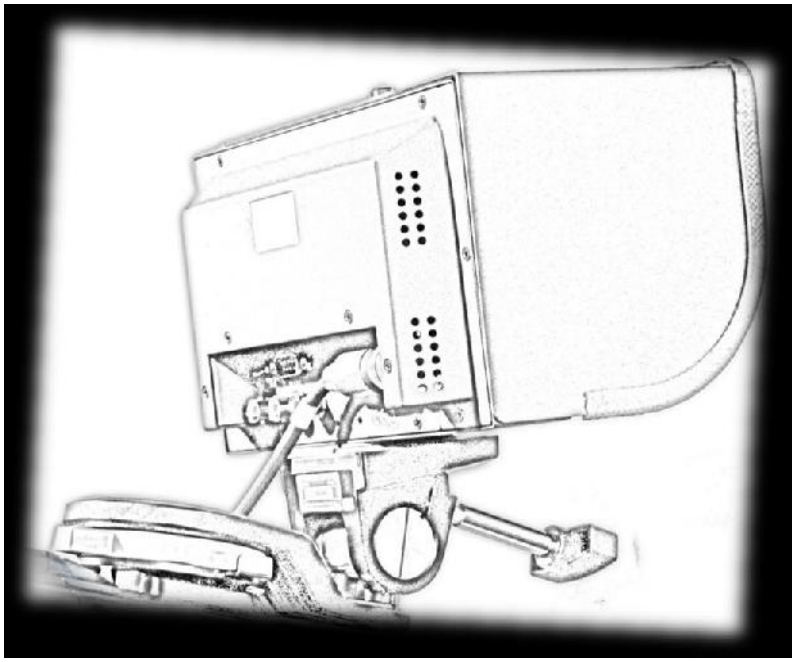
HITACHI

HD COLOR VIEWFINDER

VF-PBM307

VF-PBM209

OPERATING INSTRUCTIONS



Please read these operating instructions carefully for proper operation, and keep them for future reference.

Hitachi Kokusai Electric America, Ltd.

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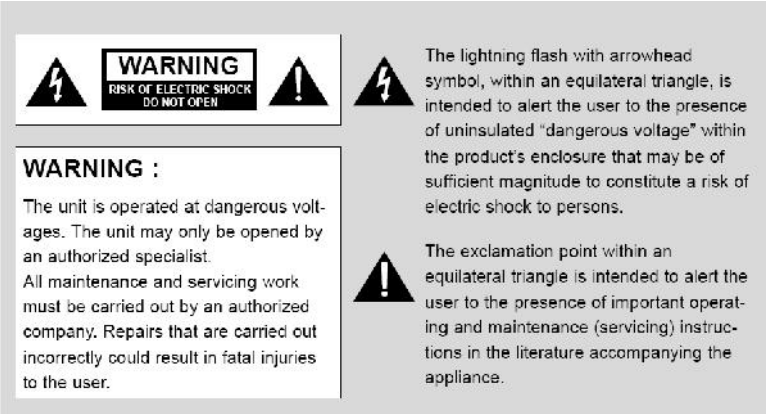
PRECAUTIONS

Before operating the set, please read this manual carefully.



WARNING:

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

CAUTION:

Unauthorized tampering with the monitor invalidates the warranty.

The manufacturer shall not warrant for any damage caused by improper maintenance and/or repair attended by any unauthorized third party.

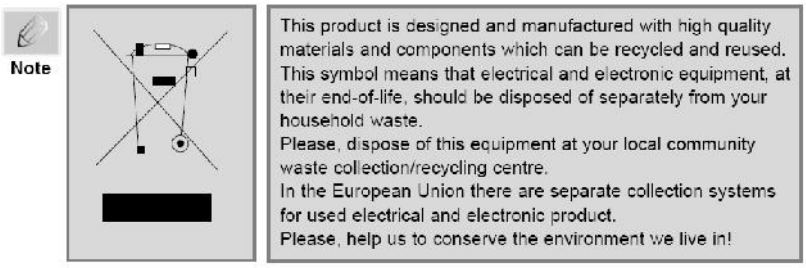
Important safeguards for you and your new product:

This 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 this new product, please read and observe the following safety points when installing and using this new product and save them for future reference.

Please read Instructions:

1. **Follow Instructions**: All operating and use instructions should be followed.
2. **Retain Instructions**: The safety and operating instructions should be retained for future reference.
3. **Heed Warnings**: All warnings on the product and in the operating instructions should be adhered to.
4. **Cleaning**: Disconnect the unit from the power supply before cleaning. Do not use abrasive cleaners. Use a damp cloth for cleaning.
5. **Liquids and Moisture**: Do not allow liquids to enter chassis or use in high humidity environment.
6. **Transportation**: A product should be transported with care. Quick stops, excessive force and uneven surfaces may cause damage to the product.

7. **Attachments**: Do not use attachments not recommended by HITACHI and PLURA Broadcast Inc. as they may cause hazards.
8. **Ventilation**: Do not block any of the ventilation openings.
9. Install in accordance with these instructions.
10. **Power Sources**: This product should be operated only using the type of power source indicated on the marking label. If you are not sure of the type of power supply, consult your dealer.
11. **Servicing**: Do not attempt to service this product yourself as opening or removing covers may expose you to dangerous voltages or other hazards. Refer all servicing to qualified service personnel.
12. **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.
13. **Mounting**: The product should be mounted using the appropriate and recommended camera accessories which are offered with this product.
14. **Power**: This set operates on DC through 20 PIN VF cable supplied; 12VDC. This product is grounded to the camera's chassis potential at all times through the VC-90A supplied cable.

