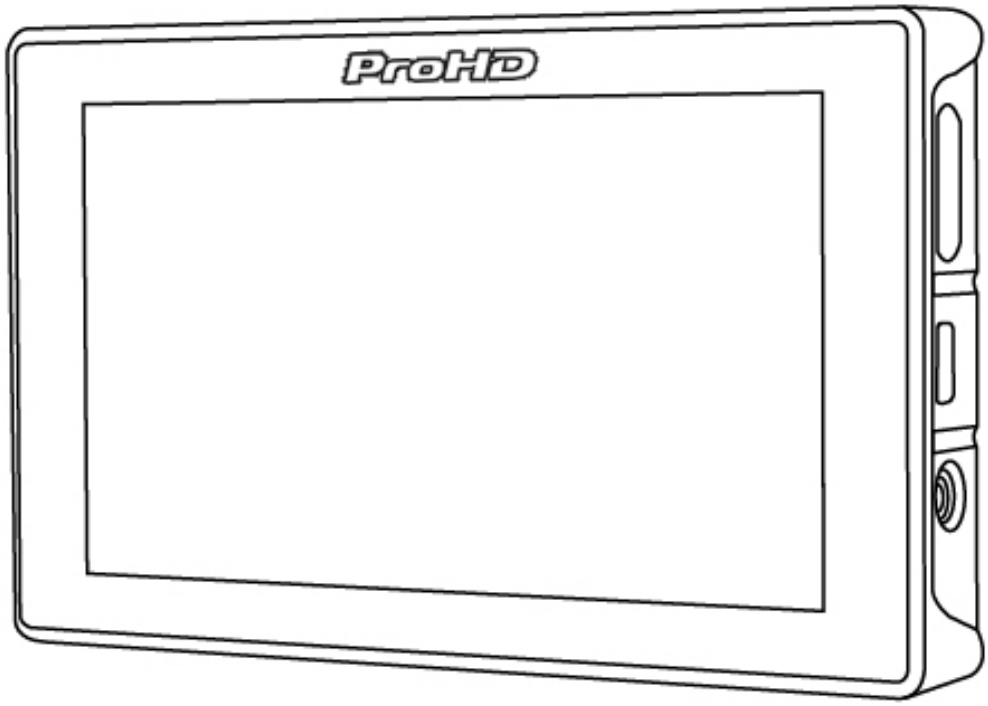
ProHD

Model: DT-X53F

5.5’’ Full HD Camera-top LCD Monitor



User Manual

Ver: B

Please read this User Manual throughout before using.

Preface

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 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.

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

Packing list

Basic package includes:

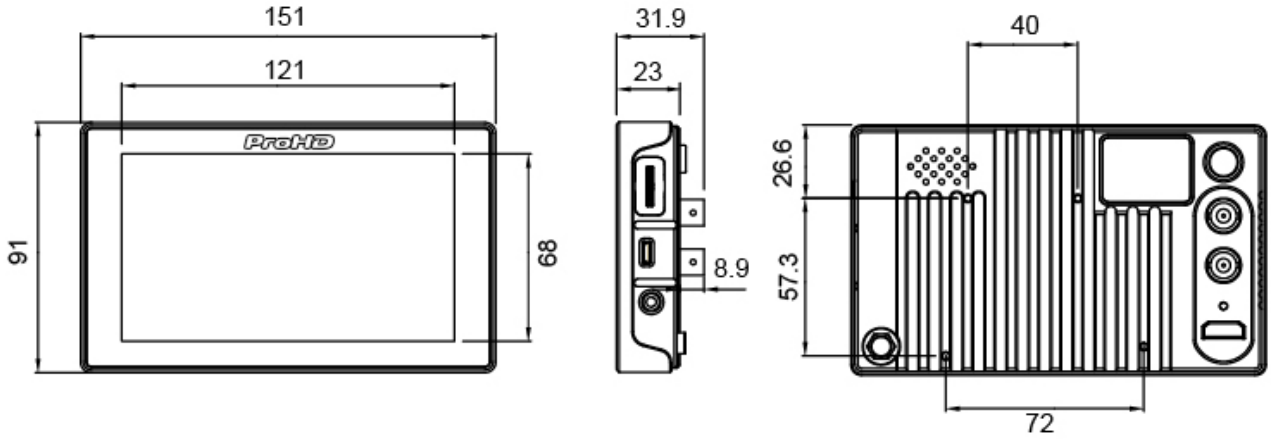
1x Foldable sun hood
1x SSL-JVC battery plate
1x D-tap to lockable pole-tap DC cable
1x Pole-tap to lockable pole-tap DC cable
1x Cold shoe & Screw mounting arm trestle
1x 50cm BNC video cable

Professional package includes additional:

1x AC-DC lockable power adaptor
1x Lockable HDMI cable (60cm)
1x Carrying case

Dimension

The main body (mm)



