



## User Manual

# MFS61-18G

4K 60Hz 4:4:4 (18G) 6 input Multi-format  
Presentation Switcher  
with  
Audio De-embedding

**Inputs:** 3x HDMI, 1x DP, 1x USB-C, 1x VGA

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The MFS61-18G is a six input, single output multi-format presentation switcher featuring 3 HDMI inputs, one USB-C input, one DisplayPort and one VGA that can each be selected to the single HDMI output. The output audio is also de-embedded to both balanced analogue and optical S/PDIF (TosLink). The MSF61-18G can be controlled from the front panel, RS232 or via the built-in LAN interface.

## Features

- Six video inputs – 3x HDMI, 1x DisplayPort, 1x USB-C and 1x VGA
- One HDMI output
- Supports HDMI 2.0 and MHL 2.2
- Supports HDCP 1.4 and HDCP 2.2
- Supports video resolutions up to 4K@60Hz 4:4:4 8-bit.
- Supports HDR and CEC
- VGA resolutions up to 1920x1200
- Two De-Embedded Audio outputs:
  - Balanced Analogue Stereo, and
  - Optical S/PDIF (TOSLINK)
- Display volume and On/Off control (using CEC or RS232 commands)
- 15 selectable EDID options, including four programmable locations
- Controllable via RS232, LAN and IR
- Optional RS232 control of display device
- 12V DC power input

## Panel Descriptions

### Front Panel



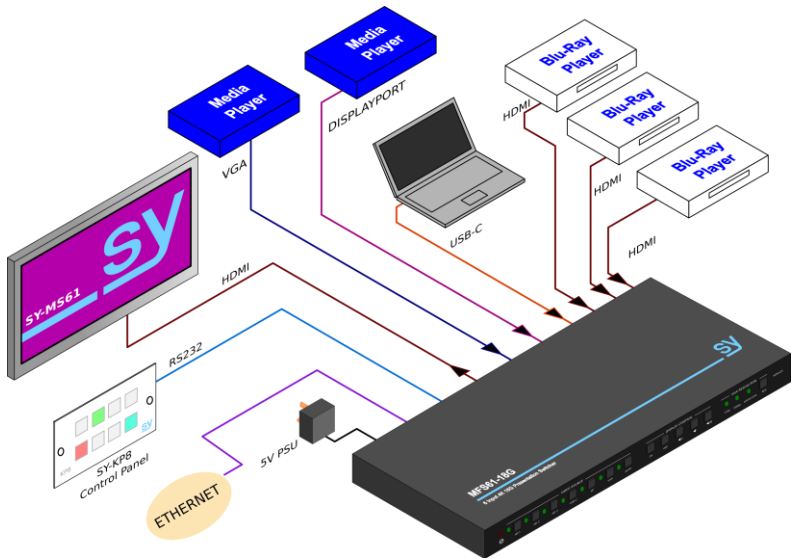
Name	Description
<b>Power LED</b>	<b>Green</b> – Powered & operational; <b>Red</b> – standby mode
<b>Source Buttons</b>	For manual selection of the desired input
<b>Input LEDs</b>	Indicates the current input selection
<b>Auto Button</b>	Press for three second to toggles the auto-switching mode
<b>Auto LED</b>	Green when Auto switching mode is active
<b>Display Control</b>	ON / OFF and Volume control of the display/soundbar via CEC commands
<b>VGA Resolution</b>	Shows the currently selected VGA input resolution (1 of the 3 most popular), selectable from the RES button or RS232 (more choice)
<b>SERVICE</b>	Firmware update port

## Rear Panel



Name	Description
<b>HD 1 (MHL)</b>	HDMI input 1 with MHL support
<b>HD 2 (MHL)</b>	HDMI input 2 with MHL support
<b>HD 3</b>	HDMI input 3
<b>USB-C</b>	USB-C video input
<b>DP</b>	DisplayPort video input
<b>VGA</b>	VGA video input
<b>Audio</b>	VGA analogue stereo audio input
<b>HD OUT</b>	HDMI video output
<b>OPTICAL</b>	TOSLINK (S/PDIF) de-embedded optical audio output
<b>L R AUDIO</b>	Balanced stereo analogue audio output
<b>EDID</b>	EDID options switch
<b>IR IN</b>	IR control input
<b>RS232</b>	RS232 control port
<b>TCP/IP</b>	LAN control port
<b>12V DC</b>	DC Power input (12V @ 2A max.)

## System Connection



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## Connection Procedure

- Connect the input video sources.
- Connect the display to the HDMI output.
- If required, connect the desired audio outputs to an audio amplifier.
- If required, connect to the IR / RS232 or LAN control ports.
- Connect the 12V DC PSU.

When using the balanced analogue audio output into an unbalanced audio input, only connect to the L+, R+ and Ground terminals. Do NOT connect either the L- or the R- terminals to any ground as this may harm the SY-MFS61-18G.

## Using the MFS61-18G

### Powering Up State

Whenever the MFS61-18G is powered up, it will always revert to the last known state for each of the following:

- Video selection
- Auto Mode
- VGA input resolution

### Manual Switching

Manual switching mode is indicated when the AUTO LED is off. Use any of the six input buttons to select the desired input, whereby its respective LED will also light up.

### Automatic Selection

The Auto selection mode is active when the AUTO LED is lit. To toggle between the Manual and Auto switching modes, press and hold the AUTO button for 3 seconds to make the AUTO LED change state.

