

Installation Guide

HDMI+VGA 5x1 Switcher



SY-MS51 & SY-MS51-AP

The SY-MS51 and SY-MS51-AP are five-input, single-output video switchers with three HDMI inputs and two VGA inputs. The SY-MS51 provides only a local HDMI output and the SY-MS51-AP provides both a local HDMI output and a PoC HDBaseT output. Video selection can be done either manually or by using the auto selection mode. This switcher is useful for switching up to three HDMI sources and two VGA sources to local and remote display devices. The switcher can be controlled manually from the front panel or from the included IR remote controller or through the RS232 interface.

Features

- Three HDMI video inputs
- Two VGA video inputs
- One HDMI video output
- One HDBaseT PoC output, up to 70m (SY-HD-MS51-AP only)
- Manual switching from front panel or remote RS232 key pad
- Auto input selection should the selected input source fail to output a HDMI signal
- IR remote control for video switching
- RS232 control for video switching
- HDMI 1.3 compatible
- Supports 3D, HDCP and CEC

Connectors and Controls

Front



Name	Description
Power LED	Unit powered
System Monitor	LCD for display of operation mode and menu operations
Resolution	Press to change the displayed output resolution
Source	Press to select the next available input
Menu	Press to activate the on-screen menu
Enter	Used in menu mode to make a selection
Up / Mic+	Increase the mic / line volume, or the up direction button in menu mode
Down / Mic-	Decrease the mic / line volume, or the down direction button in menu mode
Left / Vol-	Increase the audio output volume, or the left direction button in menu mode
Right / Vol+	Decrease the audio output volume, or the right direction button in menu mode



Figure 1 - SY-MS51 Rear Panel

Rear

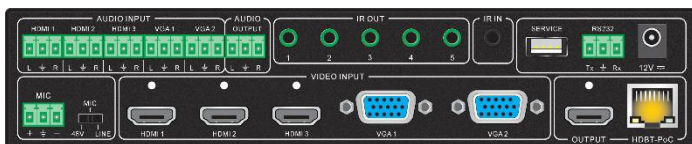


Figure 2 - SY-MS51-AP Rear Panel

The following connectors are available on both the SY-MS51 and the SY-MS51-AP

Name	Description
Audio Inputs	Audio inputs
Audio Output	Audio output from selected input signal
Mic	Microphone or Line input
Mic selection switch	Select 48V phantom power mic, unpowered mic or line level mode
Video Inputs	Three HDMI inputs and two VGA inputs
HDMI Output	HDMI output for local display device
Service	USB port for firmware updates only
RS232	RS232 port for local control commands and remote control commands
+12V	+12V DC input – centre positive

The following connectors are only available on the SY-MS51-AP:

HDBT PoC	HDBaseT output for remote display
IR Out	Outputs for IR emitters located close to the image source devices
IR In	Input from IR sensor for controlling image sources

The HDBaseT output provides power on the cable that provides power for a SY-HDBT-70R. This HDBaseT receiver also has an IR sensor that can also pass IR control commands to the IR outputs on the SY-MS51-AP switcher.

SY-MS51 & SY-MS51-AP

Using the HDMI Video Switcher

Connect up to 3 HDMI video sources to the HDMI INPUT connectors and up to two VGA sources to the VGA connectors. Connect a HDMI cable from the HDMI output of the SY-MS51 or SY-MS51-AP to the HDMI display device. For the SY-MS51-AP, a SY-HDBT-70R can also be connected using cat6 UTP cable to provide a remote display at a distance of up to 60m.

Whenever the SY-MS51 or SY-MS51-AP is powered up, it will restart in the last state it had before being switched off.

Manual Selection Mode

To use Manual selection mode the System Monitor LCD must be displaying MANUAL after the current input selection. If the System Monitor is displaying AUTO, then press and hold the SOURCE button for three seconds to turn off the Auto mode before making manual selections. Manual selection are made by briefly pressing the SOURCE button until the desired input is selected. The selection sequence is: HDMI1, HDMI2, VGA1 then VGA2.

Auto Selection Mode

The SY-MS51 has an automatic input selection mode, but this not an auto sequence mode. The auto selection mode ensures that there will always be an image shown on the HDMI display device provided that there is at least one functioning HDMI or VGA input signal.

To enable the auto selection mode, press the SOURCE button for 3 seconds when the System Monitor text will change from MANUAL to AUTO. In this mode the SY-MS51 and SY-MS51-AP behave in the following manner:

1. It will automatically select to the next highest available input whenever the currently selected input source stops providing a signal.
2. When a new signal appears at any input, that input is automatically selected.
3. If the signal for an input that is not selected stops being provided, the unit will switch to the first lowest numbered input that has a valid signal.