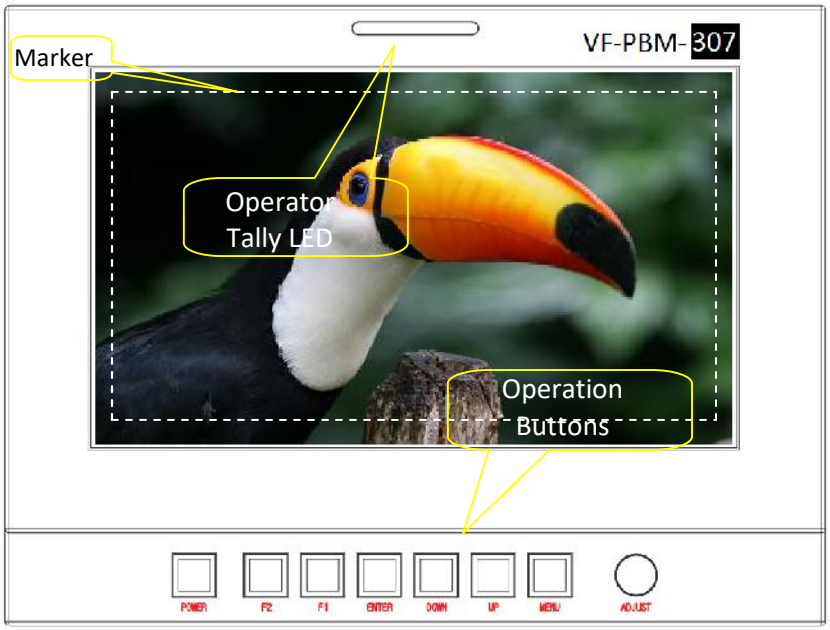


GENERAL FEATURES

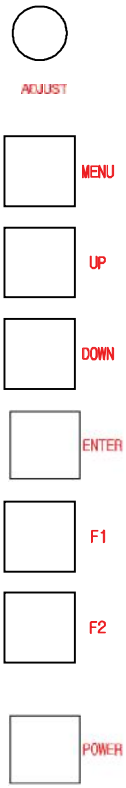
- High resolution, TFT-LCD, Backlit, Color, display panel.
- Viewfinder Power On/Off
- Preset and user-programmable color temperature – User, VAR, 11000°K, 9300°K, 6500°K, 5400°K, and 3200°K.
- LCD Dimming Control
- Manual Dimming Level Control.
- Tally LED function (Front → Green/Red/AMBER, Back → Red)
- 3 user-programmable memories to store and recall operational settings.
- Switchable Aspect Ratio – 16:9, 4:3.
- Over Scan/Zero Scan/Pixel to Pixel
- Picture magnification – 2X, 3X, 4X, 5X
- Mono/ Color display modes.
- Preset Gamma selection – User-selectable gamma curves.
- OSD: Graphic based On Screen Display, 6 Languages (UNICODE System).
- Markers – Preset and user-programmable.
- Safety Zone – 16:9, 4:3 aspect ratio, EBU action/ graphics, preset safety zones.
- Crosshair – center marker.
- Selectable color for Safety, Marker and Crosshair markers.
- Auto Calibration: K-10 (Klein)
- UMD – Programmable characters for indicating Tally On condition and the camera ID and camera person's name.
- VF-Cable input – VC-90A (1x supplied with unit)
- Component(Y,Pb,Pr) input with Active Loop Out.
- Mechanical mount – Provided with 1/4"-20 threaded hole for use only with HITACHI supplied AT-90, AT-500 and AT-750 viewfinder mounts.

FUNCTIONAL EXPLANATION OF EACH PART

Front Panel

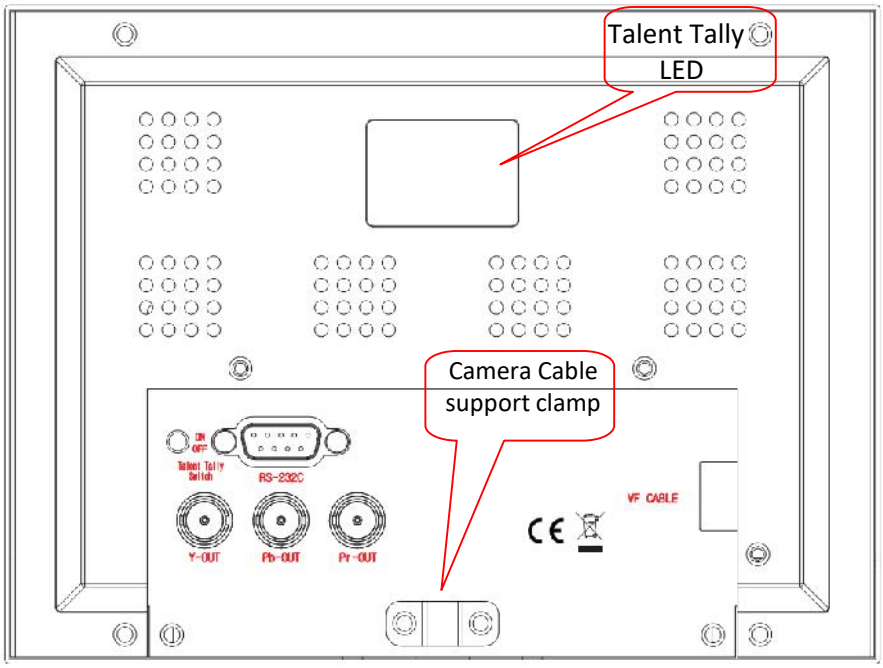


Front Keys Operations

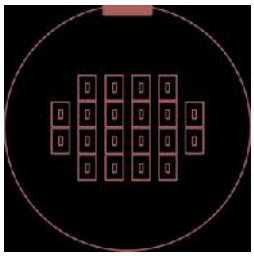


Key Name	Operation
ADJUST	Adjust Picture Menu (Brightness -> Contrast -> Color -> Sharpness) Turn Right (with 'UP' button is same) Turn Left (with 'DOWN' button is same) Push to SELECT (ENTER) or return adjustment to center-detent.
MENU	Activates main OSD menu. Navigates to previous (UP) OSD menu displayed. Exits OSD menu.
UP	Increases values of the function selected in the main OSD menu. Executes function (by OSD help commands) in main OSD menu.
DOWN	Decreases values of the function selected on the main OSD menu. Executes function (by OSD help commands) in main OSD menu.
ENTER	Activates OSD menu of input source. Executes functions (by OSD help commands) in main OSD menu.
F1	Executes functions of user programmed item: Undefined, Aspect, Mono/Blue only, Marker size, Safety Marker, Still image, Zoom, Gamma select, I/P Mode, Marker Preset 1, 2, Max Brightness
F2	
POWER	Power ON/OFF Button. Press for 3 seconds to turn ON the viewfinder. Units power cycles with the camera and remembers last operational state.

