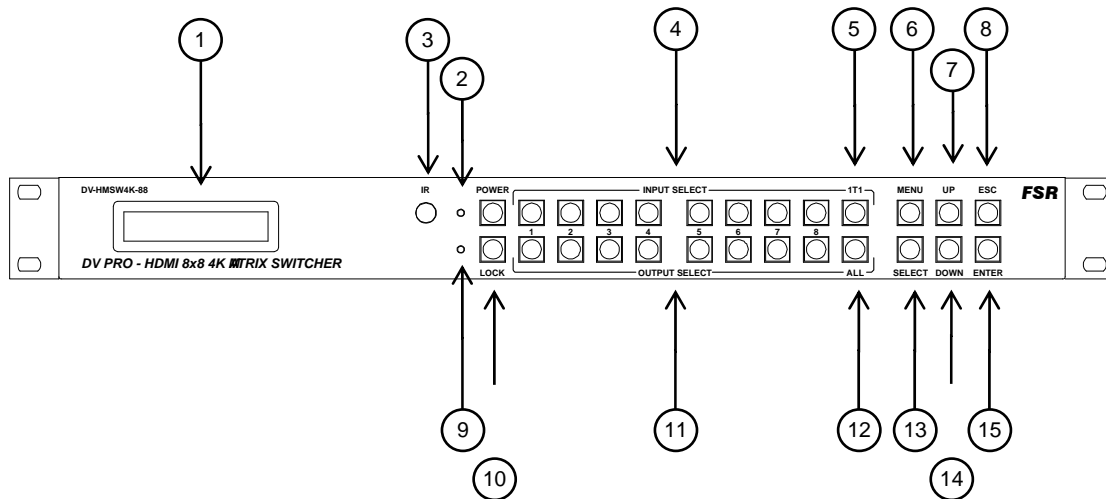
HDMI INPUT   HDMI OUTPUT   WIRED IR CONTROL   12 VDC

DEPTH INSIDE RACK IS APPROXIMATELY 9.25"

PANEL DESCRIPTION

Front Panel

1. LCD display — Shows the status of input-output selection, EDID info and other information.

2. Power LED indicator — Blue (on), Red (off, standby). Press to turn ON. Press and hold to turn OFF

3. IR receiver window for the Matrix IR remote control.

4. HDMI input selection buttons 1 to 8 — Press to select the input from 1 to 8.

5. 1T1 button — Press to mirror all inputs and outputs (e.g. input 1 to output 1, input 2 to output 2 and so on).

