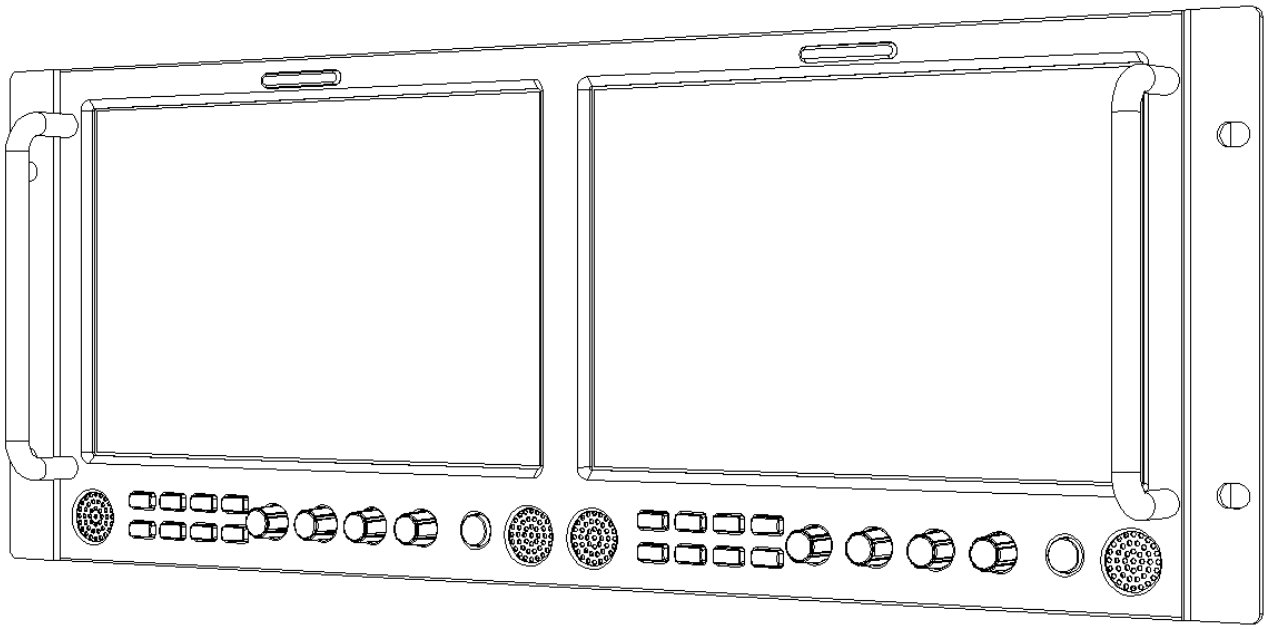
ProHD

Model: DT-X92H×2

9” Rack Mount Broadcast 3GSDI LCD Monitor



User Manual

Ver：V1.0.0V01

Please read this User Manual throughout before using.

Preface

Congratulations on your purchase of this product. Please read this user manual carefully.

1. All internal technologies of this product are protected, including device, software and trademark. Reproduction in whole or in part without written permission is prohibited.
2. All brands and trademarks are protected and other relative trademarks in this user manual are the properties of their respective owners.
3. Due to constant effort of product development, SWIT Electronics reserves the right to make changes and improvements to the product described in this manual without prior notice.
4. The warranty period of this product is 2 years, and does not cover the following:

(1) Physical damage to the surface of the products, including scratches, cracks or other damage to the LCD screen or other externally exposed parts;

(2) Misuse, abuse or negligent operation to the product;

(3) The product is disassembled by anyone other than an authorized service center.

It is considered normal that the LCD bright dot defects are not to exceed three.

5. For any suggestions and requirements on this product, please contact us through phone, fax, Email, etc.

ProHD

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Maintenance

(1) **The Monitor**

1. Please keep the signal terminals and the cooling vent away from knife-edge, metal or liquid in order to avoid short-circuit and damage.
2. Please don't try to disassemble any parts of the monitor by yourself, which would probably damage the monitor and do harm to human body, and it will cause the invalidation of product warranty.
3. Please don't touch the screen with your fingers, which would probably deface the screen.
4. Please don't press the screen; the LCD is extremely exquisite and flimsy.