Rear Panel



Camera to Viewfinder Connector – 20pin



Assignment			
1 PIN	Y Video	11 PIN	N/A
2 PIN	Y shield	12 PIN	N/A
3 PIN	Pb Video	13 PIN	N/A
4 PIN	N/A	14 PIN	R Tally ON: +3.3v / OFF: 0V
5 PIN	Pr Video	15 PIN	G Tally ON: +3.3v / OFF: 0V
6 PIN	N/A	16 PIN	N/A
7 PIN	N/A	17 PIN	N/A
8 PIN	N/A	18 PIN	GND
9 PIN	GND	19 PIN	+12VDC IN
10 PIN	N/A	20 PIN	GND

Interface description

Interface	Description
VF port	DC 12V Input Y, Pb, Pr Analog Component Video Input Tally R/G on/off
Y out	Camera video – Analog Component Loop Out. *Drives 75Ω load+
Pb out	
Pr out	
RS-232C	Factory use - Update/Multi Control/Auto color calibration
Talent Tally Switch	Turns the Talent (rear) red TALLY lamp On/Off.

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 ENTER. If a menu has more than three levels, the pop-up dialogue box will be displayed as the fourth or fifth level.

To display 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.

To go to the next level

Press **ENTER** button.

To go back to the previous level

Press **MENU** button

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 **ENTER** to move to the second level.
4. Use **UP/DOWN** button to select the second menu option.
5. Press **ENTER** 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.

Composition

1. (1) each: VF-PBM-307 LCD/ Color viewfinder, 7-inch, 16:9.
2. (1) each: VF-HO307 Viewfinder screw-on hood with rubber protective edging
3. (1) each: VC-J90A 20-pin Viewfinder to camera chassis, shielded cable.
4. (1) each: Operation Manual (English USA)
5. (1) each: Warranty card (English USA)

CAMERA MOUNTING PROCEDURES

Viewfinder Adaptors for Hitachi HDTV Cameras

There are 2 different types of viewfinder mounts that can be used with the VF-PBM207.

The top left unit is model AT-90

The bottom left unit is model AT-500

Both mounts can be used with Hitachi HDTV cameras models SK-HD1200, SK-HD1000, Z-HD5000 & Z-HD6000. Note that the VF mount is installed on the CA-HF1200, CA-HF1000 or CX-HD1000 cable adapter chassis as shown below.

Install the supplied Fixing Screw on the threaded mount on the bottom part of the viewfinder chassis.

Secure the Fixing Screw such that it does not easily come out. (We recommend you affix it with some thread locking glue.)

After mounting the Viewfinder on the Adapter, move the lock level downward to secure it in place.

The VF-PBM207/ AT-90 mount combination places the center of gravity closer to the front of the camera body and does not have as much front-aft movement as the AT-500.

The VF-PBM207/ AT-500 mount combination shown above, places the viewfinder closer to the camera operator and has a superior tilt range and longer movement lock handle.

BASIC OPERATION

Turning On the Monitor

1. If the Camera Cable VC-90A is not installed, please connect it to the VF CABLE connector on the rear of the viewfinder. Secure the cable with the supplied cable fixing clamp.
2. Power ON the monitor by pressing the **POWER** button on the front lower right for 2 seconds or more.
   The monitor has a stand-by or power save mode. When in standby mode, the display is off but the electronics inside the VF are on. In order to turn monitor on, press the **POWER** button.
3. The camera video is automatically displayed. Assure that the camera is outputting video and that the VF is not in "STILL IMAGE" mode (refer to page 20).

On Screen Menu Language Selection

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

ON SCREEN MENU SELECTION AND ADJUSTMENT

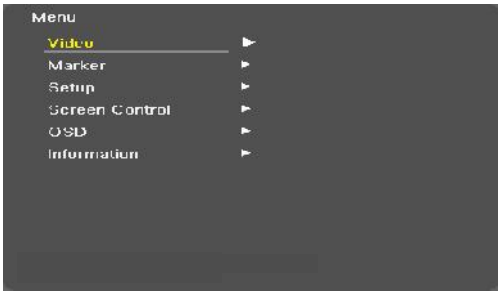
How to adjust the OSD screen

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

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

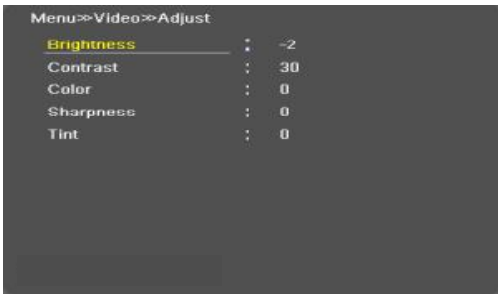
PICTURE MENU OPTIONS

Video Menu of each Input Mode



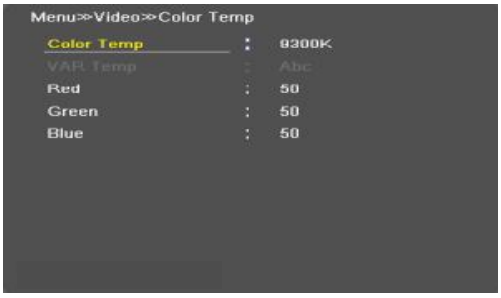
- Section Menu page

Adjust



- Adjust the values of Brightness, Contrast, Color, and Sharpness directly from -50 to 50.
- NOTE: Tint has no effect since the VF processes a component color camera signal.

Color Temperature Control

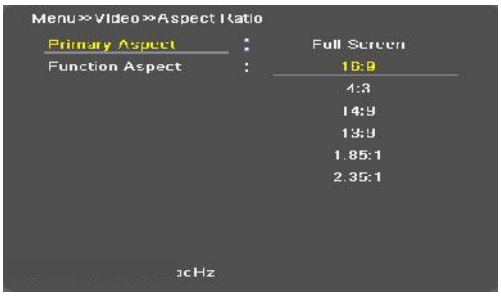


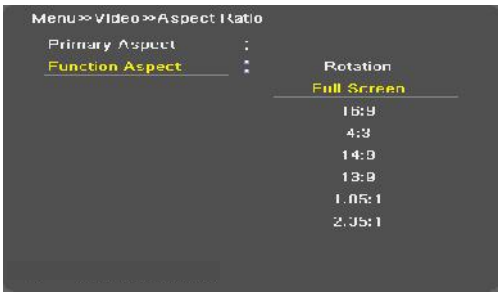
- For Setting the Color temperature or adjusting RGB gain value directly
- User (User setting RGB gain value), VAR (3200°K ~ 11000°K), Often used value (11000°K, 9300°K, 6500°K, 5400°K,3200°K)

SCAN

- Over Scan – 95% input size and fit the selected display size
- Zero Scan – 100% Input size and fit the selected display size
- Pixel to Pixel – Display size is an input size. If input resolution is higher than the panel's 800h x 480v native resolution. Useful aid for when critically focusing the camera lens.

