

plura[®]
b r o a d c a s t

Operating Instructions

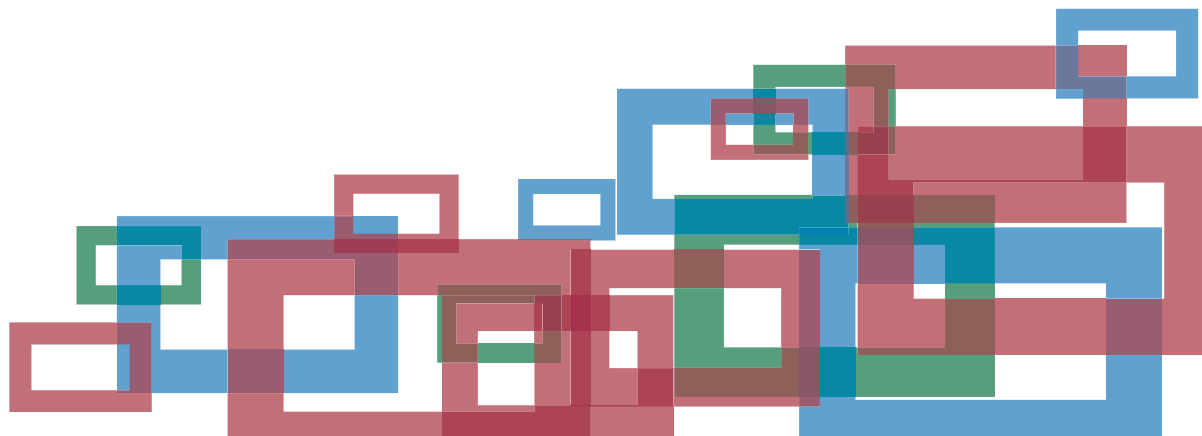
FTM-043-3G

Powerful Broadcast 4.3" Field testing Monitor

with Audio & Video Test Generator – 3G Ready!

FTM-Series

FTM-043-3G



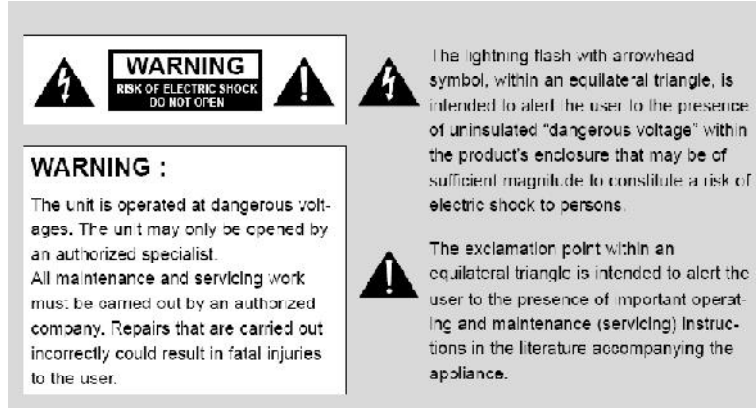
PRECAUTION -----	5
1. GENERAL FEATURES -----	7
2. FUNCTIONAL EXPLANATION OF EACH PART -----	8
1) FRONT PANEL -----	8
● <i>Front Keys Operations</i> -----	8
● <i>Speaker Out</i> -----	9
2) REAR PANEL -----	9
● <i>DC 12V IN</i> -----	9
● <i>Interface description</i> -----	9
3. MENU OVERVIEW -----	10
1) TO SHOW AND HIDE THE MENU-----	10
2) TO GO TO THE NEXT LEVEL -----	10
3) TO GO BACK TO THE PREVIOUS LEVEL -----	10
4) TYPICAL MENU OPERATION -----	10
4. BASIC OPERATION -----	11
1) TURNING ON THE MONITOR-----	11
2) VOLUME ADJUSTMENT -----	11
3) ON SCREEN MENUS LANGUAGE SELECTION-----	11
5. ON SCREEN MENUS SELECTION AND ADJUSTMENT -----	12
1) HOW TO ADJUST THE OSD SCREEN -----	12
6. SELECT VIDEO INPUT -----	13
1) HOW TO SELECT VIDEO SOURCE BY OSD-----	13
7. TEST OUT MENU OPTIONS -----	13
1) 3G/HD/SD 1, 2 OUT -----	13
● <i>Output source</i> -----	13
● <i>Resolution.</i> -----	13
● <i>Frequency</i> -----	13
● <i>Pattern</i> -----	13
2) VIDEO/AES OUT-----	14
● <i>Output</i> -----	14

-Video, AES -----	14
● Resolution-----	14
8. VIDEO MENU OPTION -----	14
1) ADJUST CONTROL-----	14
2) COLOR TEMPERATURE CONTROL -----	15
3) SCAN -----	15
4) ASPECT RATIO -----	15
5) MONO/BLUE ONLY -----	15
6) H V DELAY -----	16
9. AUDIO MENU OPTION-----	16
1) SPEAKER/HEADPHONE OUT -----	16
● Audio Out-----	16
-Select output Audio.(Auto/SDI in/AES in/Line in/Gen) -----	16
● Gen Level -----	16
● Volume -----	16
2) 3G/HD/SDI 1, 2 OUT-----	16
● Audio Out-----	16
-Select output Audio.(SDI in/AES in/Line in/Gen) -----	16
● Gen Level -----	16
● Group -----	16
● Mask-----	16
3) VIDEO/AES OUT-----	17
● Audio-----	17
-Select output Audio.(SDI in/AES in/Line in/Gen) -----	17
● Gen Level -----	17
● AES Group -----	17
4) TONE OUT-----	17
● Audio-----	17
-Select output Audio.(SDI in/AES in/Line in/Gen) -----	17
● Audio Level -----	17
5) 3G/HD/SD IN -----	17
● Output Group-----	17
● Output Channel-----	17