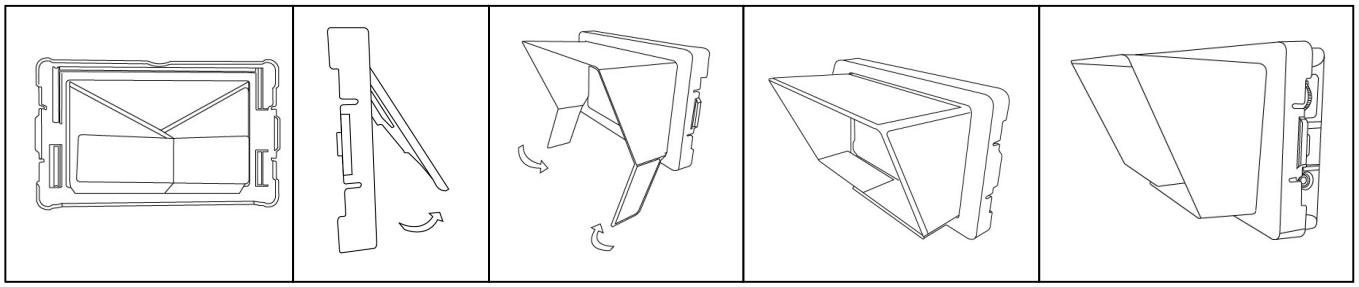
Sun hood installation

(1) Take out the sun hood from the flannel bag, see pic1;

(2) Push out the sun hood as pic2, unfold as pic3;

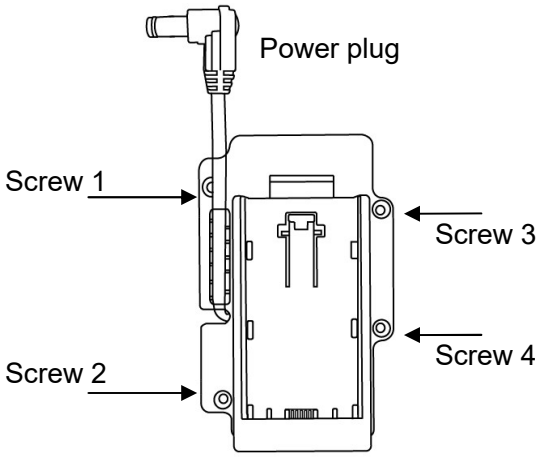
(3) Fold the two bottom parts inward as pic3, with the internal magnets attached and fixed as pic4;

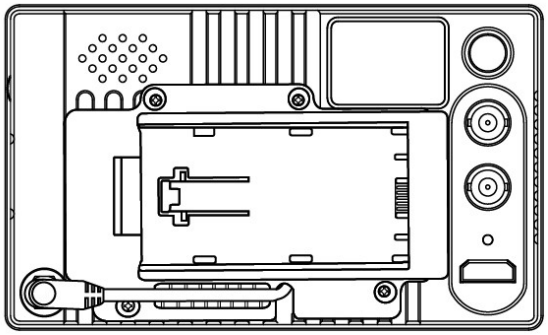
(4) Install the sun hood on the monitor, see as pic5.



1 2 3 4 5

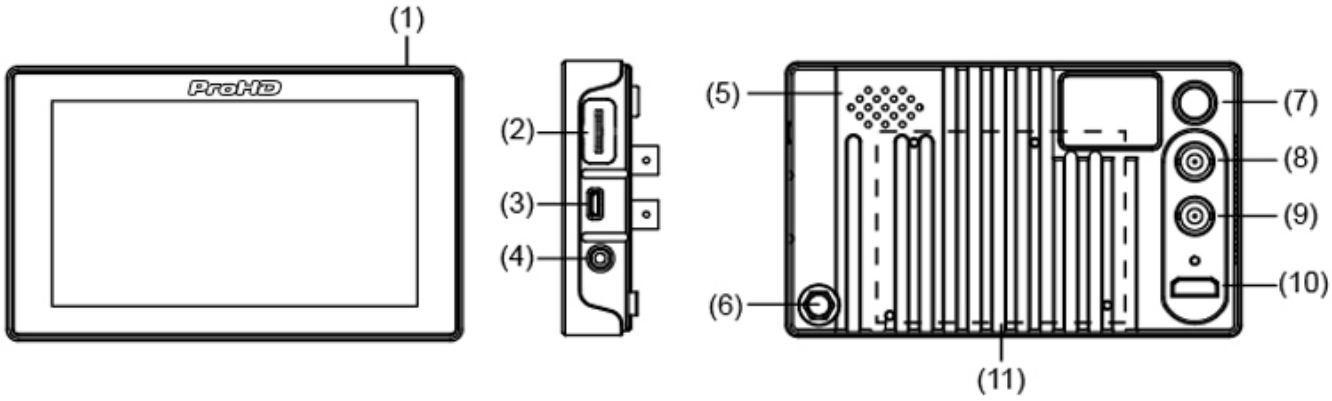
Battery plate installation





Install the battery plate on the back panel of the monitor as shown above, fix with four screws, then insert the power connector with lock to the rear housing power port, and twist the latch portion clockwise to the end. Mounting the battery to the plate can power the monitor.