(2) **The power**

Please use the power adapter provided or recommended by the manufacturer in order to avoid damage. For a third party power adapter, please make sure the voltage range, supplied power, and polarity of power lead are fit.

Please disconnect the power cable under the following situations:

1. If you do not operate this monitor for a period of time;
2. If the power cable or power adaptor is damaged;
3. If the monitor housing is broken.

(3) **Working Environment**

1. Please don't lay this product on the unstable place.
2. Please don't lay this product in hot, cold or wet location.

(4) **Cleaning**

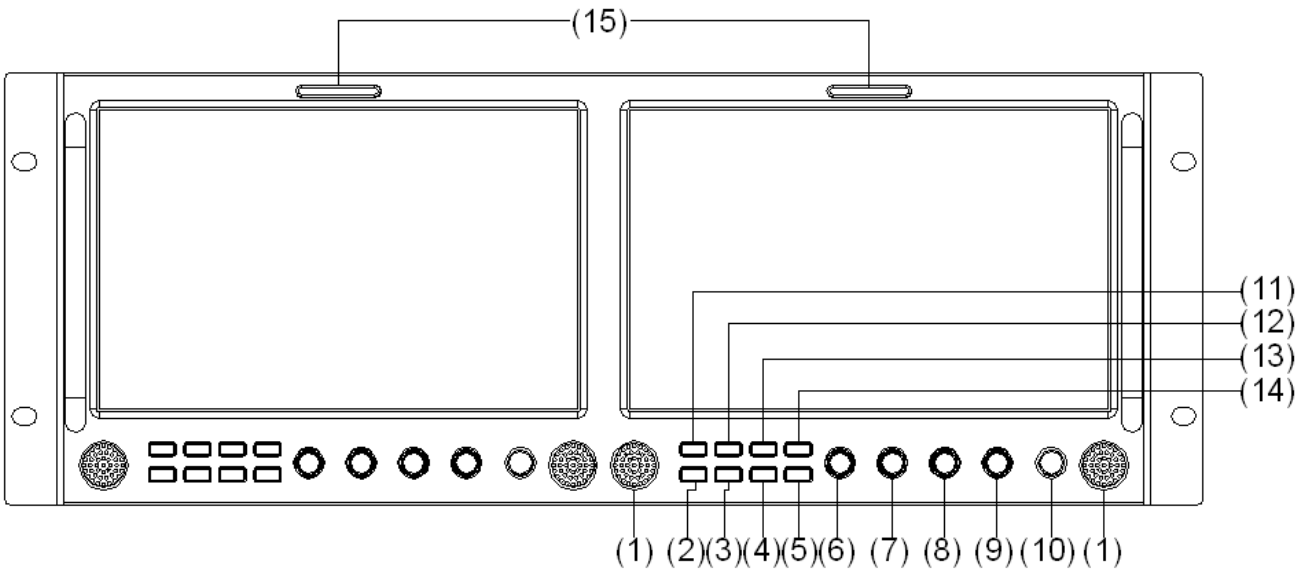
1. Please clean the screen with dry and downy cloth or special LCD cleanser.
2. Please do not press hard when cleaning the screen.
3. Please do not use water or other chemical cleanser to clean the screen. The chemical may damage the LCD.
4. For first time use, please tear off the factory LCD film. To protect the LCD screen, please post the LCD protection film offered in the package.

