

Installation Guide

SY-MS61

6 Input 4K Presentation Switcher

SY-MS61 6 Input 4K Switcher



The SY-MS61 is a compact 6x1 mini scaler switcher with 6 video inputs (4 HDMI, 2 VGA), 2 auxiliary audio inputs (for the VGA inputs), 1 HDMI output and 3 audio outputs (1 dual-mono analogue audio, 1 3.5mm stereo audio, 1 optical audio).

The SY-MS61 switches VGA or HDMI/DVI input video signals to the HDMI output with up-scaling for the VGA inputs to the HDMI output and supports 6 output resolutions. It provides comprehensive resolution capacities up to 4K and 1080p 3D. The unit also supports EDID management and can be controlled by RS232 or IR.

The SY-MS61 can be used in a variety of applications, such as monitoring, conference room, large-screen displaying, digital signage, television, education, command and control centre, smart home etc.

Features

- Control – via Front panel buttons, RS232 commands and IR Remote
- Switch – select 6 input source to HDMI output
- Scale – scale VGA to HDMI output, Output resolutions selectable to assure preferred output, and supports various output resolutions, such as:
 - 1920x1200
 - 1920x1080
 - 1360x768
 - 1280x800
 - 1024x768
 - 1280x720
- Support HDMI 1.4, 4Kx2K and 1080P 3D, Compliance with HDCP1.4.
- Support EDID management
- Input switching modes: auto-switching or manual-switching
- Intuitive indicator for power connection status, source selection and output resolution mode
- Compact design for easy operation
- Support power-off memory
- Support hot plug

SY-MS61 6 Input 4K Switcher



Front Panel



Name	Description
Power LED	Indicator for power status: <ul style="list-style-type: none"> Off when no power Blinking when the system is loading firmware Constantly lit when the system is ready
Input LEDs	Solid green to indicate the selected input source
Auto-switching LED	Solid green when in auto-switching mode
Output resolution LEDs	Solid green to indicate the selected output resolution (Input is VGA)
SOURCE/AUTO	<ul style="list-style-type: none"> Audio source selection button: switching circularly between HDMI1, HDMI2, HDMI3, HDMI4, VGA1, and VGA2. Press ◀ to select the previous one, press ▶ to select the next one. Switching mode selection button. Press and hold ◀ for 3 seconds or more to enter auto-switching mode, press and hold for 3 seconds or more again to return to manual-switching mode.
RESOLUTION	<ul style="list-style-type: none"> Output resolution manual switching button: selection circularly among 1920×1200, 1920×1080, 1360×768, 1280×800, 1024×768, 1280×720. Default resolution: 1920×1080 Firmware updating button: press and hold for 7 seconds or more to enter in software updating procedure.
BLANK	Press to switch on/off audio & video output.