6. MENU — Press the MENU then use the UP and DOWN buttons to scroll through the following five sub-menus:

    1. EDID Setting

    2. Set EDID to default setting

    3. Network Config

    4 Tech Support (Informational)

    5. Firmware version (Informational)

7. UP selection button

8. ESC — Press to quit menu (escape)

9. LOCK LED indicator — Panel is locked when lit.

10. LOCK button — Press and hold to lock and unlock Front Panel

11. HDMI output selection button 1 to 8 — Press to select the output from 1 to 8.

12. ALL button — Routes the specified input to all the outputs
13. SELECT button
14. DOWN button
15. ENTER button

Back Panel
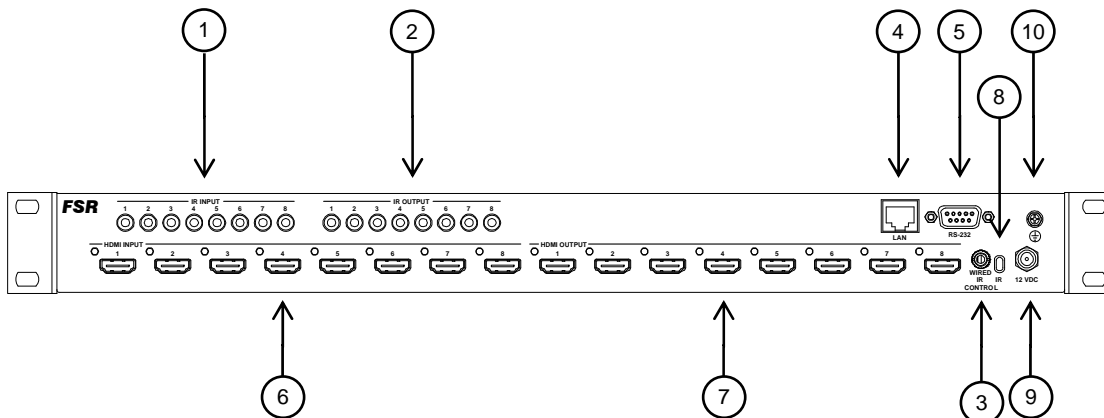
1. 8 IR inputs 3.5mm stereo phone-jack
2. 8 IR outputs 3.5mm stereo phone-jack
3. 3.5 mm stereo phone-jack Matrix IR receiver input
4. LAN port
5. RS-232 port
6. 8 HDMI inputs
7. 8 HDMI outputs
8. Matrix remote control IR receiver window
9. Power input
10. Ground terminal screw

FRONT PANEL OPERATION

MENU

Press the MENU and then use the UP and DOWN buttons to scroll through the following five sub-menus:

1. EDID Setting
2. Set EDID to default setting
3. Network Configuration
4. Tech Support (Informational)
5: Firmware version (Informational)

EDID Setting Sub-menu

Front panel EDID menu				
Input(s)	**Video**	**Audio**		
1, 2, 3, 4, 5, 6, 7, 8 or ALL	1080i 60Hz	2.0Ch	5.1Ch	7.1Ch
	1080p 60Hz			
	1080p 3D 60Hz			
	4Kx2K 30Hz			
	1024x768 60Hz	No Audio		
	1920x1080 60Hz			
	1920x1200 60Hz			
	COPY OUTx EDID Copy the Output EDID to the specified input(s)			

1. Press the MENU button to display "1. EDID Setting."

2. Press the SELECT button.

3. Use the UP / DOWN buttons to scroll through inputs 1 through 8 or "ALL".   The "ALL" selection will set all inputs to the currently selected EDID settings.

4. Press the SELECT button to select a specific input or all inputs.

5. Scroll to the desired resolution and press SELECT.

NOTE: The EDID for an output can also be copied and used for a specified input(s) by scrolling to "COPY OUTx EDID" and selecting.   The display must be connected to the DV-HMSW4K-88 prior to performing the EDID settings.

6. Scroll to the desired audio channel and press SELECT.

7. Press the ENTER button to store the settings and exit the EDID menu.

Set the EDID to the Default Setting Sub-Menu

1. Press the MENU button to display "1. EDID Setting"

2. Use the DOWN button to scroll to "2. Set EDID to default setting".

3. Press the SELECT button to display "Reset EDID?"

4. Press the SELECT button again to toggle and highlight "Yes"

5. Press the ENTER button to reset all the current EDID settings to the factory default (Factory default is 1080p 60Hz 2.0 channel audio)

Network Configuration Sub Menu

1. Press the MENU button to display "1. EDID Setting".

2. Use the DOWN button to scroll to "3. Network Configurations".

3. Press the SELECT button repeatedly to select either IP, Gateway (GWAY) or Subnet Mask (SMSK).

4. When the desired setting is highlighted and flashing press ENTER.

5. Set the first octet by using the UP or DOWN buttons and /or by using the input select buttons to enter a numeric value.   **NOTE**: button "1T1" is used to set a 9 and button "ALL" is used to set a "0".   Press the SELECT button to accept the setting and move to the next octet.

6. When all the network settings are completed press the ENTER button.   The LCD display will prompt for a reboot.   Remove power from the matrix by unplugging it to reboot and store the settings.