1. Features

- **Full-HD 9” LCD Panel**
  IPS LCD panel, 1920×1200 resolution, H 170°/ V 170° viewing angle, 800:1 contrast,
- **Multiple inputs**
  3G/HD/SD-SDI, HDMI and Composite input
- **Loop through outputs**
  3G/HD/SD-SDI, HDMI has loop through output
- **PIP Display**
  Under SDI/HDMI, switch on a sub-window to PIP display another CVBS
  Under CVBS, switch on a sub-window to PIP display another SDI/HDMI
- **SDI audio de-embed**
  Under SDI and HDMI, it can display the de-embed SDI audio and output via 3.5mm headphone socket or speaker
- **2-ch audio meter display**
  Under SDI and HDMI, it displays channel1 and channel 2 embedded audio meters with mark. The audio meter is green, and will turn yellow when audio exceeds -20dB, and turn red when exceeds -9dB.
- **SDI Timecode**
  Under SDI input, it can display the SMPTE timecode, which is used extensively for synchronization, and for logging and identifying material in recorded media.
- **Peaking focus assist (red/blue switch)**
  Under SDI and HDMI, it has Peaking focus assist function which is to mark the sharpest edges of the image with red or blue color, for users to check if the subjects are focused.
- **Zebra stripes**
  Under SDI and HDMI, it can display the Zebra Stripes which are used to check if the image is over exposed or not by showing black and white lines on the monitor. It is considered over exposed when luminance value exceeds 90%.
- **Freeze frame**
  To capture and display the on-play current frame.
- **Blue/Red/Green only**
  Under SDI and HDMI, it can be selected as the Blue/Red/Green Only Mode, only the blue/red/green pixels are used to generate the image, to assist image noise monitoring and adjustment.
- **Safe Area Adjustable**
  You can select the scale of safe area frame from 80%, 85%, 88%, 90% ,93% and 95% in the menu system.
- **Scale Marker**
  The monitor has 16:9 native LCD panel, and supports 4:3, 13:9, 14:9, 15:9, 1.85:1 and 2.35:1 scales marker for different video producing.
- **UMD**
  Support TSL UMD protocol so that TALLY、UMD can be remotely controlled.
- **User definable function keys**
  There are 4 function keys on the monitor front panel, which permit users to define shortcuts for the various functions.
- **User definable GPI control**
  Offer DB9 interface to define functions for users to remote operate the monitor.
- **User editable video title**
  User can edit a video title for the current camera, and the title will display on the top of screen.

2. Panel Instruction

Front view



⑴Speaker: For SDI/HDMI embedded audio and analog audio monitoring. (Will not work if earphone is plugged in)

⑵～⑸F1, F2, F3, F4 User definable function keys

⑹ENTER/VOL: Select and Apply

Under menu system, revolve “ENTER/VOL” to adjust settings and press to apply;

Out of menu system, revolve “ENTER/VOL” to adjust volume, and press “ENTER/VOL” to mute.

⑺BRIGHT: Revolve “BRIGHT” to adjust brightness value from 0～100. Default: 50.

⑻CONTRAST: Revolve “CONTRAST” to adjust contrast value from 0～100. Default: 50.

⑼SATURATION: Revolve “SATURATION” to adjust saturation value from 0～100. Default: 50.

⑽POWER: Power on/off

Connect with power cable, press the “POWER” to switch on the monitor. Press again to switch off.

Disconnect with power cable or battery if the monitor will not be used for a period of time.

⑾SOURCE: Press “SOURCE” to select SDI1、SDI2、HDMI、CVBS signal input

⑿ZOOM: Press “ZOOM” to switch on/off the zoom function.