Operation Instructions



⑴ **F1 - F3**: User definable function keys

User can set F1, F2, F3 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.

When the menu system is on, press F3 to directly exit the menu at any time.

⑵ **Menu Knob**

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.

⑶ **Micro USB port:** Connect external storage device, for firmware upgrades.

⑷ **PHONE:** 3.5mmheadphone jack, output SDI/HDMI embedded audio.

⑸ **SPEAKER:** SDI/HDMI embedded audio output (will not work if headphone is connected)

⑹ **DC IN:** Pole DC power input socket (Outer: Negative, Inner: Positive)

⑺ **POWER:** Switch on/off the power

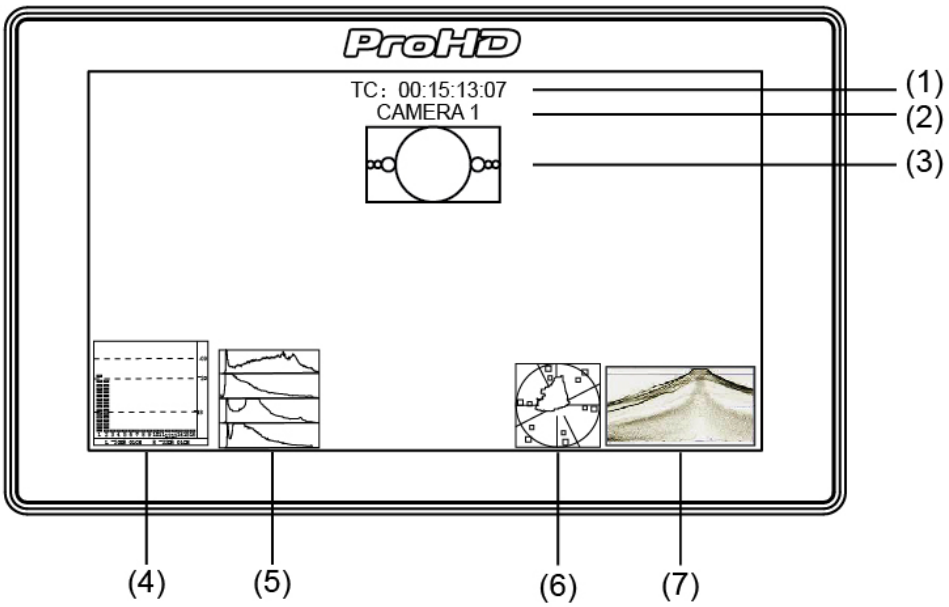
⑻ **SDI-OUT:** When current display signal is SDI, it will loop through output SDI signal;
When current display signal is HDMI, it will convert HDMI to SDI output.
* The HDMI to SDI conversion doesn’t support SD signal.

⑼ **SDI-IN:** 2K/3G/HD/SD SDI input (BNC)

⑽ **HDMI-IN:** HDMI 1.3 input (HDMI-A type)

⑾ **Battery plate installation area**

·OSD



⑴ **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 -F3 as “Timecode” to turn on or off this function

⑵ **UMD**

Display the source title. Set up under “UMD” submenu.

⑶ **AFD (SDI)**

User can set function keys F1 -F3 as “AFD” to turn on or off this function. If no relevant information is detected, it will be displayed as “AFD: UNLOCKED”.

⑷ **Audio meters**

Monitor the audio information. User can set function Keys F1 -F3 as “Audio” to turn on or off this function. The audio meter position, audio channels and blending, etc can be set under “Audio” submenu.

⑸ **Histogram**

User can set function Keys F1 -F3 as “Histogram” to turn on or off this function.

⑹ **Vector**

User can set function Keys F1 -F3 or GPI pins as “Vector” to turn on or off this function.