The auto selection mode provides the following behaviour:




- **New input:** When a new input is detected, that input is automatically selected.
- Any new sources connected to the switcher will be automatically selected.
- **Source removed:** When currently selected source is removed, it will automatically select the next available input (starting at input 1).
- **Source Select Buttons:** Only available inputs can be selected.

The input source buttons can still be used to select inputs, but where there is no signal at the newly selected input, then the MFS61-18G will revert to the previous input selection.

- When the first active input is detected, the MFS61-18G will send the CEC and RS232 Display ON commands.
- When the last active input signal is removed, the MFS61-18G will send the CEC and RS232 Display OFF commands.

## Display Control

The MFS61-18G also has five buttons to control the display power state, as well as the volume and mute settings of a display/soundbar. To use this feature, the display and soundbar devices must support CEC commands. The following command functions are provided:

- **ON** – Turn on the display device
- **OFF** – Turn off the display device
-  – Mute the display/soundbar audio
-  – Decrease the display/soundbar audio level
-  – Increase the display/soundbar audio level

The **ON** and **OFF** buttons will also output the RS232 commands to a display device, provided that the respective RS232 commands have already been programmed. Note that when using the RS232 port is used to control a third-party device, the switcher cannot be controlled via RS232 at the same time.

## VGA Resolution

Using the **RES** button and the three LEDs, 720p, 1080p and 1920x1200, desired resolution for the VGA input can be set manually. Repeatedly press the RES button until the LED for the desired VGA input resolution is selected. More resolution options are available via RS232.

## EDID Setting

The 4-way EDID switch on the rear of the MFS61-18G allows the MFS61-18G to request a specific resolution from the video sources. Care should be taken to ensure that the source and the display device are both capable of handling the selected resolution.

The **4-way EDID Selection Switch** provides the following settings:

EDID Setting 1 2 3 4	Video Resolution	Audio Format
<b>U U U U</b>	EDID Pass-Through – Settings are the same as the display device	
<b>U U U D</b>	1920x1080p 60Hz	2ch
<b>U U D U</b>	1920x1080p 60Hz 10-bit colour	2ch
<b>U U D D</b>	1920x1200 60Hz	2ch
<b>U D U U</b>	4K24 HDR	2ch
<b>U D U D</b>	4K60	2ch
<b>U D D U</b>	4K60	5.1
<b>U D D D</b>	4K60	7.1
<b>D U U U</b>	4K60 HDR	2ch
<b>D U U D</b>	4K60 HDR	5.1
<b>D U D U</b>	4K60 HDR	7.1
<b>D U D D</b>	EDID Memory 1 – 1080p 60	5.1
<b>D D U U</b>	EDID Memory 2 – 1366x768 60Hz	2ch
<b>D D U D</b>	EDID Memory 3 – 4K60 10-bit colour	2ch
<b>D D D U</b>	EDID Memory 4 – 4K60 10-bit colour	5.1
<b>D D D D</b>	WebGUI or RS232 Programming Mode	

In the above table, **U** represents the switch in its **Up** position and **D** represents the switch in its **Down** position. The switch settings are given from left-to-right (1234) as seen from the switch. See the EDID Management section for complete instruction on how to program any of the four User EDID Memory locations. The resolution settings for these locations are the factory defaults that will be overwritten when programming new EDID data.

All resolutions indicated as 4K in the tables have the actual resolution of 3840x2160. All resolutions are 8-bit colour, unless otherwise specified.

## Panel Lock

The front panel can be locked or unlocked by pressing the HD1 and VGA buttons together for three seconds. All the LEDs will flash to indicate the new panel lock status:

- Two flashes when the front panel is locked.
- One flash when the front panel is unlocked.

## Audio Outputs

The SY-MFS61-18G has two de-embedded audio outputs:

- Balanced analogue stereo (L+R) using the 5-way pluggable connector
- Optical S/PDIF using the TOSLINK connector

When using the analogue audio output, the wiring must be compatible with the amplifier input requirements, use either balanced or unbalanced connections as shown in the following diagrams:

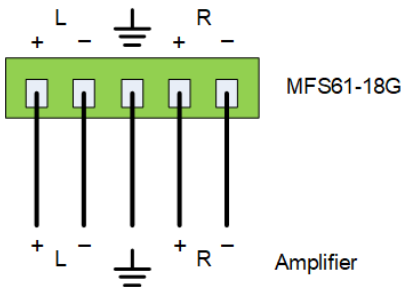


Figure 1 - Balanced Wiring

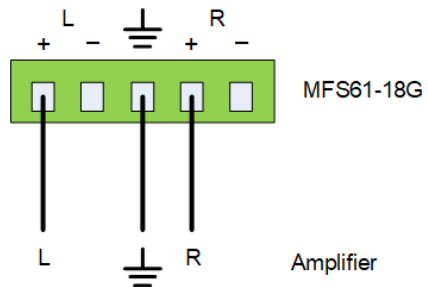


Figure 2 - Unbalanced Wiring

## RS232 Commands

**IMPORTANT:** RS232 control of the MFS61-18G is only possible when the RS232 port is not being used to control a display device. The RS232 port can be used to control the MFS61-18G or a display device, but not both at the same time.

All the RS232 commands given below are sent to the MFS61-18G with the following settings:

**9600 bps, 8 bit Data, No parity, 1 Stop bit**

All the commands are case-sensitive and must include the stated punctuation marks. However, they do not require the <CR><LF> terminating character sequence, and must be sent to the SY-MFS61-18G as a single packet burst and not hand-typed.

The square brackets indicate a numerical value should be used and are provided for ease of reading, they must not be included in the actual command.

The responses are given as examples only, the actual contents of the response messages will differ in accordance with the MFS61-18G settings at the time the command was sent.