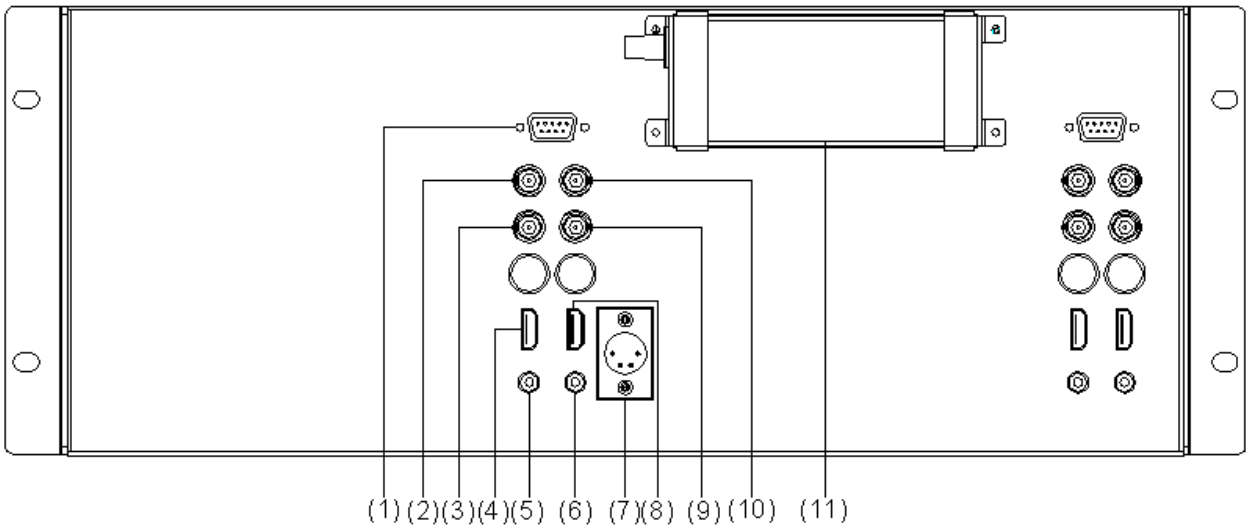
⒀DISPLAY: Display current settings

Press “Display” to display or shut off relevant status information

⒁MENU: Press to enter Menu

⒂TALLY: Red, Green and Yellow 3-color TALLY indicator

Rear view



⑴ REMOTE: DB9 socket, external controlling signal input. (See details in “4.REMOTE interface definition”)

⑵SDI-OUT：SDI loop through output (BNC connector)

When SDI2 is displayed, the SDI-LOOP outputs the SDI-IN2 signal, and when SDI-IN1 or other input sources are displayed, the SDI-LOOP outputs the SDI-IN1 signal.

⑶SDI-IN1: SDI input (BNC connector)

⑷HDMI-OUT: HDMI loop through output (HDMI-A connector)

⑸PHONE: 3.5mm headphone socket, for SDI/HDMI embedded audio and analog audio monitoring.

⑹AUDIO-IN: 3.5mm analog audio input

⑺DC IN 11V-17V: Connect with DC12V 4-pin XLR power adapter, support 6.5V-24V voltage input (Pin 1: Negative, Pin 4: Positive)

⑻HDMI-IN: HDMI input (HDMI-A connector)

⑼SDI-IN2: SDI input (BNC connector)

⑽CVBS-IN: CVBS input (BNC connector)

⑾AC-DC 12V Power Adaptor

·Input formats

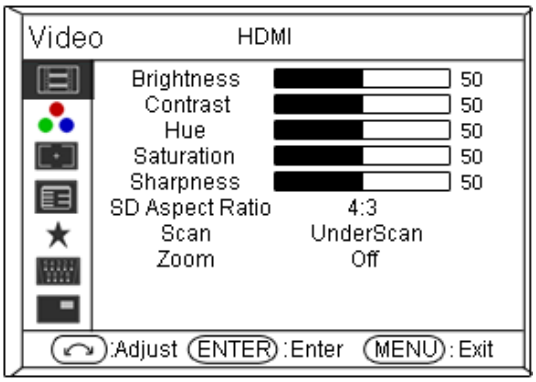
Input		Supported formats
CVBS		PAL／NTSC
HDMI		480i／576i／480p／576p
		1080i（60／59.94／50）
		720p（60／59.94／50）
		1080p（60／59.94／50／30／29.97／25／24／23.98）
SDI	SMPTE-425M	1080p（60／59.94／50）
	SMPTE-274M	1080i（60／59.94／50）
		1080p（30／29.97／25／24／23.98）
	SMPTE-RP211	1080psf（30／29.97／25／24／23.98）
	SMPTE-296M	720p（60／59.94／50）
	SMPTE-125M	480i（59.94）
	ITU-R BT.656	576i（50）

3. Menu Operation

(1) Press “MENU” and it will display menu system
(2) Revolve “ENTER” to select an item. The selected item will be highlighted display.
(3) Press “ENTER” to enter the selected item.
(4) Under menu system, press “MENU” to back to previous menu.
∗The menu will automatically save and quit if it remains idle.