Tech Support Sub-Menu (Informational)

1. Press the MENU button to display "1. EDID Setting"

2. Use the DOWN button to scroll to display "4. Tech Support".

3. Press the SELECT button to display the FSR Tech support contact information.

Firmware version Sub-Menu (Informational)

1. Press the MENU button to display "1. EDID Setting"

2. Use the DOWN button to scroll to display "5: Firmware version"

3. Press the SELECT pushbutton to display the current DV-HMSW4K-88 firmware

version information.

MATRIX ROUTING

MANUAL ROUTING:

To select and route an input to an output press the desired INPUT SELECT button and then an OUTPUT SELECT (or vice versa) button to specify a route. The DV-HMSW4K-88 will switch and the current route status will be shown on the LCD Display.

1T1 (one to one) ROUTING:

The 1T1 button, when pressed, will automatically route each input to its respective output.   IE: Input 1 to Output 1, Input 2 to Output 2 and so on.

ALL ROUTING:

The ALL button, when pressed, will automatically route a selected input to all of the outputs.
To use the "ALL" function:

1. Press the ALL button.   The DV-HMSW4K-88 will prompt for an INPUT
2. Select the desired INPUT to be routed to "ALL" outputs.
3. Press the ENTER button.   The ALL route will be stored and displayed on the LCD display.

IR REMOTE CONTROL ROUTING

Set EDID

Succession	Setting the EDID with the IR remote control								
1st	Video	1080i		1080p		1080p 3D		4K	
2nd	Audio	2.0Ch		5.1Ch				7.1Ch	
3rd	Input	1	2	3	4	5	6	7	8	ALL

1. Press the desired resolution button on the EDID section of the remote control.
2. Press the desired Audio channel button to select audio type.
3. Select a single input (or the "ALL" button to select all inputs) to set the EDID settings selected above.

Copy EDID

Succession	Coping the EDID with the IR remote control									
1st	Output	1	2	3	4	5	6	7	8	
2nd	Copy									
3rd	Input	1	2	3	4	5	6	7	8	ALL

1. Press an output number
2. Press COPY
3. Press an input number or ALL

MATRIX ROUTING

To select and route an input to an output simply press the desired OUTPUT SELECT button and then INPUT SELECT (or vice versa) button on the remote to specify a route. The DV-HMSW4K-88 will switch and the current route status will be shown on the LCD Display.

PTP (one to one) ROUTING:

The 1T1 button, when pressed, will automatically route each input to its respective output.   IE: Input 1 to Output 1, Input 2 to Output 2 and so on.

ALL ROUTING:

The ALL button (output), when pressed, will automatically route a selected   input to all of the outputs.
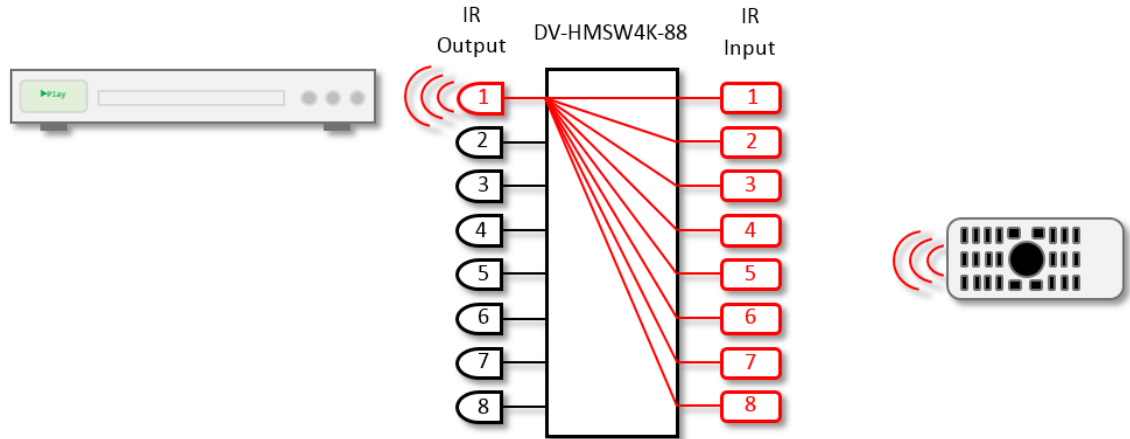
To use the "ALL" (output) function:

Select the desired INPUT to be routed to "ALL" outputs.
Press the ALL (output) button.
The ALL route will be stored and displayed on the LCD display.

