# 4K 7x1 Multi-format Presentation Switcher
# DV-MFSS-71

Based on firmware revision 1.11 and FSR1.0.0.L



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

## PROPRIETARY INFORMATION

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## UNPACKING

The DV-MFSS-71 7x1 Switcher package includes the following items:

- DV-MFSS-71 7x1 switcher
- IR remote control
- Rack ears
- Under table brackets
- User's manual
- 12VDC 4A power supply
- 8 Screws
- 9 3-Pin screw terminal

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

- HDMI is a trademark of HDMI licensing, LLC.
- DisplayPort
- Specifications may be changed without any notice in order to improve the function of the product.

## LIMITED WARRANTY

The DV-MFSS-71 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
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## 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 equipment on this product. Keep it away from liquid, magnetic and flammable substances.

# TABLE OF CONTENTS

## DESCRIPTION

The DV-MFSS-71 7 x 1 Seamless Switcher has been designed to address the needs of the corporate, education, medical, and houses of worship fields. It can be easily operated from the front panel or remotely with a Flex Control System to create a powerful and cost effective switching system.

The DV-MFSS-71 features 4 HDMI, 1 Display Port, 1 DVI and 1 HD-15 video inputs. The HDMI inputs are HDCP compliant and accept resolutions up to 4K 2160p (3840x2160) @ 30Hz. The HD-15 input supports VGA, RGB, and YPbPr input up to 1920x1200 @ 60Hz.

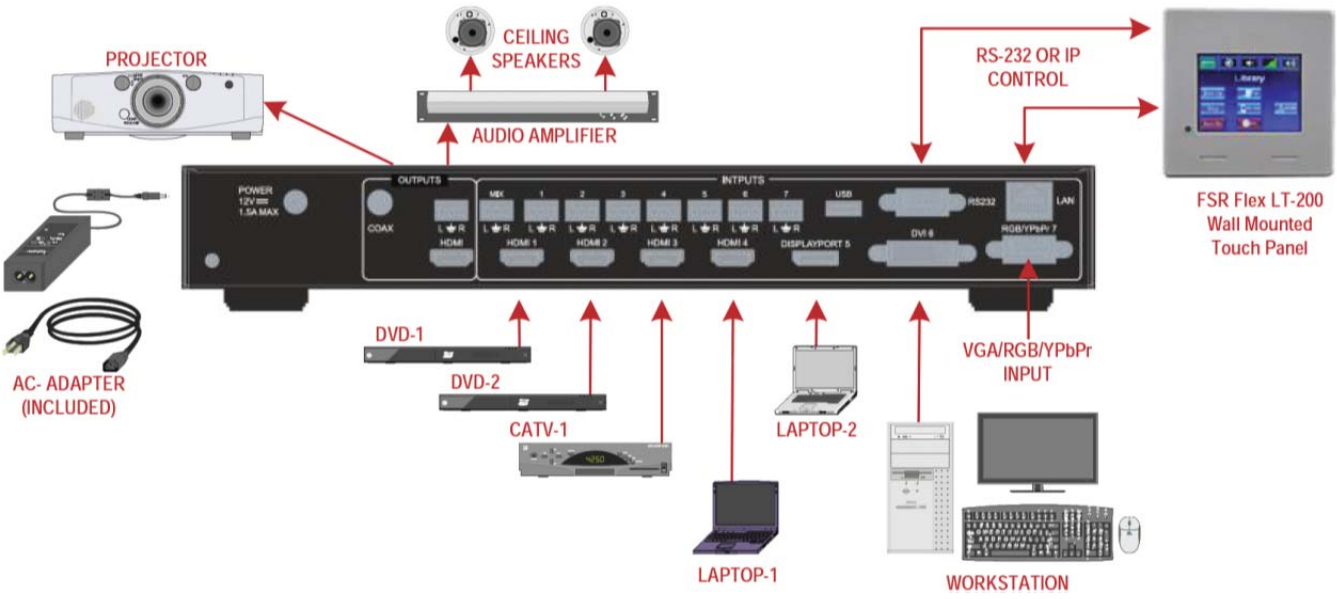
The DV-MFSS-71 has an HDCP compliant output that supports resolutions up to 4K 2160p (3840x2160) @ 30Hz. Each of the inputs is scaled to match the output resolution and switching between them is seamless and instantaneous, meaning no still frame or black screen during switching.

The HDMI input has embedded audio along with analog stereo inputs. The DisplayPort, DVI and VGA also have an analog stereo input. There is an additional analog input that is mixed into the audio output for voice over program applications. All analog audio inputs are via captive screw terminals. The HDMI inputs support up to 7.1 multichannel embedded audio. The audio can follow the video during switching or can be switched separately in breakaway mode. Audio outputs are available either embedded on the HDMI port, via the multi-channel digital coaxial, or via stereo analog out connectors.