Aspect Ratio





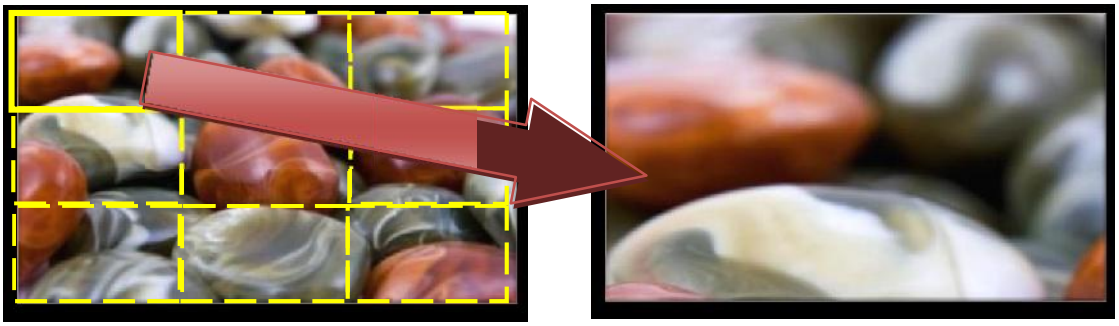
- For setting the aspect ratio of the video display.
- Full Screen: The images are displayed to fill the panel's native screen size.
- Full Screen, 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1: The images are displayed with each aspect ratio.
- Function Aspect: Assigns the Aspect ratio to be switched by F1 Function KEY. Rotation cycles the aspect ratio every time the the F1 button is depressed.
- NOTE: When operating the VF in 4:3 aspect ratio; also select 4:3 aspect on the camera VF Menu to avoid geometric distortion to the displayed image.

Zoom

- Magnifies the picture by (2X, 3X, 4X, 5X) ratios.
- The YELLOW box marker indicates the zoom ratio selected above.
- Press Adjust knob or Enter button, to see the enlarged picture selected above.
- Turn the Adjust knob to move the zoom zone within the active raster.
- Press the MENU key to exit the function.

Example of 3X Zoom ratio (3X3 block image division)

Zone 1 of 9 is displayed



- Zoom X position: Select the YELLOW box's column position.

- Zoom Y position: Select the YELLOW box's row position.
- NOTE: Zoom selection 2x = 4 zone, 3x = 6 zone, 4x = 16 zone, 5x = 25 zone divisions.

Mono/Blue Only

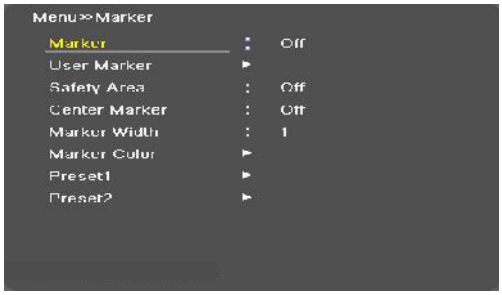
- Mono/ Color: Displays a monochrome (B&W) or Color image.
- Blue Only: Picture is displayed in blue color only. For verification of proper color display with SMPTE color bars generated by the HITACHI cameras.

Max Brightness

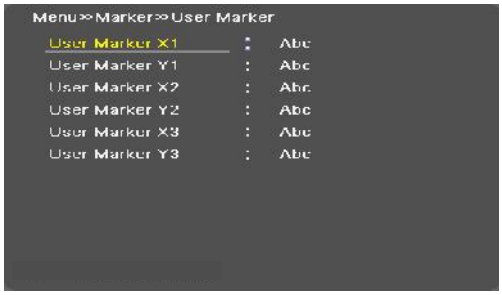
Max Brightness **On / Off** – For observing a dim object or testing the device's back-lamp.

MARKER MENU OPTIONS

Marker & User Marker



< Marker >



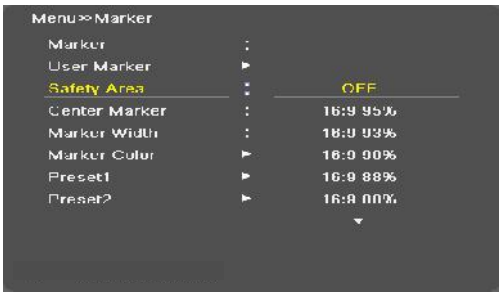
< User Marker >

1. Preset Markers: Displays markers with aspect rations: 16:9, 4:3, 14:9, 13:9, 1.85:1, 2.35:1, 1.85:1&4:3, User1, User2, User3 fitted to the panel size.
2. 3x User Marker: User-programmable marker size adjustment using the X1,2,3 and Y1,2,3 row/column settings.

Example of 16:9 preset marker (Yellow) & User marker (white)

Example of 4:3 preset marker(Yellow) & User marker (white)

Safety Area



- Preset Safety Area: For selection of one of the following safety zone markers: (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)

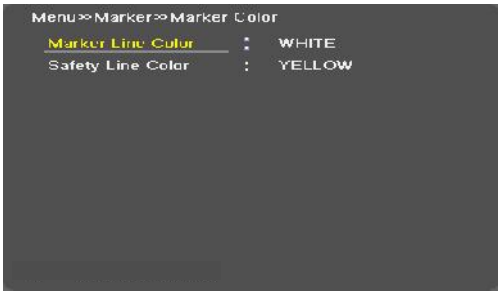
Center Maker

- "+" Crosshair Marker on center of screen

Marker Width

- Marker line thickness setting. (0~10)
  ≥0 = thin lilne, ≤10 = thick line.

Marker Color



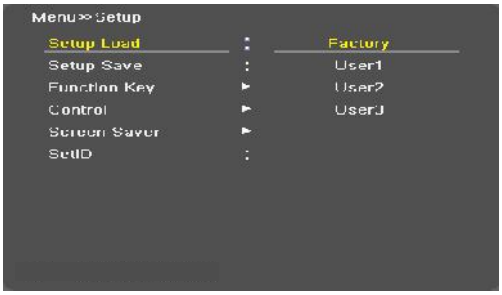
- Crosshair & Marker Line Color: Select Marker line color (White, Yellow, Blue, RED, Black)
- Safety Zone Line Color: Select the Safety zone line color (White, Yellow, Blue, RED, Black)

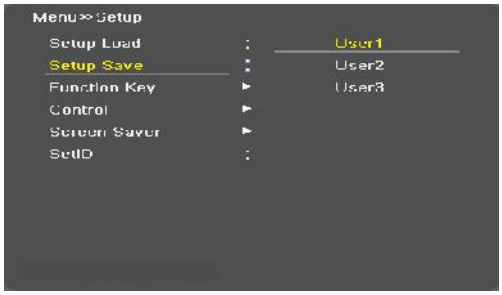
Preset-1 & Preset-2

- Marker preset memories

SETUP MENU OPTIONS

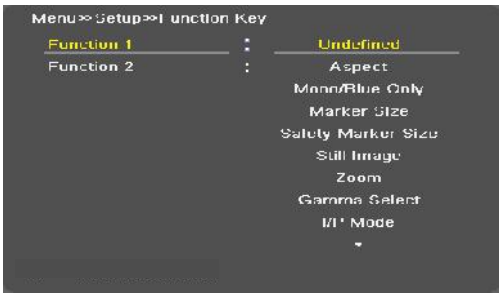
Setup Load & Setup Save





- Setup Load: Load user saved values or default factory values.
- Setup Save: Save user adjustment values under memory 1, 2, or 3.