## MFS61-18G System Commands

Command	Action	Response
<b>POWON.</b>	Power on the MFS61-18G	POWER ON!
<b>POWOFF.</b>	Put the MFS61-18G in to standby mode	POWER OFF!
<b>LOCK.</b>	Lock the front panel buttons	FRONT PANEL LOCKED!
<b>UNLOCK.</b>	Unlock the front panel buttons	FRONT PANEL UNLOCK!
<b>GETGUIIP.</b>	Report the IP address for the WebGUI	GUI_IP:192.168.0.178!
<b>SETGUIIP</b> <b>&lt;xxx:xxx:xxx:xxx&gt;.</b>	Set the IP address for the WebGUI to xxx.xxx.xxx.xxx	SET GUI IP:xxx.xxx.xxx.xxx!
<b>STA.</b>	Report the current system status. List of the current state of the MFS61-18G	
<b>RST.</b>	Factory reset. The MFS61-18G is reset to factory defaults and a list of the new states is	
<b>HELP.</b>	Get the command list. Returns a list of all available commands	
<b>CASCADE ON.</b>	Turn on Cascade mode.	CASCADE ON!
<b>CASCADE OFF.</b>	Turn off Cascade mode.	CASCADE OFF!
<b>TVBPLUGDET ON.</b>	Turn on back panel plug detection.	
<b>TVBPLUGDET OFF.</b>	Turn off back panel plug detection.	
<b>NAMESET xxxxxxxx</b>	Set the product name string.	

## TV Plug Detect

These commands enable or disable both the CEC and RS232 commands that provide the following features:

1. When the last video input is removed, the CEC and RS232 power OFF commands will be transmitted to the display device.
2. When the first input video is connected, the CEC and RS232 power ON commands will be transmitted to the display device.

Note that the RS232 Display ON and Display OFF commands will only be sent after they have been programmed using the RS232 commands for CMDON and CMDOFF, and with a programmable delay set by the RSDelay command and may also be repeated by sending the RSREPEAT commands.

See **Third-Party Device Control** for complete detail (page 12).



## Product Name String

Setting different product name strings when controlling multiple MFS61-1G units from a web browser will aid in identifying the specific unit being controlled. The displayed product name on the WebGUI will be the contents represented by **xxxxxxxx** in the above commands table. The product name string is limited to a maximum of 59 characters, any product name longer than 59 characters will be truncated to the maximum character limit.

## Source Switching

Command	Action	Response
<b>HDMI1.</b>	Switch to HDMI input 1	HDMI OUT SWITCH TO 1!
<b>HDMI2.</b>	Switch to HDMI input 2	HDMI OUT SWITCH TO 2!
<b>HDMI3.</b>	Switch to HDMI input 3	HDMI OUT SWITCH TO 3!
<b>HDMI4.</b>	Switch to USB-C input	HDMI OUT SWITCH TO 4!
<b>HDMI5.</b>	Switch to DisplayPort input	HDMI OUT SWITCH TO 5!
<b>HDMI6.</b>	Switch to VGA input	HDMI OUT SWITCH TO 6!
<b>HDMI.A.</b>	Enable auto switching mode	HDMI OUT SWITCH TO AUTO MODE!
<b>HDMI.M.</b>	Enable manual switching mode	HDMI OUT SWITCH TO MANUAL MODE!
<b>AUTO FIRST.</b>	Start input source detection from input 1	
<b>AUTO NEXT.</b>	Start input source detection from next highest input number	

Both the AUTO FIRST and AUTO NEXT commands do not generate a response message.

## VGA Resolution Selection

Note that the front panel button only provides the following 3 popular settings:

**VGARES3** (720p60Hz), **VGARES7** (1080p60) or **VGARES8** (1920x1200@60Hz)

The following RS232 commands provide eight VGA resolution settings as well as auto adjusting the VGA output image. In each case, the VGA OUTPUT is the image resolution sent to the HDMI output of the MFS61-18G.

Command	Action	Response
<b>VGARES1.</b>	SET RESOLUTION OF VGA OUTPUT TO 1024x768@60Hz!	<i>As given in Action</i>
<b>VGARES2.</b>	SET RESOLUTION OF VGA OUTPUT TO 1280x720@50Hz!	<i>As given in Action</i>
<b>VGARES3.</b>	SET RESOLUTION OF VGA OUTPUT TO 1280x720@60Hz!	<i>As given in Action</i>
<b>VGARES4.</b>	SET RESOLUTION OF VGA OUTPUT TO 1360x768@60Hz!	<i>As given in Action</i>
<b>VGARES5.</b>	SET RESOLUTION OF VGA OUTPUT TO 1600x1200@60Hz!	<i>As given in Action</i>
<b>VGARES6.</b>	SET RESOLUTION OF VGA OUTPUT TO 1920x1080@50Hz!	<i>As given in Action</i>
<b>VGARES7.</b>	SET RESOLUTION OF VGA OUTPUT TO 1920x1080@60Hz!	<i>As given in Action</i>
<b>VGARES8.</b>	SET RESOLUTION OF VGA OUTPUT TO 1920x1200@60Hz!	<i>As given in Action</i>
<b>VGAAUTO.</b>	Auto adjust the VGA output image	VGA AUTO ADJUST!

## EDID Management

Before using any of the following EDID RS232 commands, always ensure that the **4 EDID switches** (page 5) are set to the all UP position (**UUUU**) as any other setting of these switches will always take priority over the RS232 or WebGUI EDID settings.