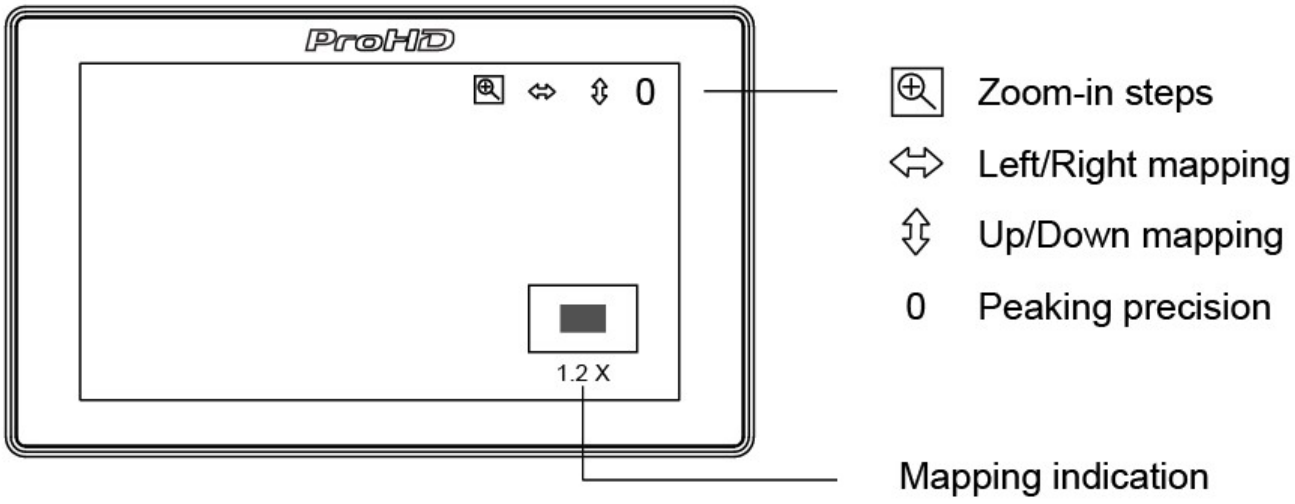
The Vector position, Vector color and Vector blending, etc. can be set under “Vector” submenu.

⑺ **Waveform**

User can set function Keys F1 -F3 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.

Zoom-in and mapping



Set “Zoom-in” to function keys, and enable zoom-in mode, the OSD displays as above.

⑴ **Zoom-in steps operation**

Scroll the Menu key up and down, to quick adjust zoom-in steps among: 1.2x, 1.5x, 1.8x, 2.0x, 2.4x, 2.6x, 2.8x and 3.0x. The zoom-in indication window is displayed on bottom right of the screen.

⑵ Left and Right mapping

Press Menu key, the ⇔ button is highlighted. Scroll the Menu key up and down to move the video left and right.

⑶ Up and Down mapping

Press Menu key again, the ⇳ button is highlighted. Scroll the Menu key up and down to move the video up and down.

⑷ Peaking precision adjust

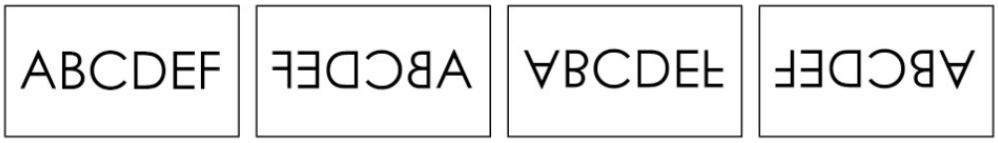
Press Menu key again, the peaking precision number is highlighted. S croll the Menu key up and down to adjust the peaking focus assist precision from 0-9.

⑸ Mapping indication window

Under zoom-in mode, the mapping indication window is displayed on bottom right of the screen, and indicates the zoom-in rate, up/down/left/right position.

Introduction of audio and video functions

- **16-ch embedded audio meters**
  The monitor can display max 16 channels audio meters for SDI embedded audio, and 2 channels meters for HDMI embedded 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)**
  The histogram is a bar graph that shows the distribution of luminance values in the picture. There’re R, G, B 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:

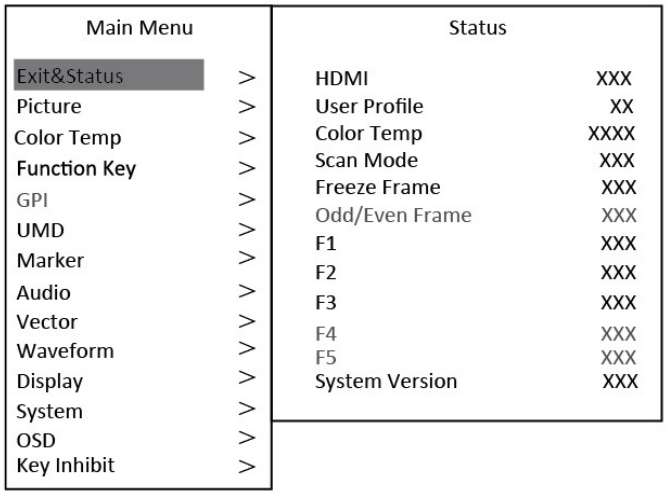


Normal Left to right Up to down 180° Rotate

Main menu

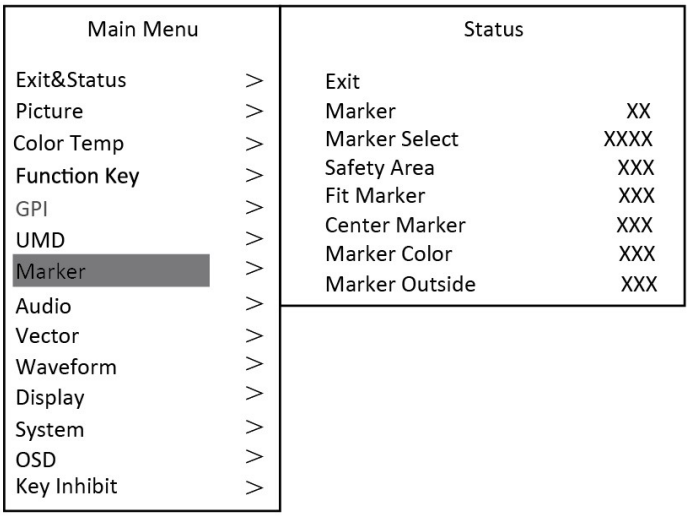
DT-X53F has OSD to adjust the parameters and settings, for example: Picture, color temp., function keys, etc.