6)	AUDIO METER -----	17
●	<i>Level Meter</i> -----	17
●	<i>Type</i> -----	17
●	<i>Position</i> -----	17
●	<i>Scale</i> -----	17
7)	VOLUME -----	18
10.	MARKER MENU OPTION -----	18
1)	MARKER & USER MARKER -----	18
2)	SAFETY AREA -----	19
3)	CENTER MARKER -----	19
4)	MARKER WIDTH -----	19
5)	MARKER COLOR -----	19
11.	SETUP MENU OPTIONS -----	19
1)	SETUP LOAD & SETUP SAVE -----	19
2)	FUNCTION KEY -----	20
3)	OSD MENU -----	20
●	<i>OSD Option</i> -----	20
●	<i>Time code</i> -----	21
●	<i>Under Monitor Display (color: Tally R/G mode action)</i> -----	21
●	<i>Input ID</i> -----	21
4)	ADVANCED -----	21
●	<i>Information</i> -----	21
●	<i>Screen Saver</i> -----	22
●	<i>Screen Control</i> -----	22
●	<i>Fan Control</i> -----	22
5)	SET ID -----	22
12.	SUPPORTED INPUT MODES -----	23
1)	SUPPORTED SIGNALS -----	23
2)	SUPPORTED TIMINGS -----	23
●	<i>SDI input</i> -----	23
3)	MECHANICAL DIMENSION -----	23
●	<i>FTM-043-3G</i> -----	23

Precaution

Before operating the unit, please read this manual carefully.



WARNING:

To reduce the risks of electric shock do not remove cover (or back). No user serviceable parts inside. Refer servicing to qualified service personnel. To prevent fire or shock hazard, do not expose the unit to rain or moisture. Do not rub or strike the Active Matrix LCD with harsh surface material as this may scratch, mark, or damage the Active Matrix LCD permanently.

CAUTION:

Unauthorized tampering with the inside of the monitor invalidates the warranty.

The manufacturer shall not warrant any damage caused by improper maintenance and/or repair by third parties.

Important safeguards for you and your new product:

Your product has been manufactured and tested with your safety in mind. However, improper use can result in potential electrical shock or fire hazards. To avoid defeating the safeguards that have been built into your new product, please read and observe the following safety points when installing and using your new product and save them for future reference.

1. Read Instructions

2. Follow Instructions

All operating and use instructions should be followed.

3. Retain Instructions

The safety and operating instructions should be retained for future reference.

4. Heed Warnings

All warnings on the product and in the operating instructions should be adhered to.

5. Cleaning

Disconnect the unit from the electricity supply before cleaning. Do not use abrasive

cleaners. Use a damp cloth for cleaning.

6. Water and Moisture

Do not use this apparatus near water.

7. Transporting Product

A product should be transported with care. Excessive force and uneven surfaces may cause the product to potential damage.

8. Attachments

Do not use attachments, not recommended by PLURA. as they may cause hazards.

9. Ventilation

*Do not block any of the ventilation openings.
Install in accordance with the manufacturer's instructions.*

10. Power Sources

This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply, consult your supplying dealer.

11. Power Lead Polarization

This product is equipped with a three-wire grounding-type cord. This is a safety feature. Do not defeat the safety purpose of the grounding-type cord.

12. Power Cord Protection

Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles and the point where they exit from the product.

13. Outdoor Cable Grounding

If an outdoor cable is connected to the product, be sure the cable is grounded so as to provide some protection against voltage surges and built-up static charges. A "face plate" also needs to be installed with an isolating capacitor to prevent any damage from static.

14. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent possible damage to the product due to lightning and power-line surges.

15. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to avoid contact with such power lines or circuits, as contact with them might be fatal.

16. Earthing the product

This product must be earthed properly to comply with the safety regulations in the country of use. If you are unsure of these regulations, please consult a qualified electrician.

17. Servicing

Do not attempt to service this product yourself as opening or removing covers may expose to dangerous voltages or other hazards. Refer all servicing to qualified service personnel. If the unit does not operate properly, switch it off and call your dealer.