Command	Action	Response
<b>EDIDR</b> [xxxx].	Read the contents of the EDID memory, where [xxxx] represents the 4-way switch setting (0=Down, 1=Up for each switch position)	EDID_0001! ...
<b>EDIDUSE</b> [xxxx].	Select an EDID memory, where [xxxx] represents the 4-way switch	EDIDUSE0001!
<b>EDIDW</b> [xxxx].	Program one of the four User EDID memory locations in RS232 or WebGUI EDID Setting Mode— see <b>User EDID Programming</b> for detailed instructions	

## User EDID Programming

The four User Defined EDID locations can each be programmed with a valid binary EDID image file using the following procedure:

1. Have the EDID binary file available.
2. Set the 4-way EDID switch to all UP (**UUUU**).
3. Send one of the following RS232 commands:
  - a. **EDIDW1011.** To program User Defined EDID Memory 1
  - b. **EDIDW1100.** To program User Defined EDID Memory 2
  - c. **EDIDW1101.** To program User Defined EDID Memory 3
  - d. **EDIDW1110.** To program User Defined EDID Memory 4

4. The MFS161-18G will respond with: **PLEASE SEND THE EDID FILE!**
5. Send the EDID binary file to the MFS61-18G via the RS232 link.
6. After receiving the EDID file the MFS61-18G will respond with:

**RECEIVED THE FILE, LENGTH=256!**

**EDID1101 UPDATE SUCCESSFULL!**

Note that the last message should always match with the value used for EDIDW command.

7. To use the programmed EDID, set the EDID switch to match the User Memory location that was used for the RS232 command.

## Audio Control Commands

These commands independently enable or disable to the two audio de-embedded outputs: Analogue Audio and Optical Audio.

Command	Action	Response
<b>IISON.</b>	Enable the analogue L/R audio output	IIS OUT ON!
<b>IISOFF.</b>	Disable the analogue L/R audio output	IIS OUT OFF!
<b>SPDIFON.</b>	Enable the optical audio output	SPDIF OUT ON!
<b>SPDIFOFF.</b>	Disable the optical audio output	SPDIF OUT OFF!

## Display Control Commands

To use these commands the Display device must support CEC commands.

The following RS232 commands provide the same function as the five display control buttons on the front of the MFS61-18G:

Command	Action	Response
<b>TVON.</b>	Turn the display device on	CEC TV POWER ON!
<b>TVOFF.</b>	Turn the display device off	CEC TV POWER OFF!
<b>TVVOL+.</b>	Enable the optical audio output	CEC TV VOLUME INCREASE!
<b>TVVOL-.</b>	Disable the optical audio output	CEC TV VOLUME DECREASE!
<b>TVMUTE.</b>	Mute/Un-mute the display audio	CEC TV VOLUME MUTE/UNMUTE!

## CEC Control

Any input Source & Display device that support CEC commands can also be controlled using the following RS232 command. Please note that a good knowledge of the CEC commands is needed to ensure that the correct command is sent to the specific device being controlled.

Command	Action	Command Example
<b>CECxx</b> <b>&lt;yy:yy:yy&gt;.</b>	Send CEC command “yy yy yy” to control the source or display device.	CEC00 <40:44:41>.

The following applies for this command:

<b>xx</b>	xx = port number to send the CEC command out of: 00 – HD1 01 – HD2 02 – HD3 03 – USB-C 04 – DisplayPort 05 – HDMI OUT (to the display device)
<b>yy:yy:yy</b>	The specific CEC command to transmit. (All <b>yy</b> values must be given as hexadecimal values only).

The above Example Command has the following meaning:

Send the CEC command **40 44 41** out of the HD1 input port to control the HDMI-1 source device.

40 = from logical address 4 to logical address 0

44 = CEC User Interface command

41 = Volume up (as quoted in the CEC specification)

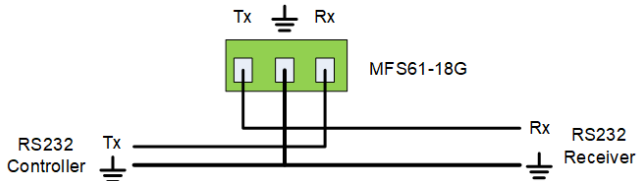
## Third-Party Device Control

The MFS61-18G also provides RS232 pass-through to permit the control of third-party devices. For each of the following commands, the [B] parameter is the transmission baud rate to the device being controlled:

[B] Value	Baud Rate
1	2400
2	4800
3	9600
4	19200
5	38400
6	57600
7	115200

The CMDON and CMDOFF commands will be sent when the respective ON and OFF buttons in the Display Control section are pressed, or when changes to the input signal connections are made as detailed in **TV Plug Detect** on page 8.

**Note:** When the RS232 port is being used to control a third-party device, the switcher responses cannot be received by the controlling PC, and the wiring should be as shown in Figure 3:



*Figure 3 - RS232 Wiring when Controlling Other Equipment and the MFS61-18G*

This wiring arrangement permits control of both the MFS61-18G and the third-party device by using the following RS232 commands to pass third-party device commands through the MFS61-18G. If the responses are required from the third party device, then connect the Tx from that device back to the Rx of the RS232 Controller.

For each of the following commands only use either the ASCII version or the hexadecimal version as required.

Note that some of the commands in the following table do not use the terminating full stop character. This is correct, but all other given punctuation marks and special character must be included as shown.