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



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.

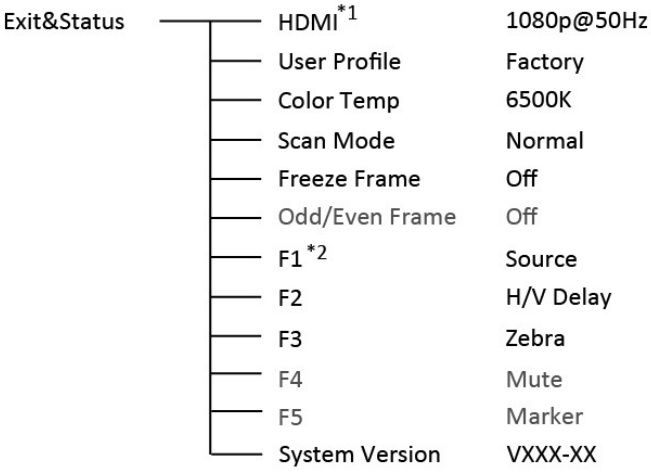
Notice:

* 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:



*1 Display the current video signal and format

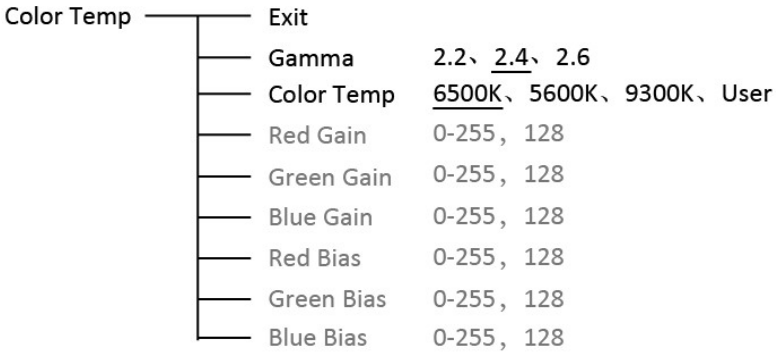
*2 Display the current function keys setup

2. Picture

To adjust picture parameters

3. Color Temp

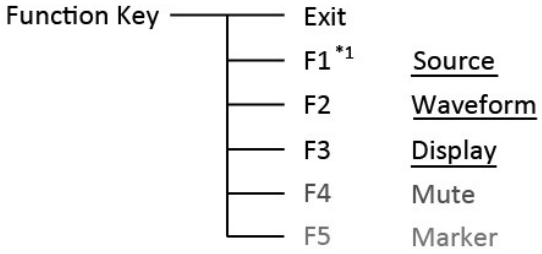
To select different color temperature or setup user-defined color parameters



* Only “Color Temp” is set to “User”, the Red/Blue/Green Gain or Red/Blue/Green Bias can be adjusted.

4. Function key

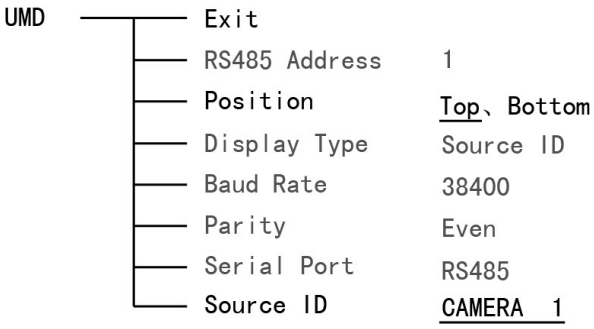
To define the F1 - F3 function keys



*1 Function keys F1-F3 can be set as the down below functions:

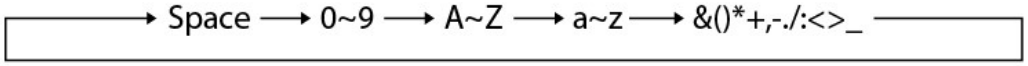
source, Waveform, Display, Color Temp, Time Code, Zebra, Vector, Audio Bar, Histogram, False Color, AFD, H/V Delay, R/G/B/Mono, Marker, Color Bar, UMD, Audio Alarm, Max backlight, Focus Assist, Aspect Ratio, Scan Mode, Zoom Mode, Mute, Freeze Frame, Flip Mode.

5. UMD



⑴ Select “Source ID”

⑵ 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:



⑶ Press “MENU” to save the current settings letter and then start to set the next letter.