18. Damage Requiring Service

Isolate this product from the mains supply and refer servicing to qualified service personnel under the following conditions:

- A. If the power-supply cord or plug is damaged.*
- B. If the front LCD has been damaged.*
- C. If there is ingress of water between the glass and the LCD screen.*
- D. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.*
- E. If the product has been dropped or the chassis has been damaged.*
- F. If the product exhibits a distinct change in performance.*

19. Safety Check

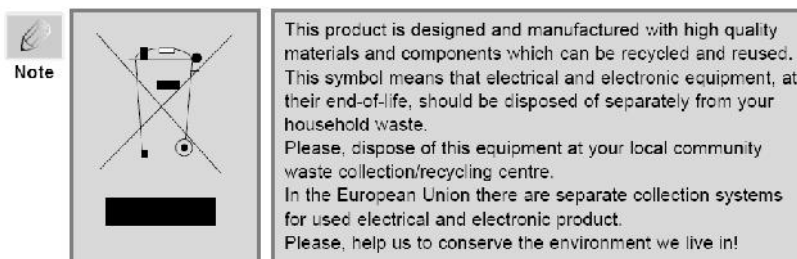
Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in proper operating condition and the front seal is intact.

20. Mounting

The product should be mounted on only as recommended in the instructions.

21. Power

This set operates on an AC supply; the voltage is as indicated on the label on the Manual. This appliance must be earthed at all times through the chassis as well as through the power lead.



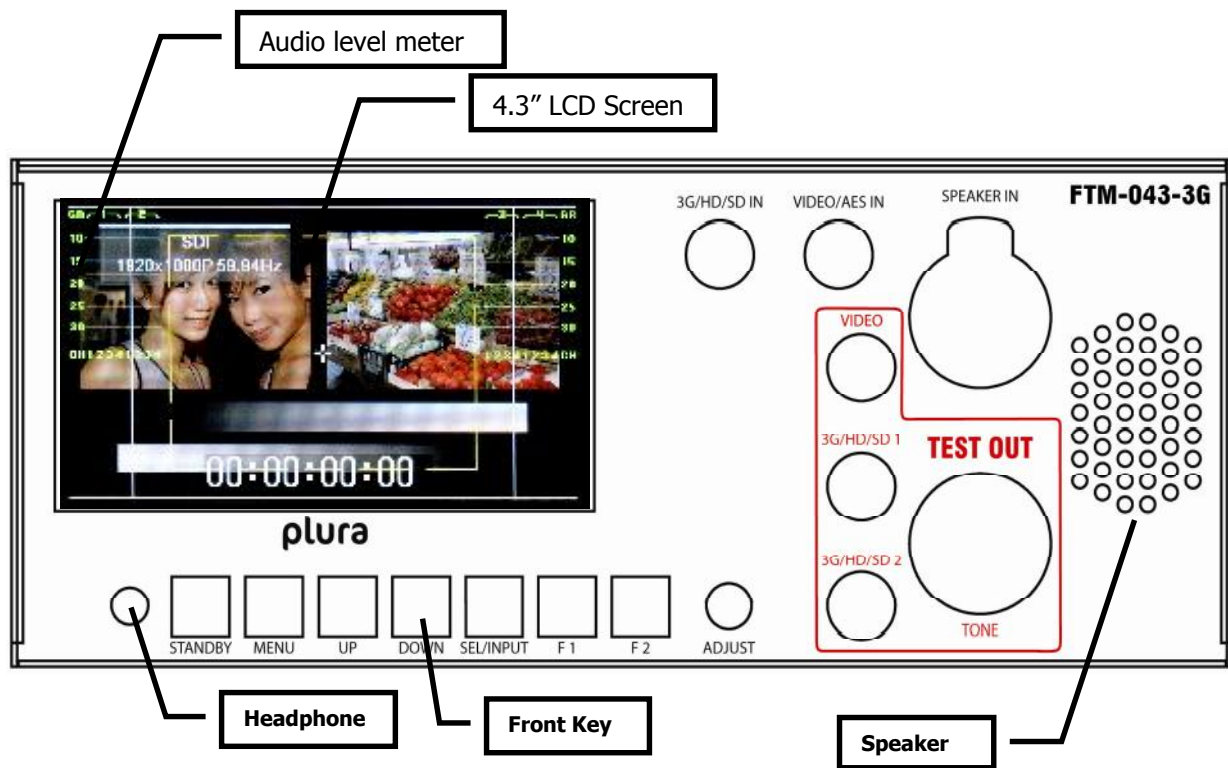
1. GENERAL FEATURES

- 4.3" LCD Screen
- Video input: 3G/HD/SD-SDI(3G/1.485G/270M, 3G level B Format not supported), NTSC/AES

- Video input support Embedded Audio on HD and SDI
- Audio input: Analog Audio (1ch)
- Audio Output: Embedded Audio ch 1 & 2 on 3.5mm jack in front
- TEST OUT: 3G/HD/SD 1 & 2 (3G/1.485G/270M)
- TEST OUT: Video, AES out
- TEST OUT: Audio 1k Tone
- Screen Adjustments: Brightness, Contrast, Color, Sharpness, Phase, Tint
- Power: 12VDC through External Adapter

