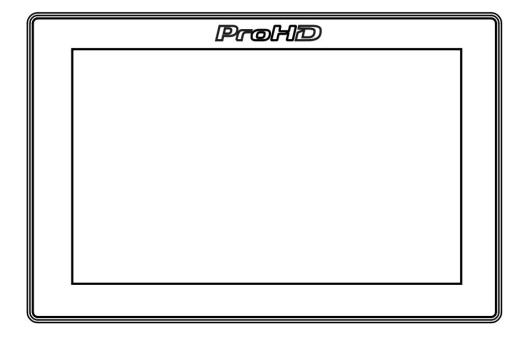


Model: DT-X73F

7" Full HD Camera-top LCD Monitor



# **User Manual**

Ver: A

Please read this User Manual throughout before using.

## **Preface**

- 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 property 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) The LCD dot defects are not over three;
  - (3) Any damage caused by using third-party power adaptors;
  - (4) Any damage or breakdown caused by use, maintenance or storage not according to the user manual.
  - (5) The product is disassembled by anyone other than an authorized service center.
  - (6) Any damage or breakdown not caused by the product design, workmanship, or manufacturing quality, etc.



## SWIT Electronics Co., Ltd. / SWIT Electronics USA, LLC

Address: 3350 Scott Blvd. 61-02, Santa Clara, CA 95054

Toll free: 1 866 986-SWIT(7948)

Tel: 408 260-8258

Fax: 408 228-8438

Email: info@swit.us

Website: www.swit.us

## **Maintenance**

## Warning

- 1. In order to reduce the risk of fire and electrical shock, do not lay this product in rain or damp places.
- 2. Please keep away from the strong magnetic field; it may cause the noise of the video and audio signals.

## The power

- 1. Please use the power adapter provided or recommended by the manufacturer in order to avoid damage.
- 2. For a third party power adapter, please make sure the voltage range, supplied power, and polarity of power lead are fit.
- 3. Please disconnect the power cable under the following situations:
- (A). If you do not operate this monitor for a period of time;
- (B). If the power cable or power adaptor is damaged;
- (C). If the monitor housing is broken.

#### The monitor

- 1. Please don't touch the screen with your fingers, which would probably deface the screen.
- 2. Please don't press the screen; the LCD is extremely exquisite and flimsy.
- 3. Please don't lay this product on unstable place.

## 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.

## **Contents**

Preface	2
Maintenance	3
Contents	
Packing list	
Operation Instructions	6
· · OSD	
Main menu	
Sub-Menu	10
Specification	16
SpecificationTrouble-shooting	17

# **Packing list**

## Standard package includes:

1x Foldable sun hood

1x SSL-JVC battery plate

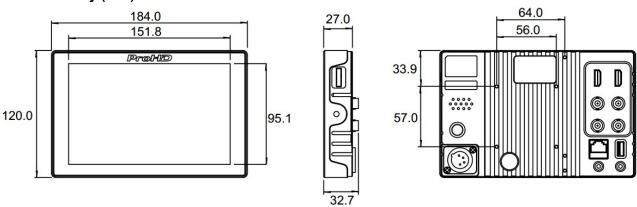
1x AC-DC lockable power adaptor

1x Cold shoe & Screw mounting arm trestle

1x HDMI cable (60cm)

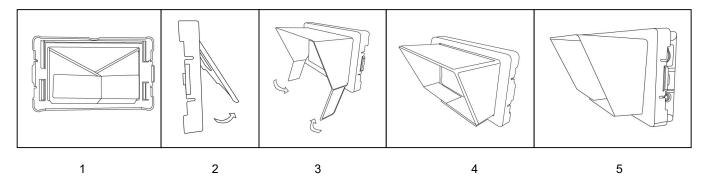
## **Dimension**

#### The main body (mm)

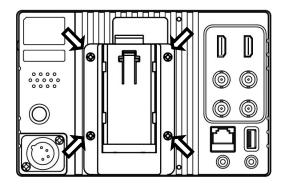


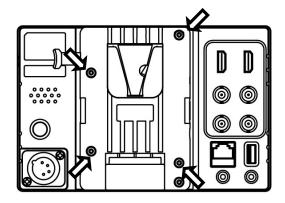
#### Sun hood installation

- (1) Take out the sun hood from the flannel bag, see pic1;
- (2) Push out the sun hood as pic2, unfold as pic3;
- (3) Fold the two bottom parts inward as pic3, with the internal magnets attached and fixed as pic4;
- (4) Install the sun hood on the monitor, see as pic5.