⑷ Repeat step (2) and step (3), max 8 letters are supported.

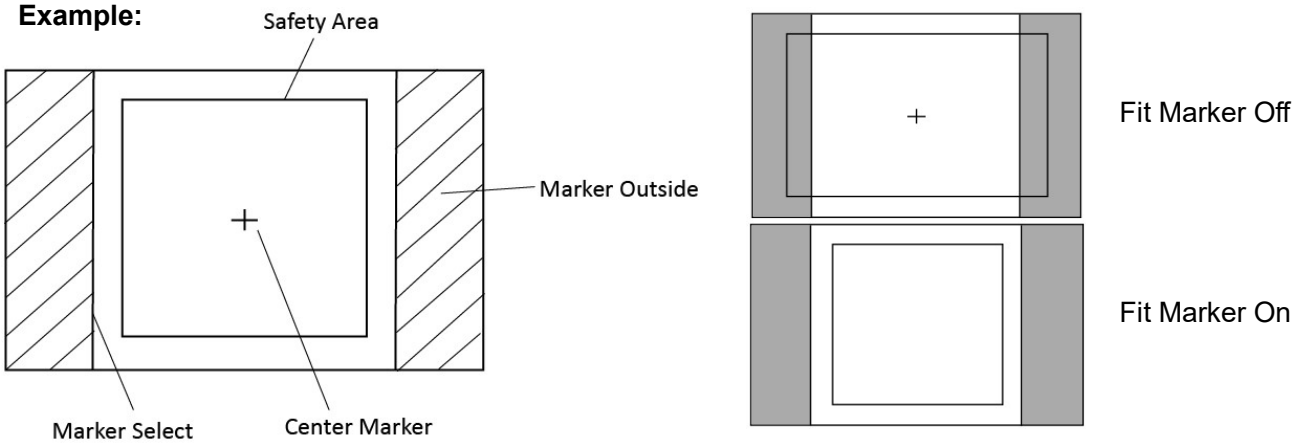
⑸ Press “Exit” to quit and save the settings.

6. Marker

Marker	Exit	
	Marker	Off、On
	Marker Select	Off、4:3、13:9、14:9、15:9、16:9、1.85:1、2.35:1
	Safety Area	Off、80%、85%、90%、93%、95%
	Fit Marker*1	Off、On
	Center Marker	Off、On
	Marker Color	White、Red、Green、Blue、Black、Gray
	Marker Outside	Off、Gray、Black

*1 When “Fit Marker” is “Off”, the size of safety area is benchmarked against the actual display screen, accounting for 80% ~ 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% ~ 95% of the area inside the scales marker.

Example:



7. Audio

Audio	Exit	
	Audio Bar	Off、On
	Bar Frame	Off、On
	Bar Position	Top Right、Bottom Left、Bottom Right、Top Left
	Bar Blending	Low、Off、High
	Audio Alarm	Off、On
	Select Channel	Channel 1-2、1-8、1-16
	Left Channel	CH1-CH16，CH1
	Right Channel	CH1-CH16，CH2

*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.

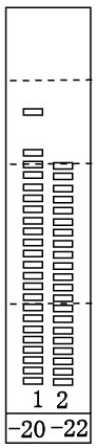
*3 When “Audio Alarm” is set to “On”, if no embedded audio is detected, the audio bar will display “UNLOCKED”. If the audio value is too low, the audio bar will display “MUTE”

*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.

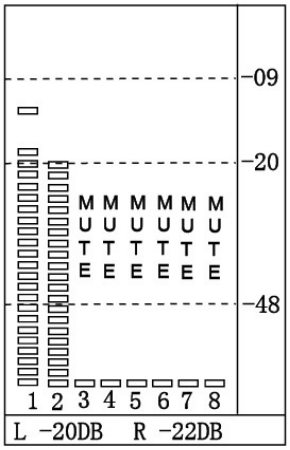
When the current “Select Channel” is set to “Channel1-8”, the left channel and right channel output can be selected from Channel1 to channel8.

When the current “Select Channel” is set to “Channel1-16”, the left channel and right channel output can be selected from Channel1 to channel 16.

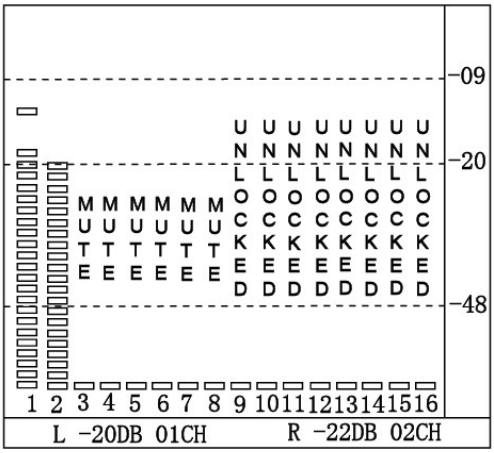
In audio bar, the left channel information will be in green, and the right channel information will be in red.



