avgear

USER MANUAL

AVG-SC51T

Compact Scaler Switcher
HDBaseT 5x2

Version: SC51T_2015V1.0

The AVG-SC51T is a compact mini scaler switcher with 5 video inputs (3 HDMI, 2 VGA) and 6 audio inputs (3 HDMI audio & 2 VGA audio; 1 MIC audio input). The VGA input supports VGA, YPbPr and C-video, assuring the scaler switcher is compliant with multiple video signal types.

Features

- Compliant with HDCP
- Supports CEC, with commands to enable/disable this function
- Supports video source auto-switching function
- Bi-directional IR & RS232 control
- Output resolutions selectable to assure preferred output, supports various output resolutions, such as 1920x1200, 1920x1080, 1600x1200, 1360x768, 1280x800, 1280x720, 1024x768
- VGA video supports C-video, YPbPr and VGA
- Supports online software upgrades
- 48V phantom power to support condenser microphone
- MIC port supports balanced/unbalanced signals.
- 3-level MIC input, supports condenser microphone, dynamic microphone and wireless microphone
- Controllable via button, IR & RS232
- Extensive OSD function

PLEASE READ THIS PRODUCT MANUAL CAREFULLY BEFORE USING THIS PRODUCT.

This manual is only for operation instruction only, and not to be used in a maintenance capacity. The functions described in this version are current as at March 2015. Any changes of functions and operational parameters will be updated in future manual versions. Please refer to your dealer for the latest product details.

Version 1.0 1/3/15

SAFETY OPERATION GUIDE 

In order to guarantee the reliable operation of the equipment and safety of the user, please abide by the following procedures in installation, use and maintenance:

1. The system must be earthed properly. Please do not use two blade plugs and ensure the alternating power supply ranges from 100v to 240v and from 50Hz to 60Hz.
2. Do not install the switcher in an environment where it will be exposed to extreme hot or cold temperatures.
3. This unit will generate heat during operation, please ensure that you allow adequate ventilation to ensure reliable operation.
4. Please disconnect the unit from mains power if it will be left unused for a long time.
5. Please DO NOT try to open the casing of the equipment, DO NOT attempt to repair the unit. Opening the unit will void the warranty. There are high voltage components in the unit and attempting to repair the unit could result in serious injury.
6. Do not allow the unit to come into contact with any liquid as that could result in personal injury and product failure.

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1. Introduction

1.1. Introduction to AVG-SC51T

The AVG-SC51T is a compact mini scaler switcher with 5 video inputs (3 HDMI, 2 VGA) and 6 audio inputs (3 HDMI audio & 2 VGA audio: switched following the video; 1 MIC audio input). The VGA input supports VGA, YPbPr and C-video, assuring the scaler switcher is compliant with multiple video signal types.

AVG-SC51T scales & switches any video signal to the HDMI output and HDBaseT output (supports PoC, connects with AVG-HD402PR, max transmission distance is 60 meters).

With 1 x IR IN, 5 x IR OUT & 1 x RS232, IR & RS232, signals can be transmitted bi-directionally between the AVG-SC51T and AVG-HD402PR.

1.2. Features

- Compliant with HDCP
- Supports CEC, with commands to enable/disable this function
- Supports video source auto-switching function
- Bi-directional IR & RS232 control
- Output resolutions selectable supporting various resolutions, such as 1920x1200, 1920x1080, 1600x1200, 1360x768, 1280x800, 1280x720, 1024x768
- VGA video supports C-video, YPbPr and VGA
- Supports online firmware upgrading
- 48V phantom power to support condenser microphone
- MIC port supports balanced/unbalanced signal
- 3-level MIC input, supports condenser microphone, dynamic microphone and wireless microphone (Line Level)
- Controllable via button panel, IR & RS232
- Extensive OSD function

1.3. Package Contents

- 1 x AVG-SC51T
- 2 x Mounting ears (for AVG-SC51T)
- 1 x AVG-HD402PR
- 2 x Mounting ears (for AVG-HD402PR)
- 5 x Screws
- 7 x Captive screw connectors
- 1 x IR receiver
- 1 x IR emitter
- 2 x VGA to YPbPr cables
- 2 x RS232 cable
- 8 x Plastic cushions
- 1 x IR remote (Cell battery is not included)
- 1 x Power Adapter (DC 12V)
- 1 x User Manual

Note: Please confirm if the product and the accessories are all included, if not, please contact your dealer.

2. Product Appearance

2.1. AVG-SC51T Front Panel

① Power indicator

- Illuminates red when power is on, turns green in standby mode.

② LCD screen

- Shows the real-time system working status

③ SOURCE/AUTO

- Used as the video source selection button, press to select one source, press again to select next source, switching through in turn between HDMI1, HDMI2, HDMI3, VGA1 and VGA2. The LCD screen will show the name of the selected source.

- Used as a switching mode selection button, press and hold for **7 seconds or more** to enter into Auto-switching mode, press and hold for **7 seconds or more** again to enter into Manual-switching mode.

Note: Setting any VGA port to AV or YPbPr in Manual-switching mode, the system will not be able to enter into Auto-switching mode. While in Auto-switching mode, setting any VGA port to AV or YPbPr will automatically enter into Manual-switching mode, and the LCD screen and RS232 control software will prompt “Not support!”.

④ ENTER

Confirm selection in menu.

⑤ RESO/AUTO

- Used as output resolution manual switching button, select between 1920x1200, 1920x1080, 1600x1200, 1360x768, 1280x800, 1280x720, 1024x768.

- Used as output resolution switching mode selection button, press and hold for **7 seconds or more** to enter in Auto-switching mode, press and hold for **7 seconds or more** again to enter into Manual-switching mode.

⑥ MENU/FWUPDATE

- Menu button, press it to enter into the OSD menu.
- Used also as the software updating button, press and hold for 7 seconds or more to enter into the software updating procedure.

⑦ VOL-

- Used as the volume down button.
- Used as the direction button NEXT in menus.

⑧ MIC+

- Used as the MIC volume up button.
- Used as a direction button to MOVE UP in menus.

⑨ VOL+

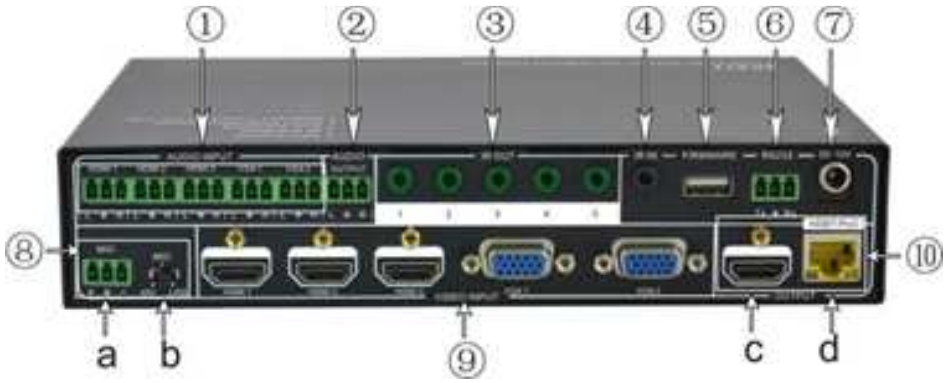
- Used as a volume up button.
- Used as a direction button to PREVIOUS in menus.

⑩ MIC-

- Used as a MIC volume down button.
- Used as a direction button MOVE DOWN in menus.

Note: Pictures shown in this manual are for reference only.

2.2. AVG-SC51T Rear Panel



① AUDIO INPUT

Including 3 HDMI audio & 2 VGA audio inputs

Note. For embedded HDMI audio or external input audio, this is selected by sending RS232 commands.

② AUDIO OUTPUT

Audio output port, the audio comes from the input audio corresponding to the selected video source and is mixed with MIC audio.

③ IR OUT

5 in total, connect with IR emitters to control local source devices or AVG-SC51T remotely, switched along with the corresponding video source.

④ IR IN

Connects with IR receiver (with IR carrier only), to receive IR signals sent by the IR remote or remote controller of another input/output device.

⑤ FIRMWARE

USB port, connects with a USB flash disk or other storage device with the update file loaded, to update the system firmware.

⑥ RS232

Serial control port, 3-pin captive screw connector, connects with a control device (such as a computer) to control the AVG-SC51T or other devices connected with the AVG-HD402PR.

⑦ DC 12V

Power port, connect with DC 12V power adapter.

⑧ MIC

a) MIC port
   Connection for a microphone
b) Mic switch
   3 Positions: 48V phantom power mode (connect with condenser microphone), MIC mode (connect with a dynamic microphone) and LINE mode (connect with a wireless microphone or line audio).

⑨ VIDEO INPUT

Video input ports, include 3 HDMI inputs & 2 VGA inputs.

VGA ports support YPbPr, C-video and VGA format. Factory default is VGA format.