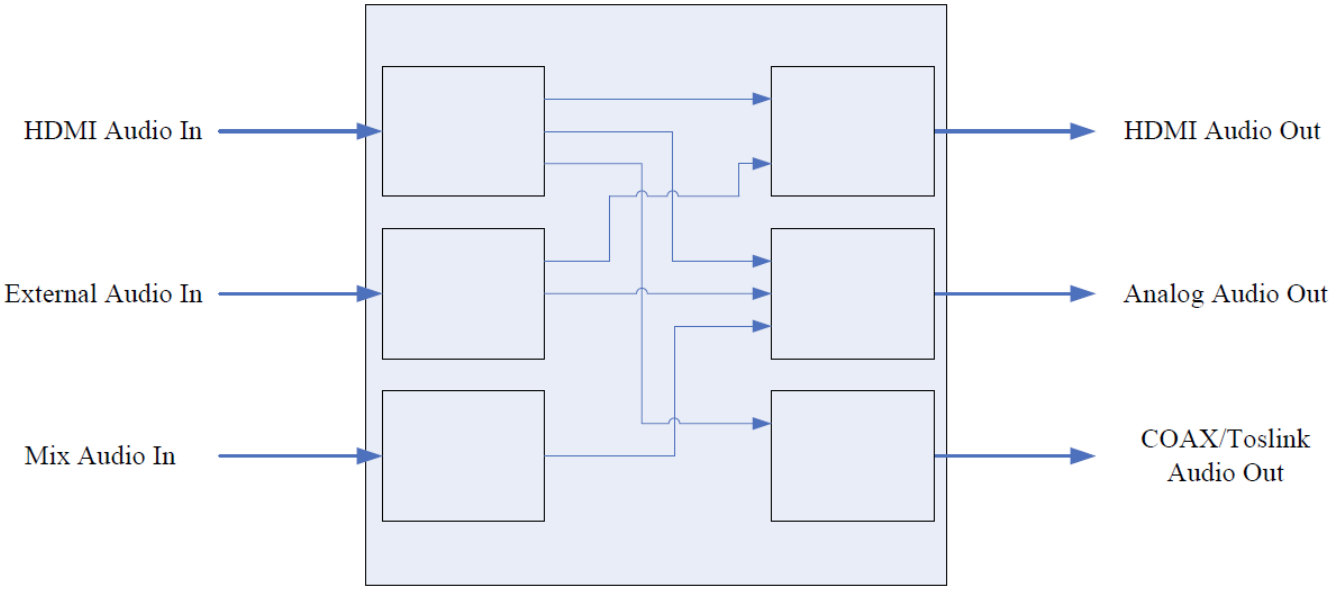
## FEATURES

- Upscaler and downscaler 7x1 switcher
- 4 HDMI, 1 DisplayPort, 1 DVI, 1 VGA (RGB/YPbPr)
- HDMI up to 4kx2k 30Hz and DisplayPort up to 4kx2k 60Hz
- HDMI output supports resolutions up to 4Kx2K 30Hz
- Each source input is automatically scaled to match the optimal output resolution
- Each input also has an unbalanced stereo audio input via captive screw terminals
- Coax and HDMI supports up to 7.1 audio channels
- HDCP compliant
- Additional mix Stereo audio input
- Easy-to-use front panel control, Web GUI, IR, RS- 232 and Telnet.
- Can be controlled via FSR’s FLEX Touch Panel Control System with pre-made templates available.
- 1 RU Height, 19” wide with rack ears
- VGA input with auto adjust

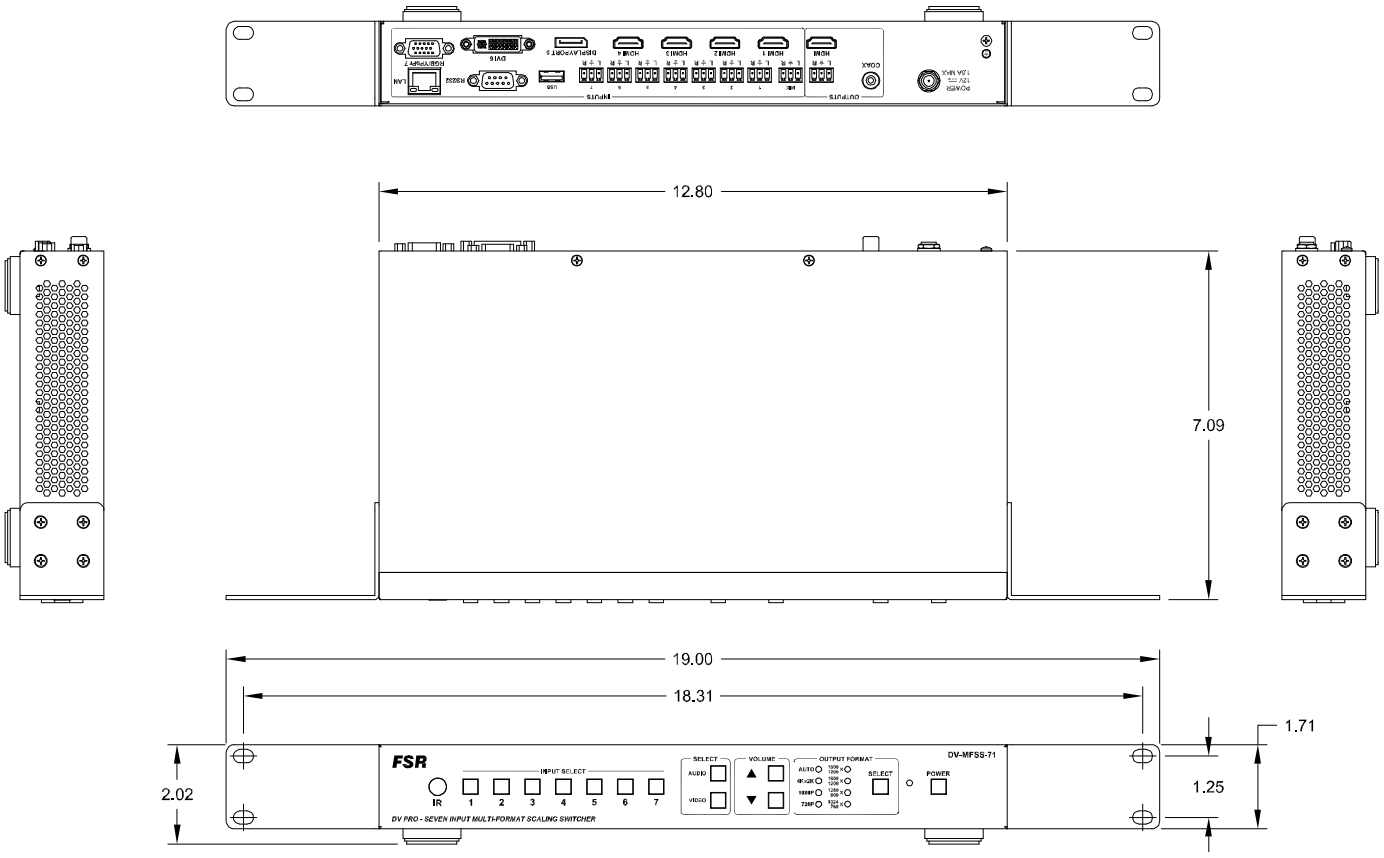
## TYPICAL APPLICATION



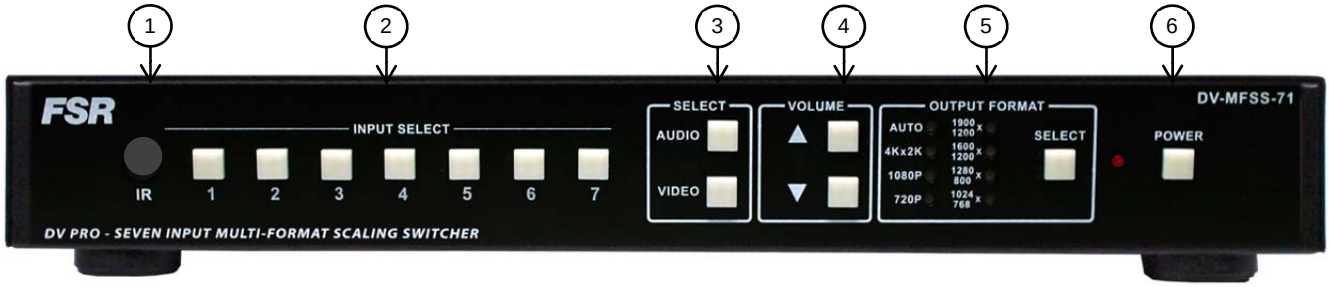

## AUDIO BLOCK DIAGRAM



# DIMENSIONS


12.80
7.09
19.00
18.31
1.71
1.25
2.02
FSR
IR
1 2 3 4 5 6 7
DV-MFSS-71
POWER
DV PRO - SEVEN INPUT MULTI-FORMAT SCALING SWITCHER

