PTN Electronics

SC61D Mini Presentation Scaler Switcher

User Manual

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SC Series --- Presentation Scaler Switcher

Please read this manual carefully before using this product.
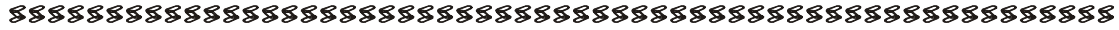
This is a manual for Presentation scaler switcher SC61D.

This manual is only an instruction for operators, not for any maintenance usage. The functions described in this version are updated till April 2011. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

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All product function is valid till 2011-4-1

⚠ Operation Notice

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In order to ensure the credibility use of the product and the user's safety, please comply with the following items during installation and maintenance:

①

The system must be earthed properly. Please do not use two blades plugs and ensure the alternating power supply ranged from 100v to 240v and from 50Hz to 60Hz.

②

Do not put the machine in a place of too hot or too cold.

③

To avoid any damage by over heat, please keep the working environment good in ventilation to radiate the heat when running the machine.

④

The machine should be turned off when in rainy and humid days or nonuse for a long time.

⑤

The AC power supply line should be disconnected with the power socket during the following operation.
A. Take out or reinstall any component of the machine.
B. Disconnect or re-connect any connector of the machine.

⑥

Please do not attempt to maintain and uncover the machine for there is a high-voltage component inside and the risk of the electric shock.

⑦

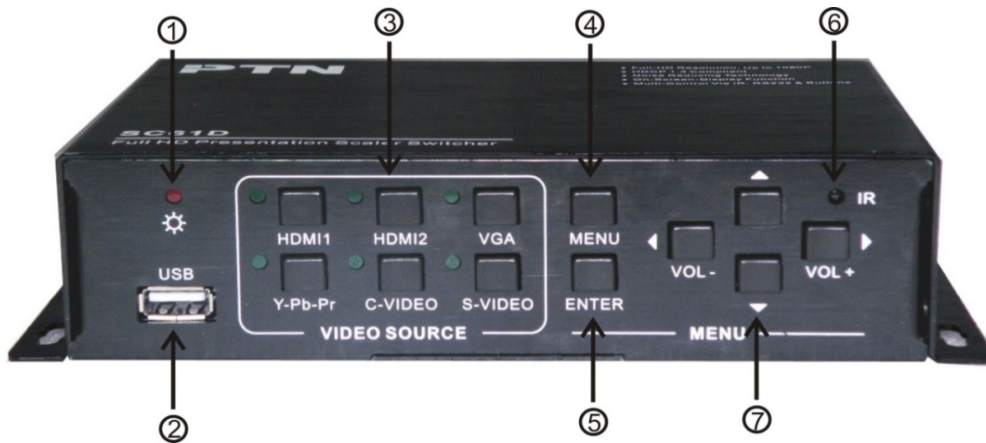Do not splash any chemical product or liquid on or near the equipment.

1. Function

SC61D is a presentation scaler switcher designed for multi-signal processing, signals of C-Video, S-Video, YPbPr, VGA and HDMI can be scaled to high-resolution HDMI format and switched out. The Audio is following video switching, all the audio is scaled to HDMI embedded digital audio, 3.5mm stereo audio and Coaxial(SPDIF) audio outputs.

Product Features:

1: 6 channels video inputs: 2xHDMI, 1xVGA, 1xYPbPr(Component Video), 1xC-Video (Composite Video), 1x S-Video(Separate Video). All of these will be scaled to HDMI output.

2: The video supports different format, including NTSC, PAL, SECAM. It is auto-adjustable.

3: The video is built in the gain-compensation technology, 10Bit processing.

4: YPbPr supports the resolution of interlaced scanning and progressive scanning, from 480i to 1080p. It is built in the 1080i up-scaling function.

5: The VGA input supports VESA standard, including: 640x480, 800x600, 1024x768, 1280x1024, 1280x768, 1360x768/60Hz & 1920x1080, supporting the DDC2/B plug and play.