#### **Battery plate installation**

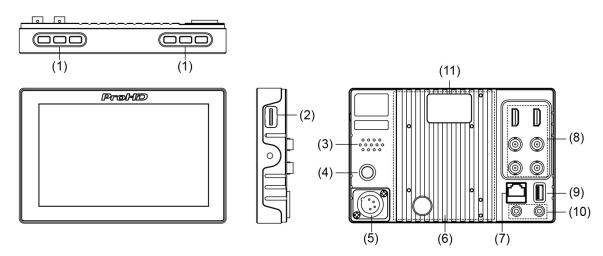




The monitor standard package includes JVC SSL type DV battery plate, and is supported to change battery plate to JVC BN-VF type DV, V-mount or Gold mount plates, by 4 screws and inner DC plug.

The BN-VF plate, V-mount plate and Gold mount plate are optional purchased.

## **Operation Instructions**



(1) **SOURCE:** Input signal source selection

F1 - F4: User definable function keys

User can set F1, F2, F3, F4 keys to corresponding function for quick operation. For details please refer to "Sub Menu - 4.Function key".

When user press and hold the function keys for more than 3 seconds, it will pop-up a definable function list menu, user can rotate and press to select functions. If no operation exceeds 3 seconds, the monitor will automatically save the selection and Exit.

**DISPLAY:** OSD info on/off

Press "DISPLAY" to turn on or turn off relevant status information, audio and video scopes.

#### (2) Menu Knob

Main menu settings

Press the Menu knob to open the menu system on the left top of the screen;

Rotate the knob up and down to select menu items and press the knob to enter or confirm.

Adjust volume, image display parameters

Out of menu system, directly rotate the knob to adjust volume. Press the menu knob to apply the adjusted volume value, and turn to brightness, contrast, saturation in turn.

Note: The last adjusted item will be memorized in system, and when next time directly revolve the Menu Knob, it will adjust the last item.

- (3) SPEAKER: SDI/HDMI audio and analog audio output (will not work if headphone is connected)
- (4) **POWER:** Switch on/off the power
- (5) **DC IN:** 4-pin XLR DC input, 6.5-36V, (Pin 1: Negative, Pin 4: Positive)
- (6) Battery plate installation area
- (7) **GPI:** GPI control input (RJ45), refer pin description to "Main Menu 5. GPI"
- (8) **SDI-IN1:** 2K/3G/HD/SD SDI input (BNC)

**SDI-IN2**: 2K/3G/HD/SD SDI input (BNC)

**SDI OUT:** When current display signal is SDI1, it will loop through output SDI1 signal;

When current display signal is SDI2, it will loop through output SDI2 signal;

When current display signal is HDMI, it will convert HDMI to SDI output;

\* The HDMI to SDI conversion doesn't support SD signal.

**HDMI-IN:** HDMI 1.3 input (HDMI-A type)

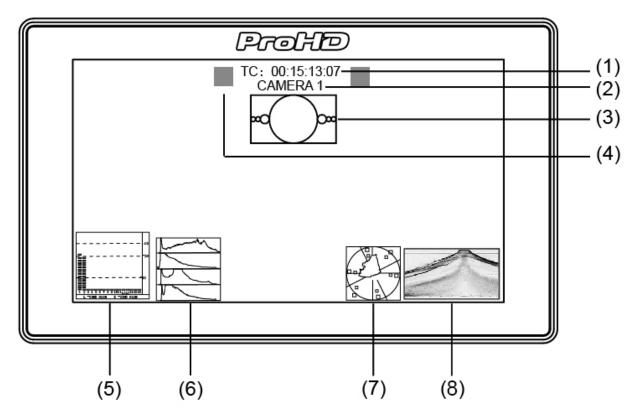
**HDMI-OUT:** HDMI 1.3 loop through output (HDMI-A type)