⑩ OUTPUT

c) HDMI local output

d) HDBaseT output, supports PoC.

The two ports share the same audio signal, and the audio signal is mixed with MIC audio and HDMI embedded audio (output audio). If disabling HDMI embedded audio output, there will be no audio output.

Note: Pictures shown in this manual are for reference only.

3. System Connection

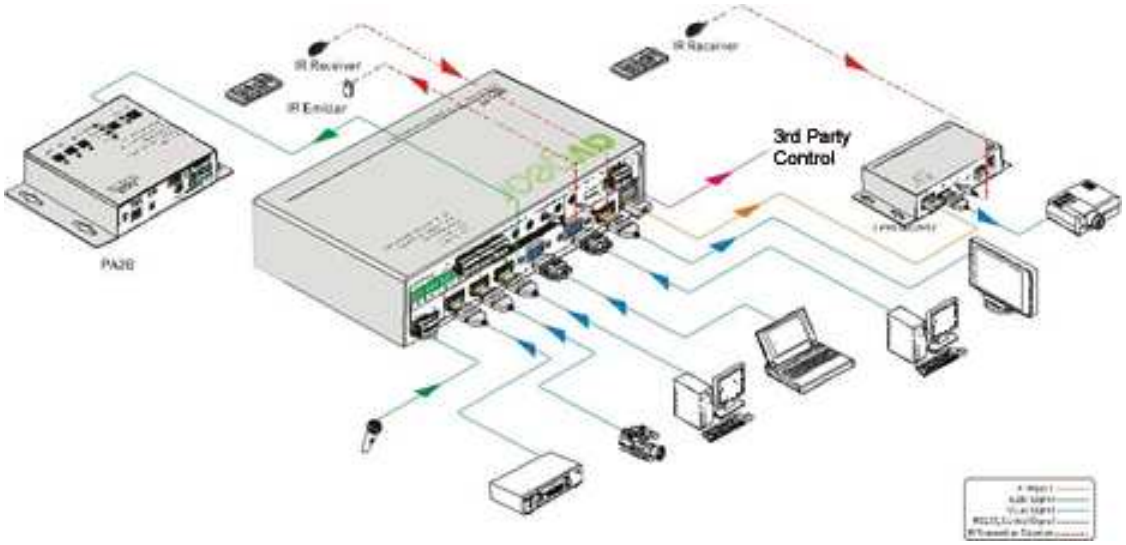
3.1. Usage Precautions

1. System should be installed in a clean environment with temperature and humidity maintained within equipment specification.

2. All of the power switches, plugs, sockets and power cords should be insulated and safe.

3. All devices should be connected before power is turned on.

3.2. System Diagram



3.3. Connection Procedure

Step 1. Connect HDMI source devices (e.g. Blu-ray DVD) to HDMI input ports of AVG-SC51T with HDMI cable. Connect VGA source devices (e.g. PC) to VGA input ports of the AVG-SC51T with VGA cable.

Step 2. Connect audio sources to corresponding AUDIO INPUT ports on AVG-SC51T with audio cable. The audio of HDMI can be embedded or external by sending the right command.

Step 3. Connect a HDMI display device to HDMI output port of AVG-SC51T with HDMI cable.

Step 4. Connect AVG-HD402PR to HDBaseT output port of AVG-SC51T with twisted pair.

Step 5. Connect speaker, headphone or PTN amplifier to AUDIO OUTPUT port of AVG-SC51T.

Step 6. Connect control device (e.g. PC) to RS232 port of AVG-SC51T or AVG-HD402PR (bi-directional RS232 control, either end is available).

Step 7. Both AVG-SC51T and AVG-HD402PR have IR IN and OUT. When one model is connected with IR receiver, the other model should connect with an IR transmitter.

For example: When “IR IN” of AVG-SC51T connects with an IR receiver, the IR transmitter must connect to IR OUT of AVG-HD402PR.

The IR signal can be transmitted bi-directionally between AVG-SC51T and AVG-HD402PR.

Step 8. Select MIC level and connect right microphone to MIC input port. MIC audio will be transmitted to AUDIO OUTPUT port and mixed with source audio.

Step 9. Connect DC12V power adaptor to the power port (AVG-HD402PR is able to get power from AVG-SC51T with PoC function).

Note: AVG-SC51T supports unidirectional PoC, i.e., If the power adapter is connecting with AVG-SC51T, AVG-HD402PR can get power from AVG-SC51T; but when the power adapter is connecting with AVG-HD402PR, AVG-SC51T can not get power from AVG-HD402PR.

3.4. Connection of the Microphone

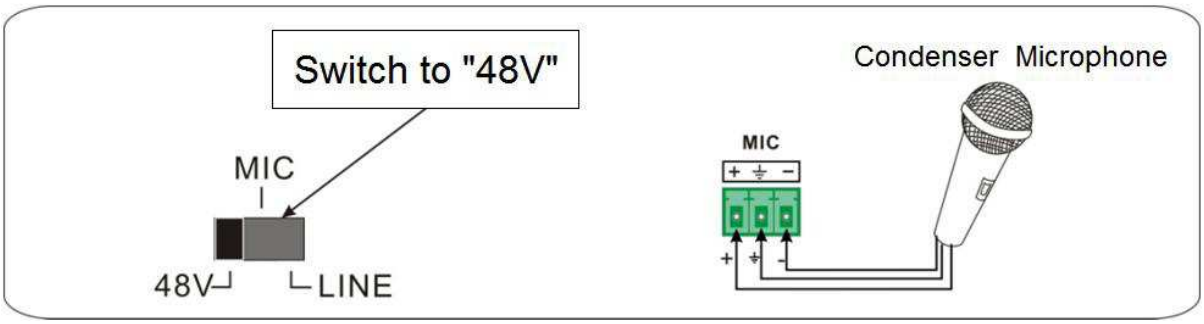
AVG-SC51T provides with one 3-level microphone input port, to accommodate different microphone input modes, including 48V phantom power mode, MIC mode & LINE mode.

48V phantom power input

48V phantom power input has a good frequency characteristic, high input impedance and high sensitivity.

When switched to “48V”, the MIC input will provide 48V phantom power. This is only used for **condenser microphone**.

Connect the microphone in this way: “+” connects to positive, “-” connects to negative and “ ⏚ ” to ground.



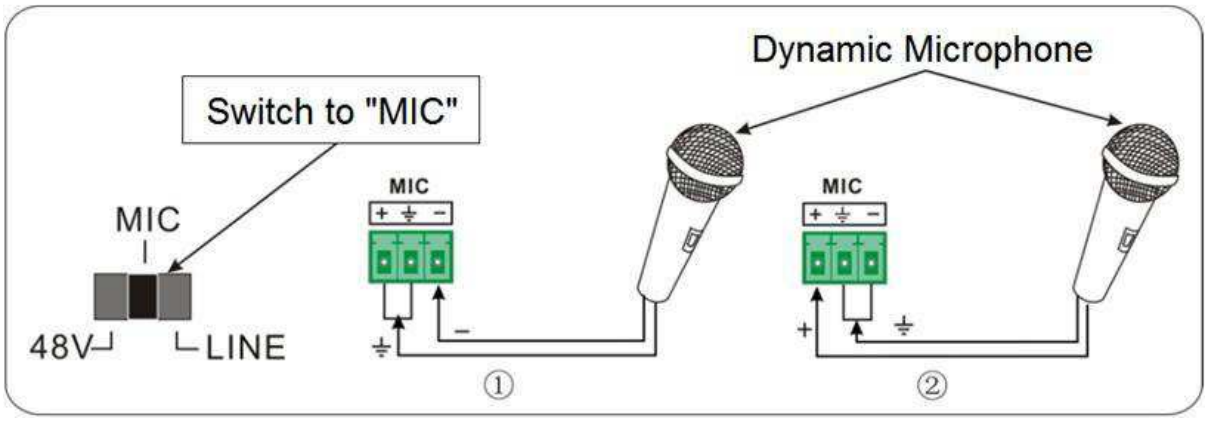
MIC input

MIC input has low frequency characteristics, and wide frequency response.