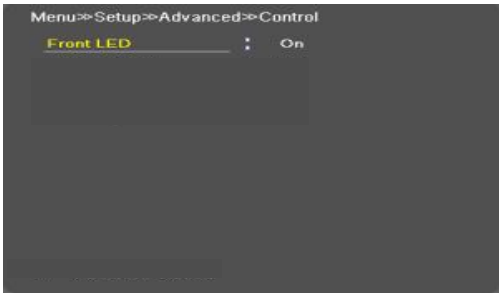
Function 1 & Function 2



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

Function1&2 button	Description
Undefined	No Assignment
Aspect	Sets the aspect ratio of the images
Mono/Blue Only	Execute Mono color or Blue Only
Marker size	Marker size Select
Safety Marker size	Safety size Select
Still image	Toggles picture status between motion and still image.
Zoom	Zoom function is operated(Off, 2x, 3x, 4x, 5x)
Gamma Select	Select Gamma curve.
I/P Mode	Line Doubler/Inter-Field/Field Merge function on/off
Marker Preset 1,2	Preset 1,2 select
Max Brightness	Max Brightness function on/off

Control



- FRONT LED: Front LED on/off

Screen Saver

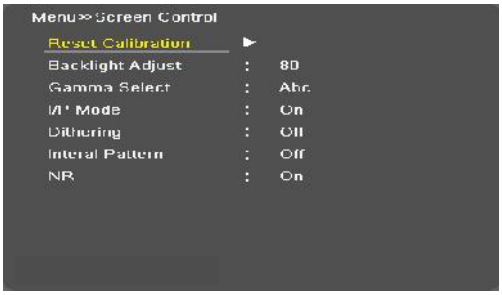
- Blue Screen: Enables screen saver functions to avoid panel burning.
- BG [Background] Gray: Selects the gray background level of the monitor for images that do not fill the entire screen.
- Power save Mode: Power Save Mode on/off

Set ID & Active Set ID

- For remote control, must set unique ID number for each unit (01~99).

SCREEN CONTROL

Reset Calibration



- Color Calibration Reset.
  Prompt: _ _ _ _
- NOTE: A 4-digit code is needed to activate this function. Please contact your nearest HITACHI or PLURA representative.

Backlight Adjust

- Inverter dimming Level select (0~100)

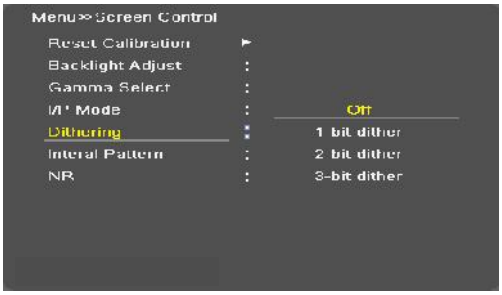
Gamma Select

- Gamma Level Select: (0.8 = high λ ~ 3.0 = low λ)

I/P Mode

- Line Doubler/Inter-Field/Field Merge function on/off

Dithering



- Dithering 1-bit/2-bit/3-bit/off function on/off

Internal Pattern

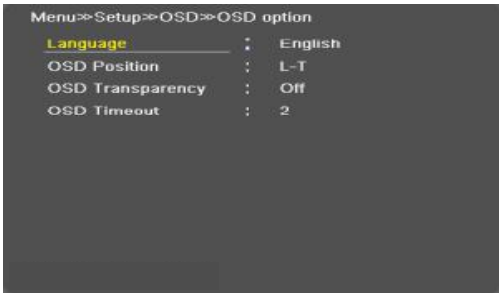
- 100% Color Bars, 75% Color Bars, Luma, RGB, White, Black, RED, Blue, Green
- NR (Noise Reduction)
- Noise Reduction on/off (NR is for Video signal HD-SDI, Composite, S-Video, Y/Pb/Pr, DTV timing)

NR (Noise Reduction)

- Noise Reduction on/off

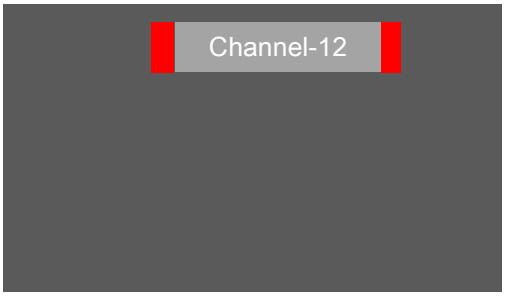
OSD (ON SCREEN DISPLAY)

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)

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



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)

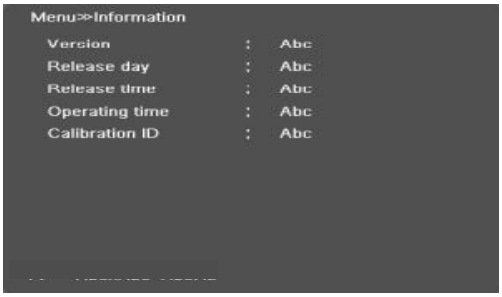
Input ID

Input ID: Source Message display.

ID Style: Select “Input Format”/”Custom Label”

Input Label: Can be used to program the Camera ID number or the cameraperson’s name so that it is superimposed on the display.