Command	Action	Command Example
<b>/+[B]:xxx</b>	Where xxx is the ASCII command string	<b>/+3:abc123!</b> (Send ASCII <b>abc123</b> )
<b>/-[B]:xx xx xx</b>	Where each xx is the hexadecimal command string value	<b>/-3:1A 2A 3A 4A!</b> (Send HEX <b>1A 2A 3A 4A</b> )
<b>CMDON/+ [B]:xxx</b>	Send the ASCII power on command when the DISPLAY ON button is pressed.	CMDON/+3:abc123
<b>CMDON/- [B]:xx xx xx xx</b>	Send the hexadecimal power on command when the DISPLAY ON button is pressed.	CMDON/-3:1A 2A 3A 4A
<b>CMDOFF/+ [B]:xxx</b>	Send the ASCII power off command when the DISPLAY OFF button is pressed.	CMDOFF/+3:abc123
<b>CMDOFF/- [B]:xx xx xx xx</b>	Send the hexadecimal power off command when the DISPLAY OFF button is pressed.	CMDOFF/-3:1A 2A 3A 4A
<b>CMDVOLUP/+ [B]:xxx</b>	Send the ASCII volume up command when the Volume Up button is pressed.	CMDVOLUP/+3:VOL+
<b>CMDVOLUP/- [B]:xxx</b>	Send the hexadecimal volume up command when the Volume Up button is pressed.	CMDVOLUP/-3:56 4C 01
<b>CMDVOLUP/+ [B]:xxx</b>	Send the ASCII volume down command when the Volume Down button is pressed.	CMDVOLUP/+3:VOL-
<b>CMDVOLUP/- [B]:xxx</b>	Send the hexadecimal volume down command when the Volume Down button is pressed.	CMDVOLUP/-3:56 4C FF
<b>RSDELAY n.</b>	Set the delay in seconds to wait before sending the Display Off command.	
<b>RSREPEAT n.</b>	Set the number of times that the Display Off command is repeated.	
<b>SNDCEC ON.</b>	Enable the transmission of display control CEC commands.	
<b>SNDCEC OFF.</b>	Disable the transmission of display control CEC commands.	
<b>SNDRS ON.</b>	Enable the transmission of display control RS232 commands.	
<b>SNDRS OFF.</b>	Disable the transmission of display control RS232 commands.	

# Network Configuration

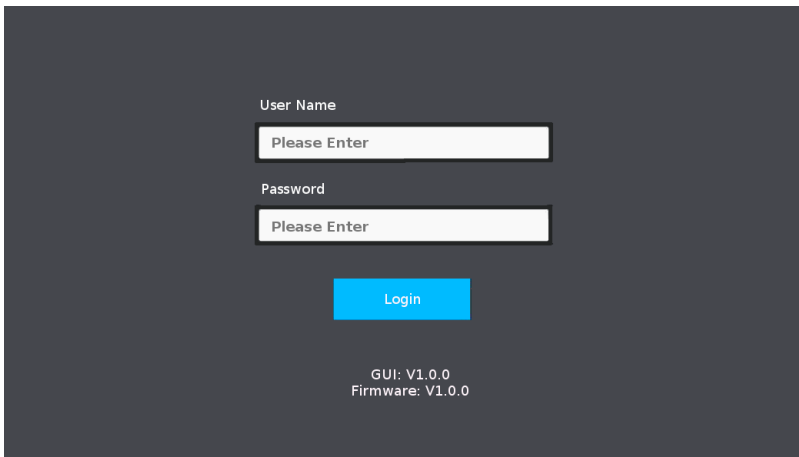
The following RS232 commands allow for the setting of the network parameters. When setting the IP address values, all three IP settings (Subnet Mask, Gateway and IP addresses) must be set at the same time. After sending these three commands you must wait for 15 seconds to allow the network system to register the changes.

Command	Action	Command Response
<b>SETNETMODE:FIX.</b>	Enable Static IP mode	NETMODE: FIX!
<b>SETNETMODE:DYN.</b>	Enable Dynamic IP mode	NETMODE: DYN!
<b>SETNETIP &lt;xxx.xxx.xxx.xxx&gt;.</b>	Set the MFS61-18G IP address	NET IP: xxx.xxx.xxx.xxx
<b>SETNETMSK &lt;xxx.xxx.xxx.xxx&gt;.</b>	Set the network subnet mask value	NET MSK: xxx.xxx.xxx.xxx
<b>SETNETGTW &lt;xxx.xxx.xxx.xxx&gt;.</b>	Set the network gateway IP address	NET GTW: xxx.xxx.xxx.xxx
<b>GETNEWSTA.</b>	Get the network settings of the MFS61-18G	This command will return all of the above response messages.

# Web Interface

The SY-MFS61-18G can also be controlled using the built-in web interface. The default IP settings are:

IP Address: 192.168.0.178  
Subnet Mask: 255.255.255.0  
Gateway: 192.168.0.1

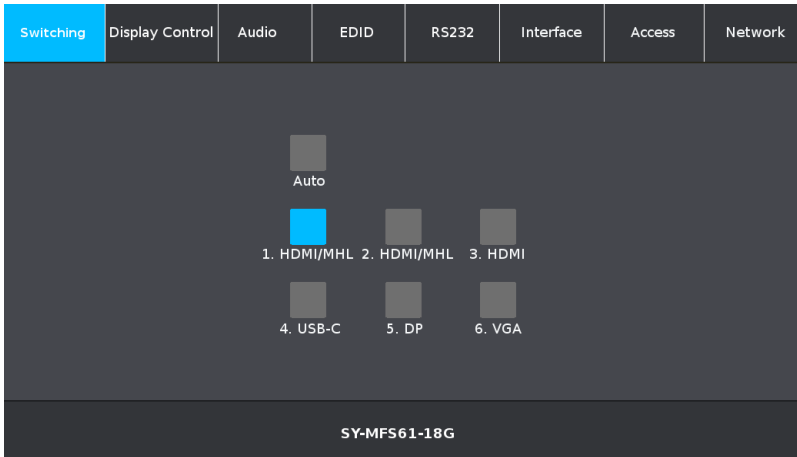


Access to the web interface from a browser requires a user name and a password. The password can be changed by using the Access page. The default settings are:

Username: **admin**  
Password: **admin**

After entering the above credentials, the Switching tab will be displayed.