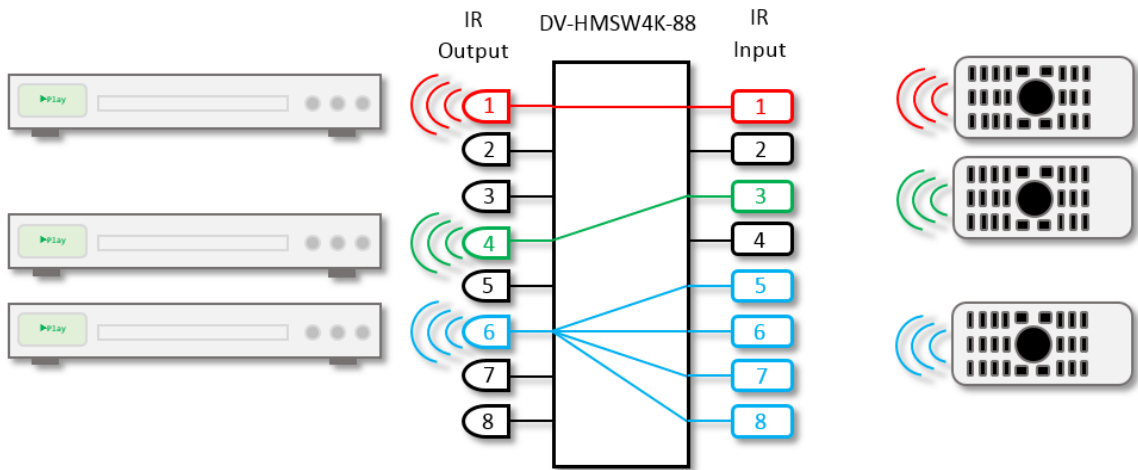**NOTE**: The settings will be discarded if the sequence in not performed
within 5 seconds

MATRIX IR ROUTING EXAMPLES

The IR signal follows the HDMI signal routing in reverse direction

HDMI: Input 1 to all outputs

IR: All inputs to output 1

The IR signal follows the HDMI signal routing in reverse direction

HDMI: Input 1 to output 1

IR: Input 1 to output 1

HDMI: Input 4 to output 3

IR: Input 3 to output 4

HDMI: Input 6 to outputs 5 - 8

IR: Input 5 - 8 to output 6

GRAPHICAL USER INTERFACE (GUI)

The GUI provided is limited to firmware updates, device tag and static network settings.