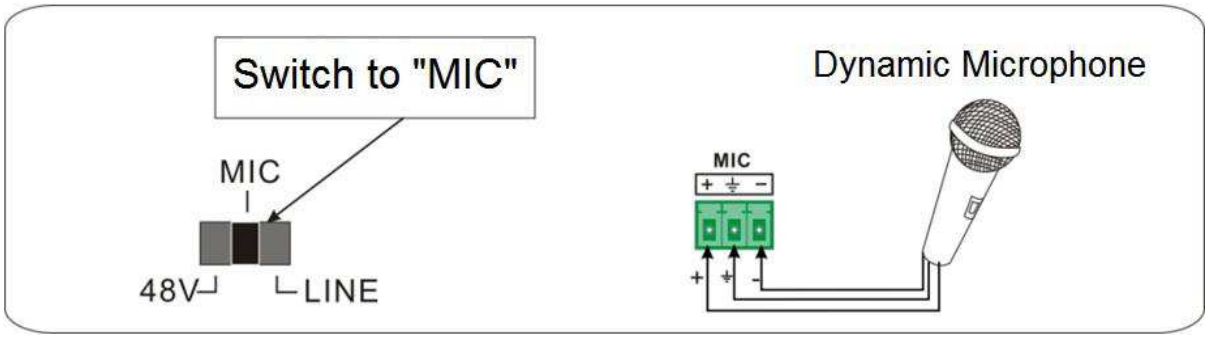
When switched to “MIC”, the microphone input is used for connecting with dynamic microphone. There are two different connection methods:

1. **Unbalanced connection:**

   “+” and “ ⏚ ” connect to ground, and “-” connects to signal. “-” and “ ⏚ ” connect to ground, and “+” connects to signal.



2. **Balanced connection:** “+” connects to positive, “-” connects to negative and “ ⏚ ” connects to ground.



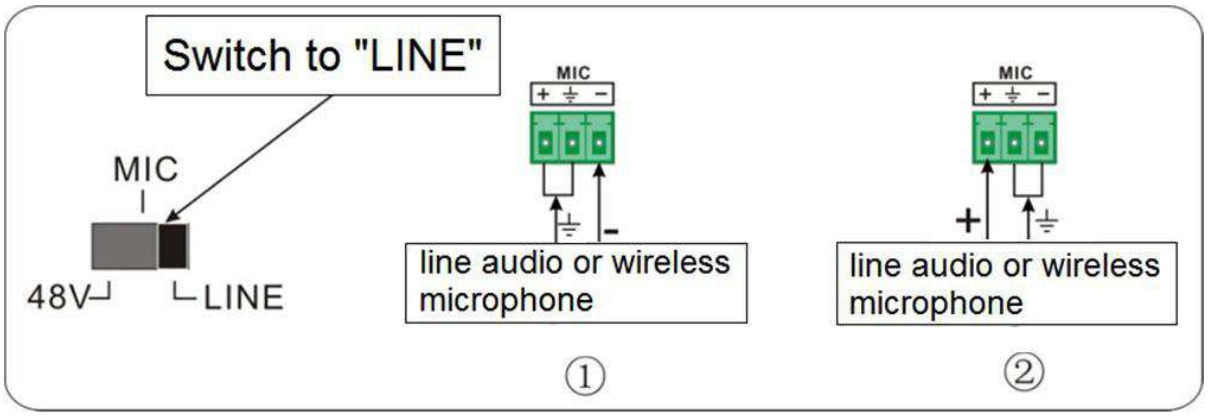
LINE input

LINE input has low frequency characteristics, and wide frequency response.

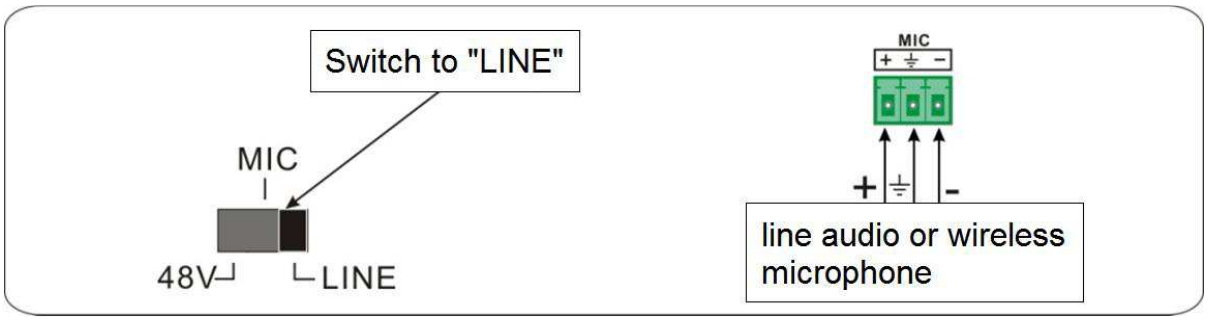
When switch to “LINE”, the microphone input is used for connecting with line audio or wireless microphone output. There are two different connection methods:

1. **Unbalanced connection:**

   “+” and “ ⏚ ” connect to ground, and “-” connects to signal.
   “-” and “ ⏚ ” connect to ground, and “+” connects to signal.



2. **Balanced connection:** “+” connects to positive, “-” connects to negative and “ ⏚ ” connects to ground.



3.5. Application

AVG-SC51T has great application in various systems such as the IT realm, monitoring, conference rooms, big screen displays, broadcast, education, command & control centers and smart homes etc.

4. System Operations

4.1. Operations of Front Panel Buttons

Front panel buttons can be used for output resolution adjusting, switching operations, software updating, volume adjustment and other operations.

4.1.1. Resolution Adjusting

Resolution supports auto-adjusting and manual-adjusting. Press and hold for RESO/AUTO button for 7 seconds or more to switch between auto-adjusting/ manual-adjusting mode.

Note:

1. In auto-adjusting mode, AVG-SC51T will choose the resolution of the display device at the far-end as the preferred resolution.

   If you need to choose the resolution of local HDMI display device:

   - Turn off the power of AVG-SC51T and disconnect the AVG-SC51T and AVG-HD402PR.
   - Turn on the power of AVG-SC51T.
   - The unit grabs the resolution of the local HDMI output device.
   - Connect AVG-HD402PR to AVG-SC51T.

2. In auto-switching mode, front panel button control is not available, but IR and RS232 controls are able to switch modes.

4.1.2. Switching Operations

Video signals support auto-switching and manual-switching. Press and hold for **SOURCE/AUTO** button for **7 seconds or more** to enter in auto-switching/ manual-switching mode.

The display result is showed as below:

IN: HDMI1 MANUAL 1280 X 720	IN: HDMI1 AUTO 1280 X 720

The display result will be shown for **2 seconds**.

Auto-switching function

The auto-switching mode abides by the following principles:

- **New input principle**

  Once a new input signal is detected, AVG-SC51T will switch to the new signal automatically.

- **Power rebooting principle**

  The AVG-SC51T offers a function to remember the last displayed signal when rebooting. Once rebooted, AVG-SC51T will automatically enter auto-switching mode, and then detect all inputs and memorize their connection status for future rebooting use.

If the last displayed signal is still available, AVG-SC51T will output the signal. If not, there will be no signal on output devices.

- **Signal removing principle**

  Once removing the current display signal, AVG-SC51T will detect all input signals with priority from INPUT 1 to INPUT 5. It will transfer the signal detected first to be available to all output devices.

Notice: The Auto-switching function works only when connecting a new signal, removing a signal or power rebooting. With any VGA port set to AV or YPbPr, the system will be not able to enter into Auto-switching mode.

Operation Examples:

- Connect INPUT 2, INPUT 4, and INPUT 5 ports with source devices, select INPUT 4 to outputs.
- Press and hold for the front key **SOURCE/AUTO** for **7 seconds or more** to enter in auto-switching mode.
- No signal removed or new input, AVG-SC51T just works in auto-switching mode, and will take no action (Output from INPUT 4)
- Connect INPUT 3 with a source device, and then it will choose INPUT 3 to output.
- Remove the signal of INPUT 3, AVG-SC51T will detect from INPUT 1 to INPUT 5. And when it detects that input 2 is available, it will choose INPUT 2 to output.
- Cut off the power of the AVG-SC51T, then reboot. As the AVG-SC51T is in auto-switching mode, it will choose INPUT 2 to output.

4.1.3. Volume Adjustment

Not in OSD menu, press VOL – to decrease line volume, VOL + to increase.

Not in OSD menu, press MIC – to decrease MIC volume, MIC + to increase.

4.1.4. Used in the OSD Menu

Press **MENU** button to enter in OSD menu, and use **UP**, **DOWN**, **LEFT**, **RIGHT** button to navigate, press **ENTER** button to confirm selection. **MENU** button also can be used to exit present menu level by level until exit the OSD menu.

4.1.5. Software Updating

AVG-SC51T supports software updating via USB flash disk.