**CVBS-IN:** PAL/NTSC composite video input (BNC)

- (9) USB: Connect external storage device, for firmware upgrades.
- (II) **AUDIO-IN:** Analog audio input (3.5mm)

**AUDIO-OUT:** Analog audio output (3.5mm)

(II) **TALLY light:** Display Red/Green/Yellow TALLY signals; refer settings to "Main Menu – 5. GPI"



#### (1) Timecode (SDI)

Under SDI input, it can display Timecode. If no Timecode information is detected, it will be displayed as "TC: UNLOCKED".

User can set function keys F1 - F4 as "Timecode" to turn on or off this function

#### (2) **UMD**

Display the source title. Set up under "UMD" submenu.

#### (3) **AFD (SDI)**

User can set function keys F1 - F4 as "AFD" to turn on or off this function. If no relevant information is detected, it will be displayed as "AFD: UNLOCKED".

#### (4) Soft TALLY

When connected with TALLY control devices and set TALLY port in GPI, the screen will display soft TALLY signal, flashing in Red, Green or Yellow. Refer to "Main Menu – 5. GPI"

#### (5) Audio meters

Monitor the audio information. User can set function Keys F1 - F4 as "Audio" to turn on or off this function. The audio meter position, audio channels and blending, etc can be set under "Audio" submenu.

#### (6) Histogram

User can set function Keys F1 - F4 as "Histogram" to turn on or off this function.

#### (7) **Vector**

User can set function Keys F1 - F4 or GPI pins as "Vector" to turn on or off this function.

The Vector position, Vector color and Vector blending, etc. can be set under "Vector" submenu.

#### (8) Waveform

User can set function Keys F1 - F4 or GPI pins as "Waveform" to turn on or off this function.

The Waveform position, type, color and blending, etc can be set under "Waveform" submenu.

#### Introduction of audio and video functions

#### ◆ 16-ch embedded audio meters

The monitor can display max 16 channels audio meters for SDI embedded audio, max 8 channels meters for HDMI embedded audio, and 2 channels meters for analog audio. The audio meter is green, and will turn yellow when audio exceeds -20dB, and turn red when audio exceeds -9dB.

#### Audio alarm

If the embedded audio value is too low or no embedded audio, it will display "MUTE" or "UNLOCKED" in the audio bar.

#### ◆ Timecode (SDI)

Under SDI input, it can display the SMPTE timecode (VITC1, VITC2 or LTC) on the top of the screen. If no Timecode information is detected, it will be displayed as "UNLOCKED".

#### ♦ Waveform (Y, Cb, Cr, R, G, B and single line)

Under SDI and HDMI input, Y, Cb, Cr, R, G, B and single line waveforms can be selected to display

#### Vector

The displayed vector scope pattern is available under both SDI and HDMI, represents saturation as distance from the center of the circle, and hue as the angle, in standard position, around it.

#### ♦ Histogram (R, G, B, W)

The histogram is a bar graph that shows the distribution of luminance values in the picture. There're R, G, B, W histograms that individually displayed simultaneously, available under both SDI and HDMI.

#### ♦ Internal Color Bar

Under SDI and HDMI input, it has 100% internal color bar which helps to analyze the monitor color and adjust the display parameter.

#### Peaking focus assist (red/blue switch)

The Peaking focus assist function is to mark the sharpest edges of the image with red or blue color under SDI and HDMI input, for users to check if the subjects are focused.

#### **♦** Zebra stripes

Zebra Stripes 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

The freeze frame is to capture and display the current broadcast frame.

#### ♦ R/G/B/Mono

R/G/B/Mono is to display only the blue/red/green primary signal or the luminance signal only so as to monitor the image noise.

#### ◆ False Color

The false color is used to aid in the setting of camera exposure. Under false color mode, there's a color chart on the bottom of screen for reference. The color from the dark to the bright will be displayed as blue, cyan, green, yellow, orange and red in a consecutive way.