Operating System: Microsoft Windows Vista, 7, 8 and 8.1

To change the network settings and/or device tag click on the "General" tab
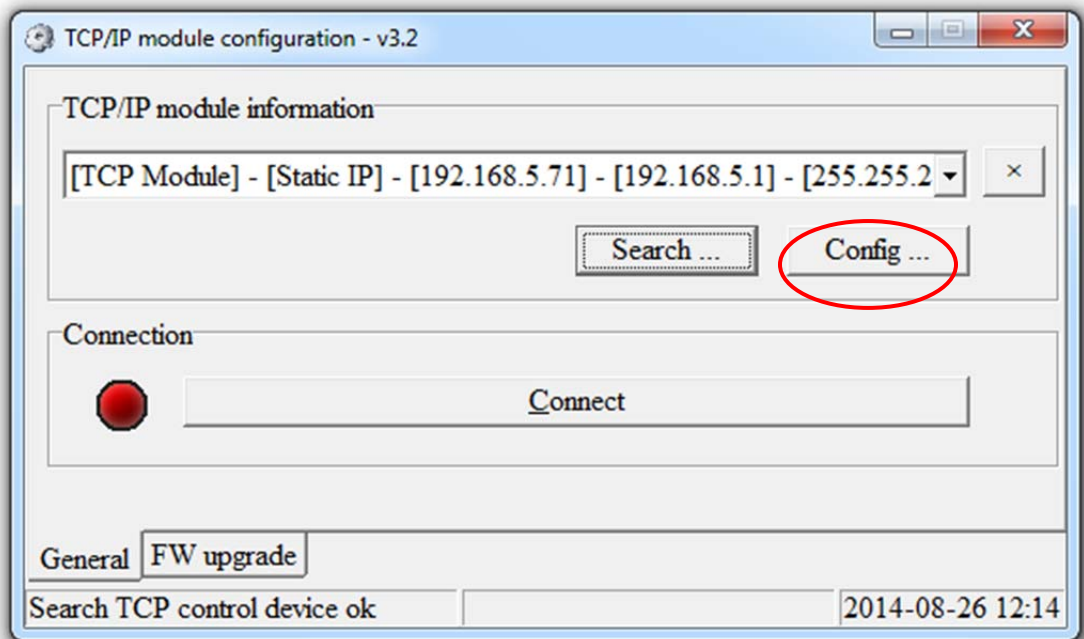and then click on "Search"

