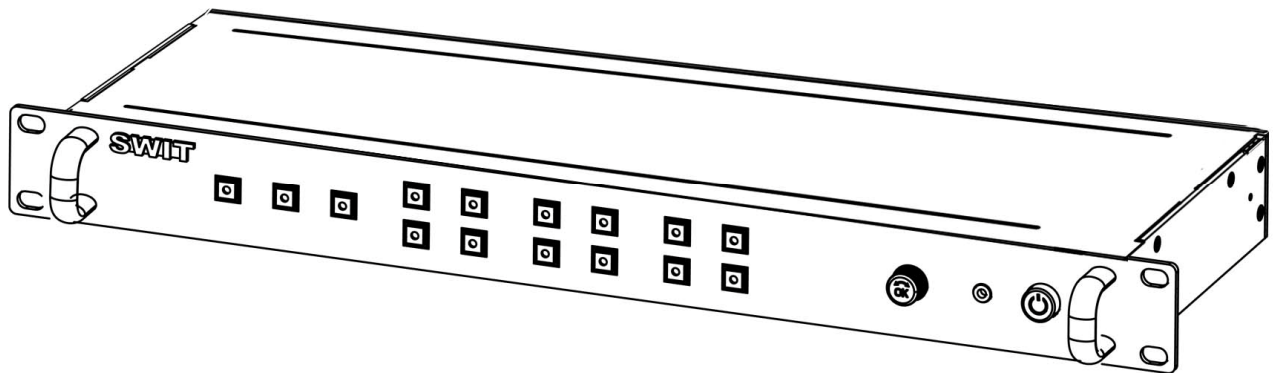# SWIT®

Model: **S-9104+**

Broadcast HD Quad Split Viewer
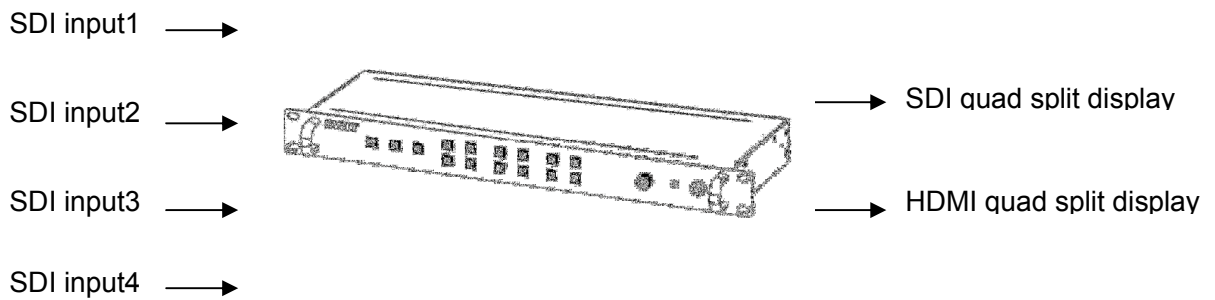
USER MANUAL

Ver: V1.0.0V00

Please read this User Manual throughout before using.

1. Introduction

SDI input1 ⟶

SDI input2 ⟶   ⟶ SDI quad split display

SDI input3 ⟶   ⟶ HDMI quad split display

SDI input4 ⟶

S-9104+ is a solution of 4-ch HD/SD-SDI simultaneously displayed on a single HDMI or SDI monitor. It is pure hardware architecture design and 10 bit raw video data output to ensure the real color and clarity of the original video source. It supports SDI embedded audio meter display, SDI timecode display, UMD, TEXT TALLY display and audio/video abnormal alarm. The product can be widely used in live production, broadcast central control room and other occasions for centralized video monitoring.

2. Features

- ◆ 4-channel HD/SD-SDI input and independent loop through output
- ◆ Output HDMI and HD/SD-SDI as quad-split or full screen switch display
- ◆ Each channel can be selected to position on every quarter of the quad-split windows
- ◆ Support HD/SD mixed display in Quad-split mode
- ◆ Pure FPGA processing, 10 bit raw video data output
- ◆ SDI embedded audio meter (2-ch) display
- ◆ Output SDI embedded audio via 3.5mm earphone socket
- ◆ SDI timecode display
- ◆ Support UMD and TEXT TALLY based on TSL protocol
- ◆ Alarm when video lost, still or black, or audio lost, high/low or mute
- ◆ SD video ratio 16:9 / 4:3 switchable in Quad-split mode
- ◆ Mark 4:3 SD range in 16:9 HD image
- ◆ Pure hardware architecture design without the computer configuration
- ◆ Main and backup DC power input
- ◆ 19-inch 1RU standard rack mountable