Procedures:

1. Copy the file "**MERGE_51T.bin**" to the root directory of a USB flash disk. (Make sure the file is copied to the root directory for normal use. The "**MERGE_51T.bin**" file is provided/ authorized by AVGear engineering department or from our website: www.avgear.com.au

2. Plug the USB flash disk to the AVG-SC51T USB port on its front panel.

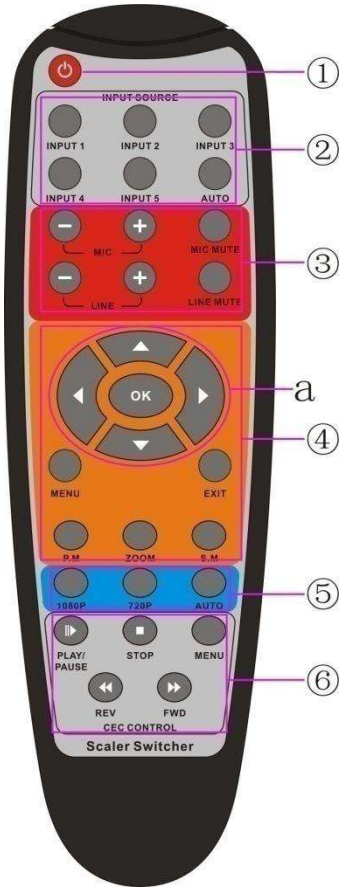
3. Press the button "**MENU**" for **7 seconds or more** to update the software automatically.

Or press this button for **1 second** to open the OSD menu "Option" → Select "Software Update" to enter in update procedure. Or send command **50689%** to update software.

4.2. Operations of IR

4.2.1. IR Remote

As an IR signal can be transmitted bi-directionally between AVG-SC51T and AVG-HD402PR, it is able to use the IR remote at the far-end to control AVG-SC51T or HDMI source devices (via CEC function buttons).



① **Standby button**

Enter/ exit standby mode

② **Input channel selection buttons**

INPUT 1 is for HDMI1, INPUT 2 for

HDMI2…INPUT 5 for VGA2.

AUTO: Enable/disable auto-switching mode.

③ **Volume adjusting buttons**

MIC-/+: turn down/ up MIC volume LINE-/+: turn down/ up line volume MIC MUTE: mute/ unmute MIC audio

LINE MUTE: mute/ unmute line audio

④ **Menu operation buttons**

MENU: press to enter in OSD menu or used to return to previous menu; EXIT: exit OSD menu.

OK: confirm button; Navigation buttons: UP/DWON/LEFT/ RIGHT button, for value setting or page-turn, Buttons in area a are also able to work in CEC mode to enter the menu of HDMI source device; P.P, ZOOM, S.M: shortcut button, to select display mode.

⑤ **Resolution selection buttons**

Select resolution by pressing corresponding button.

AUTO: Enable/disable auto-switching mode.

⑥ **CEC function buttons**

(For HDMI input signal which supports CEC only) Including PLAY, PAUSE, STOP, MENU, REV (reverse) and FWD (forward)

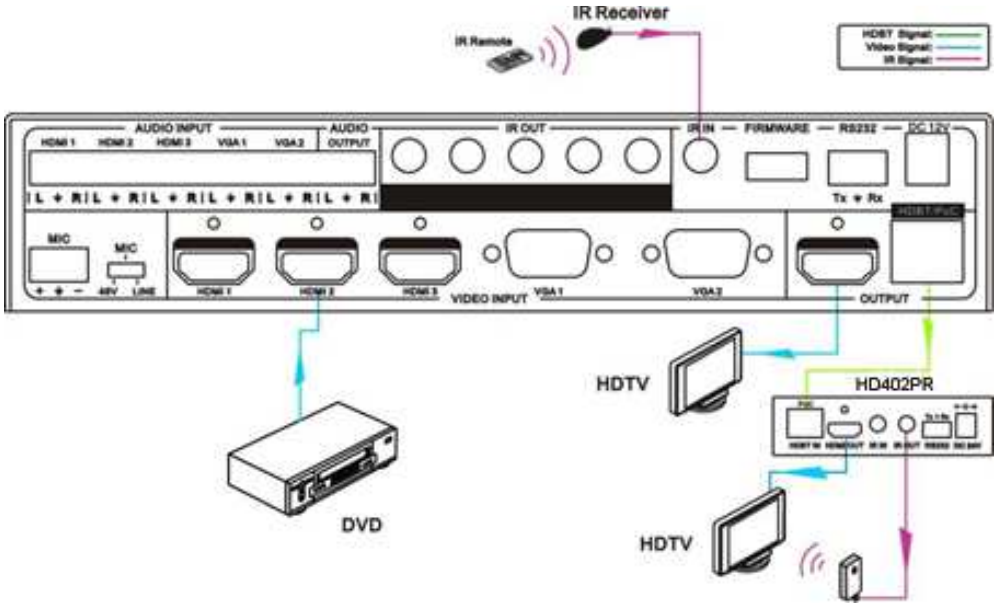
Buttons in section **a** also work when entered CEC.

4.2.2. IR Operations

The 5 IR OUT ports correspond to the 5 video inputs separately, and the IR signals are switched following the corresponding video source.

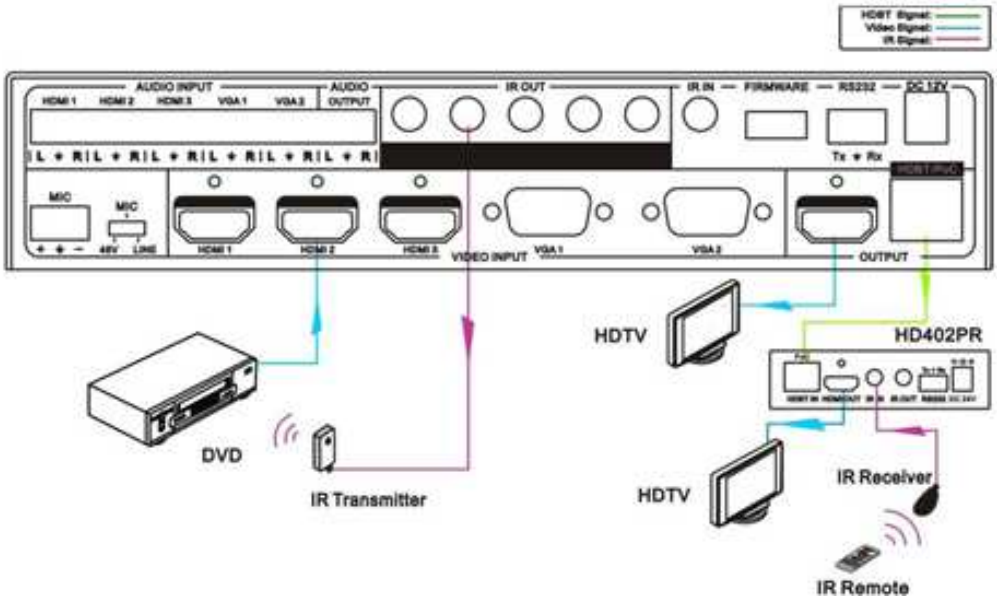
1. Control of far-end device from local

Control AVG-SC51T or far-end display device from local through corresponding IR remote.



2. Control local device from remote

Control AVG-SC51T or local device from local through corresponding IR remote.



4.3. Operation of the CEC Function

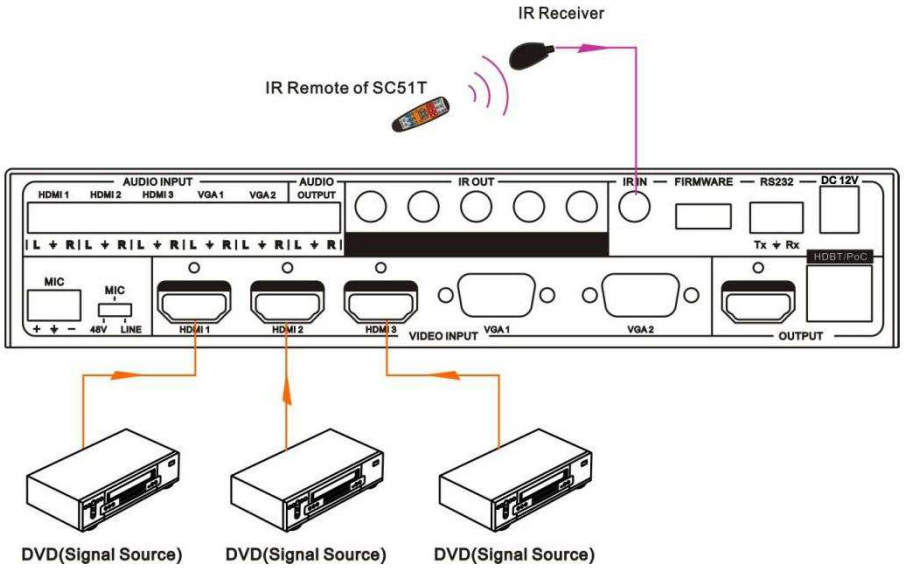
AVG-SC51T supports CEC, it can be turned on/ off by sending RS232 commands or OSD menu operations. The default setting is ON.

Commands pertaining to CEC: “50686%” (enable CEC) and “50687%” (disable CEC)

HDMI INPUT ports 1~3 support CEC, if the connected source devices also support CEC and their CEC are on, users can control the source device via the IR remote of AVG-SC51T.