6: The two HDMI inputs support the full-digital signal, supporting Bit Synchronous Digital audio decoding

7: USB port can update the firmware, working as the flash disk, playing the pictures (JPEG) and music (MP3). It supports the presentation timing mode.

8: It can adjust the aspect ratio, zoom in/out the output image.

9: The brightness, contrast, sharpness and temperature can be adjusted.

10: 3 Audio outputs. HDMI embedded audio, 3.5mm stereo audio and Coaxial (SPDIF). The volume/bass/treble is adjustable.

11:The HDMI output resolution supports XGA (1024×768), 720P(1280x720), WXGA(1280×800), 1080P(1920X1080). (1080P is the default output resolution.)

12: HDCP 1.3 compliant

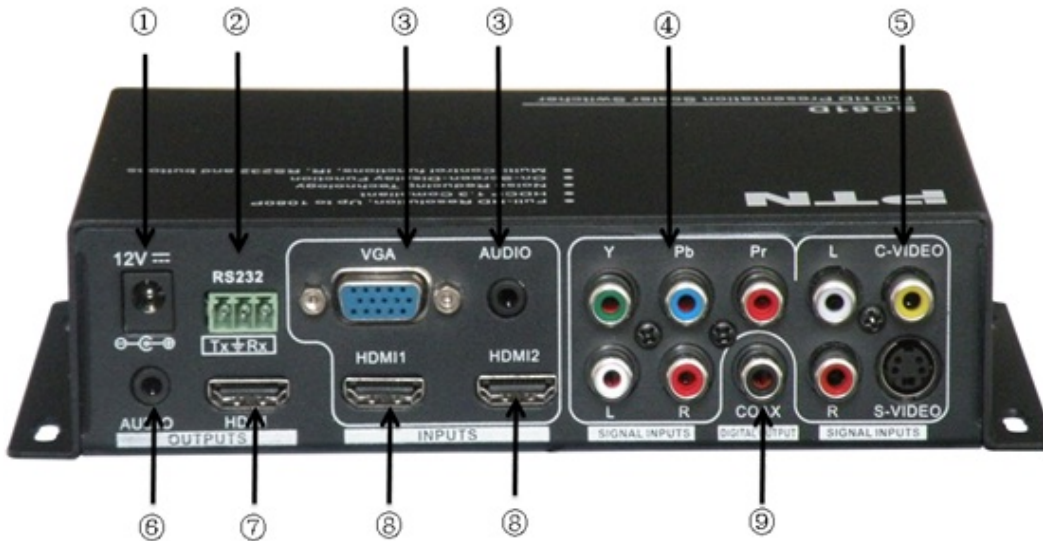13: It supports the power-fail memory function.

2. Front Panel

Front Panel description.

① Power indicating LED. It will keep on red when the unit is connected with power.

② USB input. It can work as the USB flash disk, supporting the JPEG picture presentation playing, and MP3 audio playing. It is operated by the OSD.

It can work as the firmware updating port, which is working with the computer, connection USB cable.

③ Video source selection buttons. You can select the video/audio source by these six buttons.

④ The MENU button to active OSD (on-screen display), working with the direction key. When press, will enter into the Picture setting, Audio setting, System setting and USD setting mode. The MENU button also can cancel the last operation.

⑤ The ENTER button, working with the MENU button and the direction key. When press, can confirm the setting parameter.

When into the USB mode, the ENTER button also has the confirm function.

⑥ IR sensor. It is for IR remote controlling, receiving the signal of IR remote.

⑦ The direction key, when enter into the OSD mode, the four buttons will able. When OSD is off, only the left button and the right button can be able for the volume controlling (VOL-, VOL+).

3. Real Panel

Rear Panel description

① Power port. Connecting the 12VDC power.

② RS232 control port. It works with the third-party controller, for bi-directional RS232 commands.