3. Product view

Front view
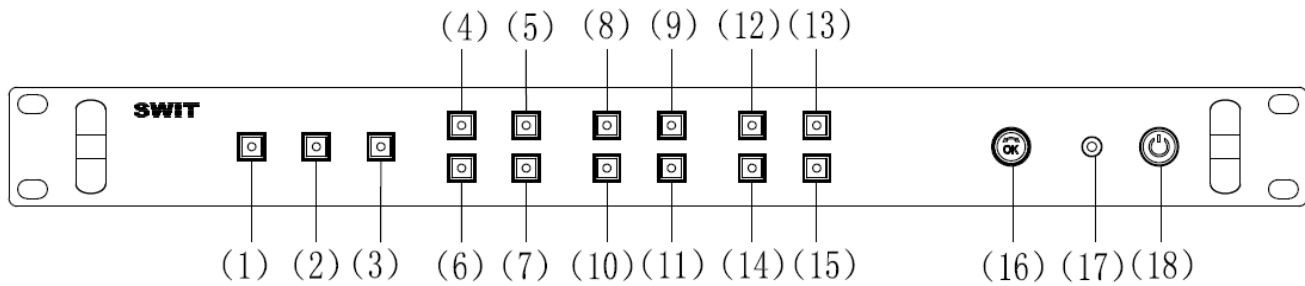
⑴ ALARM: signal alarm function

Press "ALARM" to enable video/audio abnormal alarm, press again to switch off.

⑵ Full screen display the current channel

⑶ Quad split display all the 4 channels

⑷~⑺ Window select:

WINDOW1~WINDOW4: Press to select the window1/2/3/4 as the current window.

⑻~⑾ Channel select:

CH-1~CH-4: Press to select the channel1/2/3/4 as the current channel.

⑿ MARK/SD-RATIO:

Press "MARK/SD-RATIO" to display the 4:3 Marker on HD image, and stretch to 16:9 for SD image.

⒀ TIME-CODE:

Press "TIME-CODE" to switch on SDI timecode display for each input video, press again to switch off.

⒁ AUDIO-BAR:

Press "AUDIO-BAR" to switch on the 2-ch SDI embedded audio meter for each input video, press again to switch off.

⒂ LOGO-SET:

Press "LOGO-SET" and the letter menu will pop up. Revolve "OK" to select corresponding letter and press "OK" to confirm. Press "LOGO-SET" again to complete the video title setting.

Note: The LOGO-SET will not be available when UMD is input. And will be enabled when UMD is disconnected and reboot the product.

⒃ OK:

Revolve OK to adjust the volume of 3.5mm audio output,

and under video title setting menu, revolve OK to select letters and press to apply.

⒄ PHONE: 3.5mm Earphone socket, for current channel embedded audio monitoring

⒅ POWER: Power on/off

Connect with power cable, press the "POWER" to switch on the S-9104+. Press again to switch off.

Rear view
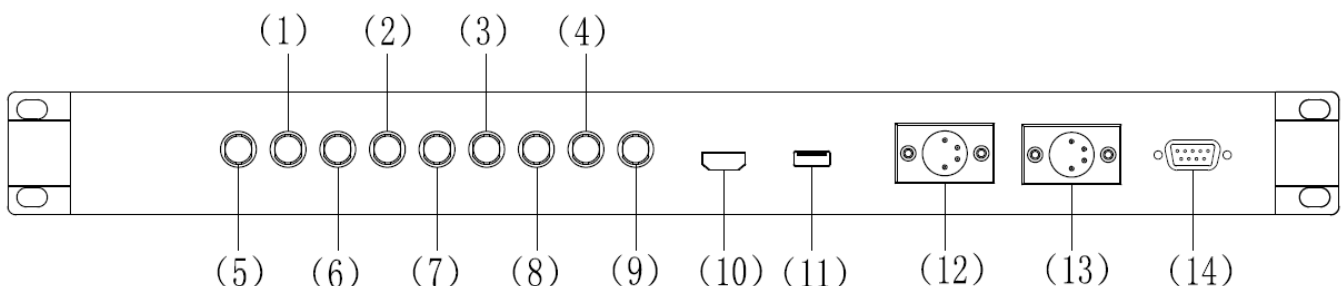
⑴~⑷ IN4~IN1: SDI input (BNC)

⑸~⑻ LOOP4~LOOP1: SDI loop through output (BNC)

⑼ SDI-OUT: SDI Quad view output (BNC)