2. *Functional explanation of each part*

1) *Front Panel*



• **Front Keys Operations**

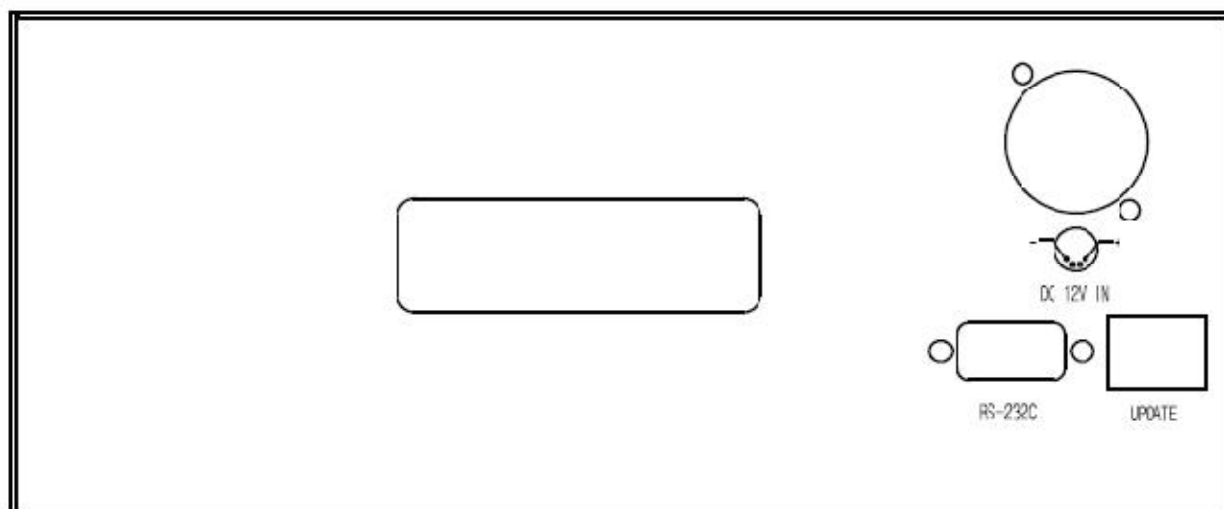
Key Name	Operation
STANDBY	▶ Power ON/OFF Button. This button is operated after being pressed about 3 seconds.
SEL/INPUT	▶ Activates OSD menu of input source selecting. ▶ Changes input source by selecting. ▶ Executes functions (by OSD help commands) in main OSD menu.
DOWN	▶ Decreases Audio volume of speaker. ▶ Decreases values of user menu in main OSD menu. ▶ Executes function (by OSD help commands) in main OSD menu.
UP	▶ Increases Audio volume of speaker. ▶ Increases values of user menu in main OSD menu.

	▶ Executes function (by OSD help commands) in main OSD menu.
MENU	▶ Activates main OSD menu. ▶ Navigates higher menu in main OSD menu. ▶ Exits OSD menu.

- **Speaker Out**

Interface	Description
Speaker out	8 ohm±15%, Max 1.5W

2) *Rear Panel*



- **DC 12V IN**



IN NO	Description
4	+ 12V
1	GND

- **Interface description**

Interface	Description
3G/HD/SD IN	3G/HD/SD Input
VIDEO/AES IN	Video/AES input

SPEAKER IN	Audio input	
TEST OUT	3G/HD/SD 1	3G/HD/SD output
	3G/HD/SD 2	3G/HD/SD Output
	VIDEO	Video/AES Output
	TONE	Audio Output
UPDATE	Update/Multi Control/Auto color calibration	
RS-232C	Firmware Upgrade	

3. **MENU OVERVIEW**

In this menu system, there are several ways to customize the menu settings provided. Most menus consist of three levels to set up the options, but some require greater depth for the variety of settings. If you press the **MENU** button, only the first and second level of the menu system will appear on the monitor screen. The third level can be displayed by pressing **SEL/INPUT**. If a menu has more than three levels, the pop-up dialogue box will be displayed as the fourth or fifth level.

1) **To show and hide the Menu**

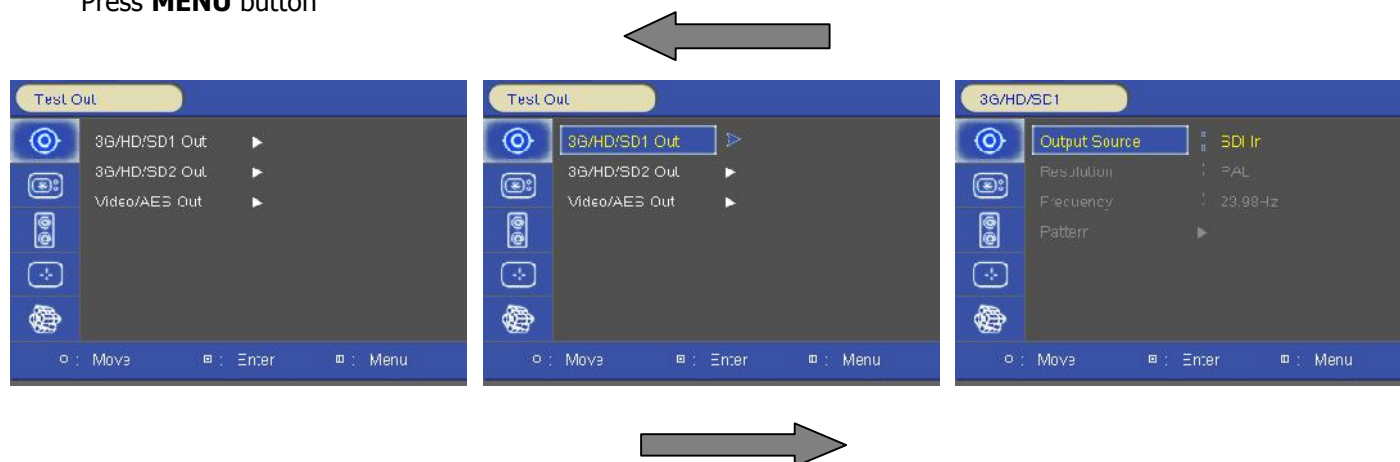
Press the **MENU** button to display the menu. A second press of the **MENU** button will take you back to monitor viewing.