Channel1～2



Channel1～8



Channel1～16

8. Vector

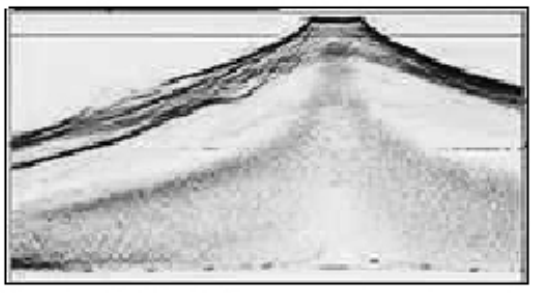
Vector	Exit	
	Vector	Off、On
	Vector Position	Bottom Right、Center、Top Left、Top Right、Bottom Left
	Vector Blending	Off、Low、High
	Vector Color	Color、White、Green、False Color
	Histogram	Off、On
	Histogram Blending	Low、Off、High

9. Waveform

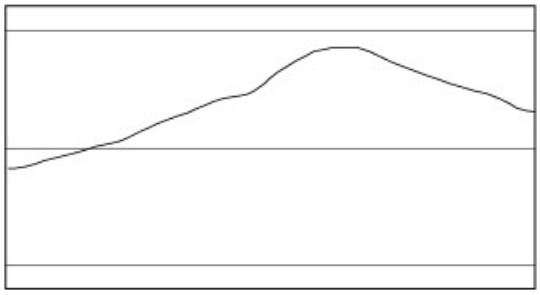
Waveform	Exit	
	Waveform	Off、On
	WFM Type	Y、Cb、Cr、R、G、B
	WFM Position	Bottom Left、Bottom Right、Center、Top Left、Top Right
	WFM Blending	Low、High、Off
	WFM Color	White、Green、False Color
	WFM Single Line	Off、On
	WFM Line Count *1	0-1079, 0

*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

10. Display

Display		
	Exit	
	Waveform	Off、On
	Audio Bar	Off、On
	Vector	Off、On
	Zebra	Off、On
	Focus Assist	Off、Blue、Red
	Time Code	Off、On
	Histogram	Off、On
	False Color	Off、On
	AFD	Off、On
	H/V Delay	Off、On
	R/G/B/Mono	Off、Blue Only、Red Only、Green Only、Mono
	Color Bar	Off、On
	Marker	Off、On
	UMD	Off、On

11. System

System		
	Exit	
	Aspect Ratio	16:9、4:3、Auto
	Scan Mode	Normal、OverScan、Native
	Zoom Mode	Off、Zoom1、Zoom2
	Odd/Even Frame	Off
	Color Space *1	Auto、RGB(4:4:4)、YCbCr(4:4:4)、YCbCr(4:2:2)
	Freeze Frame	Off、On
	Flip Mode	Off、H Flip、V Flip、H/V Flip
	Recall Profile	Factory、User1、User2、User3
	Save Profile	User1、User2、User3
	Source Scan *2	On、Off
	Logo *3	On、Off
	Green Mode	Black Backlight
	Idle Duration	2Hours
	Update Driver *4	No、Yse
	Update Kernel *5	No、Yes

*1 Color space

The default color space parameter is automatic. It will automatically dispay based on the input signal recognized color sapce. If the signal can not recognize the correct color space, user should manually adjust the color space to correctly display.

*2 Source Scan

When set to “Yes”, after turn on the monitor, the signal will be inspected and follow the sequence of “SDI→HDMI→SDI”

For example: if channel is selected to SDI, SDI-IN has no input, and HDMI has input. When turn on the monitor, after automatic inspection, SDI has no recognized signal, and HDMI has recognized signal, then the input signal will be HDMI.

When set to “No”, update model will not be supported.

*3 Logo

When powered on, the screen will display ProHD logo.

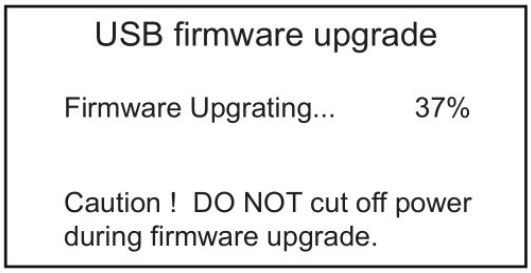
*4.*5 Update Driver/ Kernel

Download latest firmware files in USB disk - root directory.

Switch on the monitor, and insert USB disk into the USB socket on rear panel, by a Micro-USB OTG cable.