NOTE: If the GUI is not able to find the Matrix on a network due to traffic, connect the
Matrix directly to the computer with a straight through or crossover Ethernet cable.
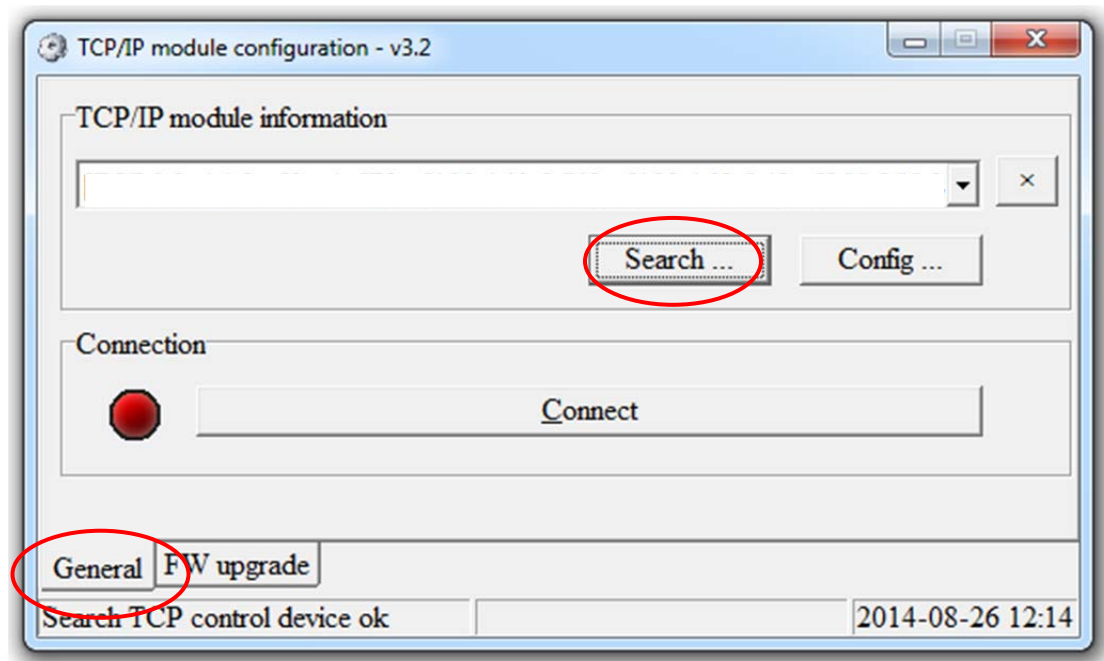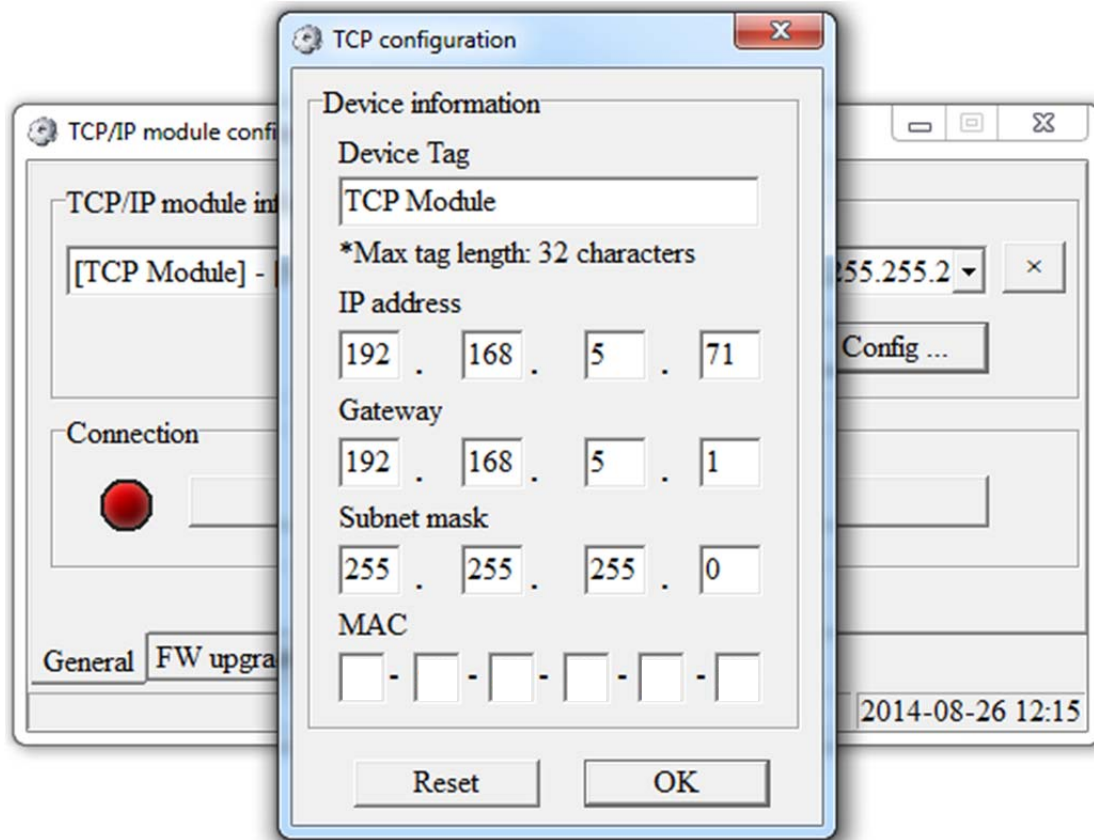
Select the desired matrix from the drop down menu and click on "Yes"
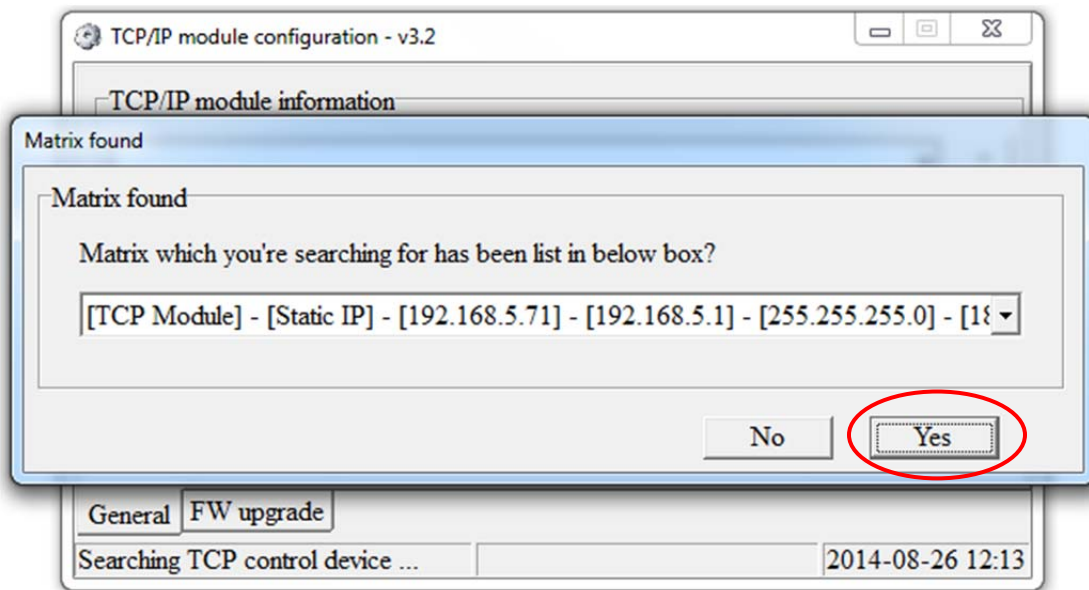
Click on "Configure"