## FRONT PANEL



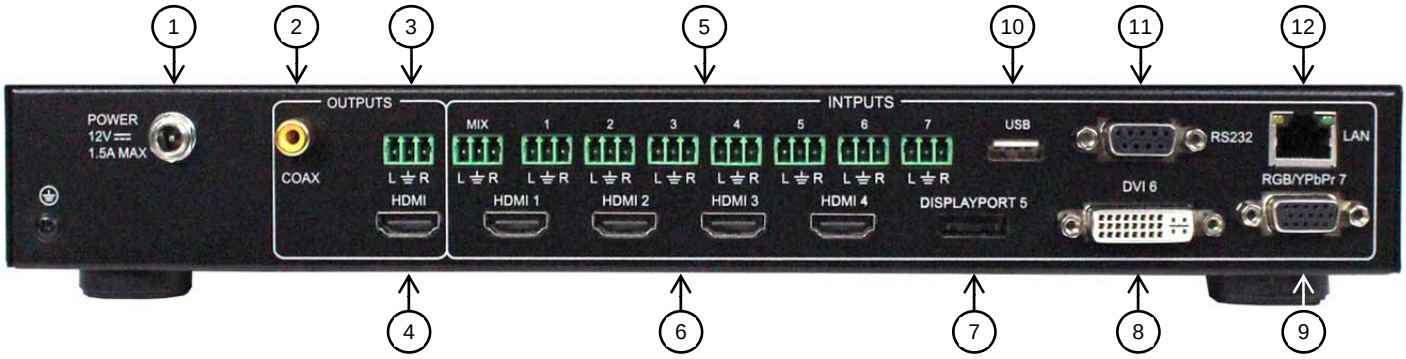

| ID | Name |
|---|---|
| 1 | IR receiver |
| 2 | Input select* |
| 3 | Video and Audio select |
| 4 | Volume up and down |
| 5 | Output resolution |
| 6 | Power ON and OFF (Standby) |

* The VGA auto adjust command can also be executed by pressing and holding the input 7 switch for 3 seconds. (See below)

### VGA INPUT AUTO ADJUST BEHAVIOR:

The DV-MFSS-71 switcher will automatically adjust to new VGA sources when they are first connected. The process will take several seconds during which time the image will move around the screen until the optimal scaler settings are determined. Once a particular source is learned, the switcher will recognize it and readjustment will not be necessary. Up to 10 unique sources can be stored in the unit's memory, after which additional sources will result in one of the others being overwritten. If for any reason the image does not display correctly, the auto-adjust process can be triggered manually by pressing and holding the input 7 switch for 3 seconds.

## REAR PANEL




| ID | Name |
|---|---|
| 1 | Power input |
| 2 | Digital audio output |
| 3 | Analog audio output |
| 4 | HDMI output |
| 5 | Analog audio inputs |
| 6 | HDMI inputs |
| 7 | DisplayPort input |
| 8 | DVI input |
| 9 | VGA (RGB/YPbPr) input |
| 10 | USB service port |
| 11 | RS-232 |
| 12 | LAN |

## OPERATION


Power ON and OFF (Standby)

NOTE: To reset to factory default, press and hold Input Select 5 during the power up cycle until the front panel LEDs blink.


Output format

---


To select the video, press video and one of the inputs.

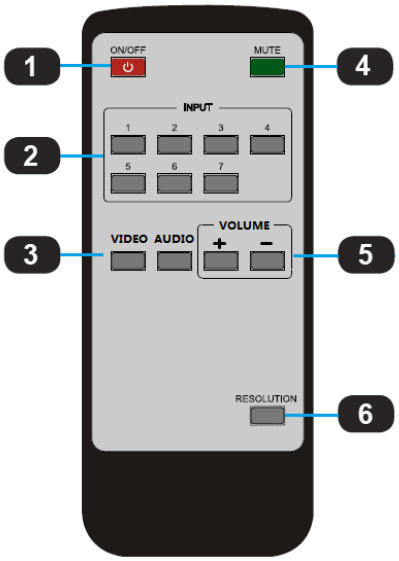
---


To select the audio, press audio and one of the inputs.

---

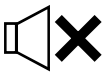
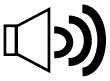

Volume up and down

## IR REMOTE CONTROL




| ID | Name |
|---|---|
| 1 | Power ON and OFF (Standby) |
| 2 | Input |
| 3 | Video and Audio select<br>To select the video, press video and one of the inputs<br>To select the audio, press audio and one of the inputs |
| 5 | Volume up and down |
| 4 | Mute and unmute |
| 6 | Output resolution<br>Auto (Display's native resolution) ➔ 4Kx2K 30Hz ➔ 1920x1080 60Hz ➔ 1280x720 60Hz ➔ 1920x1200 60Hz ➔ 1600x1200 60Hz ➔ 1280x800 60Hz ➔ 1024x768 60Hz |

## ON SCREEN DISPLAY (OSD)

| | |
|---|---|
| HDMI2<br>3840x2160@30Hz | Selected input and its input resolution |
| HDMI2 not connected<br>IP: 192.168.0.10 | Selected input state and DV-MFSS-71's IP address |
| VGA Auto Adjust | VGA auto adjust |
|  5 | Volume |
| IP: 192.168.0.10<br>Port: 23 | DV-MFSS-71's IP address and port number |
|  | Mute |
|  | Unmute |
| System is upgrading… | **IMPORTANT: Do not power OFF or remove the USB drive during the firmware upgrade.** |

## IP SETTINGS

There are two methods to obtain the IP address:

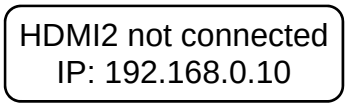
1. Obtain the IP address and port number via the information from the on-screen display (OSD).
2. Obtain the IP address and port number via the IP CONFIGURATION TOOL APPLICATION.

The following presents the two methods:

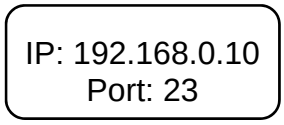
### OSD

Obtain the IP address and port number via the information from the OSD:

When there is no signal, the following OSD in the window will be displayed:




Or when an image is displayed, the IP information is displayed in the area above the middle of the window.




The IP address in this example, is 192.168.0.10 and the port number is 23.