③ VGA and stereo audio input. It supports the different resolutions and format.

④ YPbPr and stereo audio input.

⑤ S-Video/C-Video and stereo audio input. They share the same stereo audio.

⑥ Stereo audio output. All the input audio will be switched to this output, including the embedded HDMI audio.

⑦ HDMI output. Embedded digital audio, with volume adjustable.

⑧ HDMI inputs. Supports HDCP1.3

⑨ Coaxial audio output, with SPDIF format.

4. Specification

Video Input		Video Output	
Input	2 HDMI 1 VGA 1 YPbPr 1 C-Video 1 S-Video 1 USB multimedia input	Output	1 HDMI

Input Connector	HDMI female connector VGA(15 pin HD), female connector RCA female connector 4 pin mini DIN connector USB-A connector	Output Connector	HDMI female connector
Video Signal	HDMI 1.3 RGBHV, RGBs, RGsB, RsBsGs, NTSC 3.58, NTSC 4.42,PAL, SECAM MPEG / AVI / JPG for USB input	Video Signal	HDMI 1.3
Video General			
Resolution Range	1080P,1920*1080 ; 720P, 1280*720; WXGA,1280*800 ; XGA, 1024*768.	Bandwidth	HDMI: 4.95Gbps(1.65Gbps per color) C-Video/S-Video: 150MHz YPbPr: 170MHz VGA: 375MHz
Maximum Pixel Clock	145MHz	Video Impedance	75Ω
VGA Cross Talk	-50dB@5MHz	Input / Output Level	0.5V~2.0Vp-p
Gain	0dB		
HDCP management	Compliant with High-bandwidth Digital Content Protection(HDCP) with DVI & HDMI 1.3 standards		
Audio Input		**Audio Output**	
Input	3 Stereo Audio for line audio 2 digital embedded audio	Output	stereo audio for line audio COAX and HDMI audio
Input Connector	4 RCA for for YPbPr, C-Video & S-Video audio 1 3.5mm jack for VGA audio HDMI for embedded audio	Output Connector	1 3.5mm jack for line audio 1 RCA for digital audio HDMI for embedded audio
Audio Input Impedance	>10kΩ	Audio Output Impedance	50Ω
Audio General			
Audio Connector	Mini Jacks; tip (L); ring (R); sleeve (GND) HDMI embedded audio CO-AX audio (SPDIF)	Stereo Channel Separation	>80dB @1KHz
Frequency Response	20Hz~20K Hz	CMRR	>90dB @20Hz to 20K Hz
Control Parts			
Control/Remote	IR remote, Buttons & RS-232	Pin Configurations	2 = TX, 3 = RX, 5 = GND
Options	TCP/IP control by PTNET		
General			
Temperature	-20 ~ +70℃	Humidity	10% ~ 90%
Power Supply	100VAC ~ 240VAC, 50/60Hz	Power Consumption	7W
Case Dimension	W160 x H44x D100mm (wall mountable)	Product Weight	0.8Kg

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5. Input Video/Audio Description

The detail description of inputs and outputs.

5.1 C-Video and S-Video input

Supporting PAL/SECAM/NTSC format
Changeable aspect ratio. (Full-screen, wide screen, 4:3)
Color RGB adjustable

5.2 YPbPr input

Changeable aspect ratio. (Full-screen, wide screen, 4:3)

Input Resolution	Display Parameter				
	Frame frequency		Frame frequency		Frame frequency
720×480 I	2:	525	15.75	60	4
720×480 P	1:	525	31.5	60	4
720×576 I	2:	625	15.625	50	4
720×576 P	1:	625	31.25	50	4
1280×720P	1:	750	45	60	1
1280×720P	1:	750	37.50	50	1
1920×1080 I	2:	1125	28.125	50	1
1920×1080 I	2:	1125	33.75	60	1
1920×1080 I	2:	1250	31.25	50	1
1920×1080 p	1:	1250	62.5	50	1
1920×1080 p	1:	1250	67.5	60	1
The bandwidth is up to170MHz					