## Switching Tab



- Click the **Auto** button to toggle the Auto Switching mode.
- Click on the numbered input buttons to select that input – please note that when the Auto Switching mode is active that the MFS61-18G will only select inputs that have a valid input signal (see **Automatic Selection** above for more detail).

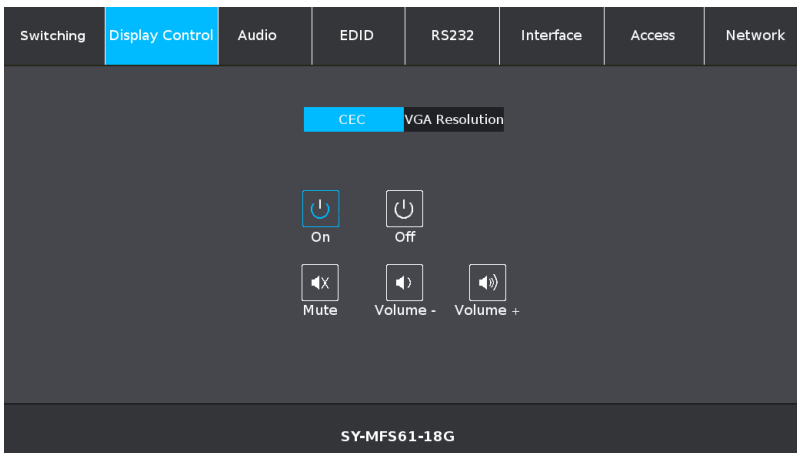
## Display Control




This dual function tab changes its appearance depending on which option button is highlighted:

- **CEC** – Enables the CEC display control buttons.
- **VGA Resolution** – Enables VGA Resolution setting options.

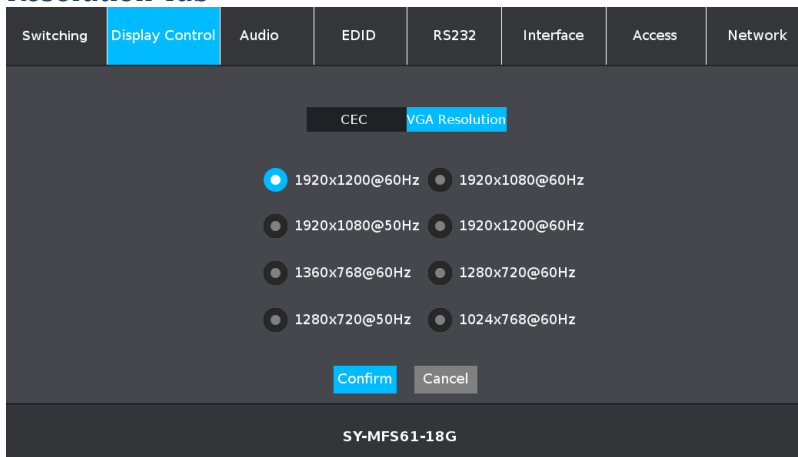
## CEC Control Tab

This tab provides the same control functions as given by the Display Control section on the front panel of the MFS61-18G.



- **ON** – Turn on the display device
- **OFF** – Turn off the display device
-  – Mute the display audio
-  – Decrease the display audio level
-  – Increase the display audio level

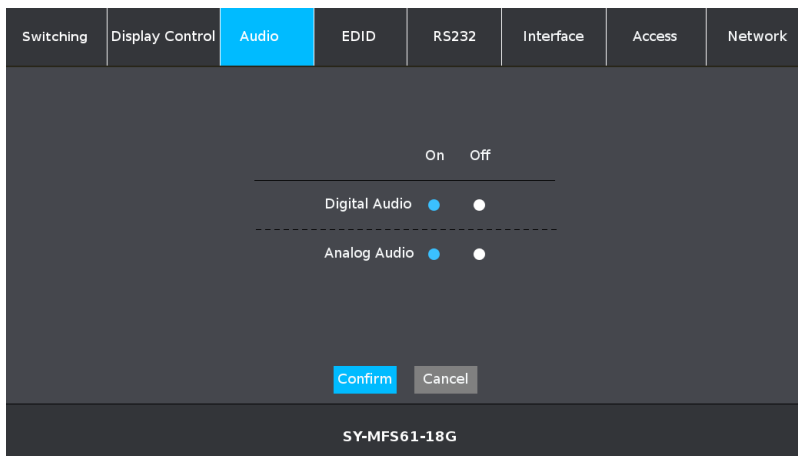
## VGA Resolution Tab



Select the desired VGA resolution from the given option buttons and then click **Confirm** to accept that option, or **Cancel** to revert to the current VGA resolution setting of the MFS61-18G.

## Audio Tab

The Audio tab allows the two de-embedded to outputs to be enabled or disabled.



- **Digital Audio** – Enable or Disable the Optical S/PDIF (TosLink) output.
- **Analog Audio** – Enable or Disable the balanced stereo analogue audio output.