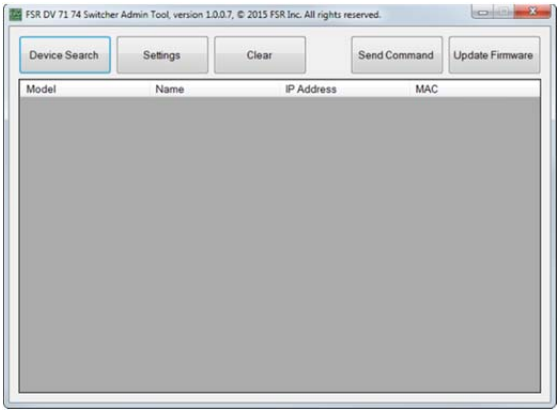
## IP CONFIGURATION TOOL APPLICATION

To obtain the IP address and port number via the IP CONFIGURATION TOOL APPLICATION:

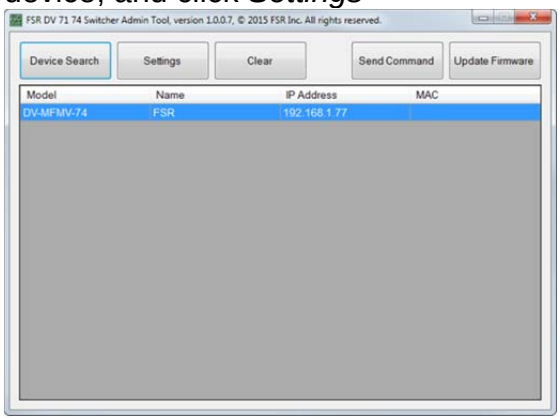
Download the application "FSR_DV_71_74_Switcher.exe" file from the FSR Document Library at www.fsrinc.com.

NOTE: Make sure the PC and DV-MFSS-71 are on the same network.

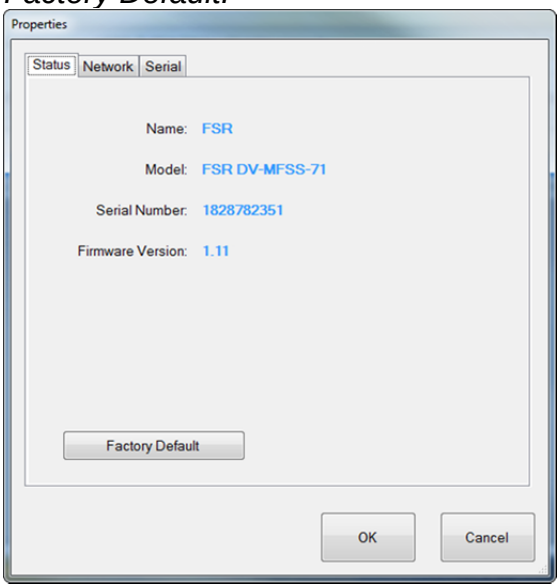
Run the application on the PC to show the main screen:



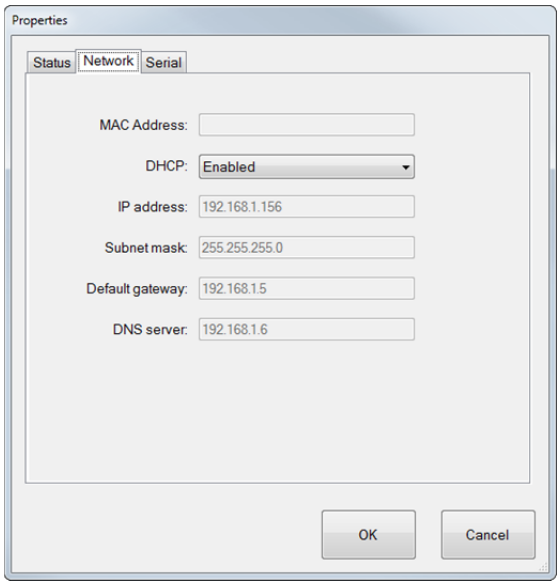

Click *Device Search*, the following device list is shown. Select the device, and click *Settings*



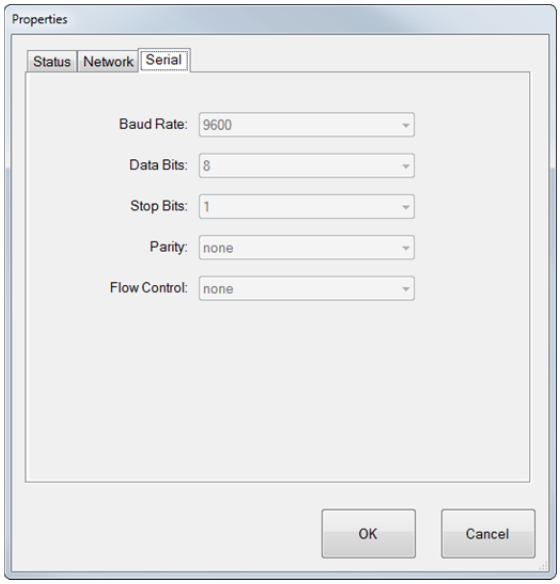
The screen defaults to the *Status* tab where the DV-MFSS-71's information is shown.
The DV-MFSS-71 settings can be returned to factory default by clicking *Factory Default.*



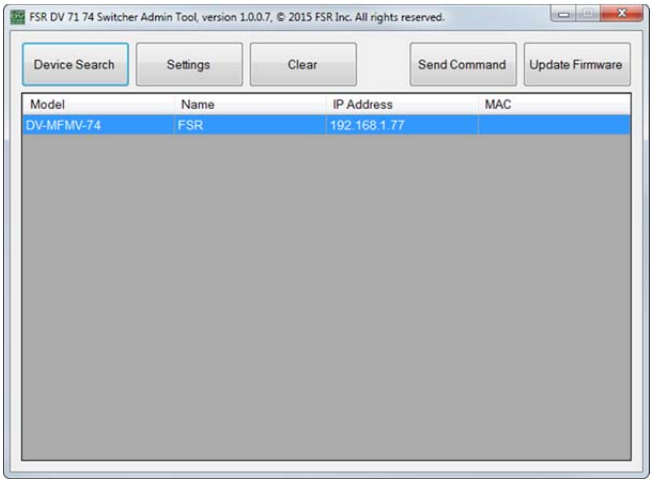

Click the *Network* tab to view the DV-MFSS-71's IP information. DHCP is enabled by default. The static IP address can be entered manually by disabling the DHCP via the pulldown menu.