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5.3 VGA input

The VGA resolution is VESA standard, supporting:

720×400@70 Hz
640×480@60 Hz
640×480@72 Hz
800×600@60 Hz
800×600@72 Hz
800×600@75 Hz
1024×768@60 Hz
1024×768@70 Hz
1024×768@75 Hz
1280×768
1280×1024@75 Hz
1360×768@60Hz
1920×1080

The bandwidth is up to 375MHz (-3dB).
The following audio can adjust bass/treble
Changeable aspect ratio. (Full-screen, 4:3)

5.4 HDMI input

HDMI resolution support:

640×480@60 Hz
640×480@72 Hz
640×480@75 Hz
800×600@56 Hz
800×600@60 Hz
800×600@72 Hz
800×600@75 Hz
1024×768@60 Hz
1024×768@70 Hz
1024×768@75 Hz
1280×1024@75 Hz
1280×720P
1360×768
1920×540
1920×1080I
1920×1080P

Digital embedded audio decoding.
Changeable aspect ratio. (Full-screen, wide screen, 4:3, auto-adjust)
Support HDCP1.3, compatible with DVI signal

5.5 Audio input/output

3 Stereo audio input & 2 HDMI embedded audio input
3 simultaneous outputs. 3.5mm stereo audio, COAX (SPDIF), and HDMI embedded audio.
Volume/Bass/Treble adjustable
Audio status presets

5.6 USB input

It works as the USB flash disk port, which is connected to the USB disk, reading the data inside. It can recognize the JPG picture and MP3 audio file.
It is controlled by OSD operation.
The picture and music can be played at the same time.
The picture can be edited and presented.

It works as the firmware updating port, connecting with the computer by USB cable, using the USB flash disk to uploading the firmware.

6. OSD Operation (On-Screen-Display)

The SC61D provides a nice OSD operation menu, with various functions and language.
The operation introduction is:

6.1 Picture Setting

The first icon from left of OSD menu is to set the picture parameter. It includes the pictures mode preset, color temperature, contrast, brightness, hue, saturation, sharpness and scale. Some parameters are available depending on different input.
Please check the picture below:

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6.2 Audio Setting

The Second icon from left of OSD menu is to set the audio/sound parameter. It includes the sound effect preset, bass, treble, balance, scene mode, surround and smart volume setting. Some parameters are available depending on different input.
Please check the picture below:

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6.3 System Setting

The Third icon from left of OSD menu is the system setting. It includes the OSD language setting, OSD time duration etc .

Please check the picture below:

6.4 USB operation menu

The last icon from left of OSD menu is the USB operation menu. You can enter the USB flash disk, to play music and picture. And, you can set the picture presentation order, and picture presentation speed.

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When you enter this page, you can select the file from USB flash disk, which is plugged to SC61D. You can use the up/down/left/right buttons to control it.