3.1 VIDEO submenu

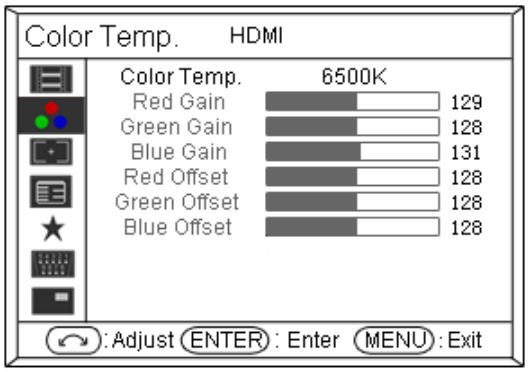
The VIDEO submenu includes:



(1) **BRIGHTNESS:** 0-100 value adjustment
(2) **CONTRAST:** 0-100 value adjustment
(3) **HUE:** 0-100 value adjustment
(4) **SATURATION:** 0-100 value adjustment
(5) **SHARPNESS:** 0-100 value adjustment
(6) **SD Aspect Ratio:** Under SD-SDI input, the aspect radio can be set to 4:3 or 16:9; under HD-SDI, it is not available to adjust.
(7) **SCAN:** “UNDERSCAN” / “OVERSCAN” / “Full Screen” / “Pixel-to-pixel” / ”SD 2X Display” selection.
(8) **ZOOM:** Turn on the zoom function to enlarge the video by 150% from the center in real time.

3.2 Color temp submenu

The Color temp submenu includes:

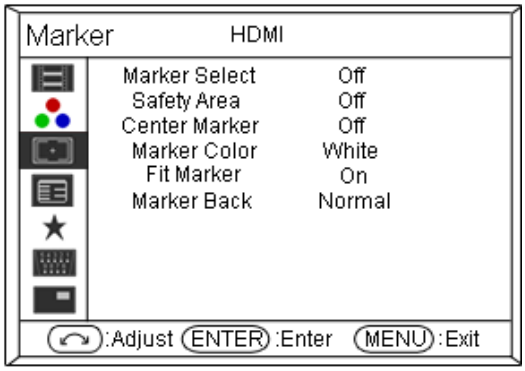


(1) Color temp: 5600K, 6500K, 9300K, USER1, USER2, USER3
(2) Red GAIN: 0～255 value adjustment
(3) Green GAIN: 0～255 value adjustment
(4) Blue GAIN: 0～255 value adjustment
(5) Red Offset: 0～255 value adjustment
(6) Green Offset: 0～255 value adjustment
(7) Blue Offset: 0～255 value adjustment
∗ Remark: RGB GAIN and RGB Offset settings are only available when “Color temp” is set as USER1/2/3

3.3 Marker submenu

The Marker submenu includes:

(1)Marker Select: Select the scale marker from 4:3, 13:9, 14:9, 15:9, 1.85:1, 2.35:1 and 16:9
(2) Safe Area: Select the safe area scale from 80%, 85%, 90%, 93% and 95%.
(3) Center Marker: ON/OFF
Turn on/off the center cross marker on the central screen.
(4) Marker Color: Select the color of markers from WHITE, RED, GREEN, BLUE, BLACK and GRAY.
(5) Fit Marker: On/Off
When switched off, the size of the safe area is 80%~95% of the actual screen display area; and when switched on, the size of the safe area is 80%~95% of the inside scale marker area.
(6) Marker Back: Normal, Semitransparent, Black



Normal: Normally display the outer area of scale marker

Semitransparent: half-tone display the outer area of scale marker

Black: Black display the outer area of scale marker

3.4 OSD submenu

The OSD submenu includes:

⑴ Menu Position: Center, right top, right bottom, left top, left bottom

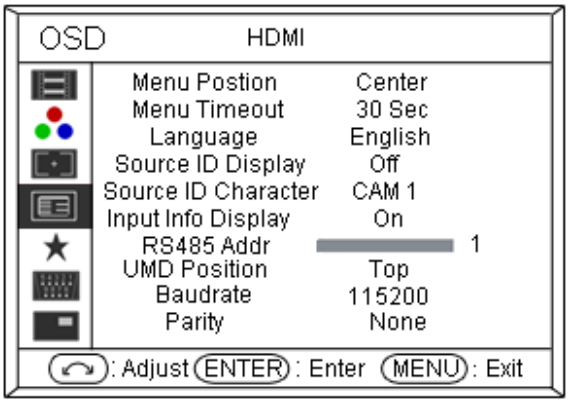
⑵ Menu timeout: 0～60s

Set a time (in seconds) in which the menu will automatically quit if remains idle. Default: 30.