The working status related to CEC and STANDBY is showed as below:

Situation	Working Status
CEC: on, Standby: on	Press STANDBY button on IR remote, AVG-SC51T enters in standby mode, so do all HDMI source devices. Press STANDBY button again on IR remote, AVG-SC51T exits standby mode, the HDMI source devices start working too.
CEC: on, Standby: off	Press STANDBY button on IR remote, AVG-SC51T enters in standby mode, HDMI 1~3 source devices keep on.
CEC: on	Use CEC function buttons, ▲,▼, ◀ ▶ , and OK buttons on IR remote to control HDMI source devices, include play, pause, fast forward, fast reverse and operations in menu.
CEC: off	Unable to control HDMI source devices through IR remote.



CEC: Control HDMI source devices by IR remote of the AVG-SC51T

4.4. Operations of RS232 Control

As RS232 can be transmitted bi-directionally between AVG-SC51T and AVG-HD402PR, it is able to control a third party RS232 device locally or control the AVG-SC51T remotely. When controlling a third party RS232 device, the baud rate of this device should be 2400, 4800, 9600, 19200, 38400, 57600 or 115200.

4.4.1. Installation/Removal of RS232 Control Software

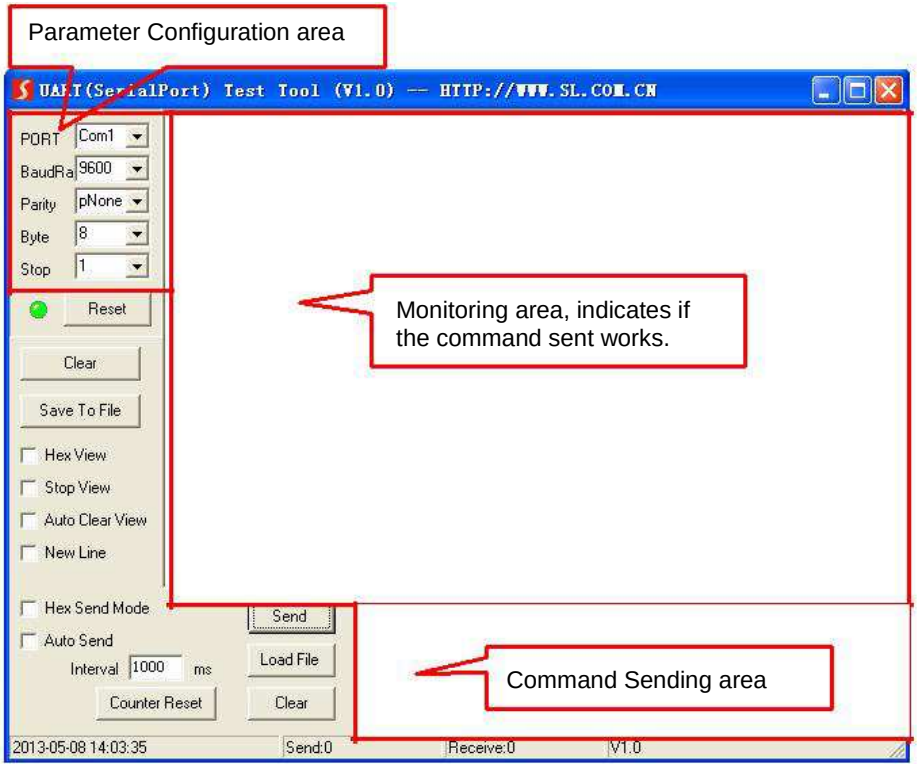
- **Installation:** Copy the control software file to the computer connected with AVG-SC51T.
- **Removal:** Delete all the control software files in corresponding file path.

4.4.2. Basic Settings

First to connect AVG-SC51T with all input devices and output devices needed, then to connect it with a computer which is installed with RS232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is showed as below:

The interface of the control software is showed as below:



Please set the parameters of COM number, baud rate, data bit, stop bit and the parity bit correctly, and then you are able to send command in the Command Sending Area.

4.4.3. RS232 Communication Commands

Communication protocol: RS232 Communication Protocol

Baud rate: 9600 Data bit: 8 Stop bit: 1 Parity bit: none

Command	Function	Feedback Example
Switch Commands		
50701%	Switch to HDMI 1 input	Switch to HDMI 1
50702%	Switch to HDMI 2 input	Switch to HDMI 2
50703%	Switch to HDMI 3 input	Switch to HDMI 3
50704%	Switch to VGA 1/YPbPr 1/AV 1 input	Switch to VGA 1/YPbPr 1/AV 1
50705%	Switch to VGA 2/YPbPr 2/AV 2 input	Switch to VGA 2/YPbPr 2/AV 2
50680%	Select VGA 1 for INPUT 4	Input 4 Set & Switch to VGA 1
50681%	Select YPbPr 1 for INPUT 4	Input 4 Set & Switch to AV 1
50682%	Select AV 1 for INPUT 4	Input 4 Set & Switch to AV 1
50683%	Select VGA 2 for INPUT 5	Input 5 Set & Switch to VGA 2
50684%	Select YPbPr 2 for INPUT 5	Input 5 Set & Switch to YPbPr 2
50685%	Select AV 2 for INPUT 5	Input 5 Set & Switch to AV 2
50785%	Enable auto-switching	Auto Switching
50786%	Disable auto-switching	Manual Switching
Audio Commands		
50600%	MUTE line audio	LINE Mute
50601%	UnMute line audio	LINE Unmute
50602%	Line audio volume up	LINE Volume: xx (xx=0~60)
50603%	Line audio volume down	LINE Volume: xx (xx=0~60)
50720%	Mute LINE audio & MIC audio	LINE Mute
		MIC Mute
50721%	Unmute LINE audio & MIC audio	LINE Unmute
		MIC Unmute
50722%	Mute MIC audio	MIC Mute
50723%	Unmute MIC audio	MIC Unmute
50694%	Enable Mic precedence	Mic precedence: enable
50695%	Disable Mic precedence	Mic precedence: disable
50761%	Not display mute icon of LINE audio	LINE Mute Icon: disable
50762%	Display mute icon of LINE audio	LINE Mute Icon: enable
50763%	Not display mute icon of MIC audio	MIC Mute Icon: disable
50764%	Display mute icon of MIC audio	MIC Mute Icon: enable
50765%	Display freeze icon	Freeze Icon: enable
50766%	Not display freeze icon	Freeze Icon: disable

Command	Function	Feedback Example
50644%	Display channel status	Input Icon: enable
50645%	Not display channel status	Input Icon: disable
50650%	Check the channel status	Input Icon: xx
50606%	Auto-adjust the input parameter (VGA only)	VGA Input Auto
50699%	Check the system version	Version Vx.x.x
50688%	Enable MIC noise detecting	MIC detect: enable
50689%	Disable MIC noise detecting	MIC detect: disable
50690%	Check MIC noise detecting statue	MIC detect: XXXX
50791%	HDCP Active	HDCP Active
50792%	HDCP Manual	HDCP Manual
50793%	Enable HDCP output	HDCP ON
50794%	Disable HDCP output	HDCP OFF
50795%	Inquire HDCP/ Active HDCP	HDCP Active
	Inquire HDCP/ Manual HDCP	HDCP Manual
		HDCP OFF/ON
50767%	Restore default EDID	EDID: initial
50768%	Bypass EDID data from output to input	EDID: bypass
50769%	Upload custom EDID data to the switcher	Please send edid data within 10 secs!
50770%	Inquire EDID status	EDID: initial
		EDID: bypass
		EDID: user
50782%	EDID management, copy the best resolution data of one output to HDMI input	Manage HDMI input with prefered timing
		Timing table=[1]
		Resolution:1920x1080
50787%	Enable serial control mode 1: control Scaler & far-end from local RS232	RS232 Mode 1: RS232 Control Scaler & Remote
50788%	Enable serial control mode 2: control Scaler from local RS232 and far-end)	RS232 Mode 2: RS232 & Remote Control Scaler
50697%	Exit standby mode	Wake up!
50797%	Enter standby mode	Go to standby!
50698%	Software update	
50617%	Reset to factory defaults	Factory Reset
Menu Commands		
50609%	OK for OSD selection	Key: ok
50610%	LEFT button	Key: left
50611%	RIGHT button	Key: right
50612%	UP button	Key: up
50613%	DOWN button	Key: down
50616%	MENU button (enter OSD)	OSD: Enter
50618%	EXIT button (exit OSD)	OSD: Exit