The USB can play MP3 music and JPG picture. And it can show the lyric of MP3 file, if the lyric is in the same folder of MP3 file.   The lyric should be in .LRC format.
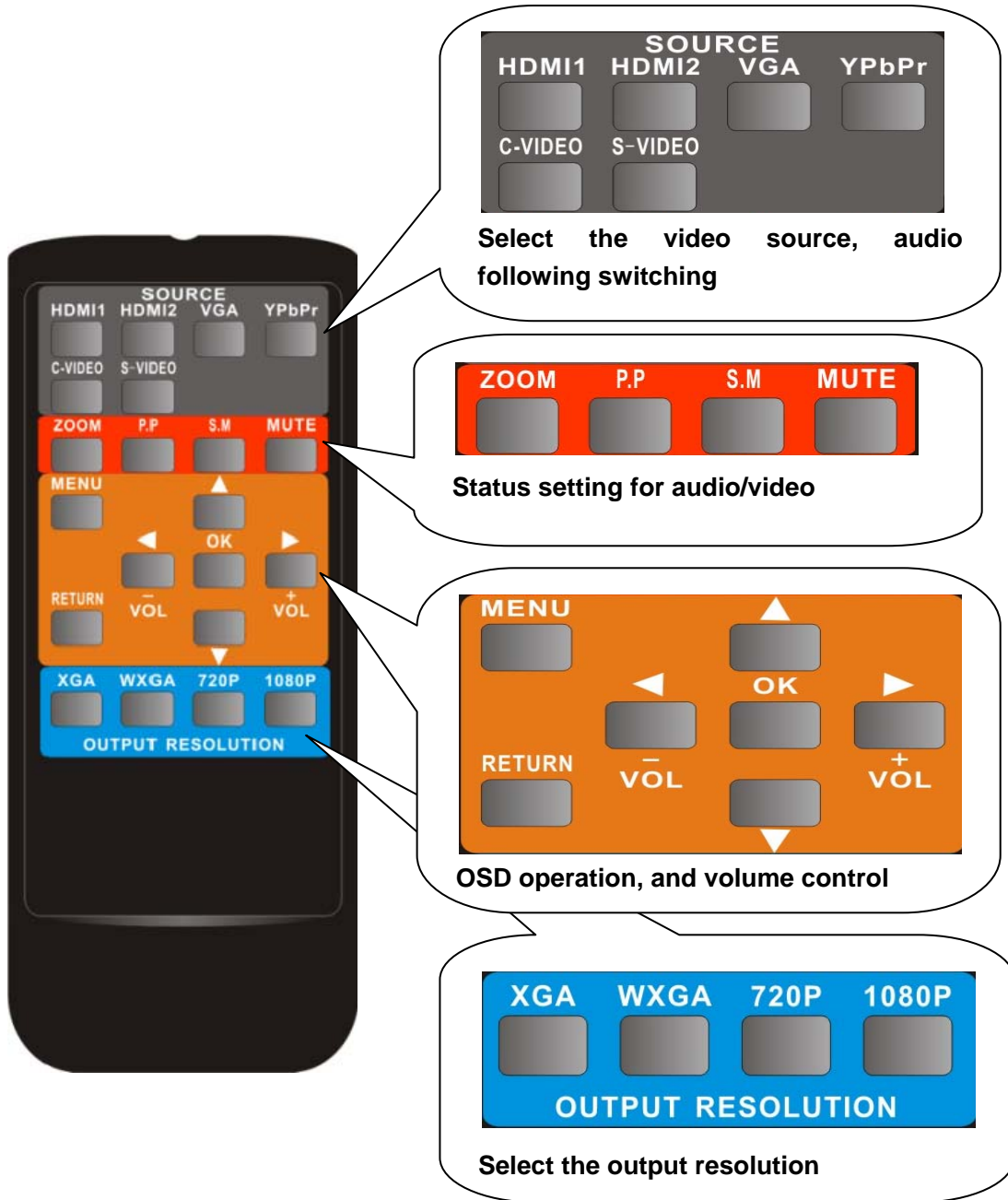
Please check the MP3/ lyric playing below:

Notice:

①   When you are in the USB folder page, the ENTER button is for confirm function. When use the IR remote , the OK button is for confirm function. The button "Menu" is the return function. When use IR remote, the RETURE button is for the return function.

②   When the resolution is 1024x768, it does not support the USB flash disk.

③   When the resolution is changed, the OSD menu will be off.