2) **To go to the next level**

Press **SEL/INPUT** button.

3) **To go back to the previous level**

Press **MENU** button



4) **Typical Menu Operation**

1. Press **MENU** button: The main menu will appear.
2. Use **UP/DOWN** button to select the desired menu option (icon).
3. While the desired menu option is selected, press **SEL/INPUT** to move to the second level.
4. Use **UP/DOWN** button to select the second menu option.

5. Press **SEL/INPUT** to move to the third level: Some menu options require additional steps.
6. Press **MENU** to return to the previous menu to return to monitor viewing.

4. ***BASIC OPERATION***

1) ***Turning On the Monitor***

1. First, connect power cord correctly. At this moment, the monitor switches to standby or power on mode. In standby mode, in order to turn monitor on, press the **ST-BY** button.
2. Select the viewing source by using **SEL/INPUT** button on Keypad in front of monitor

2) ***Volume Adjustment***

1. Press the **UP/DOWN** button on Keypad.
2. If you want to switch the audio off, press the **FUNCTION (Audio mute)** button.
3. You can cancel this function by pressing the **FUNCTION (Audio mute)** or volume control button.

3) ***On Screen Menus Language Selection***



- SETUP -> OSD -> OSD Option -> Language
- The menus can be shown on the screen in the selected language.
- Supported Language: English, Spanish, Portuguese, German, French, Italian

5. On Screen Menus Selection and Adjustment

1) How to adjust the OSD screen

1. Press the **MENU** button and then **UP/DOWN** button to select each menu.
2. Press the **SEL/INPUT** button and then use **UP/DOWN (SEL/INPUT)/MENU** button to display the available menus.



- Your monitor's OSD (On Screen Display) may differ slightly from what is shown in this manual.

6. **SELECT VIDEO INPUT**

1) **How to Select Video Source by OSD**

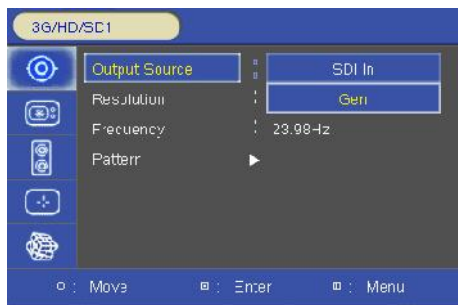
1. Press the **SET/INPUT** button and then **UP/DOWN** button to select each video source.
2. Press the **SET/INPUT** button to go to desired video source.
3. If Input Name is enabled, The **SET/INPUT** button goes into input name edit mode instead of selecting source.



7. **Test Out MENU OPTIONS**

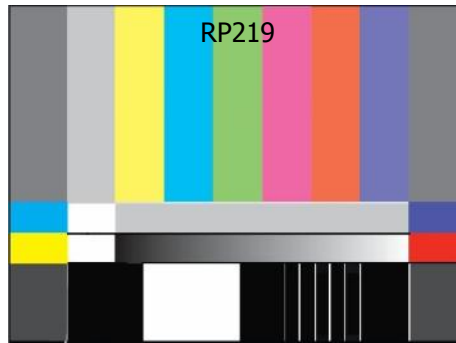
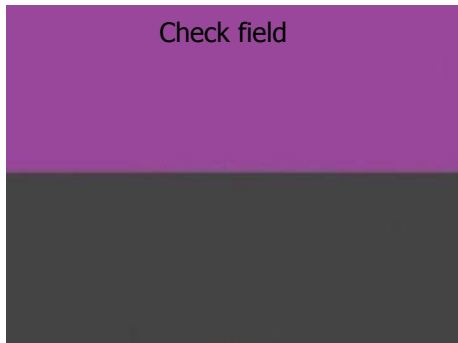


1) **3G/HD/SD 1, 2 Out**



- **Output source**
-Select output Source.(SDI or Generator)
- **Resolution**
-NTSC, PAL, 720p, 1080i, 1080p,2K sf, 2K p
- **Frequency**
- 23.98, 24, 25, 29.97, 30, 50, 59.94, 60 Hz

- **Pattern**
➔ Pattern: Black, White, RED level, Blue level, Green level, Gray level, Gradient, Check field, Cross line, 75% bar, RP219, RED, Blue, Green, 15% Gray



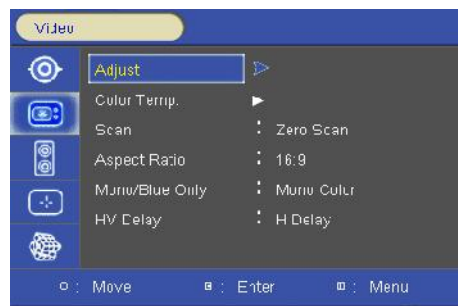
- ➔ Moving Pattern: on/off Select.
- ➔ Moving Speed: 1~15 Select.