Manual selection mode is not possible while the System Monitor LCD is displaying AUTO, to return to manual switching mode you must press the SOURCE button for three seconds, when the System Monitor LCD will change from AUTO to MANUAL.

IR Remote Control

The SY-MS51-AP is supplied with a remote control key pad that allows the operator to change the input selection provided that there is a direct line of sight to the IR detector that is connected to the IR IN connector on the back of the SY-MS51-AP unit. Simply make your selection from the IR remote key pad.

Mic / Line Input Mode Selection

The SY-MS51 and SY-MS51-AP both have a Mic / Line input connector that can be used for balanced or unbalanced audio signals. Be sure to set the mode switch correctly for the intended signal source.

- 48V should only be used for phantom powered condenser type microphones
- Mic should be used for dynamic or self-powered condenser microphones
- Line should be used for line level signals

For unbalanced signal sources, connect the unused input terminal to the central ground terminal.

SY-MS51 & SY-MS51-AP

RS232 Control Commands

The following RS232 commands provide control of the SY-HD-S41 from a PC, laptop or programmable control panel. The RS232 settings are: 9600 baud, 8 bits, no parity, and 1 stop bit.

Action	Command	Response
Select input HDMI 1	50701%	switch[spc]to[spc]hdmi1[spc][cr][lf]
Select input HDMI 2	50702%	switch[spc]to[spc]hdmi2[spc][cr][lf]
Select input HDMI 3	50703%	switch[spc]to[spc]hdmi3[spc][cr][lf]
Select input VGA 1	50704%	switch[spc]to[spc]vga1[spc][cr][lf]
Select input VGA 2	50705%	switch[spc]to[spc]vga2[spc][cr][lf]
Enable HDMI embedded audio output	50648%	Digital[spc]Sound[spc]Output:[spc]Enable[spc][cr][lf]
Disable HDMI embedded audio output	50649%	Digital[spc]Sound[spc]Output:[spc]Disable[spc][cr][lf]
Use HDMI 1 Embedded Audio	50706%	HDMI1[spc]AUDIO[spc][cr][lf]
Use External Audio 1 input	50707%	LINE1[spc]AUDIO[spc][cr][lf]
Use HDMI 2 Embedded Audio	50708%	HDMI2[spc]AUDIO[spc][cr][lf]
Use External Audio 2 input	50709%	LINE2[spc]AUDIO[spc][cr][lf]
Use HDMI 3 Embedded Audio	50710%	HDMI3[spc]AUDIO[spc][cr][lf]
Use External Audio 3 input	50711%	LINE3[spc]AUDIO[spc][cr][lf]
Enable HDCP	50780%	HDMI[spc]OUT[spc]HDCP[spc]On[spc][cr][lf]
Disable HDCP	50781%	HDMI[spc]OUT[spc]HDCP[spc]Off[spc][cr][lf]
Enable EDID auto-adjusting output resolution mode	50782%	
Enable Auto Selection Mode	50785%	Open[spc]Source[spc]Auto[spc][cr][lf]
Set output resolution to 1360x768 HD	50619%	Resolution:1360*768[spc][cr][lf]
Set output resolution to 1920x1200 WUXGA	50620%	Resolution:1920*1200[spc][cr][lf]
Set output resolution to 1600x1200 UXGA	50621%	Resolution:1600*1200[spc][cr][lf]
Set output resolution to 1024x768 XGA	50626%	Resolution:1024*768[spc][cr][lf]
Set output resolution to 1280x720 720P	50627%	Resolution:1280*720[spc][cr][lf]
Set output resolution to 1280x800 WXGA	50628%	Resolution:1280*800[spc][cr][lf]
Set output resolution to 1920x1080 HD	50629%	Resolution:1360*768[spc][cr][lf]
Mute Line & Mic audio	50720%	LINE[spc]Mute[spc]On[spc][cr][lf] MIC[spc]Mute[spc]On[spc][cr][lf]