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7. Controlling

Part A: Remote operation

SOURCE

HDMI1	HDMI2	VGA	YPbPr

C-VIDEO	S-VIDEO

Select the video source, audio following switching

ZOOM	P.P	S.M	MUTE

Status setting for audio/video

MENU
▲
◄   OK   ►
RETURN   ─VOL   ▼   +VOL

OSD operation, and volume control

XGA	WXGA	720P	1080P

OUTPUT RESOLUTION

Select the output resolution

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RS-232 Protocol

Baudrate: 9600bps   8N1

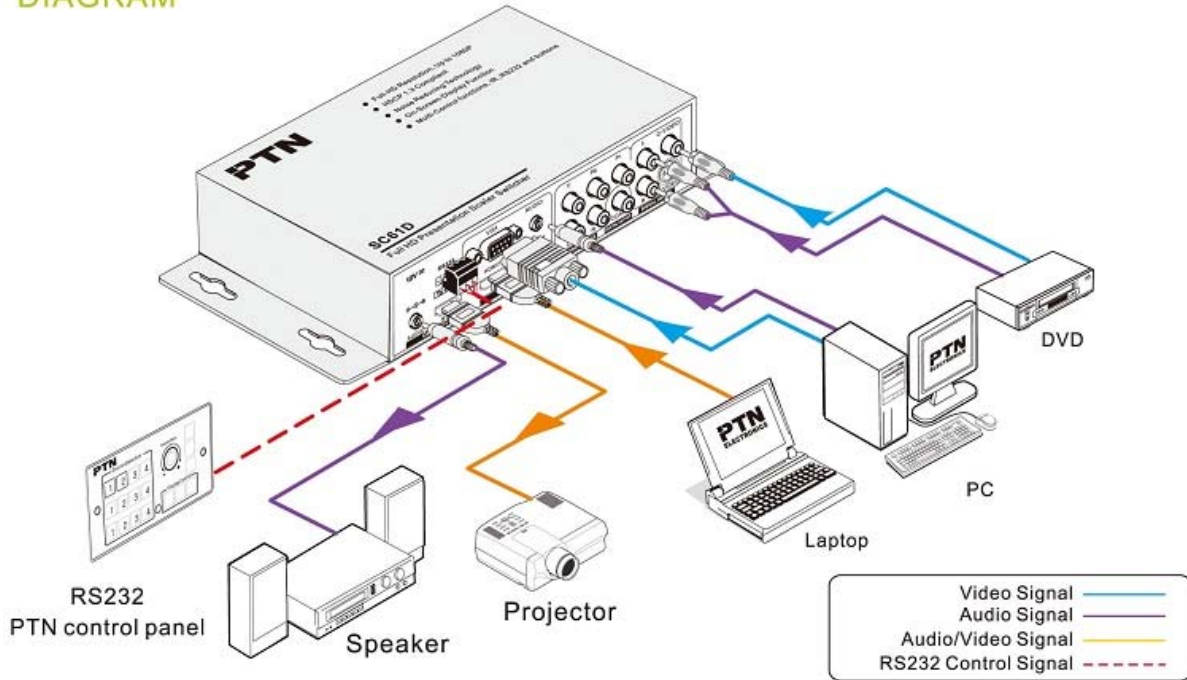| Command (ASCII)	Function Description	Feed back (example) (ASCII)
0600%	MUTE	Mute On
0601%	UnMute	Mute Off
0602%	Audio turn up	Volume: XX
0603%	Audio turn down	Volume: XX
0604%	Lock the front panel button	Panel Locked
0605%	Unlock the front panel button	Panel UnLocked
01XX%	Preset the volume. The XX is ranging from 00 to 99	Volume: XX
02XX%	Preset the brightness. The XX is ranging from 00 to 99	Brightness: XX
03XX%	Preset the contrast. The XX is ranging from 00 to 99	Contrast: XX
04XX%	Preset the saturation. The XX is ranging from 00 to 99	Saturation: XX
05XX%	Preset the sharpness. The XX is ranging from 00 to 07	Sharpness: XX
0606%	Auto-adjust the input parameter	Adjustment
0607%	Auto-adjust the color temperature	Color Temp: XX
0608%	ZOOM the image, set the aspect ratio	Aspect Ratio: XX
0609%	OK, for OSD selection	OK
0610%	Left of OSD	Left
0611%	Right of OSD	Right
0612%	Up of OSD	Up
0613%	Down of OSD	Down
0614%	set the picture mode	Picture Mode : XX
0615%	SM Mode	Sound Mode: XX
0616%	MENU of OSD	MENU
0617%	Command to reset to factory defaults	Factory reset
0620%	Switching to HDMI1 input	Source: HDMI 1
0621%	Switching to HDMI2 input	Source: HDMI 2
0622%	Switching to VGA input	Source: VGA
0623%	Switching to YPbPr input	Source: YPbPr
0624%	Switching to S-Video input	Source: SVIDEO
0625%	Switching to composite video input	Source: CVIDEO
0626%	Change the resolution to 1024X768 XGA	Resolution: XGA 1024X768
0627%	Change the resolution to 1280X720 720P	Resolution: 720P 1280X720
0628%	Change the resolution to 1280X800 WXGA	Resolution: WXGA 1280X800