2) **Video/AES Out**



- **Output**
-Video, AES
- **Resolution**
-PAL, NTSC

8. **Video MENU Option**



1) **Adjust Control**



- Adjust the values of Brightness, Contrast, Color, Tint and Sharpness directly ranges -50 to 50.

2) Color Temperature Control



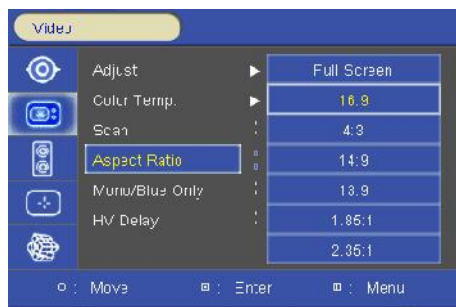
- For Setting the Color temperature or adjusting RGB gain value directly
- User (User setting RGB gain value), VAR(3200K ~ 11000K), Often used value(11000K, 9300K, 6500K, 5400K,3200K)

3) Scan



1. Over Scan – 95% input size and fit the selected display size
2. Zero Scan – 100% Input size and fit the selected display size
3. Under Scan – 105% Input size and fit the selected display size
3. Pixel to Pixel – Display size is an input size. If input resolution is bigger than panel size, fit the panel size

4) Aspect Ratio



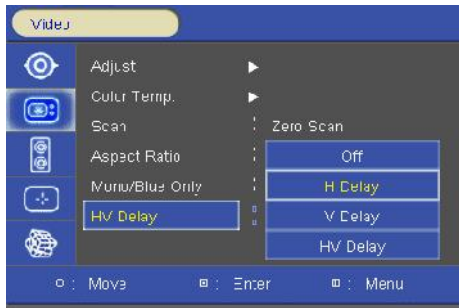
- For setting the aspect ratio.
- Full Screen: The images are displayed with a panel size.
- Full Screen, 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1: The images are displayed with each aspect ratio.
- PC mode: Full Screen & 4:3 only
- Function Aspect: For setting the Aspect to use by Function KEY controller.

5) Mono/Blue Only



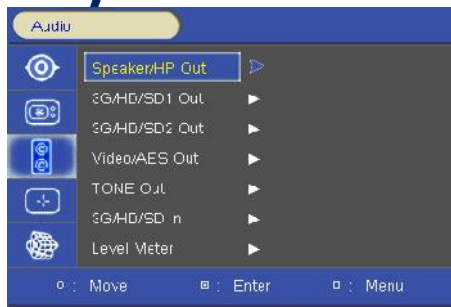
- Mono color: For selecting monochrome images
- Blue Only: Images have only blue color expect red and green color

6) *H V Delay*



-off / H Delay / V Delay / H V Delay.

9. *Audio MENU option*



1) *Speaker/Head-Phone Out*



- **Audio Out**
-Select output Audio.(Auto/SDI in/AES in/Line in/Gen)
- **Gen Level**
- Generator Audio Level select. (Flash/Silence/-30/-24/-16/-12/-6dB)
- **Volume**
-Volume 0~30.

2) *3G/HD/SDI 1, 2 Out*



- **Audio Out**
-Select output Audio.(SDI in/AES in/Line in/Gen)
- **Gen Level**
- Generator Audio Level select. (Flash/Silence/-30/-24/-16/-12/-6 dB)
- **Group**
-1/2/3/4/1+2/3+4
- **Mask**
-None/1/2/3/4/1+2/3+4/1+2+3+4

3) Video/AES Out



- **Audio**
-Select output Audio.(SDI in/AES in/Line in/Gen)
- **Gen Level**
- Generator Audio Level select. (Flash/Silence/-30/-24/-16/-12/-6 dB)
- **AES Group**
- AES Group Audio 1/2, 3/4, 5/6, 7/8

4) TONE Out



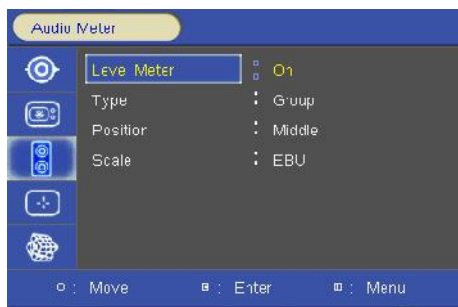
- **Audio**
-Select output Audio.(SDI in/AES in/Line in/Gen)
- **Audio Level**
- Generator Audio Level select. (Flash/Silence/-30/-24/-16/-12/-6 dB)

5) 3G/HD/SD In



- **Output Group**
-Group 1,2,3,4,
- **Output Channel**
-Channel 1,2,3,4,1/2,3/4,off