#### ◆ AFD (SDI)

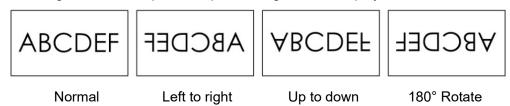
It is the abbreviation of active format description. AFD is to display the SDI embedded AFD information graphically on the screen.

#### ♦ H/V Delay (SDI)

Under SDI input, H/V Delay can be used to display line/field blanking signal, and to observe the horizontal and vertical synchronous signal.

#### ◆ Flip and Rotate

The image can be set up/down flip, or left/right mirror display, like:



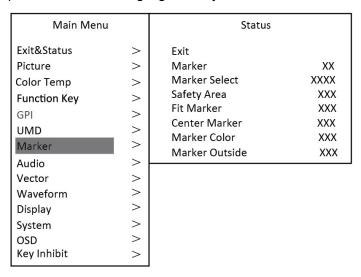
## Main menu

DT-X73F has OSD to adjust the parameters and settings, for example: Picture, color temp., function keys, etc.

1. Press "MENU" button, the main menu will pop-up from the left top of the screen. The selected main menu highlights in yellow.

Main Menu		Status	
Exit&Status Picture Color Temp Function Key GPI UMD Marker Audio Vector Waveform Display System OSD	^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^	HDMI User Profile Color Temp Scan Mode Freeze Frame Odd/Even Frame F1 F2 F3 F4 F5 System Version	XXX XX XXX XXX XXX XXX XXX XXX XXX XXX
Key Inhibit	>		

- 2. Revolve "MENU" to select submenu, the selected submenu highlights in yellow, press "MENU" to apply and enter into the selected submenu's items.
- 3. Revolve "MENU" to select the item which needed to adjust, press "MENU", the selected item and its parameters will be highlighted in yellow.



- 4. Revolve "MENU" to change the selected item's parameter, press "MENU" to apply and save the settings.
- 5. Revolve "MENU" to select "Exit", press "MENU" to quit submenu. Select "Exit & Status" under the Main Menu and press to quit Main Menu.

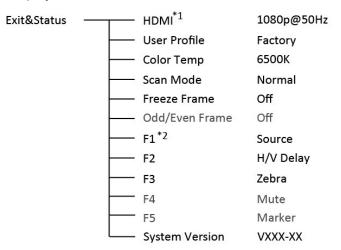
#### Notice:

- \* The items in gray cannot be set up.
- \* If there is no operation under the set time, the menu will automatically save settings and quit.
- \* If the key inhabit function is turned on, except key inhibit function, all other items are in grey. Please turn off the key inhibit function to adjust the items.

## Sub-Menu (the default values are marked with underline)

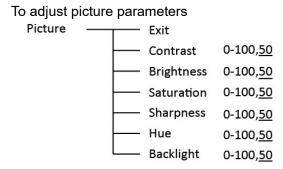
#### 1. Exit & Status

Displays the current status, the details are as down below:



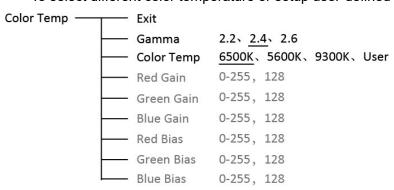
<sup>\*1</sup> Display the current video signal and format

#### 2. Picture



#### 3. Color Temp

To select different color temperature or setup user-defined color parameters

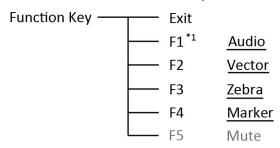


<sup>\*</sup> Only "Color Temp" is set to "User", the Red/Blue/Green Gain or Red/Blue/Green Bias can be adjusted.