⑽ HDMI-OUT: HDMI Quad view output (HDMI-A)

⑾ USB: Reserved

⑿~⒀ DC 12V IN: Connect with DC12V 4-pin XLR power adapter (Pin 1: Negative, Pin 4: Positive)
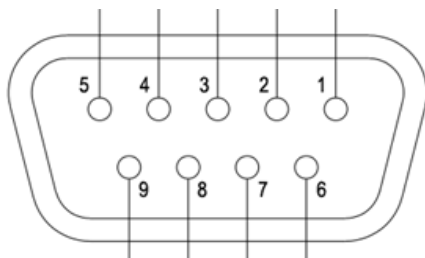
⒁ REMOTE: TSL protocol, RS485 socket

4. TSL Connection

4.1 Protocol version

S-9104+ supports TSL3.1 and TSL4.0 protocol
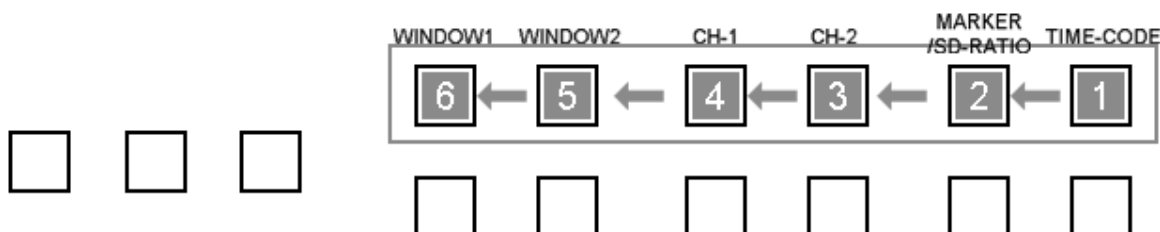
4.2 Terminal definition

S-9104+ supports RS485 socket for the upstream equipments using TSL protocol, and terminal description is as follows:

Terminal	1	2	3	4	5	6	7	8	9
Description							485B	485A	

* 38400 baud rate, no parity bit, 1 stop bit and 8 data bits

4.3 TSL protocol address setting

(1) Press the above mentioned six buttons from right to left in order ("TIME-CODE" → "MARKER/SD-RATIO" → "CH-2" → "CH-1" → "WINDOW1" → "WINDOW1") to enter the address setting menu.

(2) The address setting menu is as above, revolve "OK" to choose from 0~9, and press "OK" to finish every digit of the TSL_Addr. (the address range is 0-126). After setting, press "LOGO-SET" to save the address.
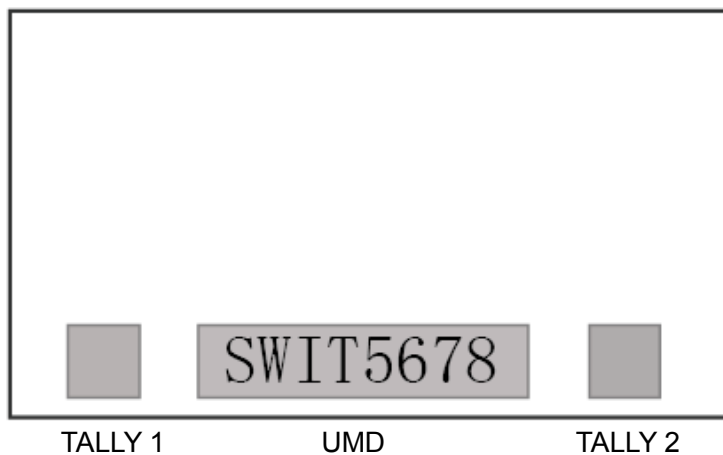
(3) The user set address will be applied to WINDOW1 and WINDOW2. And WINDOW3 and WINDOW4 will be auto assigned address as "user set address +1".
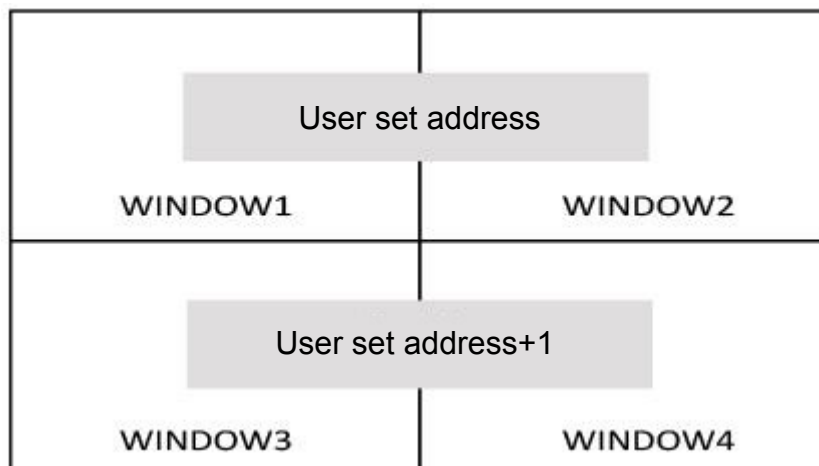
(4) The TSL address will automatically save when the power is shut down.