Rear Panel

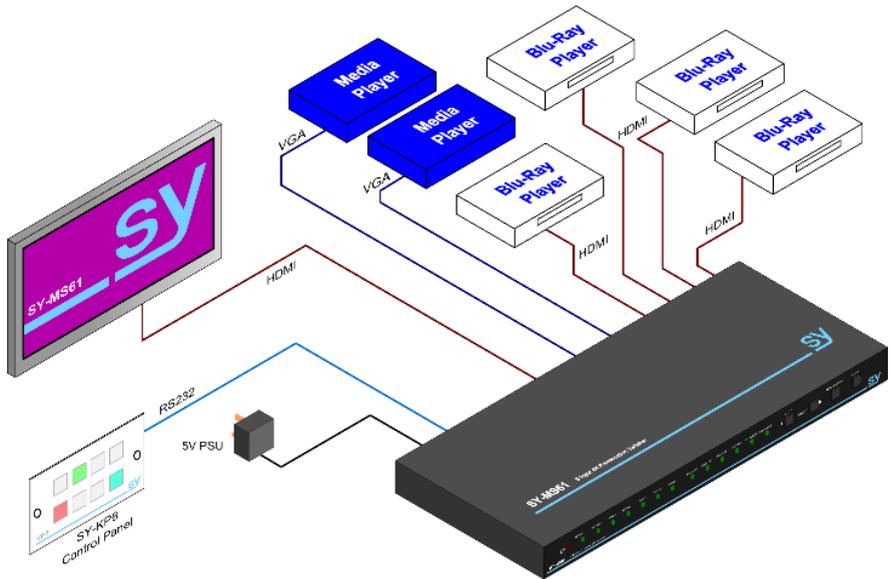


Name	Description
INPUTS	<ul style="list-style-type: none"> HDMI: 4 HDMI/DVI video source input ports(embedded HDMI audio format: PCM) VGA: 2 VGA video source input ports AUDIO: 2 3.5mm stereo audio source input ports, switched following the corresponding VGA
OUTPUTS	<ul style="list-style-type: none"> HDMI: HDMI video output port. 3P AUDIO: Dual-Mono analogue audio output port. 3.5mm AUDIO: stereo audio output port. OPTICAL: optical audio output port.
Control	<ul style="list-style-type: none"> FIRMWARE: Type-A USB port for updating firmware. RS232: Serial port, 3-pin pluggable terminal block, connect with control terminal (e.g. a PC) to control SY-MS61. IR IN: connect to an IR Receiver, to receive IR signal send by corresponding IR remote.
5V DC	Connect to a 5V DC 3A power adapter.

SY-MS61 6 Input 4K Switcher



System Connection System Diagram



Connection Procedures

- Connect HDMI/DVI sources (e.g. DVD) to **HDMI** inputs using HDMI cables.
- Connect VGA sources (e.g. DV Camera) to **VGA** inputs using VGA cables.
- Connect audio sources to the **AUDIO** inputs using audio cables.
- Connect a HDMI display (e.g. HDTV) to **HDMI** output port of the SY-MS61.
- Connect audio amplifiers (e.g. speaker/earphone) to audio outputs of the SY-MS61.
- Connect a control device (e.g. PC) to the **RS232** port of SY-MS61.
- Connect an IR Receiver (working voltage: 5V) to the **IR IN** of SY-MS61.
- Plug 5V DC 3A power adapter to SY-MS61.

Note:

The SY-MS61 supports both 4K & 1080p 3D HDMI signals, please use quality HDMI cables compliant with HDMI1.4 for to ensure reliable transmission when connecting.

SY-MS61 6 Input 4K Switcher



System Operations

Front Panel Button Control

The front panel buttons are used for setting the source selection, selection mode, output resolution, software updating and output screen setting.

The SY-MS61 has 6 input sources in total, which include HDMI1, HDMI2, HDMI3, HDMI4, VGA1, and VGA2. Video signals support auto-switching and manual-switching (factory default). Press and hold for **SOURCE / AUTO** for **3 seconds or more** to enter in auto-switching / manual-switching mode.

Manual-switching

Press ◀ to select the previous source, or press ▶ to select the next source.

Auto-switching

In this mode, manual selection of the input source via front panel button (◀ ▶) is disabled, but RS232 command and IR remote are able to switch mode. The auto LED turns green and stays on.

The auto-switching mode uses the following methods:

- **Detection of New input**

Upon detecting a new input signal, the SY-MS61 will switch to this new signal automatically.

- **Rebooting the Device**

The SY-MS61 always remembers the last configuration when it is repowered. This includes the selected input, the switching mode and the input signal status. If the last displayed signal is still available, SY-MS61 will output that signal. If not, the unit will detect all the inputs signals with priority from HDMI1 to VGA2. When detected the first signal, it will transfer to output.