## EDID Tab

Before using any of the following EDID RS232 commands, always ensure that the four EDID switches are set to the all UP position (**UUUU**) as any other setting of these switches will always take priority over the RS232 or WebGUI EDID settings.

Switching	Display Control	Audio	EDID	RS232	Interface	Access	Network		
			<input checked="" type="radio"/> Pass Through						
			<input type="radio"/> 1080p 60Hz / 2ch Audio						
			<input type="radio"/> 1920x1200 60Hz / 2ch Audio						
			<input type="radio"/> 4k60 / 2ch Audio						
			<input type="radio"/> 4k60 / 7.1ch Audio						
			<input type="radio"/> 4k60 HDR / 5.1 Audio						
			<input type="radio"/> User defined 1 <input type="text" value=".bin"/> <input type="button" value="Apply"/>						
			<input type="radio"/> User defined 3 <input type="text" value=".bin"/> <input type="button" value="Apply"/>						
			<input type="radio"/> 1080p 60Hz 10-bit / 2ch Audio						
			<input type="radio"/> 4k24 HDR / 2ch Audio						
			<input type="radio"/> 4k60 / 5.1ch Audio						
			<input type="radio"/> 4k60 HDR / 2ch Audio						
			<input type="radio"/> 4k60 HDR / 7.1 Audio						
			<input type="radio"/> User defined 2 <input type="text" value=".bin"/> <input type="button" value="Apply"/>						
			<input type="radio"/> User defined 4 <input type="text" value=".bin"/> <input type="button" value="Apply"/>						
			<input type="button" value="Confirm"/>						
			SY-MFS61-18G						

Select the desired EDID setting from the given options and then click the Confirm button.

The four User defined EDID options can be reprogrammed before using them:

1. Prepare the desired EDID binary files on a PC.
2. Set the EDID DIP switches on the MFS61-18G to the WebGUI mode, UUUU.
3. Select one of the User defined EDID buttons
4. Click in the **.bin** box to browse for the prepared EDID file.
5. Click the **Apply** button to transfer the EDID file to the MFS61-18G.
6. Repeat from Step 3 as required for the remaining User EDID options.
7. Select one of the User defined button and click the **Confirm** button to make it active.

The factory default EDID settings for the four User Defined options are:

- User Defined EDID 1 – 1080p60 / 5.1ch Audio
- User Defined EDID 2 – 1366x768 60Hz / 2ch Audio
- User Defined EDID 3 – 4K60 10-bit colour / 2ch Audio
- User Defined EDID 4 – 4K60 10-bit colour / 5.1ch Audio

## RS232 Tab

This tab allows the **testing** of RS232 commands to any third-party equipment. Note that when this RS232 port is used to control a third-party device, the switcher cannot be controlled via RS232 at the same time.

Switching	Display Control	Audio	EDID	RS232	Interface	Access	Network
CASCADE ON <input checked="" type="checkbox"/> CASCADE OFF <input type="checkbox"/>							
ASCII <input checked="" type="radio"/> HEX <input type="radio"/>							
Baud Rate: 9600		Display On:		Send			
Command Ending: NULL		Display Off:		Send			
Command: xxxxxx							
Send							
SY-MFS61-18G							

- **Cascade On / Cascade Off** – Enabled or disable cascade mode.
- **ASCII or HEX** – Select the appropriate option for entering the desired command.
- **Baud Rate** – Select the baud rate for transmitting the command from one of the following: 2400, 4800, 9600, 19200, 38400, 57600 or 115200.
- **Command Ending** – Choose the command termination mode:
  - NULL – Nothing is added after the command.
  - CR – A carriage-return (CR) character is added to the end of the command.
  - LF – A line-feed (LF) character is added to the end of the command.
  - CR+LF – Add both the CR and the LF characters to the end of the command.
- **Command** – The command string to transmit. The command can be entered as either ASCII characters or HEX (hexadecimal) digit pairs.
- **Send** – Click any of the Send buttons to transmit the respective RS232 data with the selected options.
- **Display On** – Enter the RS232 command to turn on the display device. Use the Send button to transmit the command.
- **Display Off** – Enter the RS232 command to turn on the display device. Use the Send button to transmit the command.
- For **Display On** and **Display Off**, any RS232 data entered in the edit boxes will also be assigned to the respective buttons on the **Display Control** tab and the buttons on the front of the MFS61-18G.

## Examples

Any command that uses only ASCII characters should be entered in **ASCII** mode, with the relevant command ending option:

PWR ON (with **CR** selected as the **Command Ending**)

Any command that cannot be represented with only ASCII characters should be entered in **HEX** mode:

020000001010103 (with **NULL** selected as the **Command Ending**)

## Interface Tab

The Interface tab permits naming of the inputs as well as changing the WebGUI title bar text.

Switching | Display Control | Audio | EDID | RS232 | **Interface** | Access | Network

Title Bar Label: SY-MFS61-18G

Button Labels:

1. HDMI/MHL HDMI/MHL	2. HDMI/MHL HDMI/MHL
3. HDMI HDMI	4. USB-C USB-C
5. DP DP	6. VGA VGA

**Confirm** Cancel

SY-MFS61-18G

- **Title Bar Label** – Enter the text to be shown in the WebGUI title bar.
- **Button Labels** – These text entry boxes can be used to set names to identify the signal sources on the **Switching** tab.
- **Confirm** – Accept the changes.
- **Cancel** – Reject the changes.

## Access Tab

The Access tab allows the current password to be changed. The new password will only take effect after the MFS61-18G is repowered. Keep a note of the new password as the only method to reset the password is to send the Reset to Factory Defaults RS232 command (**RST.**).