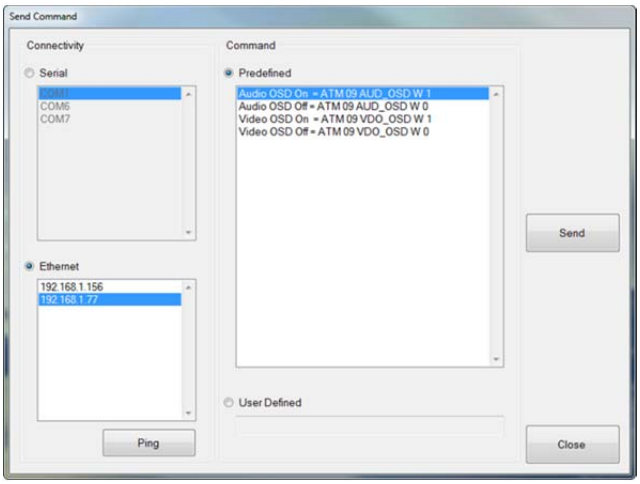

The *Serial* tab is an informational screen that will display the DV-MFSS-71 serial port settings. The settings are fixed at 9600, 8, 1, None and None.



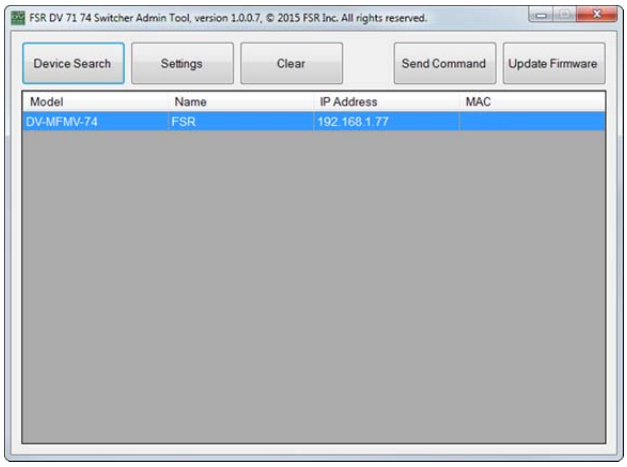
Single commands may be sent to change the display capabilities of the unit by clicking on *SEND COMMAND*.

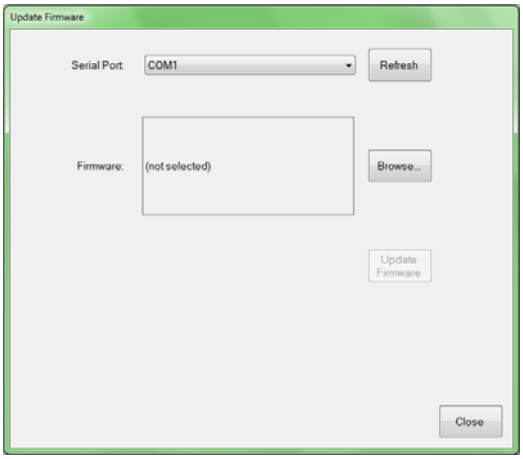



Select either *Ethernet* or *Serial* radio button
Select the appropriate COM port or Ethernet address.
Then either select a predefined command or enter a user defined command.
Click the *SEND* button to send the command:



## FIRMWARE UPDATE (EXTERNAL CONTROL BOARD)




Download the update file from the FSR website doc library.

(Example: FSR_741_20xx_xxxx_xxx.frm)

1. Connect a Serial straight-through cable to the DV-MFSS-71's RS-232 port. If present, disconnect the Ethernet cable from the LAN port.
2. Turn on the DV-MFSS-71 and wait for it to finish booting up before proceeding to the next step.
3. Click on "Update Firmware".
4. Select a Serial port.
5. Browse for the location of the firmware file.
6. Click on "Update Firmware" and wait for its completion.
7. Power cycle the DV-MFSS-71 by disconnecting the power supply.

The current firmware version can be obtained from the "Status" tab.

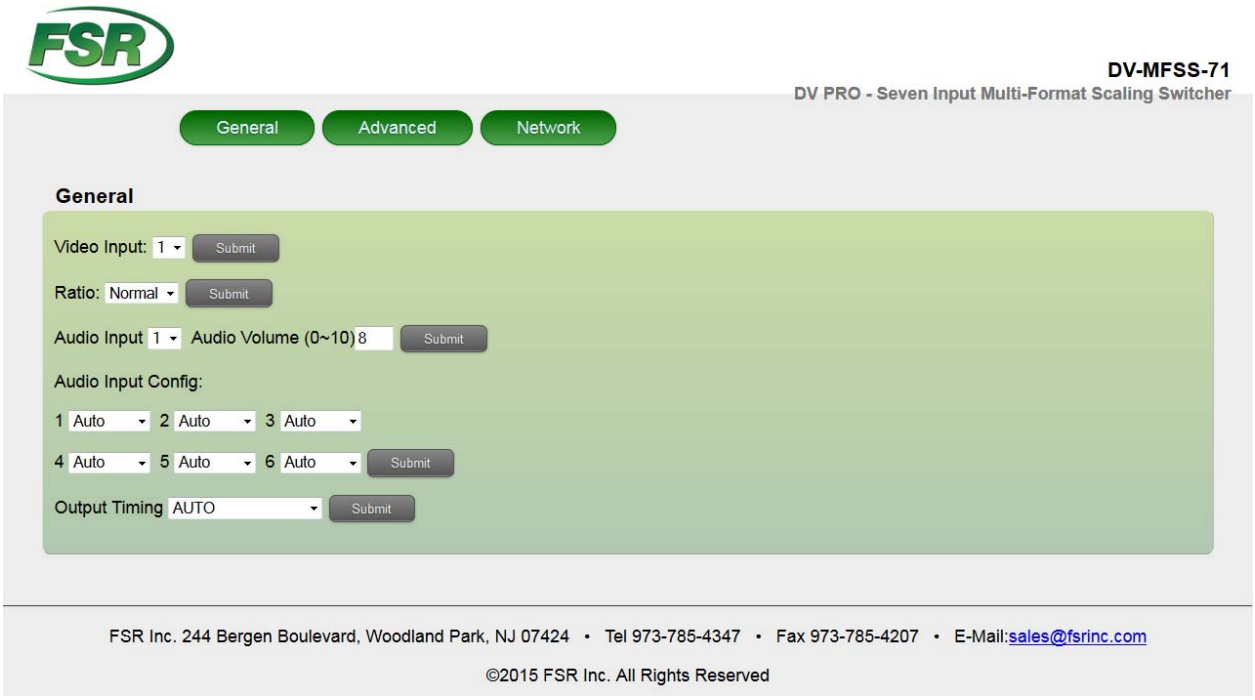
**IMPORTANT: Do not power OFF or remove the Serial cable during the firmware upgrade.**