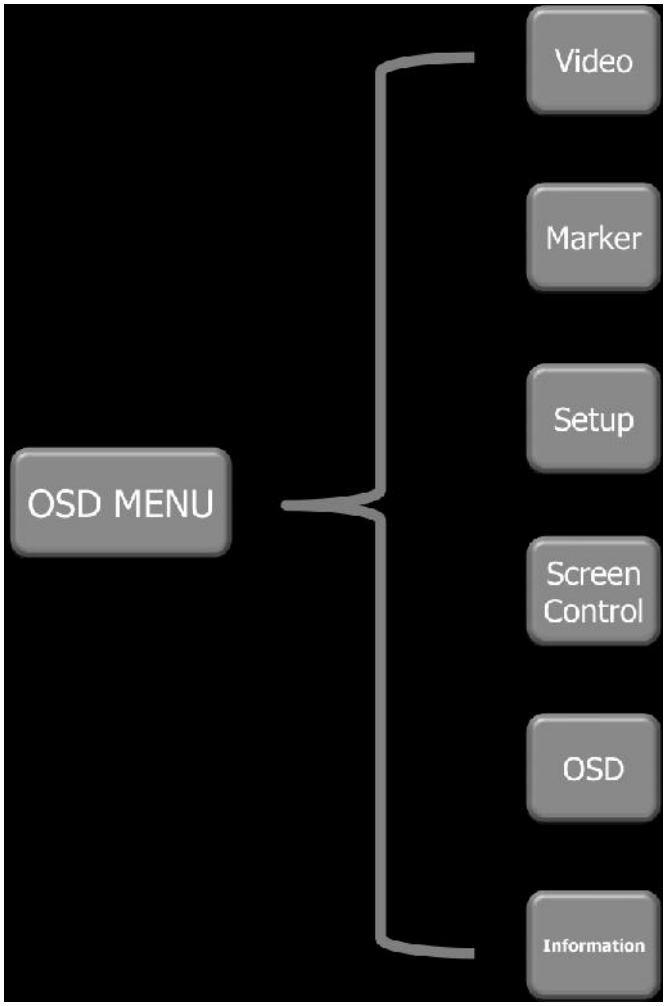
Information



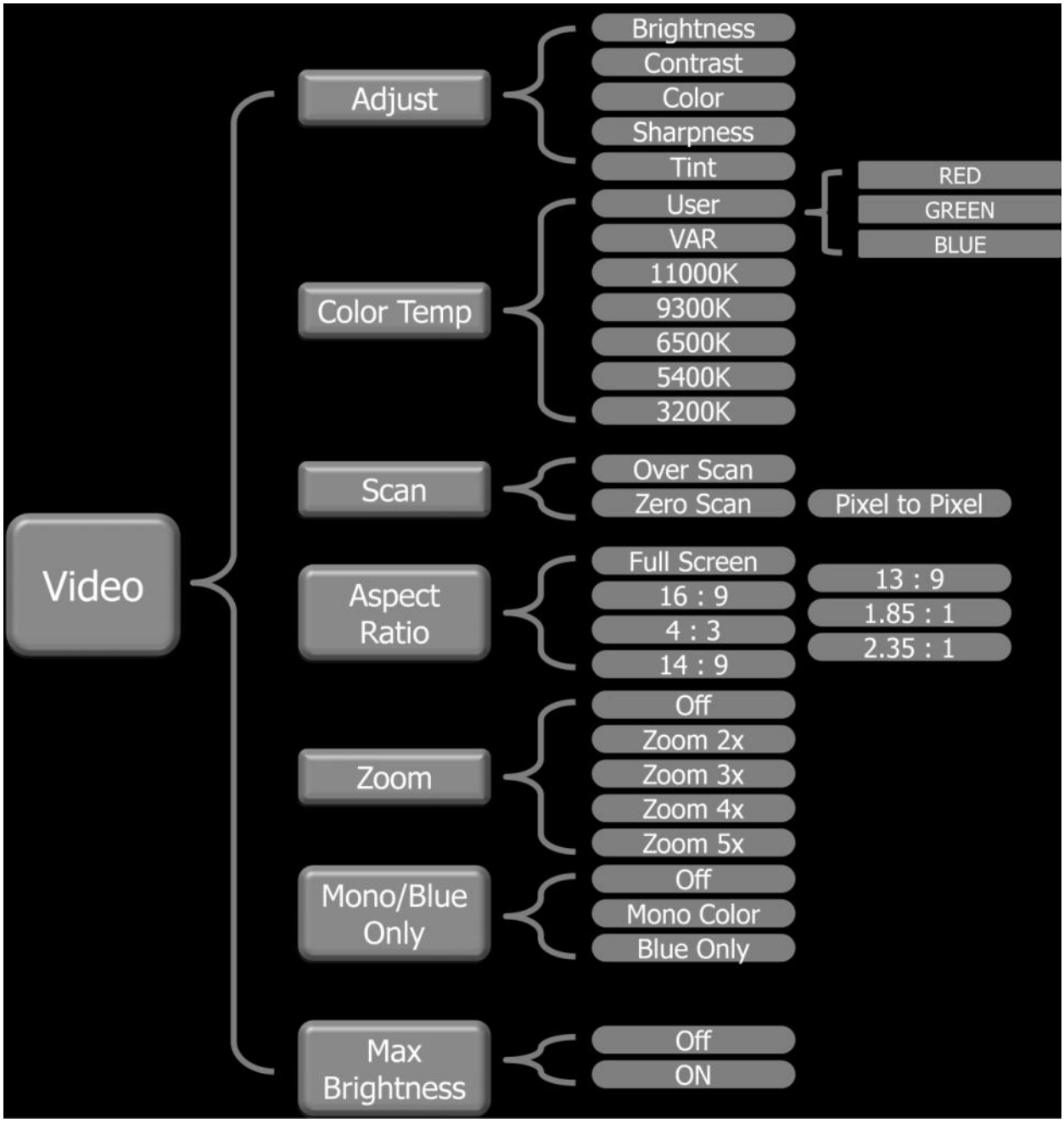
- Version, Release day, Release time, operating time, FPGA Version and Calibration ID