Command	Function	Feedback Example
Inquire Commands		
50630%	Check the volume level	LINE Volume: xx (xx=0~66)
		MIC Volume: xx (xx=0~66)
50631%	Check the input source	Input: xx (xx= HDMI1/ HDMI2/ HDMI3/ VGA1/ VGA2/ YPbPr1/ YPbPr2/ AV1/ AV2)
50632%	Check the output resolution	Resolution: xx (xx=1920×1200/ 1920×1080/ 1600×1200/ 1360 ×768/ 1280×800/ 1280×720/ 1024×768
50633%	Check the image mode	Picture Mode: xx (xx= Dynamic/ Standard/ Mild/ User)
50634%	Check the audio mode	Sound Mode: xx (xx= Standard/ Music/ Movie/ Sports/ User)
50635%	Check the image aspect ratio	Aspect Ratio: xx (xx= 16:9/ 4:3/ auto/ panorama/ justscan/ zoom1/ zoom2, when the input source is VGA format, xx can only be 4:3, 16:9 or Panorama)
50636%	Check the brightness	Brightness: xx (xx=0~99)
50637%	Check the contrast	Contrast: xx (xx=0~99)
50638%	Check the saturation	Saturation: xx (xx=0~99)
50639%	Check sharpness	Sharpness: xx (xx=0~99)
50640%	Check the color temperature	Color Temperature: xx (xx= Cool/ Medium/ Warm/ User.)
50651%	Check Volume Icon display status	Volume Icon: xxxx
50652%	Check Digital audio output status	Embedded Audio Output: enable/disable
50712%	Check the audio input sources for HDMI 1, 2, 3	HDMI1 Audio from XXXX port
		HDMI2 Audio from XXXX port
		HDMI3 Audio from XXXX port
50751%	Check whether the LINE audio is mute or not	LINE Mute/Unmute
50752%	Check whether the MIC audio is mute or not	MIC Mute/Unmute
50753%	Check the freeze status	Freeze: enable/disable
50754%	Check the panel locked status	Front Panel Lock/UnLock
50783%	Display statues including MIC, LINE audio, Resolution, Output Audio	Line Volume:XX
		Mic Volume:XX
50911%	Exit command	CEC cmd: exit

Note:

1. Turn on/ off HDCP auto-management by sending serial commands.

   a) When HDCP is set to active, whether output source is with HDCP depends on input source. If the input source contains HDCP, so does the output and vice versa.

2. When HDCP is set to Manual, whether the output is with HDCP depends on the state of the HDCP. Turn off HDCP, then the output is without HDCP and vice versa.

3. Screen output adjusting avails only when the screen output adjusting is on. Send command 50678% to turn on.

4. CEC commands with grey background avails only when CEC is on.

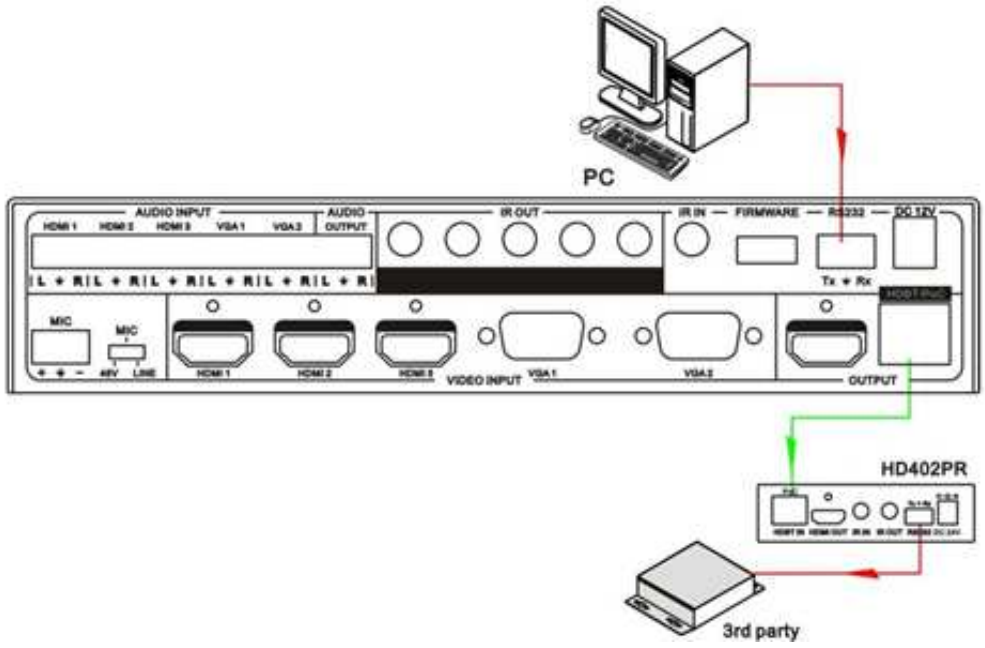
5. MIC precedence: In Mute mode, if the MIC noise detecting is on, the device will unmute MIC automatically given the outer noise exceeds the limit of noise detecting. Send 50696% to enable MIC precedence, then the device will not be able to change the mute mode no matter how loud the noise is.

4.4.4. Control AVG-SC51T or 3rd Party Device Locally

Firstly, connect the RS232 port of AVG-SC51T to RS232 port of PC.

Secondly, send command **50787%** (serial control mode 1, factory default) via RS232 communication software.

Lastly, send the right command of AVG-SC51T or other remote RS232 device connected in present system. Connect as below:

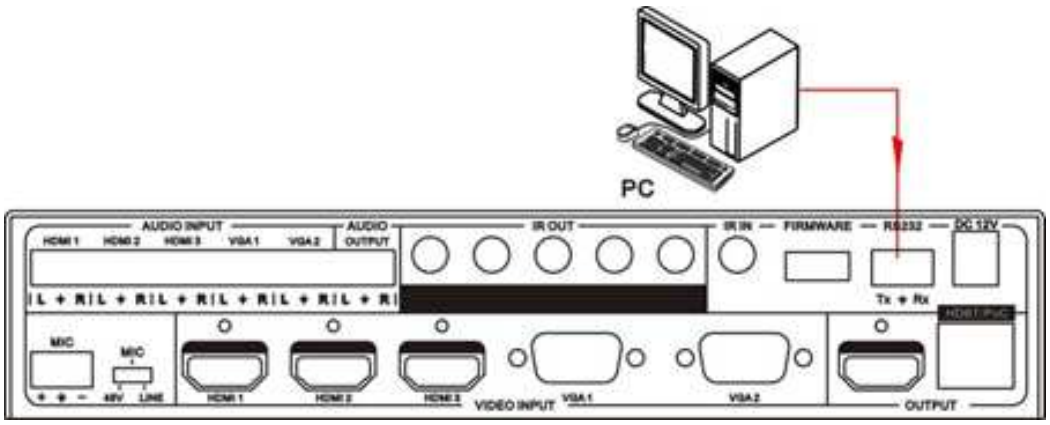


Control AVG-SC51T or 3rd party device locally

4.4.5. Control the AVG-SC51T from a Local or Remote location

Control AVG-SC51T locally

Firstly, connect the RS232 port of AVG-SC51T to RS232 port of PC. Secondly, send command 50788% via RS232 communication software. Lastly, send the right command to control AVG-SC51T. Connect as below:



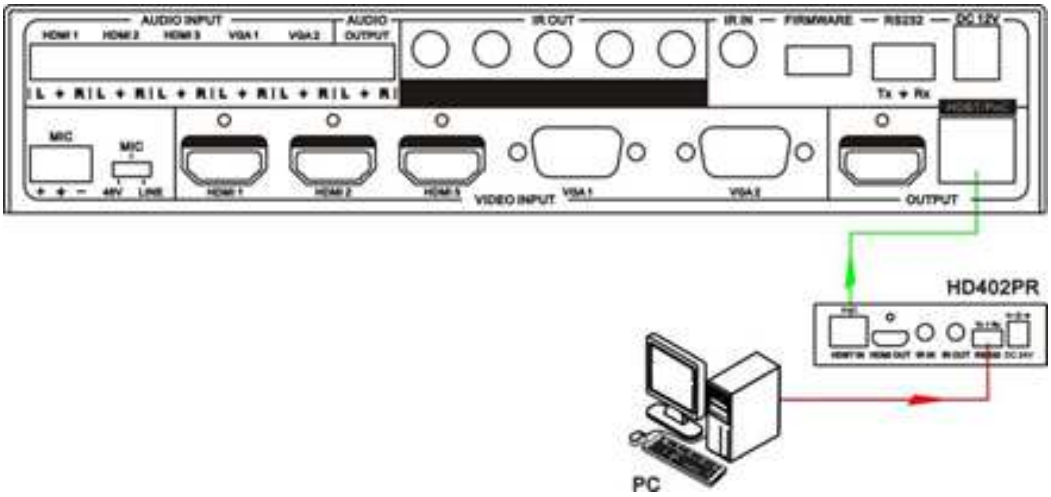
Control AVG-SC51T locally

Control AVG-SC51T from remote location

Firstly, connect the RS232 port of far-end RS232 device to RS232 port of PC.

Secondly, send command **50788%** via RS232 communication software.