Change the desired network settings and/or Device Tag and click on "Ok"
To reset the network settings and the Device Tag, click on "Reset" and then "Ok"

TCP configuration

Device information

Device Tag

TCP Module

*Max tag length: 32 characters

IP address

192 . 168 . 5 . 71

Gateway

192 . 168 . 5 . 1

Subnet mask

255 . 255 . 255 . 0

MAC

[ ] - [ ] - [ ] - [ ] - [ ] - [ ]

Reset   OK

TCP/IP module confi

TCP/IP module inf

[TCP Module] -

Connection

General | FW upgra

255.255.2 ▾   ×

Config ...

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To update the firmware, click on the "FW upgrade" tab.
Click on the folder icon to locate the firmware file
Click on "Upgrade"

NOTE: Do not power off the matrix while updating.
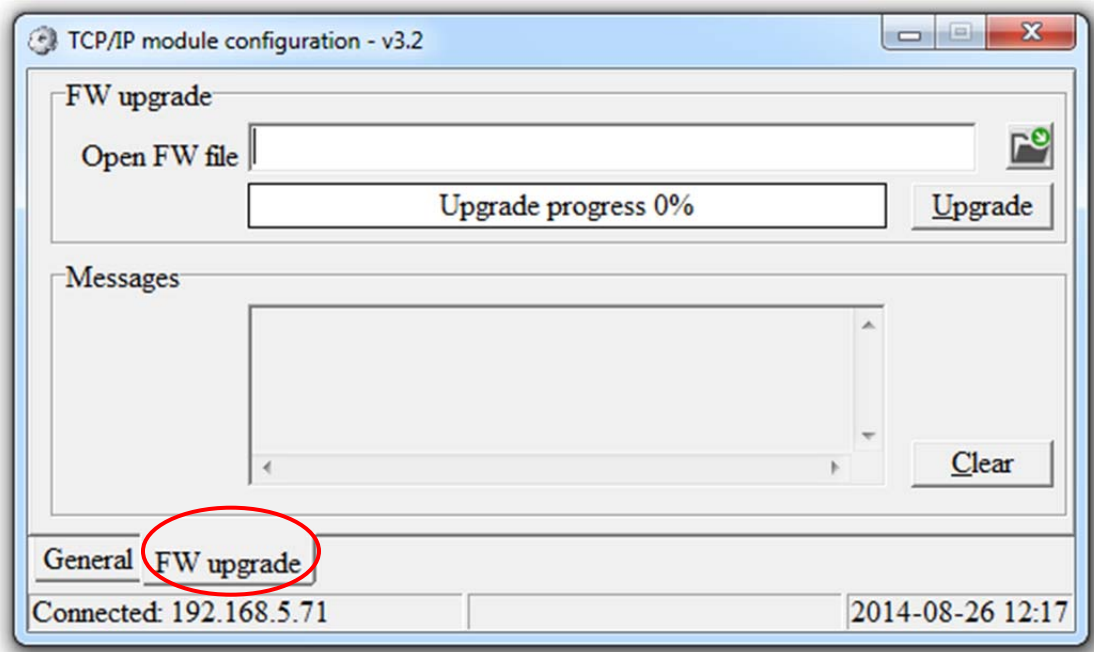
WEB INTERFACE CONTROL