SY-MS51 & SY-MS51-AP

Unmute Line & Mic audio	50721%	LINE[spc]Mute[spc]Off[spc][cr][lf] MIC[spc]Mute[spc]Off[spc][cr][lf]
Mute Mic audio	50722%	LINE[spc]Mute[spc]On[spc][cr][lf]
Unmute Mic audio	50723%	LINE[spc]Mute[spc]Off[spc][cr][lf]
Mute Line audio	50600%	LINE[spc]Mute[spc]On[spc][cr][lf]
Unmute Line audio	50601%	LINE[spc]Mute[spc]Off[spc][cr][lf]
Increase Mic volume	50724%	MicVolume[spc]++[spc][cr][lf]
Decrease Mic volume	50725%	MicVolume[spc]--[spc][cr][lf]
Set Mic Volume to XX	508XX%	MIC[spc]Volume:[spc]XX[spc][cr][lf]
Increase Line volume	50602%	LINE[spc]Volume:[spc]XX[spc][cr][lf]
Decrease Line volume	50603%	LINE[spc]Volume:[spc]XX[spc][cr][lf]
Set Line volume to XX	501XX%	LINE[spc]Volume:[spc]XX[spc][cr][lf]

Notes:

1. The actual response will always reflect the actual response to the RS232 command.
2. Auto mode is also disabled when a manual selection command is transmitted.
3. The [spc], [cr] and [lf] represent the single ASCII character value for the space, carriage return and line feed respectively.
4. Commands that have XX as part of the command string use a decimal value in the range 00 to 99 to set the direct audio level.

Specifications

General

HDMI Resolutions	480i, 480p, 720i, 720p, 1080i, 1080p, 1920 x 1200
HDMI Standard	HDMI 1.3
Power Supply	12V DC
Power Consumption	8 W max (not including SY-HDBT-70R)
RS232	9600, 8 data bits, 1 stop bit, no parity – No handshaking

Environmental

Operating Temperature	0 - 40 °C non condensing
------------------------------	--------------------------

Physical

Dimensions (W x H x D)	220 x 44 x 148 mm
Weight	700 g

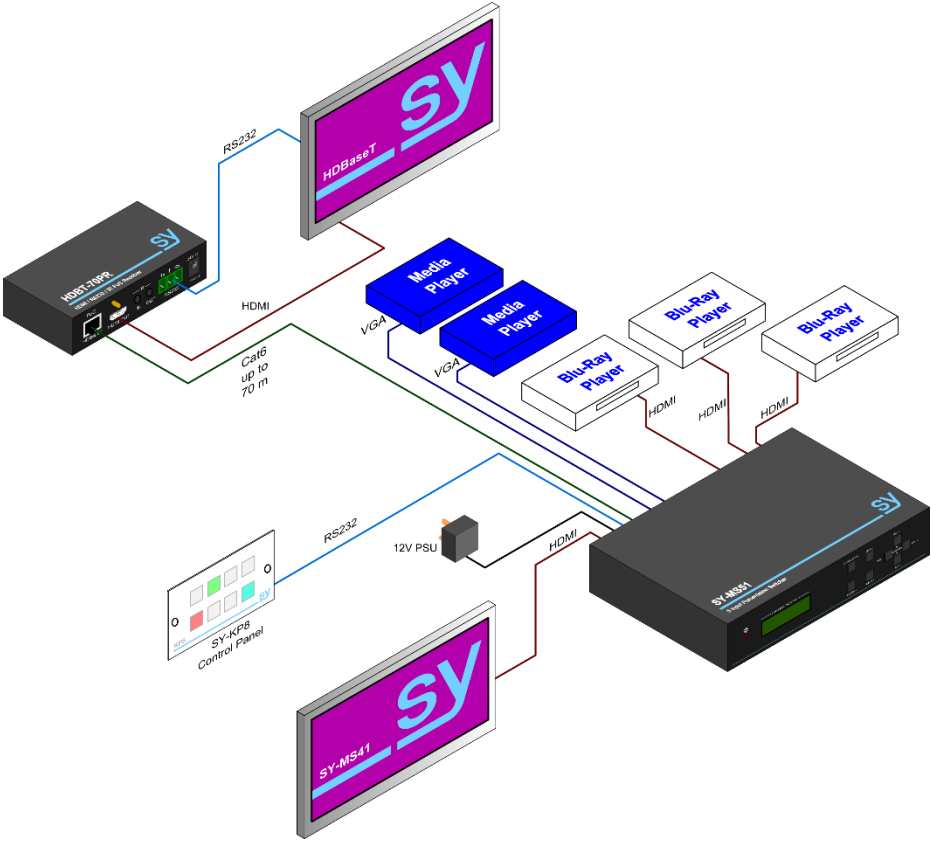


Figure 3 – SY-MS51 Connection Diagram

Safety Instructions

To ensure reliable operation of these products 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, as these products generate heat while operating.
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.

After Sales Service

1. Should you experience any problems while using these products, 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.