Lastly, send the right command to control AVG-SC51T. Connect as below:



Control AVG-SC51T from remote location

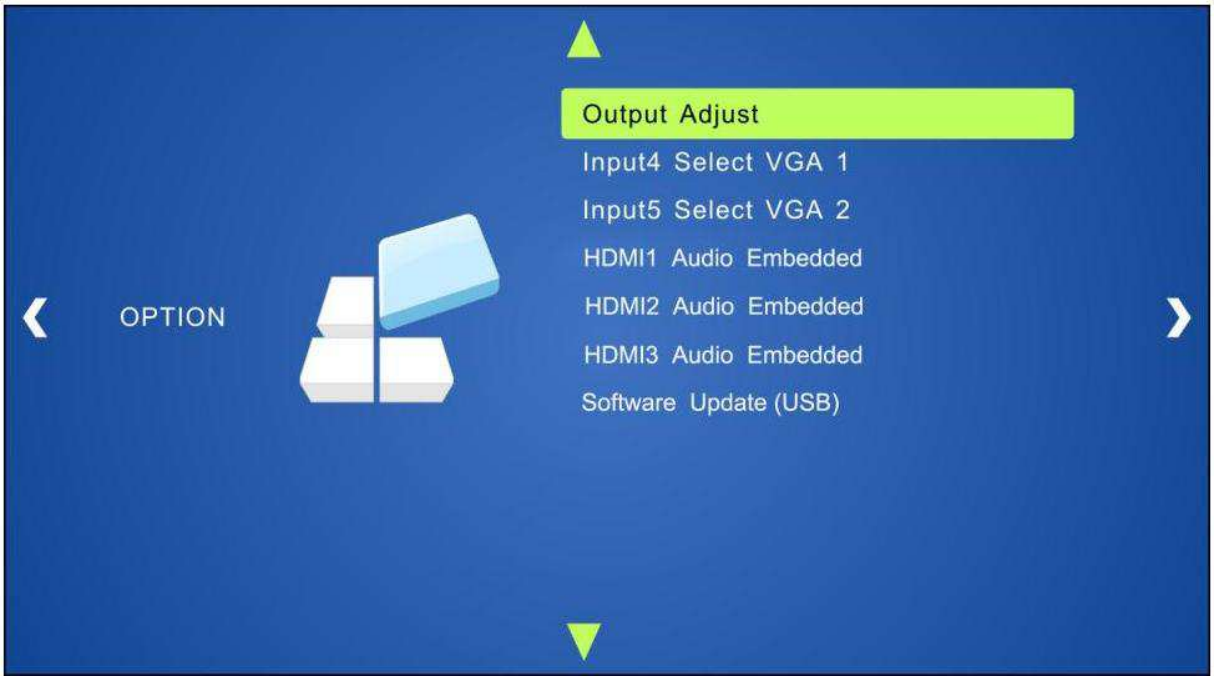
4.5. Operations in the OSD Menu

AVG-SC51T provides a powerful OSD operation menu, contains 4 parts: optional settings, image settings, audio settings and system setting etc.

Press MENU button on front panel (or MENU button on IR remote/send command 50616%) to enter in OSD menu, so it is able to do some settings through the OSD menu.

4.5.1. Option

Includes Output Adjust, Input4/5 Select, HDMI1/2/3 Audio select, and Software Update (USB)



Output Adjust: Adjust output image position (X: horizontal direction and Y: vertical direction) and ratio aspect (width and height).

Input4 Select: Select video source format for VGA input, includes AV 1 (C-video signal), VGA 1 (VGA signal) and YPbPr 1 (Component video signal). Use ENTER button to select the desired source format.

Input5 Select: Select video source for VGA input, includes AV 2 (C-video signal), VGA 2 (VGA signal) and YPbPr 2 (Component video signal). Use ENTER button to select the desired source format.

For INPUT4 & INPUT5, when change for new format signal:

1. Firstly, please select a format through this menu (the signal format changed while the video source is still the same).

2. Secondly, switch off the current signal channel (e.g. switch to another channel).

3. Thirdly, switch to channel INPUT4/INPUT5 again.

HDMI1 Audio Select: switch between Embedded and Line to choose the desired audio output port for HDMI1.

HDMI2 Audio Select: switch between Embedded and Line to choose the desired audio output port for HDMI2.

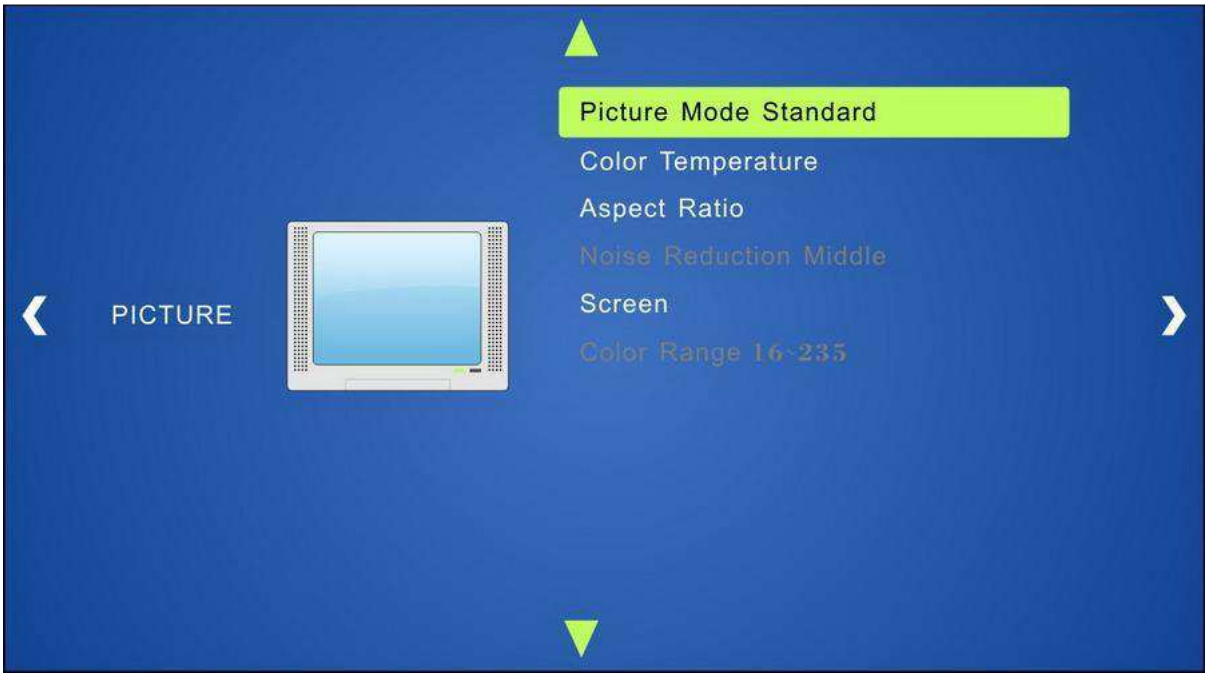
HDMI3 Audio Select: switch between Embedded and Line to choose the desired audio output port for HDMI3.

Software Update (USB): Insert the USB flash disk with updating file to USB port of AVG-SC51T, to update the software through this menu.

4.5.2. Picture

Including Picture Mode, Color Temperature, Aspect Ratio, Noise Reduction, Screen and Color Range.

Please check the picture below:



Picture mode: Includes Dynamic, Standard, Mild, and User. And only in User mode, it is able to set the image contrast and brightness.

Color Temperature: Includes Cool, Medium, Warm and User. And only in User mode, it is able to set values for Red, Green and Blue (RGB).

Aspect Ratio: Includes Native, 4:3, 16:9, Zoom1, Zoom2, Just Scan, and Panorama. VGA format only supports 4:3, 16:9 and Panorama.

Noise Reduction (not for VGA format): Includes Off, Low, Middle, High and Default.