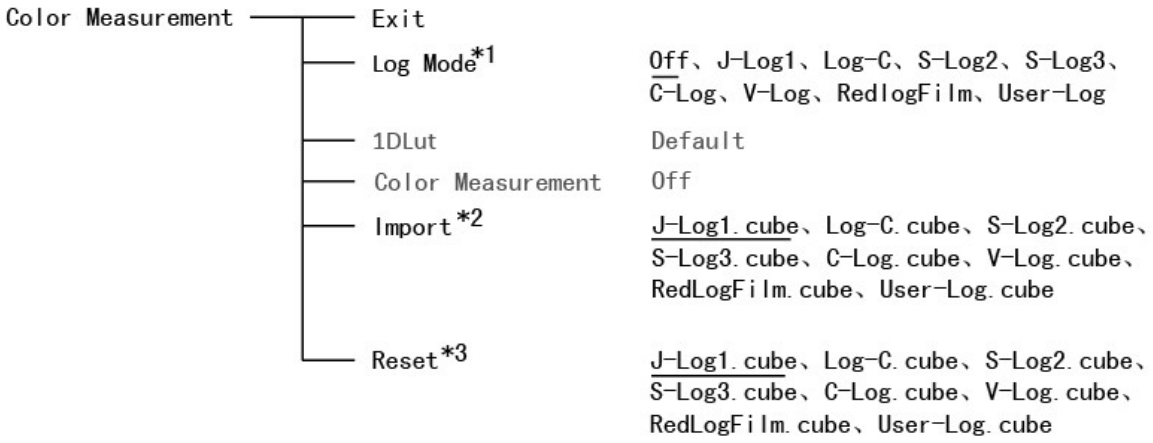
Enter Menu – System – Update Kernel, select YES and the monitor will upgrade automatically, and will restart when upgrade finished.

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.

12. Color Measurement



*1 Camera Log conversion

When shooting with Log mode of the camera, you can select the corresponding Log conversion LUT, to convert the log mode video to standard ITU Rec.709 mode to monitor. A"User-Log" is provided for user defined LUT converting to Rec.709.

*2 Import 3DLUT cube file

The monitor pre-imported the correct 3DLUT cube files to convert camera logs to Rec. 709. And you can import your own 3DLUT cubes to "User-log.cube" space. You can also import 3DLUT cubes to camera logs space to cover them.

(1) Copy the user cube file to USB stick, and rename the cube file to "User-Log.cube" (attention to the cap lettters).

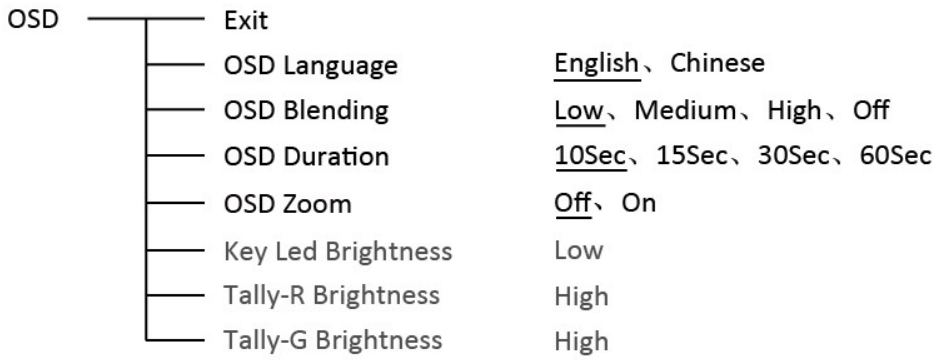
(2) Insert USB stick to the rear panel of the monitor. (Use Micro USB adaptor)

(3) Operate Menu – Color Measurement – "Import" – "User-Log.cube" – "Yes" to import.

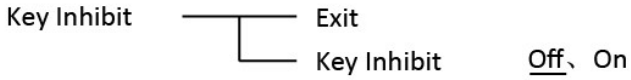
*3 Reset to factory cubes

For any wrong cubes imported that caused wrong display colors, you can reset the cubes to factory cubes here.

13. OSD



14. Key Inhibit



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

Specification

LCD Performance		
Size		5.5 inch
Display area		120.96×68.04 mm
Resolution		1920×1080
Color		8 bit
Aspect ratio		16:9／4:3
Brightness		400 cd/m^2
Contrast		1000:1
Viewing angle		Horizontal／Vertical: 160°／160°
Input／Output		
Input	HDMI×1	HDMI input
	BNC×1	2K/3G/HD/SD-SDI input
	Micro-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 audio output
Video format		
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)
		1080psf (30 / 29.97 / 25 / 24 / 23.98)
SDI	SMPTE-2048-2	2048×1080p (23.98 / 24 / 25 / 29.97 / 30 / 50 / 59.94 / 60)
		2048×1080i (50 / 59.94 / 60)
	SMPTE-425M-A/B	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／battery: 6.5V～36V
Power consumption		Regular: 7.5W; Max: 12W
Working temperature		-10°C～+50°C
Working humidity		10%～90%
Storage temperature		－15°C～＋60°C
Storage humidity		10%～90%
Dimensions		151×91×32mm
Net weight（main body）		375 g

Trouble-shooting

symptom	Possible causes	Solution
No display	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
	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.
Image or color abnormal	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
	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

ProHD

This model is manufactured by **SWIT Electronics Co., Ltd.**

and distributed, warranted and supported in Europe by **JVCKENWOOD Deutschland GmbH**

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