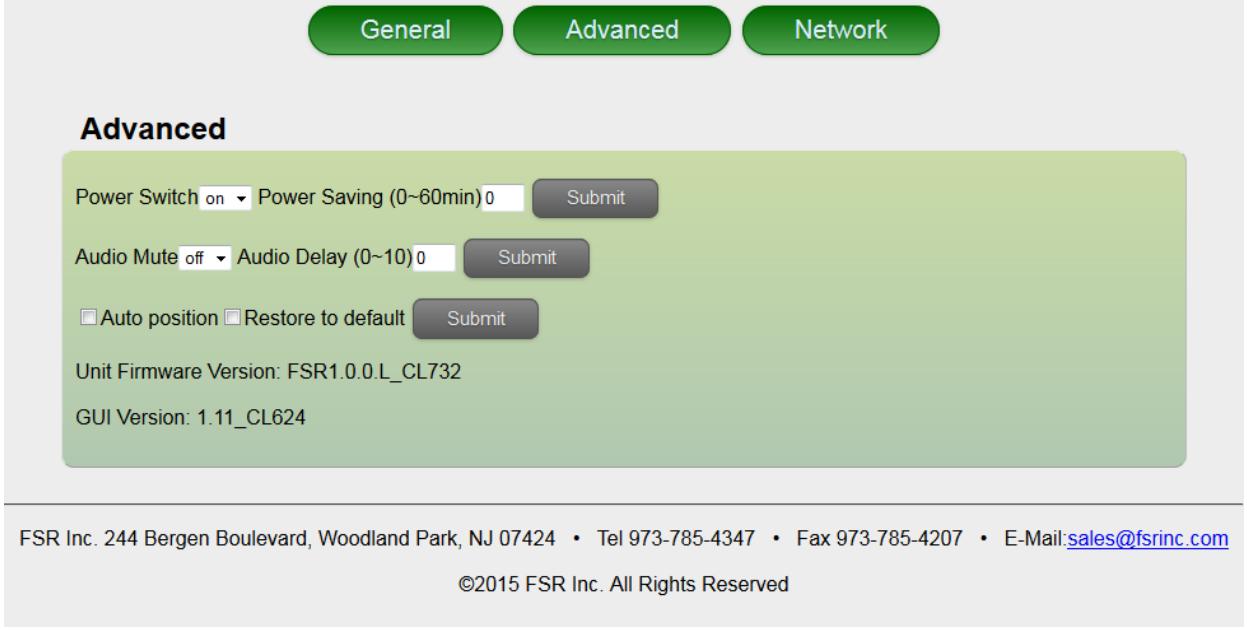
## EMBEDDED WEB SERVER

The DV-MFSS-71 can be controlled via a Web browser, which contains General, Advanced and Network settings. For more information about how to obtain the IP address, see the section on “IP SETTINGS”.

For example, the obtained IP address is 192.168.0.115

Type 192.168.0.115 in the address bar of the web browser




General
Advanced
Network
Advanced
Power Switch on Power Saving (0~60min) 0 Submit
Audio Mute off Audio Delay (0~10) 0 Submit
Auto position Restore to default Submit
Unit Firmware Version: FSR1.0.0.L_CL732
GUI Version: 1.11_CL624
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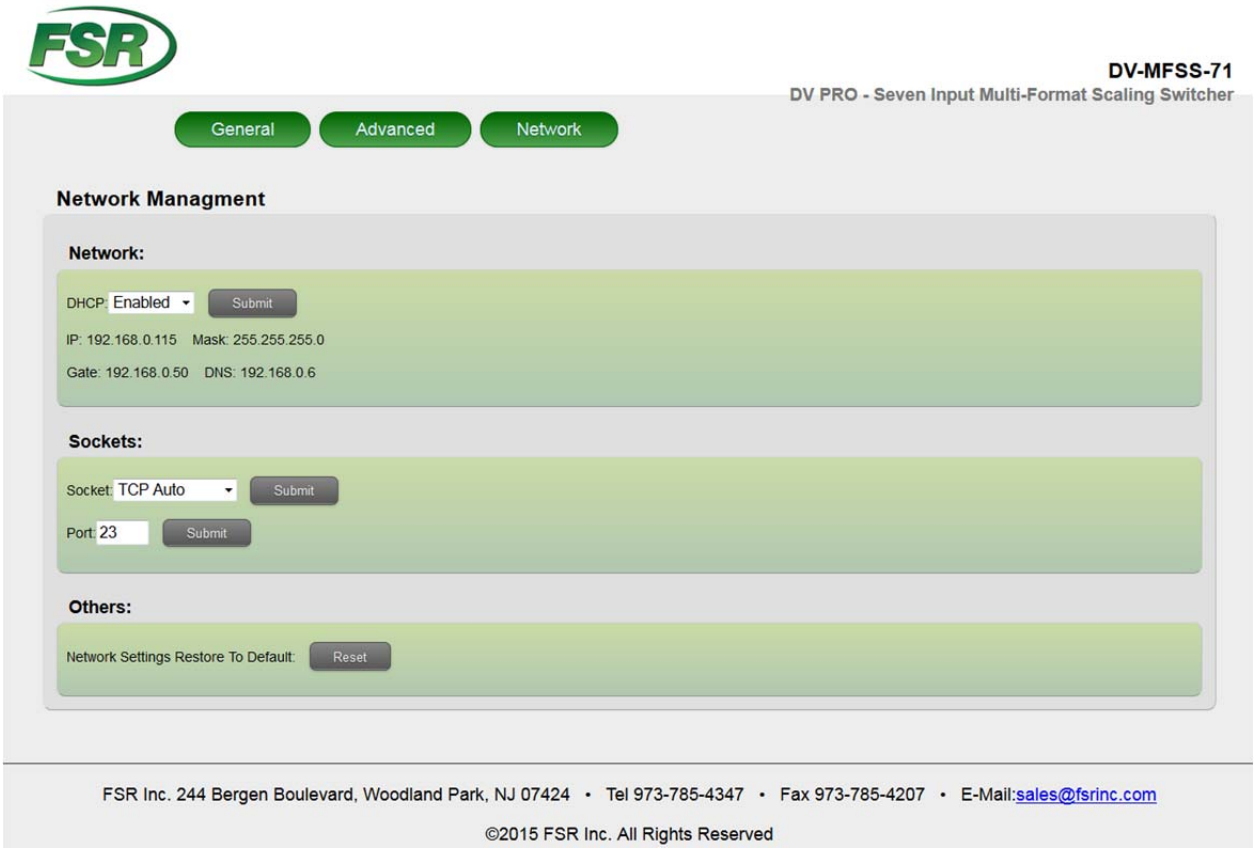
DV-MFSS-71
DV PRO - Seven Input Multi-Format Scaling Switcher
General
Advanced
Network
Network Managment
Network:
DHCP: Enabled Submit
IP: 192.168.0.115 Mask: 255.255.255.0
Gate: 192.168.0.50 DNS: 192.168.0.6
Sockets:
Socket: TCP Auto Submit
Port: 23 Submit
Others:
Network Settings Restore To Default: Reset
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## CONTROL PORTS

To control the DV-MFSS-71 use the RS-232 or LAN port but not both at the same time.