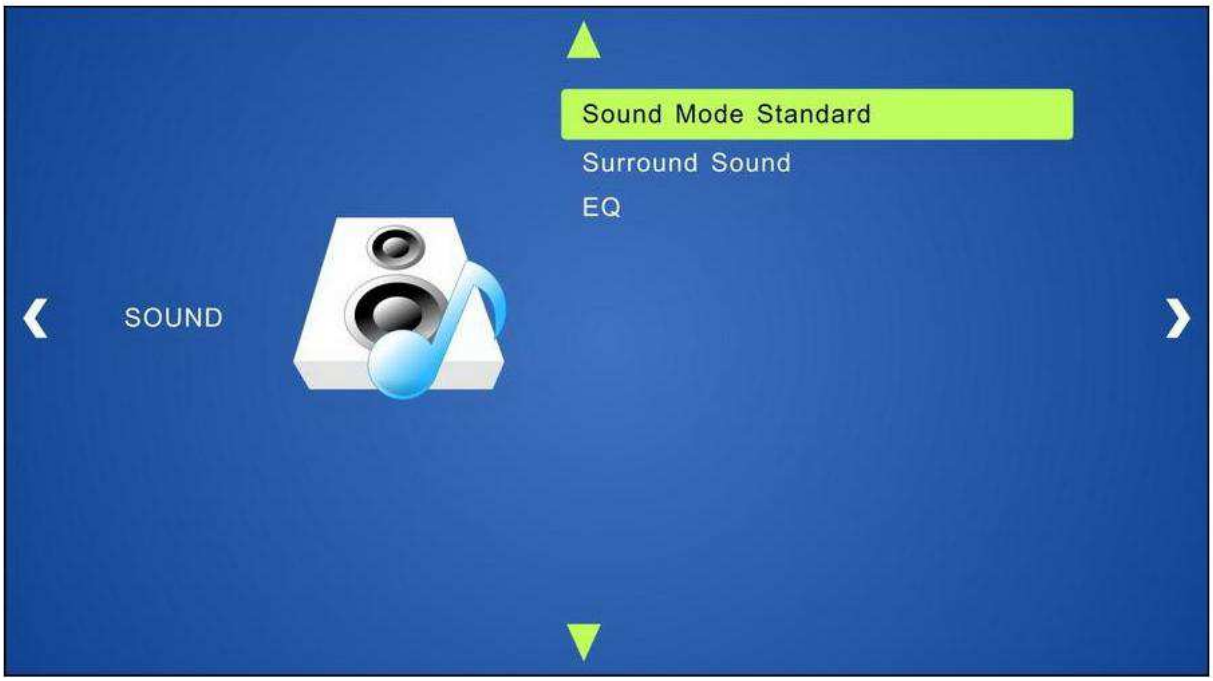
Screen (not for HDMI source): Includes Auto Adjust, Horizontal, Vertical, Size, and Phase.

Color Range (not for VGA format): 0~255, use ENTER button to select the color range.

4.5.3. Sound

Including Sound Mode, Surround Sound and EQ

Please check the picture below:



Sound mode: Includes Standard, Music, Movie, Sports and User. Only User mode supports the setting of treble and bass.

Surround Sound: Includes Off, Surround and SRS Trusurround XT.

EQ: To adjust the sound balance.

4.5.4. Setup

Including OSD Language, Restore Factory Default, Blending, HDMI CEC, OSD Duration and version inquiry

OSD Language: Supports 14 languages, including English (default), Chinese etc.

Restore Factory Default: Restores to original system state

Blending: Includes Low, Middle, High and Off. Use ENTER button to select.

HDMI CEC: Enable/disable CEC and auto-standby function. Default: CEC on, STANDBY on.

OSD Duration: Includes 5 s, 10 s, 15 s and Off. “s” is for Second.

VERSION: Displays software version

4.6. Instructions to use the VGA Converting Cable

As VGA source supports YPbPr and C-video source, AVG-SC51T provides with 2 VGA converting cables to compliant with these signals.

When need to select these signals as input source, please switch to channel INPUT 4 (or INPUT 5), and then set the signal type in OSD. And then switch to other input channel and connect INPUT 4 (or INPUT 5) with corresponding source device. At last, please switch to INPUT4 (or INPUT 5) again.

Connect with Component Video (YPbPr) Source

A. Operation Examples:

1. **Via front panel buttons & OSD**

   Press **MENU** button on front panel to enter in OSD, and then enter in **OPTION** setting menu: set “INPUT 4 Select” to **YPbPr1**, and “INPUT 5 Select” to **YPbPr2**.

After setting, press SOURCE/AUTO button on front panel to switch to YPbPr1 or YPbPr2 source.

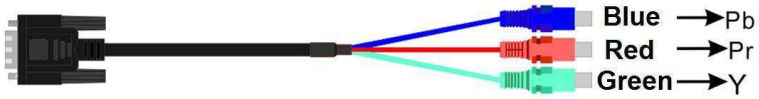
2. Via RS232 commands

Send command **50681%** (or **50684%**) to switch to YPbPr1 (or YPbPr2) source.

3. Via IR remote & OSD

Press **MENU** button on IR remote to enter in OSD, and then enter in **OPTION** setting menu: set “INPUT 4 Select” to **YPbPr1**, and “INPUT 5 Select” to **YPbPr2**. After setting, press **INPUT 4** (or **INPUT 5**) button to switch to YPbPr1 (or YPbPr2) source.

B. Connecting the VGA converting cable like this:



Connect with Composite Video (C-VIDEO) Source

A. Operation Examples:

1. Via front panel buttons & OSD

Press **MENU** button on front panel to enter in OSD, and then enter in **OPTION** setting menu: set “INPUT 4 Select” to **AV1**, and “INPUT 5 Select” to **AV2**. After setting, press **SOURCE/AUTO** button on front panel to switch to AV1 or AV2 source.

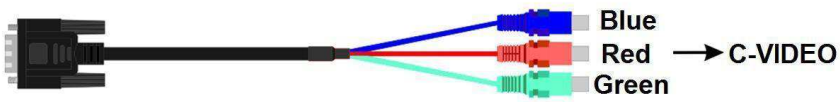
2. Via RS232 commands

Send command **50682%** (or **50685%**) to switch to YPbPr1 (or YPbPr2) source.

3. Via IR remote & OSD

Press **MENU** button on IR remote to enter in OSD, and then enter in **OPTION** setting menu: set “INPUT 4 Select” to **AV1**, and “INPUT 5 Select” to **AV2**. After setting, press **INPUT 4** (or **INPUT 5**) button to switch to AV1 (or AV2) source.

B. Connecting the VGA converting cable like this:



5. Specifications

Video Input		**Video Output**	
Input	3 HDMI 2 VGA	Output	1 HDMI 1 HDBaseT
Input Connector	3 female HDMI 2 female VGA (15 pin)	Output Connector	1 female HDMI 1 RJ45
Video Signal	HDMI, YPbPr, C-video, VGA	Video Signal	1 HDMI 1 HDBaseT
IR Input		**IR Output**	
Input	1 IR IN	Output	5 IR OUT
Input Connector	3.5mm mini jack	Output Connector	3.5mm mini jack
Video General			
Resolution	1920x1200, 1920x1080, 1600x1200, 1360x768, 1280x800, 1280x720, 1024x768	Bandwidth	HDMI:4.95Gbps(1.65Gbps per color) C-Video:150MHz YPbPr: 170MHz VGA: 375MHz
Maximum Pixel Clock	165MHz	Video Impedance	75Ω
Gain	0dB	Input / Output Level	0.5V~2.0Vp-p
HDCP	Compliant with DVI & HDMI 1.3 standards		
Audio Input		**Audio Output**	
Input	3 Dual-mono stereo audio for HDMI 2 Dual-mono stereo audio for VGA (Support C-VIDEO, YPbPr, VGA)	Output	1 stereo
Input Connector	3P captive (3.81mm)	Output Connector	3P captive (3.81mm)
Input Impedance	>10kΩ	Output Impedance	70Ω
Audio General			
Frequency Response	20Hz~20K Hz	Stereo Channel Separation	>80dB @1KHz
Control Parts			
Control/ Remote	IR remote, Buttons & RS232	Pin Configuration	2 = TX, 3 = RX, 5 = GND

General			
Temperature	-10 ~ +40℃	Humidity	10% ~ 90%
Power Supply	DC12V ±0.5V	Power Consumption	8W, supply power to AVG-SC51T and AVG-HD402PR separately 16W, AVG-SC51T supplies power to AVG-HD402PR
Dimension (W*H*D)	220x 44x 148mm	Weight	0.65Kg

6. Panel Drawing

7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Output image has noise	Bad quality connecting cable	Try another high quality cable.
	Failed or loose connection	Re-seat the connector
No output image when switching	No signal at the input / output	Check with oscilloscope or multimeter if there is any signal at the input/ output end.
	Failed or loose connection	Make sure the connection is good
	The switcher is faulty	Send it to an authorized dealer for repair.
POWER indicator doesn't light or respond to any operation	Failed connection of the power cord.	Make sure the power cord connection is good.
EDID management does not work normally	The HDMI cable is broken at the output end.	Change for another HDMI cable which is in good working condition.
There is a blank screen on the display when switching	The display does not support the resolution of the video source.	Switch again.
		Manage the EDID data manually to make the resolution of the video source automatically compliant with the output resolution.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.
Cannot control the device by 3rd party control through RS232 port	Wrong RS232 communication parameters	Type in correct RS232 Communication parameters.
	Broken RS232 port	Send it to an authorized dealer for checking.
Cannot control the device by front panel buttons whilst the control through RS232 port is ok	The front panel buttons are locked	Send command 50605% to unlock the front panel buttons.
Cannot control the device by RS232 / IR remote / front panel buttons	The device has a previous fault.	Send it to an authorized dealer for repairing.

If your problem persists after following the above troubleshooting steps, seek further help from an authorized dealer.