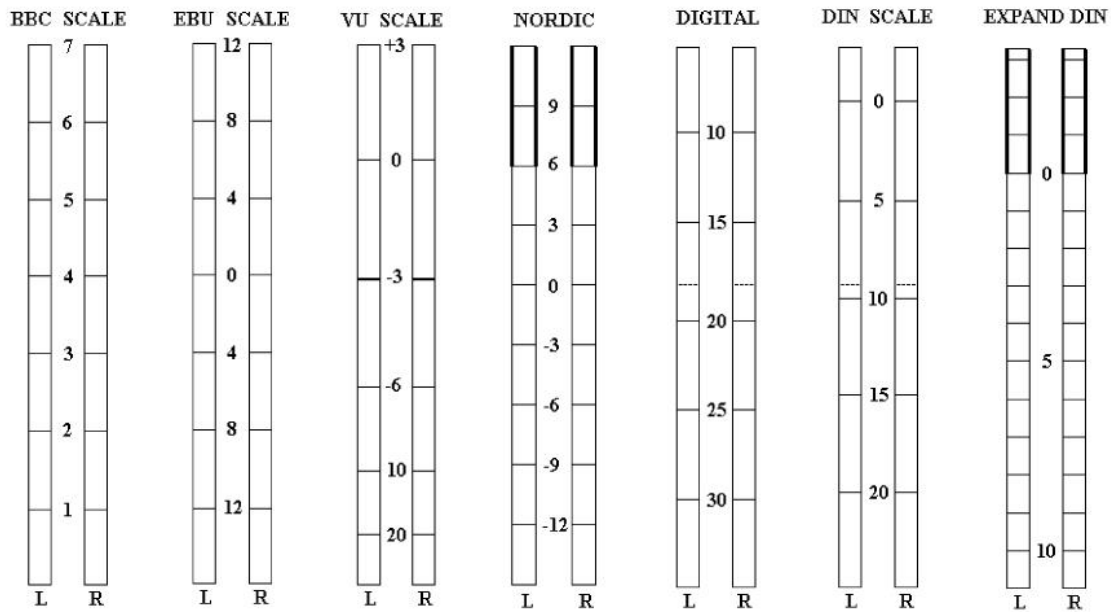
6) Audio Meter



- **Level Meter**
-on/off Control
- **Type**
-Pair: Respectively Channel with right and left display
-Group: Respectively group display
- **Position**
- Level Meter Position selects. (TOP/Middle/Bottom)
- **Scale**
- Level Meter Scale mode selects. (BBC / EBU / VU / NORDIC /

DIGITAL / DIN / EXPAND DIN)

AUDIO SCALES



7) **Volume**

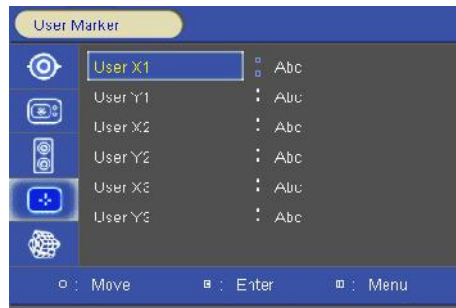
- Adjust the speaker or headphone Volume level. (0~30)

10. **Marker MENU option**

1) **Marker & User Marker**



< Marker >



< User Marker >

1. Marker : 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1&4:3, User1, User2, User3 fitted panel size marker on screen.

2. User Marker: The user wants Marker size setting. (Below panel size)

Example (1440x900 panel)



< 16:9 Marker >



< 4:3 Marker >

2) **Safety Area**



-Safety Area: Draw dotted line Marker on screen in case of images. (16:9 95/93/90/88/80%, 4:3 95/93/90/88/80%, EBU Action 16:9/14:9/4:3, EBU Graphic 16:9/14:9/4:3)

3) **Center Marker**



- "+" Marker on center of screen

4) **Marker Width**

-Marker line thickness setting. (0~10)

5) **Marker color**



- Marker Line Color: Select Marker line color (White, Yellow, Blue, RED, Black)
- Safety Line Color: Select Safety line color (White, Yellow, Blue, RED, Black)
- Marker Back Color: Select Marker Back Color. (None, Gray, White, Blue, Black)
- Safety Back Color: Select Safety Back Color. (None, Gray, White, Blue, Black)
- Marker BK Blend Color: Select Marker blending level.(0~5)
- Safety BK Blend Color: Select Safety blending level.(0 ~5)

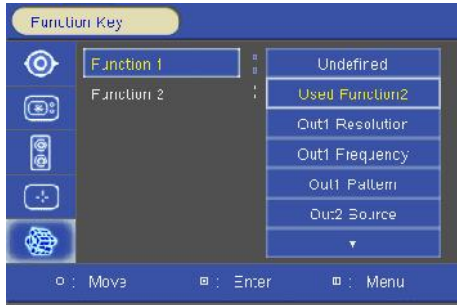
11. **SETUP MENU OPTIONS**

1) **Setup Load & Setup Save**



- Setup Load: Load user saved values or default value
- Setup Save: Save user setting values at user 1, 2, 3.