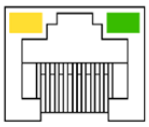
### RS-232 SETTINGS

| RS-232 Settings | |
|---|---|
| Baud rate | 9600 |
| Data bits | 8 |
| Parity | None |
| Stop bits | 1 |
| Flow control | None |

| DTE | DB-9 | DCE |
|---|---|---|
| Computer | Pin | DV-MFSS-71 |
| Rx | 2 | Tx |
| Tx | 3 | Rx |
| Ground | 5 | Ground |

**NOTE: For serial control, use a straight-through cable.**

### ETHERNET SETTINGS

| | |
|---|---|
| DHCP | ON (Default) |
| Telnet port | 23 (Default) |
| Speed | 10/100Mbps |
|  | Yellow = Link<br>Green = Speed/Activity at 100Mbps |

## RS-232 SERIAL AND ETHERNET CONTROL PROTOCOL

| Settings | Command | Reply |
|---|---|---|
| Aspect ratio | ATM 0A WIN_RAT W 1 X | 0A WIN_RAT W 1 X |
| Ex: Input set to 16:9 | ATM 0A WIN_RAT W 1 3 | 0A WIN_RAT W 1 3 |
| Window aspect ratio request | ATM 09 WIN_RAT R 1 | 09 WIN_RAT R X WIN_RAT 1 X |
| X = (1 = Normal, 2 = Full, 3 = 16:9 or 4 = 4:3) | | |
| | | |
| Audio delay | ATM 09 AUD_DLY W X | 09 AUD_DLY W X |
| Ex: Audio delay OFF | ATM 09 AUD_DLY W 0 | 09 AUD_DLY W 0 |
| Audio delay request | ATM 08 AUD_DLY R | 08 AUD_DLY R AUD_DLY X |

Audio delay

| X | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | A |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | OFF | 40ms | 80ms | 120ms | 160ms | 200ms | 240ms | 280ms | 320ms | 360ms | 400ms |

| | | |
|---|---|---|
| | | |
| Audio input configuration | ATM 0A AUD_MOD W X Y | 0A AUD_MOD W X Y |
| Ex: Input 2 set to external | ATM 0A AUD_MOD W 2 1 | 0A AUD_MOD W 2 1 |
| Audio input configuration request | ATM 09 AUD_MOD R X | 09 AUD_MOD R X Port X Audio: Y |
| X = Input (1-4)<br>Y = (0 = Auto or 1 = External)<br>Auto: Analog or HDMI audio (priority)<br>External: Only analog audio | | |
| | | |
| Audio OSD | ATM 09 AUD_OSD W X | 09 AUD_OSD W X |
| Ex. Audio OSD OFF | ATM 09 AUD_OSD W 0 | 09 AUD_OSD W 0 |
| Audio OSD request | ATM 08 AUD_OSD R | 08 AUD_OSD R AUD_OSD X |
| X = (0 = OFF and 1 = ON) | | |
| | | |
| Audio select | ATM 09 ADO_IPT W X | 09 ADO_IPT W X |
| Ex: Audio input 2 | ATM 09 ADO_IPT W 2 | 09 ADO_IPT W 2 |
| Audio input request | ATM 08 ADO_IPT R | 08 ADO_IPT R ADO_IPT X |
| X = Input (1-7) | | |
| | | |
| Copy display's EDID | ATM 09 EDI_CPY X Y | 09 EDI_CPY X Y |
| Ex: Copy display's EDID to input 4 | ATM 09 EDI_CPY 1 4 | 09 EDI_CPY 1 4 |

| Settings | Command | Reply |
|---|---|---|
| X = Output (1 = Main output or 2 = Second output if applicable)<br>Y = Input (1-7) | | |
| | | |
| EDID presets | ATM 0B EDI_POR W X C Y | 0B EDI_POR W X C Y |
| Ex: Assign EDID preset 3 to input 1 | ATM 0B EDI_POR W 1 C 3 | 0B EDI_POR W 1 C 3 |

X = input (1-7)

EDID presets

| | | | |
|---|---|---|---|
| | 1 | 2 | 3 |
| Y | 4Kx2K 30Hz 7.1Ch | 4Kx2K 30Hz 2Ch | 1920x1080 60Hz 7.1Ch |
| | 4 | 5 | 6 |
| | 1920x1080 60Hz 2Ch | 1920x1080 60Hz (VGA) | 4Kx2K 60Hz (DisplayPort) |

| Settings | Command | Reply |
|---|---|---|
| Firmware version request | ATM 08 CSW_VER W | 08 CSW_VER W X |
| Ex: X = FSR1.0.0.L Data:2015.07.15 | | |
| | | |
| HDCP input | ATM 09 IPT_DCP W X | 09 IPT_DCP W X |
| Ex: HDCP input ON | ATM 09 IPT_DCP W 1 | 09 IPT_DCP W 1 |
| X = (0 = OFF and 1 = ON) | | |
| | | |
| HDCP output | ATM 0A HDO_HDP W X Y | 0A HDO_HDP W X Y |
| Ex: HDMI 1 HDCP output ON | ATM 0A HDO_HDP W 1 0 | 0A HDO_HDP W 1 0 |
| HDCP output request | ATM 08 HDO_HDP R | 08 HDO_HDP R<br>HDMI_1_HDCP: Z<br>HDMI_2_HDCP: Z |
| X = Output (1 = Main output or 2 = Second output if applicable)<br>Y = (0 = ON or F = OFF)<br>Z = ON or OFF<br>HDMI_1_HDCP = Main output<br>HDMI_2_HDCP = Second output if applicable | | |
| | | |
| HDMI output audio mute | ATM 09 AUD_OPT W X | 09 AUD_OPT W X |
| Ex: HDMI audio output mute ON | ATM 09 AUD_OPT W 1 | 09 AUD_OPT W 1 |
| HDMI output audio mute request | ATM 08 AUD_OPT R | 08 AUD_OPT R AUD_OPT X |

| Settings | Command | Reply |
|---|---|---|
| X = (0 = Mute OFF or 1 = Mute ON) | | |
| | | |
| Master audio mute | ATM 09 AUD_MUT W X | 09 AUD_MUT W X |
| Ex: Master audio mute OFF | ATM 09 AUD_MUT W 0 | 09 AUD_MUT W 0 |
| Master audio mute request | ATM 08 AUD_MUT R | 08 AUD_MUT R AUD_MUT X |
| X = (0 = Mute OFF or 1 = Mute ON) | | |
| | | |
| Output timing | ATM 09 OPT_TIM W X | 09 OPT_TIM W X |
| Ex: 1920x1080 60Hz | ATM 09 OPT_TIM W 3 | 09 OPT_TIM W 3 |
| Output timing request | ATM 08 OPT_TIM R | 08 OPT_TIM R OPT_TIM X |