This tab also allows the front panel to be locked or unlocked.

Switching | Display Control | Audio | EDID | RS232 | Interface | **Access** | Network

Credentials

Password: admin **Confirm**

Front Panel Lock

ON **III** OFF

SY-MFS61-18G

- **Credentials** – Type the new password and click Confirm.
- **Front Panel Lock** – ON locks the front panel buttons, OFF unlocks them.

## Network Tab

Use this tab to configure the network settings and view the MAC address of the MFS61-18G.

- **MAC Address** – Displays the MAC address of the MFS61-18G
- **DHCP / Static IP** – Network IP address setting
- **IP Address** – Use to set the Static IP address of the MFS61-18G
- **Subnet Mask** – Use to set the network subnet mask
- **Gateway** – Use to set the IP address of the network gateway

**Note:** the previous image shows the factory default values for the SY-MFS61-18G, which are as follows:

IP Address:	192.168.0.178
Subnet Mask:	255.255.255.0
Gateway:	192.168.0.1

# Specifications

## General

<b>HDMI Video Input</b>	VESA and SMPTE 480p to 2160p with 3D. All HDMI resolutions to 3840x2160p @60Hz 4:4:4  480p@60Hz                      576p@50Hz                      720p@60Hz 1080p@24Hz                      1080p@50Hz                      1080p@60Hz 4K@24Hz                              4K@30Hz                              4K@60Hz 4:4:4  All PC resolutions to 1920x1200@60Hz
<b>USB-C Video Input</b>	All resolutions to 3840x2160p @60Hz 4:4:4
<b>DisplayPort Video Input</b>	All resolutions to 3840x2160p @60Hz 4:4:4
<b>VGA Video Input</b>	All PC resolutions to 1920x1200 @50/60Hz
<b>HDMI Version</b>	2.0 – All HDMI versions to 2.0v
<b>MHL Version</b>	2.2 – Inputs HD1 and HD2 only
<b>DisplayPort Version</b>	1.2 – Input 5 only
<b>HDCP Version</b>	1.4 and 2.2
<b>HDR</b>	Only HDR10 supported
<b>CEC</b>	Supported
<b>HPD</b>	Supported
<b>HDMI Audio Input Format</b>	LPCM 7.1, Dolby Atmos®, Dolby® TrueHD, Dolby Digital® Plus, DTS: X™ and DTS-HD® Master Audio™ pass-through
<b>DisplayPort Audio Input Format</b>	8 channels LPCM up to 24 bit, 192kHz, AC3, DTS
<b>VGA Audio Input Format</b>	2 channel stereo analogue (L+R)
<b>Output Audio Format</b>	Optical: PCM – Analogue: 1.8V rms, THD+N < 0.05%, 20Hz-20KHz
<b>Optical Digital Audio Format</b>	2ch only – LPCM, Dolby Digital, DTS & DTS-HD
<b>Input Connectors</b>	3x HDMI (Inputs 1 and 2 also support MHL video) 1x USB-C 1x DisplayPort 1x VGA 1x 2.1mm DC connector
<b>Output Connectors</b>	1x HDMI 1x 5 way pluggable block for L+R balanced 2x Phono for L+R unbalanced 1x Phono for Coax S/PDIF
<b>Control</b>	RS232, IR and LAN
<b>Power Supply</b>	12V DC @ 2A max.
<b>Power Consumption</b>	10W max.

## Environmental

<b>Operating Temperature</b>	-10 to +55°C (+14 to +131°F)
<b>Operating Humidity</b>	10 to 90 % RH (non-condensing)
<b>Weight</b>	620g

## Physical

<b>Dimensions (WxHxD)</b>	342.5 x 26 x 115m
<b>Case Material</b>	Steel chassis

## Part Number

<b>SY-MFS61-18G</b>	6 Input Multi-Format 18G Switcher
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## Packing List

- 1 x SY-MFS61-18G
- 2 x Mounting brackets with 4 x M3 screws
- 4 x Plastic cushions
- 1 x IR Eye
- 1 x IR remote control
- 1 x 3-way terminal block (for RS232 port)
- 1 x 5-way terminal block (for analogue audio port)
- 1 x RS232 cable (3-way terminal block to 9-way D-type connector)
- 1 x 12V 2A DC PSU
- 1 x User Manual

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## Safety Instructions

To ensure reliable operation of this product as well as protecting the safety of any person using or handling these devices while powered, please observe the following instructions.

1. Use the power supply provided. If an alternate supply is required, check the voltage, polarity and that it has sufficient power to supply the device it is connected to.
2. Do not operate this product outside the specified temperature and humidity range given in the above specifications.
3. Ensure there is adequate ventilation to allow this product to operate efficiently.
4. Repair of this equipment should only be carried out by qualified professionals as this product contains sensitive devices that may be damaged by any mistreatment.
5. Only use this product in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with this product.

## After Sales Service

1. Should you experience any problems while using this product, firstly refer to the Troubleshooting section in this manual before contacting SY Technical Support.
2. When calling SY Technical Support, the following information should be provided:
  - Product name and model number
  - Product serial number
  - Details of the fault and any conditions under which the fault occurs.
3. This product has a two year standard warranty, beginning from the date of purchase as stated on the sales invoice. For full details please refer to our Terms and Conditions.
4. SY Product warranty is automatically void under any of the following conditions:
  - The product is already outside of its warranty period
  - Damage to the product due to incorrect usage or storage
  - Damage caused by unauthorised repairs
  - Damage caused by mistreatment of the product
5. Please direct any questions or problems you may have to your local dealer before contacting SY Electronics.

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## NOTES