- **Removal of Signal**

Once removing the current display signal, SY-MS61 will detect all input signals with priority from HDMI1 to VGA2. It will transfer the signal firstly detected to be available to output devices

Operation Examples:

- Connect HDMI2, HDMI4, and VGA2 ports with source devices, select HDMI4 to outputs.
- Press and hold for the front button **SOURCE/AUTO** for **3 seconds or more** to enter in auto-switching mode.
- Connect HDMI3 with a source device, and then it will choose HDMI3 to output.
- Remove the signal of HDMI3, SY-MS61 will detect from HDMI1 to VGA2. When it detects that HDMI2 is available, it will select input HDMI2 as its output.
- Remove the power from the SY-MS61, then reapply the power. Since SY-MS61 is in auto-switching mode, it will select input HDMI2 as its output.

SY-MS61 6 Input 4K Switcher



RS232 Control

The following RS232 commands provide control of the SY-MS61 from a PC, laptop or programmable control panel. The RS232 settings are: 9600 baud, 8 bits, no parity, and 1 stop bit.

All response values given in the following table are examples only. The actual response values will reflect the changes that the transmitted RS232 command has just made.

The RS232 commands are case-sensitive and all numerical values are in decimal only.

All the punctuation characters shown in the RS232 command are part of the command and must be included when sending the command.

Command	Function	Feedback Example
Switch Commands		
50701%	Switch to HDMI 1 Input	Switch [spc] to [spc] HDMI [spc] 1 [cr] [lf]
50702%	Switch to HDMI 2 Input	Switch [spc] to [spc] HDMI [spc] 2 [cr] [lf]
50703%	Switch to HDMI 3 Input	Switch [spc] to [spc] HDMI [spc] 3 [cr] [lf]
50704%	Switch to HDMI 4 Input	Switch [spc] to [spc] HDMI [spc] 4 [cr] [lf]
50705%	Switch to VGA 1 input	Switch [spc] to [spc] VGA [spc] 1 [cr] [lf]
50706%	Switch to VGA 2 input	Switch [spc] to [spc] VGA [spc] 2 [cr] [lf]
50785%	Enable auto-switching	Auto [spc] Switching [cr] [lf]
50786%	Disable auto-switching	Manual [spc] Switching [cr] [lf]
Resolution Select Commands for VGA Input		
50619%	Change the resolution to 1360X 768	Resolution: [spc] 1360x768 [cr] [lf]
50620%	Change the resolution to 1920X1200 WUXGA	Resolution [spc] 1920x1200 [cr] [lf]
50626%	Change the resolution to 1024X768 XGA	Resolution: [spc] 1024x768 [cr] [lf]

SY-MS61 6 Input 4K Switcher



Command	Function	Feedback Example
50627%	Change the resolution to 1280X720 720P	Resolution: [spc]1280x720 [cr] [lf]
50628%	Change the resolution to 1280X800 WXGA	Resolution: [spc]1280x800 [cr] [lf]
50629%	Change the resolution to 1920X1080 1080P	Resolution: [spc]1920x1080 [cr] [lf]
Setup Commands		
50604%	Lock the front panel buttons	Front [spc] Panel [spc] lock [cr] [lf]
50605%	Unlock the front panel buttons	Front [spc] Panel [spc] Unlock [cr] [lf]
502xx%	Set the brightness to xx (xx ranges from 0 to 99) for VGA input	Brightness: [spc]xx [cr] [lf]
503xx%	Set the contrast to xx (xx ranges from 0 to 99) for VGA input	Contrast: [spc]xx [cr] [lf]
504xx%	Set the saturation to xx (xx ranges from 0 to 99) for VGA input	Saturation: [spc]xx [cr] [lf]
505xx%	Set the sharpness to xx (xx ranges from 0 to 99) for VGA input	Sharpness: [spc]xx [cr] [lf]
50607%	Adjust the colour temperature for VGA input	Color [spc] Temperature: [spc]xx [cr] [lf] (Where xx = Cool/Medium/Warm/User)
50608%	Set the aspect ratio for VGA input	Aspect [spc] Ratio: [spc]xx [cr] [lf] (Where xx = 16:9/4:3/auto)