ON SCREEN DISPLAY – MENU SYSTEM

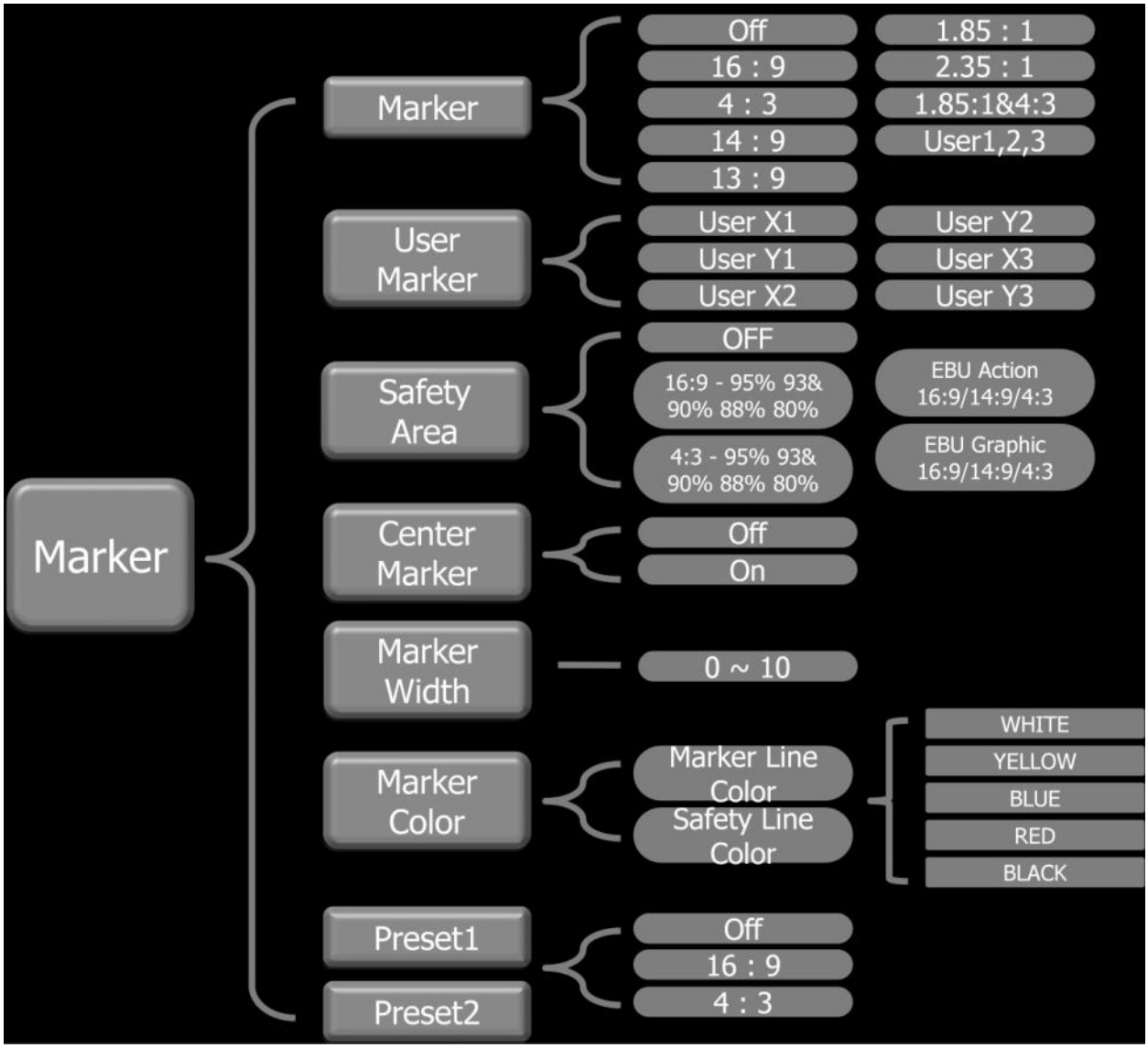
Menu Tree Organization



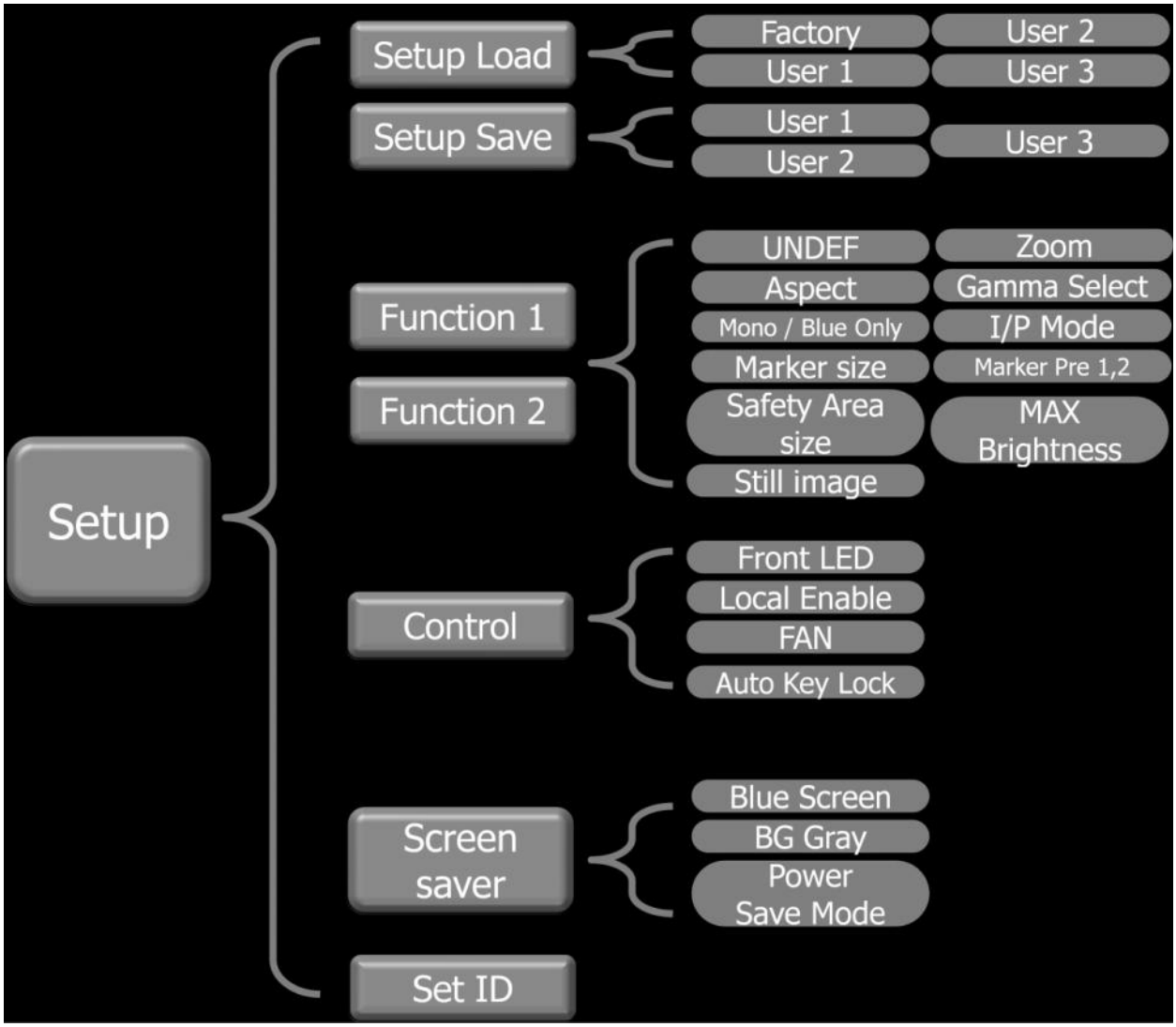
Video


Video
Adjust
Brightness
Contrast
Color
Sharpness
Tint
RED
GREEN
BLUE
Color Temp
User
VAR
11000K
9300K
6500K
5400K
3200K
Scan
Over Scan
Zero Scan
Pixel to Pixel
Aspect Ratio
Full Screen
16 : 9
4 : 3
14 : 9
13 : 9
1.85 : 1
2.35 : 1
Zoom
Off
Zoom 2x
Zoom 3x
Zoom 4x
Zoom 5x
Mono/Blue Only
Off
Mono Color
Blue Only
Max Brightness
Off
ON

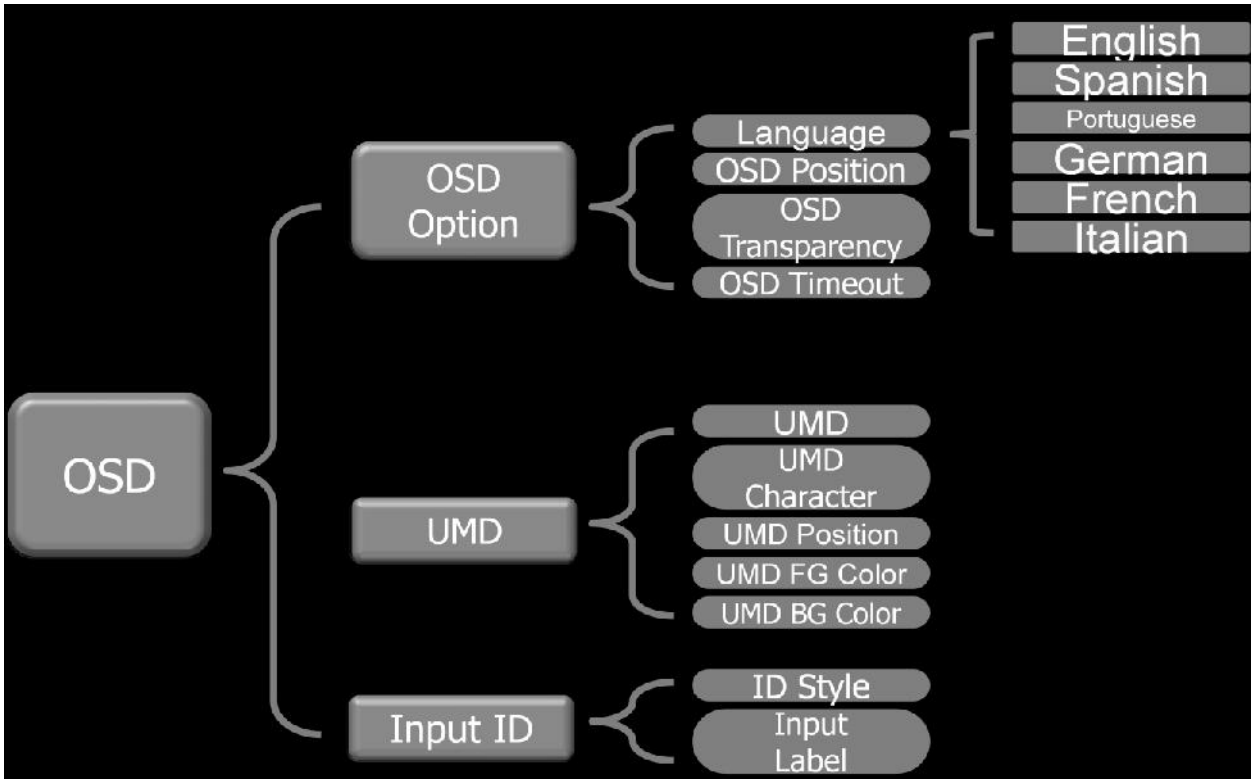
Marker


Marker
Marker
Off
16 : 9
4 : 3
14 : 9
13 : 9
1.85 : 1
2.35 : 1
1.85:1&4:3
User1,2,3
User Marker
User X1
User Y1
User X2