2) **Function Key**



- Function 1, 2: Select the function to be allocated to the FUNCTION 1, 2 buttons

Function1&2 button	Description
Out1 Source	3G/HD/SD 1 output source select.
Out1 Resolution	3G/HD/SD 1 output Resolution select.
Out1 Frequency	3G/HD/SD 1 output Frequency select.
Out1 Pattern	3G/HD/SD 1 output Pattern select.
Out2 Source	3G/HD/SD 2 output source select.
Out2 Resolution	3G/HD/SD 2 output Resolution select.
Out2 Frequency	3G/HD/SD 2 output Frequency select.
Out2 Pattern	3G/HD/SD 2 output Pattern select.
Marker	Marker on/off
Level Mater	Level Mater on/off
H/V Delay	H/V Delay on/off
Aspect	Full Screen, 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1
Scan	Over/Zero/Under/Pixel to pixel
Mono/Blue only	Mono/Blue on/off
Time code	Time code on/off
Audio Mute	Audio on/off
Still	Still on/off
Gamma Select	Gamma Level Select (0.8 ~ 3.0)
Deinterlacer	Deinterlacer on/off

3) **OSD MENU**



- **OSD Option**
 - Language: Select a language for the menus to appear in. (English, Spanish, Portuguese, German, French, Italian)
 - OSD Position: L-T, R-T, C, L-B, R-B

- OSD Transparency: Disable blending OSD background with video image.
- OSD Timeout: OSD gone time setting. (3~200)

● **Time code**

- Time code: Time code Display (off/LTC/DVITC, SDI only)
- Time code size: Time code size select. (Small, Middle, Large)
- Time code Position: Time code display position selects (L-T, C-T, R-T, L-B, C-B, R-B)
- Time code Transparency: Disable blending Time code background with video image. (0%, 25%, 50%, 75%, 100%)
- DVITC Line: AUTO, Line 1~30

● **Under Monitor Display (color: Tally R/G mode action)**



UMD



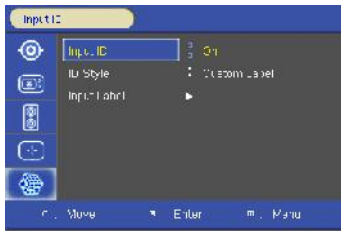
Tally Red



Tally Green

- UMD: UMD display on/off
- UMD Character: UMD Character Select
- UMD Position: UMD display position select (L-T, C-T, R-T, L-B, C-B, R-B)
- UMD FG Color: UMD Character color Select (RGB_255_192_128_Transparent)
- UMD BG Color: UMD BG color Select (RGB_255_192_128_Transparent)

● **Input ID**



Input ID



Timecode

- Input ID: source Message display.
- ID Style: select "Input Format"/"Custom Label"
- Input Label: Display user made name instead of input source name on source OSD and message OSD

4) **Advanced**

- Information, Screen Saver, Screen Control, Heat Control

● **Information**



- Version, Release day, Release time, operating time, FPGA Version and Calibration ID

- **Screen Saver**



- Blue Screen: Enables screen saver functions to avoid panel burning.
- BG Gray: Select gray level on besides display picture
- Power save Mode: Power Save Mode on/off

- **Screen Control**



- Reset White Balance
→Color Calibration Reset
- Backlight Adjust
→Inverter dimming Level select (0~100)
- Gamma Select
→Gamma Level Select (0.8 ~ 3.0)
- Deinterlacer
→ Deinterlacer function on/off
- Dithering
→Dithering function on/off

- Internal Pattern:

→100% Color Bars, 75% Color Bars, Luma, RGB, White, Black, RED, Blue, Green

-NR (Noise Reduction)

→Noise Reduction on/off (NR is for Video signal HD-SDI, Composite, S-Video, Y/Pb/Pr, DTV timing)

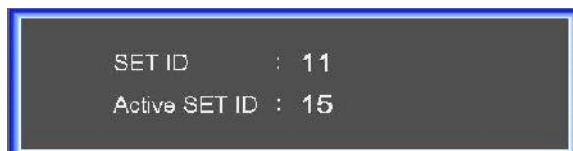
- **Fan Control**

→ Fan Control: Internal Fan Control On/off

→ MCU Fan Control: Control main MCU Fan On/Off

5) **Set ID**

- If control each Board, must set ID numbers of each Board (01~99).



- Set Active SET ID number Before Control each Board by Remote control or RS-232

- If control only 15th Board, Active SET ID must set 15.

12. ***SUPPORTED INPUT MODES***

1) ***Supported Signals***

Items		Specifications
FTM-043-3G Display	Panel	4.3" LCD
	Resolution	480 horizontal. by 270 vertical.(Contrast 800:1)
	Brightness	300 cd/m2
	Viewing Angle	R/L 160 (Typ), U/D 160 (Typ)
Supported Signals	3G/HD/SD IN	HD SDI- 2.970Gbps
		SD HDI- 270Mbps
	Video/AES	NTSC/PAL/AES

2) ***Supported Timings***

- **SDI input**

SDI input		
SDI input Signal formats	SMPTE-428.1M	2048x1080P(24/25)
	SMPTE-425M(3G)	1920x1080P(50/60) (3G level B Format not supported)
	SMPTE-260M	1920x1035i(60/59.94)
	SMPTE-259M	1920x1080i(50)
	SMPTE-274M	1920x1080i (50/59.94/60)
		1920x1080P (30Psf/25Psf/24Psf/30/25/24)
	SMPTE-296M	1280x720P (24/25/30/50/59.94/60)
	SMPTE-125M	480i(59.94)
ITU-R BT.601	576i(50)	

3) ***Mechanical Dimension***

- **FTM-043-3G**