4.4 UMD and TEXT TALLY display

When TSL successfully connected, S-9104+ can receive UMD and TALLY information, the window is as follows:

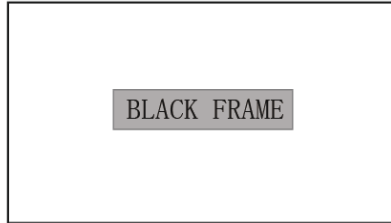| UMD	UMD (Max 8 letters)
TALLY1	Left TALLY info
TALLY2	Right TALLY info

5.Video/Audio Abnormal Alarm

Press "Alarm" to switch on the signal alarm function. When signal is abnormal, alarm info will be displayed.
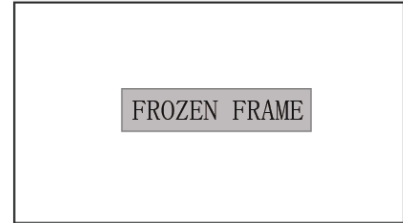
5.1 Video alarm

It supports video "NO SIGNAL", "BLACK FRAME" and "FROZEN FRAME" alarm and the corresponding alarm info will be displayed on the central of the screen.
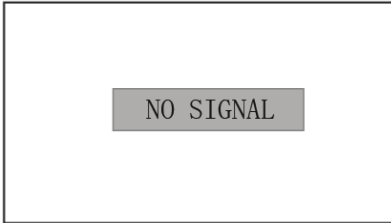
NO SIGNAL	BLACK FRAME	FROZEN FRAME
(1) NO SIGNAL: SDI input lost	(2) BLACK FRAME: Input video underexposure and display black	(3) FROZEN FRAME: Input video still

5.2 Audio alarm

It supports audio "UNLOCKED", "MUTE", "SILENCE" and "OVER" alarm and the corresponding alarm info will be displayed on the central 2-ch audio bar.

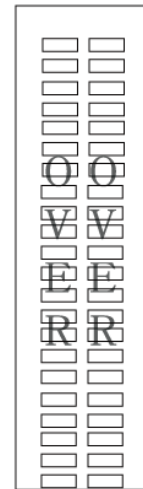|			
UNLOCKED	MUTE	SILENCE	OVER
(1) UNLOCKED No embedded audio input	(2) MUTE The embedded audio is mute	(3) SILENCE Audio level lower than -48dB	(4) OVER Audio level higher than -10dB

6. Specification

Input	HD/SD-SDI ×4
Output	HD/SD-SDI Loop×4
	HDMI quad view ×1
	SDI quad view ×1
	Analog audio (3.5mm)×1
Remote	RS 485 socket×1

Format*	SDI Input		HDMI Output
	SMPTE-274M	1080p (30 / 29.97 / 25 / 24 / 23.98)	The same as SDI input
		1080i (60 / 59.94 / 50)	The same as SDI input
	SMPTE RP211	1080psf (30 / 29.97 / 25 / 24 / 23.98)	The same as SDI input
	SMPTE-296M	720p (60 / 59.94 / 50)	The same as SDI input
	ITU-R BT.656	576i (50)	1080i60
	SMPTE-125M	480i (59.94)	1080i50

Audio Format	48KHz Synchronization
Power Consumption	≤10W
Working Voltage	DC12V
Working Environment	Working temperature: 0°C～+40°C, Working humidity: 10%～90%
Dimension	19inch/1U, 483×45×251 mm
Net weight	1464g

*Note: S-9104+ supports HD-SDI and SD-SDI mix input

⑴ In the quad split mode, support 480i / 1080i60 mixed input and 576i / 1080i50 mixed input. For all the other formats, the quad split mode requires the 4 input SDI of the same formats.

⑵ If the input signal format is 480i / 576i then the quad split output format is 1080i60 / 1080i50. In other conditions, the input signal format is the same as the output signal format.

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Product Registration Link