The DV-HMSW4K-88 can be control via a Web browser, open a Web browser and type the unit's IP address.

Matrix-8x8 Web Server

Output1 From:
⦿ Input1 ○ Input2 ○ Input3 ○ Input4 ○ Input5 ○ Input6 ○ Input7 ○ Input8

Output2 From:
○ Input1 ⦿ Input2 ○ Input3 ○ Input4 ○ Input5 ○ Input6 ○ Input7 ○ Input8

Output3 From:
○ Input1 ○ Input2 ⦿ Input3 ○ Input4 ○ Input5 ○ Input6 ○ Input7 ○ Input8

Output4 From:
○ Input1 ○ Input2 ○ Input3 ⦿ Input4 ○ Input5 ○ Input6 ○ Input7 ○ Input8

Output5 From:
○ Input1 ○ Input2 ○ Input3 ○ Input4 ⦿ Input5 ○ Input6 ○ Input7 ○ Input8

Output6 From:
○ Input1 ○ Input2 ○ Input3 ○ Input4 ○ Input5 ⦿ Input6 ○ Input7 ○ Input8

Output7 From:
○ Input1 ○ Input2 ○ Input3 ○ Input4 ○ Input5 ○ Input6 ⦿ Input7 ○ Input8

Output8 From:
○ Input1 ○ Input2 ○ Input3 ○ Input4 ○ Input5 ○ Input6 ○ Input7 ⦿ Input8

Video Output Enable:
☑ Output1 ☑ Output2 ☑ Output3 ☑ Output4 ☑ Output5 ☑ Output6 ☑ Output7 ☑ Output8

System Power: **Beep:**
⦿ On ○ Off   ○ On ⦿ Off
[Submit]

Switching and additional Matrix settings can be configured via Serial and TCP/IP (TELNET).   Refer to the DV-HMSW4K-88 Serial protocol manual for additional information.

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DEFAULT COMMUNICATION SETTINGS

Ethernet	RS-232			
IP: 192.168.5.71	**Baud rate:** 57600 bps	DTE	DB-9	DCE
Gateway: 192.168.5.1	**Data bits:** 8	**PC**	**Pin**	**Matrix**
Subnet mask: 255.255.255.0	**Parity:** None	Rx	2	Tx
Port: 23	**Stop bits:** 1	Tx	3	Rx
Connection type: Straight-through or crossover	**Flow control:** None **Connection type:** Straight-through	GND	5	GND

NOTE: The Matrix can be controlled by a third party controller using a persistent or non-persistent TCP/IP connection.

SPECIFICATIONS

- Bandwidth: 6.75Gbps
- Video Input Connectors: 8 HDMI Type A, 19-pin, female
- Video Output Connectors: 8 HDMI Type A, 19-pin female
- RS-232 serial port: DB-9 female
- TCP/IP Control: RJ-45 female
- IR control hard wired inputs and outputs: 3.5mm stereo jack
- Rack: 1 RU rack height, rack ears included
- Dimensions: (W x D x H): 17.3" x 9" x 1.75" without feet
- Shipping Weight: 6lbs.
- Operating Temperature: 32°F to 104°F
- Storage Temperature : -4°F to 140°F
- Power Supply: 12VDC 5A