<sup>\*2</sup> Display the current function keys setup

#### 4. Function key

To define the F1 – F4 function keys

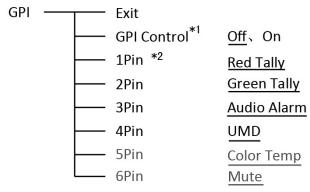


<sup>\*1</sup> Function keys F1 – F4 can be set as the down below functions:

Audio Bar, Histogram, False Color, AFD, H/V Delay, R/G/B/Mono, Marker, Color Bar, UMD, Audio Alarm, Max backlight, Focus Assist, Aspect Ratio, Scan Mode, Zoom Mode, Mute, Freeze Frame, Flip Mode, Waveform, Color Temp, Timecode, Zebra, Vector.

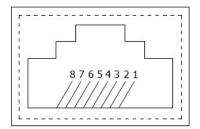
#### 5. GPI

User can set GPI pins to relevant functions to turn on or off this function.



- \*1 When "GPI control" is set to "On", the monitor can be operated through external GPI control unit.
- \*2 The GPI pins can be set to the down below functions:

Red Tally, Green Tally, Yellow Tally, Aspect Ratio, Scan Mode, Zoom Mode, Mute, Freeze Frame, Flip Mode, Color Temp, Time code, Zebra, Vector, Audio Bar, Histogram, False Color, AFD, H/V Delay, R/G/B/Mono, Marker, Color Bar, UMD, Audio Alarm, Max backlight, Focus Assist.



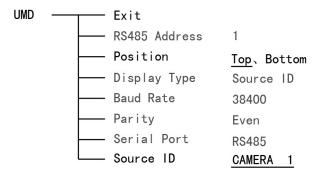
Pin	1	2	3	4
GPI	GPI_1	GPI_2	RXD+	GPI_3
Pin	5	6	7	8
GPI	GPI_4	RXD-	NC	GND

When connecting the GPI pin with GND, the set function will be turned on, and goes out when disconnecting.

Example 1: Under "GPI" submenu, set "GPI control" to "On", set "2 Pin" to "Red Tally", when the pin 2 of the extenal GPI control unit is connected with GND, both the rear TALLY light and screen soft TALLY will display as red. When disconnected, the TALLY light will disappear.

Example 2: Under "GPI" submenu, set "GPI control" to "On", set "4 Pin" to "Scan Mode", when the pin 4 of the extenal GPI control unit is connected with ground, the Scan mode will change and follow the sequence: "Normal" →"Overscan"→"Native".

#### 6. UMD

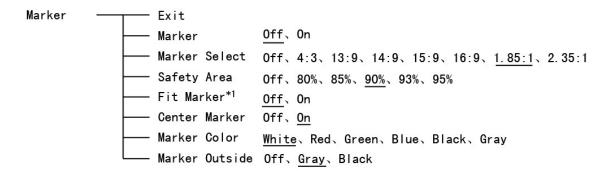


- (1) Select "Source ID"
- (2) The underline flashes as a reminder on the bottom of the first letter. Revolve "MENU" to select the letters; the letter will follow the sequence of the down below if clockwise revolved:

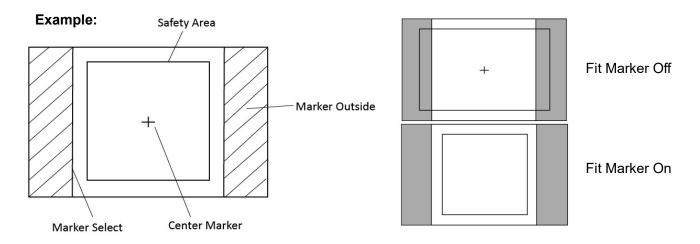
Space 
$$\longrightarrow$$
 0~9  $\longrightarrow$  A~Z  $\longrightarrow$  a~z  $\longrightarrow$  &()\*+,-./:<>\_

- (3) Press "MENU" to save the current settings letter and then start to set the next letter.
- (4) Repeat step (2) and step (3), max 8 letters are supported.
- (5) Press "Exit" to quit and save the settings.