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0629%	Change the resolution to 1920X1080 1080P	Resolution: 1080P 1920X1080
0630%	Check the volume level	Volume: XX
0631%	Check the input source	Source: XXXXXX
0632%	Check the output resolution	Resolution: XXXXXXXX
0633%	Check the image mode	Picture Mode : XX
0634%	Check the audio mode	Sound Mode: XX
0635%	Check the image aspec ratio	Aspect Ratio: XX
0636%	Check the brightness	Brightness: XX
0637%	Check the contrast	Contrast: XX
0638%	Check the saturation	Saturation: XX
0639%	Check sharpness	Sharpness: XX
0640%	Check the color temperature	Color Temp: XX
0699%	Check the firmware version	SC61D V XXXXX
0644%	OSD CHANNEL display able	OSD Source: Display
0645%	Shield OSD CHANNEL	OSD Channel （Source）: No Display
0646%	Volume Bar display able	Volume Bar: Display
0647%	Volume Bar display unable	Volume Bar: No Display
0648%	Digital audio（HDMI and SPDIF）output able	Digital Sound Ouput: Enable
0649%	Shield digital audio (HDMI and SPDIF) output	Digital Sound Ouput: Disable
0650%	Check OSD CHANNEL display status	OSD Source: Display
0651%	Check Volume Bar display status	Volume Bar: Display
0652%	Check Digital audio output status	Digital Sound Ouput: Enable

8. System Diagram

9. Firmware Updating

The SC61D supports firmware field-updating, by USB flash disk. After update to the new firmware, need to reboot and restore to factory settings. After that, reboot again.

The Operation is :

1: Copy the file "MT23ATV.bin" to a USB flash disk. (The "MT23ATV.bin" file is provided/authorized by PTN engineering department)

2: Plug the USB flash disk to the SC61D USB port on it front panel.

3: Pressing the button "MENU" for 15 seconds.

4: The SC61D will capture the new firmware from USB flash disk.

10.   Troubleshooting & Maintenance

1. When images of terminal unit output with ghost, such as the projector output with ghost, please check the projector's setting or try another high quality connection cord.

2. When there is a color losing or no video signal output, please check the input and output end connection of VGA cable.

3. When the remote controller doesn't works:
   A.   The battery has no power, please change a new one.
   B.   The controller was broken, please repair it.

4. When user cannot control the switcher by computer through its COM port, please check the COM port number in the software and make sure the COM port is in good condition.

5. When switching, there are codes back but no output image, please check with if there is any signal at the input end. If there is no signal input, maybe the input connection cord broken or the connectors loosen.

6. If the POWER indicator doesn't work or no respond to any operation, please make sure the power cord connection is well.

7. If the output image is interfered, please make sure the system is grounded well.

8. If the static becomes stronger when connecting the BNC connectors, it maybe due to the incorrect grounding, please correct it otherwise it would damage the switcher.

9. If the switcher cannot be controlled by the buttons on the front panel, RS232 port or IR

remote, the switcher may have broken. Please send it to the dealer for repairing.