SY-MS61 6 Input 4K Switcher



Command	Function	Feedback Example
50614%	Set the picture mode for VGA input	Picture [spc] Mode: [spc] xx [cr] [lf] (Where xx = dynamic/standard/mild/ user)
50615%	Set SM audio mode for VGA input	Sound [spc] Mode: [spc] xx [cr] [lf] (Where xx = standard/music/movie/sports/user)
50648%	Enable HDMI embedded audio output	Embedded [spc] Audio [spc] Output: [spc] enable [cr] [lf]
50649%	Disable HDMI embedded audio output	Embedded [spc] Audio [spc] Output: [spc] disable [cr] [lf]
50606%	Auto-adjust the input parameter for (VGA only)	VGA [spc] Input [spc] Auto [cr] [lf]
50699%	Check the system version	Version [spc] Vx.x.x [cr] [lf]
50697%	Exit standby mode	Wake [spc] up! [spc] [cr] [lf]
50797%	Enter standby mode	Go [spc] to [spc] standby! [cr] [lf]
50698%	Software update	
50617%	Reset to factory defaults	Factory [spc] Reset [cr] [lf]
50707%	Toggle the Hsync Polarity	Hpolarity:0 [cr] [lf] or Hpolarity:1 [cr] [lf]
50708%	Toggle the Vsync Polarity	Vpolarity:0 [cr] [lf] or Vpolarity:1 [cr] [lf]
50769%	Read the EDID.bin file from USB flash disk	
50772%	Set the EDID data of all input ports: bypass mode	EDID:bypass [spc] mode [cr] [lf]

SY-MS61 6 Input 4K Switcher



Command	Function	Feedback Example
50773%	Set the EDID data of all input ports: 1080P&PCM 2ch	EDID:1080P&PCM[spc]2ch[cr] [lf]
50774%	Set the EDID data of all input ports:1080P&5.1 ch	EDID:1080P&5.1ch[cr] [lf]
50775%	Set the EDID data of all input ports: 1080P 3D&5.1ch	EDID:1080P3d&5.1ch[cr] [lf]
50776%	Set the EDID data of all input ports: 1080i&PCM 2ch	EDID:1080i&PCM 2ch[cr] [lf]
50777%	Set the EDID data of all input ports: 4K&PCM 2ch	EDID:4K&PCM[spc]2ch[cr] [lf]
50787%	Set the EDID data of all input ports: user	EDID:user[cr] [lf]
Inquire Commands		
50631%	Check the input source	Input: [spc]xx[cr] [lf]
50632%	Check the output resolution	Resolution: [spc]xx[cr] [lf]
50633%	Check the image mode	Picture Mode: [spc]xx[cr] [lf]
50634%	Check the audio mode	Sound Mode: [spc]xx[cr] [lf]
50635%	Check the image aspect ratio	Aspect[spc]Ratio: [spc]xx[cr] [lf]
50636%	Check the brightness	Brightness: [spc]xx[cr] [lf]
50637%	Check the contrast	Contrast: [spc]xx[cr] [lf]
50638%	Check the saturation	Saturation: [spc]xx[cr] [lf]
50639%	Check sharpness	Sharpness: [spc]xx[cr] [lf]
50640%	Check the colour temperature	Color [spc]Temperature: [spc]xx[cr] [lf]