⑶ Language: Menu language selection, English and Chinese

⑷ Source ID Display: On/Off

⑸ Source ID Character: CAM 1



Revolve "ENTER" button to select the letters, and press "ENTER" to input. Max 10 letters are supported, the default is CAM1. There are 76 letters available, details are as below:

A～Z	a～z	0～9	!	&	‘	(	)	*	+	,	-	.	/	:	?	␣

⑹ Input info Display: On/Off

On：Turn on the OSD info display

Off：Turn off the OSD info display

⑺RS485 ADDR: 1～127 address selection

⑻UMD Position: “Top” or “Bottom”

⑼Baudrate:”38400”, “19200”, “9600” and “115200”

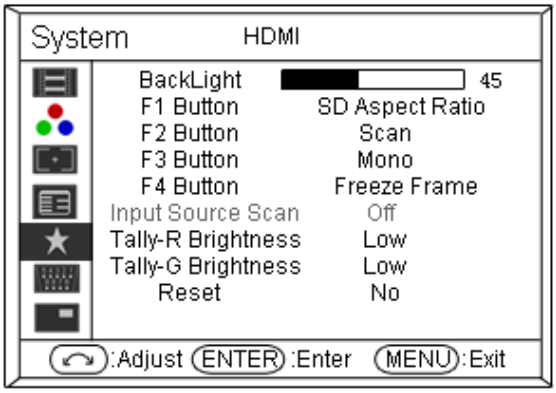
⑽Parity: “Odd”, “Even”, “None”

3.5 System submenu

The system submenu includes:

⑴Backlight: 0～100 value adjustment

⑵～⑸F1～F4 Button: Define Function Key F1, F2, F3 and F4. Function includes:



SD Aspect Ratio	Zebra
Scan	B/R/G Only
Zoom	Time Code
Mono	CVBS
Freeze Frame	HDMI
Button Lock	SDI1
PIP	SDI2
Focus Assist	Source ID Display
Audio Bar	Undefined

⑹Input Source Scan: Reserved function, can not choose

⑺Tally R Brightness: Low, Medium, High

⑻Tally G Brightness: Low, Medium, High

⑼Reset: Yes/No

Select “YES” to recover all to factory settings expect Language setting.

3.6 GPI submenu

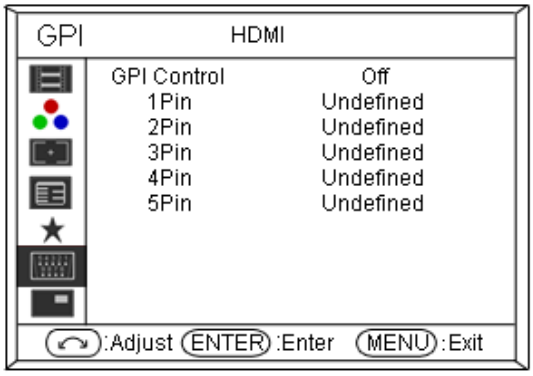
The “GPI” submenu includes:

⑴ GPI control: on/off

On: User can control the monitor through GPI control unit

Off: User cannot control the monitor through GPI control unit

⑵ Terminal1~5: Define each GPI terminal function; see details in “4.REMOTE interface definition”



3.7 PIP submenu

The “PIP” submenu includes:

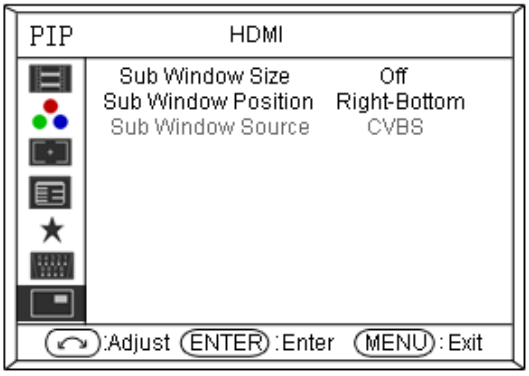
⑴ Sub window size: Off, Large, Small

⑵ Sub window position: Right-Bottom, Right-Top, Left-Bottom, Left-Top

⑶ Sub window source

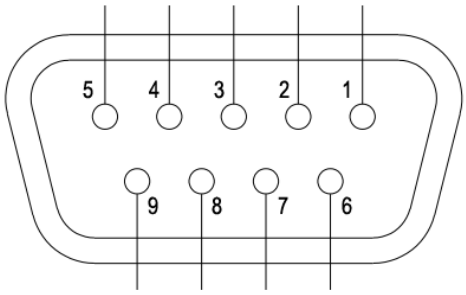
When the input signal is SDI1/SDI2/HDMI, the PIP window signal can only be CVBS;

When the input signal is CVBS, the PIP window signal can be selected from SDI1/SDI2/HDMI.



4. REMOTE Interface Definition

The GPI interface is the DB9 port, the DB9 terminals definition are as below:



DB9	1	2	3	4	5	6	7	8	9
GPI	GPI_1	GPI_2	GPI_3	GPI_4	GPI_5	VCC_OUT	485B(Rx-)	485A(Rx+)	GND

User can define each GPI terminal function in the “menu”. It will be on when GPI terminal connected to GND, and off when disconnected.

Terminal 1～5: The functions can be set as below:

Undefined	Freeze Frame
Tally-R	Button lock
Tally-G	PIP
Tally-Y	Focus assist
SD Aspect Ratio	Audio bar
Scan	Zebra
Zoom	B/R/G Only
Mono	Timecode

5. Specification

LCD Performance		
Size		9 inches
Display area		192 mm×120 mm
Resolution		1920×1200
Color Depth		8 bit
Aspect ratio		16:9 / 4:3
Brightness		450 cd / ㎡
Contrast		800:1
Input and Output		
Input	BNC×4	3G/HD/SD-SDI input×4
	BNC×2	CVBS input×2
	HDMI×2	HDMI input×2
	3.5mm×2	Analog audio input×2
Output	BNC×2	3G/HD/SD-SDI loop through output×2
	HDMI×2	HDMI loop through output×2
	3.5mm×2	SDI/HDMI/analog audio output×2
Video Format		
CVBS		NTSC / PAL
HDMI		480i / 576i / 480p / 576p
		1080i (60 / 59.94 / 50)
		720p (60 / 59.94 / 50)
		1080p (60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 / 23.98)
SDI	SMPTE-425M	1080p (60 / 59.94 / 50)
	SMPTE-274M	1080i (60 / 59.94 / 50)
		1080p (30 / 29.97 / 25 / 24 / 23.98)
	SMPTE-RP211	1080psf (30 / 29.97 / 25 / 24 / 23.98)
	SMPTE-296M	720p (60 / 59.94 / 50)
	SMPTE-125M	480i (59.94)
	ITU-R BT.656	576i (50)
General		
Input voltage		DC: 6.5V～24V
Power consumption		36W
Working temperature		0℃～+40℃
Working humidity		10%～90%
Storage temperature		－15℃～＋60℃
Storage humidity		10%～90%
Dimensions		483×173×112mm
Net weight (main body)		2.825kg

6. Packing List

1. Monitor	×1
2. User Manual	×1
3. Warranty card	×1
4. LCD protective film	×2
5. Power adaptor + Power cable	×1
6.Warranty Card	×1

ProHD

This model is manufactured, warranted and supported by **SWIT Electronics Co., Ltd. / SWIT Electronics USA, LLC**, and distributed in North America by JVCKENWOOD USA Corp.

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