Output timing

| | | | | |
|---|---|---|---|---|
| X | 1 | 2 | 3 | 4 |
| | Auto (Display's native resolution) | 4Kx2K 30Hz | 1920x1080 60Hz | 1280x720 60Hz |
| | 5 | 6 | 7 | 8 |
| | 1920x1200 60Hz | 1600x1200 60Hz | 1280x800 60Hz | 1024x768 60Hz |

| | | |
|---|---|---|
| | | |
| Power | ATM 09 POW_CRL W X | 09 POW_CRL W X |
| Ex: power ON | ATM 09 POW_CRL W 1 | 09 POW_CRL W 1 |
| Power state request | ATM 08 POW_CRL R | 08 POW_CRL R POW_CRL X |
| X = (0 = OFF (Standby) or 1 = ON)<br>• The Power ON command is the only command honored if the scaler switcher is OFF (Standby).<br>• The entire Power ON command via Ethernet must be contained within a single TCP/IP packet. | | |
| | | |

| Settings | Command | Reply |
|---|---|---|
| Power save | ATM 0A POW_SAV W XX | 0A POW_SAV W XX |
| Ex: Power save set to 30 minutes | ATM 0A POW_SAV W 1E | 0A POW_SAV W 1E |
| Power save request | ATM 08 POW_SAV R | 08 POW_SAV R POW_SAV R XX |
| XX = (00 – 3C), 00 = OFF and 3C = 60 minutes<br>• Convert the decimal value to Hex and use the result as ASCII characters. Ex. 30 minutes = 1E (ASCII)<br>• The scaler switcher will turn OFF (Standby) at the specified time if there is no video present on the selected input and it will turn ON automatically if there is video present on the selected input. | | |
| | | |
| Restore to factory default | ATM 08 RST_SET W | 08 RST_SET W |
| | | |

| Settings | Command | Reply |
|---|---|---|
| | Factory default | |
| Aspect ratio | Audio delay | Audio input configuration |
| Normal | OFF | Auto |
| Audio OSD | Audio selected | DHCP |
| ON | 1 | ON |
| HDCP input | HDCP output | HDMI audio mute |
| ON | ON | OFF |
| Input EDID | Master audio mute | Output timing |
| HDMI 1-4: 4Kx2K 30Hz 7.1Ch<br>DisplayPort 5: 4Kx2K 60Hz<br>DVI 6: 4Kx2K 30Hz<br>VGA 7: 1920x1080 60Hz | OFF | Auto (Display's native resolution) |
| Power save | Video OSD | Video selected |
| OFF | ON | Input 1 |
| Volume | | |
| 8 | | |

| Settings | Command | Reply |
|---|---|---|
| VGA auto adjust*<br>* The VGA auto adjust command can also be executed by pressing and holding the input 7 switch for 3 seconds. | ATM 08 VGA_AUT W | 08 VGA_AUT W |
| | | |
| Video OSD | ATM 09 VDO_OSD W X | 09 VDO_OSD W X |
| Ex: Video OSD ON | ATM 09 VDO_OSD W 1 | 09 VDO_OSD W 1 |
| Video OSD request | ATM 08 VDO_OSD R | 08 VDO_OSD R VDO_OSD X |
| X = (0 = OFF and 1 = ON) | | |
| | | |
| Video select | ATM 0A VDO_IPT W 1 X | 0A VDO_IPT W 1 X |
| Ex: Input 4 | ATM 0A VDO_IPT W 1 4 | 0A VDO_IPT W 1 4 |
| Video select request | ATM 09 VDO_IPT R 1 | 09 VDO_IPT R 1 VDO_IPT 1 X |
| X = Input (1-7) | | |
| | | |
| Volume | ATM 09 VOL_CRL W X | 09 VOL_CRL W X |
| Ex: Volume set to 5 | ATM 09 VOL_CRL W 5 | 09 VOL_CRL W 5 |
| Ex: Volume Up | ATM 09 VOL_CRL W + | 09 VOL_CRL W + |
| Volume request | ATM 08 VOL_CRL R | 08 VOL_CRL R VOL_CRL Y |
| X = (0-A, + = Up or - = Down), 10 = A<br>Y = (0-A), 10 = A<br>Volume control for HDMI and analog audio out. | | |
| | | |

## FIRMWARE UPDATE (AUDIO AND VIDEO BOARD)

Download the MERGE.BIN file from the FSR website doc library

The DV-MFSS-71 can be updated through a USB drive as follows.

1. Copy the MERGE.BIN update file to the root directory of a blank USB drive.
2. Connect the USB drive to the USB service port on the rear of the DV-MFSS-71. If present, disconnect the Serial and Ethernet cable from its respective port.
3. Connect the HDMI output of the DV-MFSS-71 to a display.
4. Turn on the DV-MFSS-71 and wait for it to finish booting up before proceeding to the next step.
5. Press and hold Input Select 1 until, "System upgrading..." appears on the display. During this process the button indicators will blink at a steady rate.
6. The DV-MFSS-71 will reboot automatically after loading the firmware.
7. Power cycle the DV-MFSW-71 by disconnecting the power supply.

The firmware version can be obtained using the "firmware version request" command.

**IMPORTANT: Do not power OFF or remove the USB drive during the firmware upgrade.**

## SPECIFICATIONS

| | |
|---|---|
| **Supported Formats** | |
| Input | HDMI video up to 3840x2160 30Hz and audio up to 7.1Ch<br>DisplayPort up to 3840x2160 60Hz<br>DVI up to 3840x2160 30Hz<br>VGA (RGB/YPbPr) up to 1920x1200 60Hz |
| Output | HDMI video up to 3840x2160 30Hz and audio up to 7.1Ch<br>Stereo analog audio<br>Coax audio up to 7.1Ch |
| **Connectors** | |
| Input | 4 HDMI Type A 19-pin, female<br>1 DisplayPort (Full Size) 20-pin, female<br>1 DVI, female<br>1 VGA HD-15 15-pin, female<br>7 Program audio inputs via captive screw terminals<br>1 Mix audio input via captive screw terminals |
| Output | 1 HDMI Type A 19-pin, female<br>1 Stereo via captive screw terminals<br>1 Coax |
| RS-232 | 1 DB-9, female |
| LAN | 1 RJ-45 |
| USB | 1 Type A 4-pin, female |
| Power consumption | 12VDC, 1.5A Max |
| **Physical** | |
| Dimensions (W x H x D) | 12.8” x 1.71” x 7.09” (326mm x 43.5mm x 181mm) |
| Unit Weight | 6lbs (3.3kg) |