SY-MS61 6 Input 4K Switcher



Command	Function	Feedback Example
50652%	Check Digital audio output status	Embedded [spc] Audio [spc] Output : [spc] enable [cr] [lf] or Embedded [spc] Audio [spc] Output : [spc] disable [cr] [lf]
50709%	Check output resolution and sync polarity settings	1920x1080 [cr] [lf] Hpolarity:1 [cr] [lf] Vpolarity:0 [cr] [lf]
50754%	Check the panel locked status	Front [spc] Panel [spc] Lock [cr] [lf] or Front [spc] Panel [spc] UnLock [cr] [lf]
50778%	Acquire EDID setting	EDID:xx [cr] [lf]
Adjustment Commands for VGA input		
50670%	Move the image to left	Output [spc] Position [spc] Adjust [spc] X [spc] xx [cr] [lf]
50671%	Move the image to right	Output [spc] Position [spc] Adjust [spc] X [spc] xx [cr] [lf]
50672%	Move the image up	Output [spc] Position [spc] Adjust [spc] Y [spc] xx [cr] [lf]
50673%	Move the image down	Output [spc] Position [spc] Adjust [spc] Y [spc] xx [cr] [lf]
50674%	Increase image width	Output [spc] Width [spc] Adjust [spc] xx [cr] [lf]
50675%	Decrease image width	Output [spc] Width [spc] Adjust [spc] xx [cr] [lf]
50676%	Increase image height	Output [spc] Height [spc] Adjust [spc] xx [cr] [lf]
50677%	Decrease image height	Output [spc] Height [spc] Adjust [spc] xx [cr] [lf]
50678%	Enable screen output adjusting	Enter [spc] Output [spc] Position [spc] Adjust [cr] [lf]
50679%	Disable screen output adjusting	Exit [spc] Output [spc] Position [spc] Adjust [cr] [lf]

SY-MS61 6 Input 4K Switcher



Specifications

Connectors	
Video Inputs	4 HDMI – female HDMI (Type-A) 2 VGA – female VGA (15Pin)
Audio Inputs	2 stereo audio for VGA – 3.5 mm jack
Video Output	1 HDMI – female HDMI
Audio Outputs	1 Dual-Mono analogue audio – 3-pin pluggable terminal block 1 stereo audio – 3.5mm jack 1 optical audio – SPF fibre connector

Video General	
Resolution	HDMI: up to 4Kx2K VGA: output resolution selectable
Standard	Compliant with VGA&DVI HDMI1.4, HDCP 1.4

Audio general	
Frequency Response	20Hz~20K Hz
Stereo Channel Separation	>80dB @1KHz
Audio Format	HDMI embedded audio: PCM, Dolby,

Controls	
Panel Control	Front Panel Button
Control Ports	RS232, IR remote
Pin configuration	2 = TX, 3 = RX, 5 = GND

General	
Temperature	0~ 45°C
Humidity	10% ~ 90%
PSU	5V DC @ 3A
Power Consumption	3.8 (Max)
Dimension (W*H*D)	347 x 28 x 110 mm
Weight	630 g

SY-MS61 6 Input 4K Switcher



Supported Resolutions

Format	Resolution
HDMI	480i, 480p, 576i, 576p, 720p, 1080i, 1080p, 1080p 3D, 4K x2K
DVI	640x480@60Hz, 640x480@72Hz, 640x480@75Hz, 800x600@60Hz, 800x600@72Hz, 800x600@75Hz, 1024x768@60Hz, 1024x768@70Hz, 1024x768@75Hz, 1280x1024@60Hz, 1280x1024@75Hz, 1600x1200@60Hz, 1920x1080@60Hz, 1920x1200@60Hz
VGA	1920x1200, 1920x1080, 1360x768, 1280x800, 1024x768, 1280x720

Safety Instructions

To ensure reliable operation of these 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 supplies provided. If an alternate supply is required, check Voltage, polarity and that it has sufficient power to supply the device it is connected to.
2. Do not operate either of these products 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 the equipment should only be carried out by qualified professionals as these products contain sensitive devices that may be damaged by any mistreatment.
5. Only use these products in a dry environment. Do not allow any liquids or harmful chemicals to come into contact with these products.
6. Due to the weight and physical size of some of these matrix switchers, correct Manual Handling and Lifting procedures should be observed at all times while handling these products in order to minimise the risk of injury.

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. Online registration of this product is required to activate the full three year extended warranty. 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.