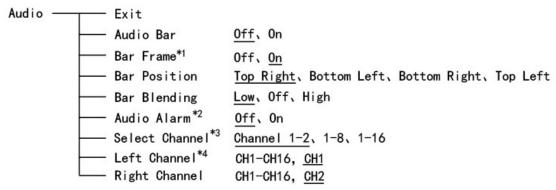
#### 7. Marker



\*1 When "Fit Marker" is "Off", the size of safety area is benchmarked against the actual display screen, accounting for  $80\% \sim 95\%$  of actual display screen. When "Fit Marker" is "On", the size of safety area is benchmarked against the area inside the scales marker, accounting for  $80\% \sim 95\%$  of the area inside the scales marker.

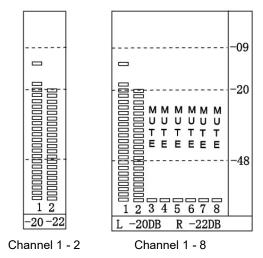


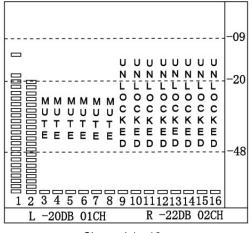
#### 8. Audio



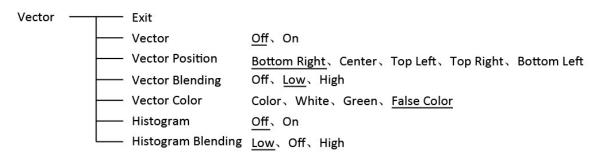
- \*1 When "Bar Frame" is set to "Off", only the audio meter will be displayed.
  - When "Bar Frame" is set to "On", frame and real-time audio value will be displayed.
- \*2 Select Channel
  - Under HDMI signal, channel1-2 can be selected.
  - Under SDI signal, channel 1-2, 1-8 and 1-16 can be selected.
- \*3 When "Audio Alarm" is set to "On", if no embedded audio is detected, the audio bar will display "UNLOCKED". If the audio value is too low, the audio bar will display "MUTE"
- \*4 Audio channels can be selected to output according to the requirements.
  - When the current "Select Channel" is set to "Channel1-2", the left channel and right channel output can be selected from Channel1 or channel2.
  - When the current "Select Channel" is set to "Channel1-8", the left channel and right channel output can be selected from Channel1 to channel8.
  - When the current "Select Channel" is set to "Channel1-16", the left channel and right channel output can be selected from Channel 1 to channel 16.

In audio bar, the left channel information will be in green, and the right channel information will be in red.

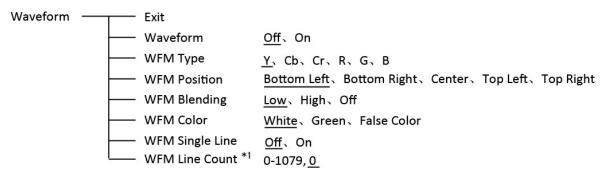




#### 9. Vector

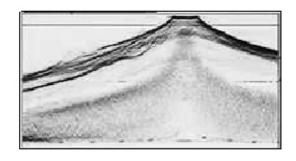


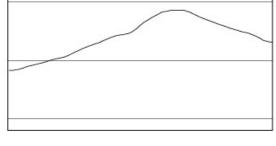
#### 10. Waveform



\*1: Only the "WFM Single Line" is set to "ON", the "WFM Line Count" can be adjusted.

"WFM Single Line" is to display the selected line waveform of "WFM Line Count"





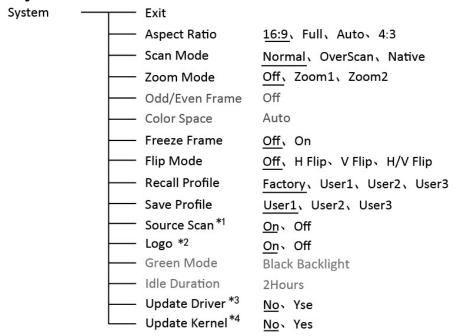
WFM Single Line: Off

WFM Single Line: On

### 11. Display



#### 12. System



#### \*1 Source Scan

When set to "Yes", after turn on the monitor, the signal will be inspected and follow the sequence of "SDI1→SDI2→HDMI→CVBS→SDI1"

\*2 Logo: Refer to the startup displayed ProHD logo.

#### \*3 \*4 Update Driver/ Kernel

Download latest firmware files in USB disk - root directory. Switch on the monitor, and insert USB disk into the USB socket on rear panel.

Enter Menu - System - Update Kernel, select YES and the monitor will upgrade automatically, and will restart when upgrade finished.

Enter Menu - System - Update Driver, select YES and the monitor will upgrade automatically, and will restart when upgrade finished.

Please DO NOT cut off power during firmware upgrade.

## USB firmware upgrade

Firmware Upgrating... 37%

Caution! DO NOT cut off power during firmware upgrade.

#### 13. OSD



Key Inhibit Off、On Key Inhibit

If the "Key Inhibit" is "On", there is no response when all the buttons except "MENU" are pressed.

# **Specification**

LCD Pe	rformance		
Size		7 inch	
Display area		151.2×94.5 mm	
Resoluti	on	1920×1200	
Color		8 bit	
Aspect r	ratio	16:9 / 4:3	
Brightne	ess	400 cd/m <sup>2</sup>	
Contras	t	1000:1	
Viewing	angle	Horizontal / Vertical: 160° / 160°	
Input /	Output		
	HDMI×1	HDMI input	
	BNC×2	2K/3G/HD/SD-SDI input	
Input	BNC×1	CVBS input	
	3.5mm×1	Analog audio input	
	USB×1	For firmware upgarde	
Output	BNC×1	2K/3G/HD/SD-SDI loop through output or HDMI converted to SDI output	
	3.5mm×1	SDI/HDMI/Analog audio output	
Video fo	ormat		
		480i / 576i / 480p / 576p	
		1080i (60 / 59.94 / 50)	
HDMI		720p (60 / 59.94 / 50)	
		1080p (60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 / 23.98)	
		1080psf (30 / 29.97 / 25 / 24 / 23.98)	
	OMPTE COMO O	2048×1080p (23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60)	
	SMPTE-2048-2	2048×1080i (50 / 59.94 / 60)	
	SMPTE-425M-A/B	1080p (60 / 59.94 / 50)	
	SMPTE-274M	1080i (60 / 59.94 / 50)	
SDI		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)	
Genera	İ		
Input vo	Itage	DC / battery: 6.5V~36V	
Power consumption		Max: 12W	
Working temperature		-10°C∼+50°C	
Working humidity		10%~90%	
	temperature	- 15°C∼ + 60°C	
Storage humidity		10%~90%	
Dimensions		184×120×33mm	
Net weight (main body)		610 g	

# **Trouble-shooting**

symptom	Possible causes	Solution
	The power is not turned on	Please check if the power is connected, and then press "POWER" button to turn on the monitor
	Unstable power voltage	Reconnect to power supply
No display	BNC or HDMI cable loose contact or not correctly connected	Check and correctly connect the BNC or HDMI cable
	The attached battery is no power	Change battery
	Using DIY power supply but the polarity is reversed	Refer to the provided power supply, reconnect the power.
	Bad contact of BNC or HDMI cable	Change cable
	Video signal has Interference	Remove the interference source(s)
	Improper adjustment of the color parameters	Adjust the "Recall profile" to "Default" under "System" submenu
	Distortion of the image	Reset the Aspect ratio
Image or color abnormal	Set to Red/Green/Blue only or Mono	Turn the Blue only/ Red Only/ Green Only/Mono off under R/G/B/Mono submenu
	Turn on the "Focus Assist" function	Turn off the "Focus Assist" function
	Turn on the "False Color" function	Turn off the "False Color" function
	Signal can not correctly recognize color space, wrong set of HDMI color space.	Set to the correct color space mode
No audio output	Set to Mute	Turn off MUTE or revolve "MENU/ENTER" to adjust the volume
	Bad contact of signal cable	Connect to the correct input socket



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

To obtain service or for further information, please contact:

#### **SWIT Electronics USA, LLC**

Address: 3350 Scott Blvd. 61-02, Santa Clara, CA 95054

Toll free: 1 866 986-SWIT (7948) • Tel: 408 260-8258 Fax: 408 228-8438

Email: info@swit.us • Website: www.swit.us