User Y2
User X3
User Y3
Safety Area
OFF
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
Center Marker
Off
On
Marker Width
0 ~ 10
Marker Color
Marker Line Color
Safety Line Color
WHITE
YELLOW
BLUE
RED
BLACK
Preset1
Preset2
Off
16 : 9
4 : 3

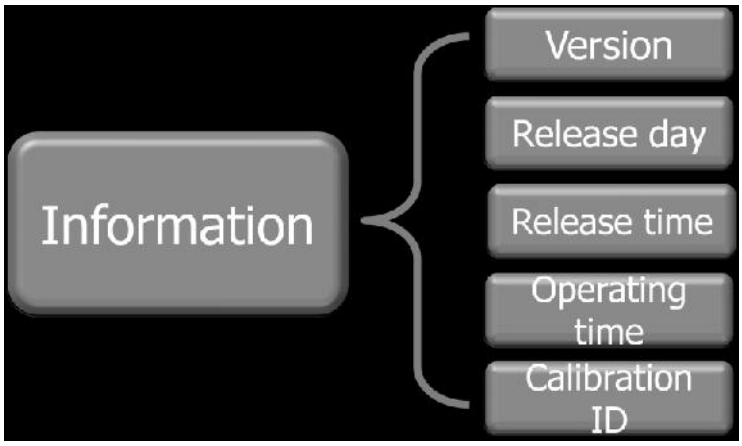
Setup


Setup
Setup Load
Factory
User 1
User 2
User 3
Setup Save
User 1
User 2
User 3
Function 1
Function 2
UNDEF
Aspect
Mono / Blue Only
Marker size
Safety Area size
Still image
Zoom
Gamma Select
I/P Mode
Marker Pre 1,2
MAX Brightness
Control
Front LED
Local Enable
FAN
Auto Key Lock
Screen saver
Blue Screen
BG Gray
Power Save Mode
Set ID

OSD



Information



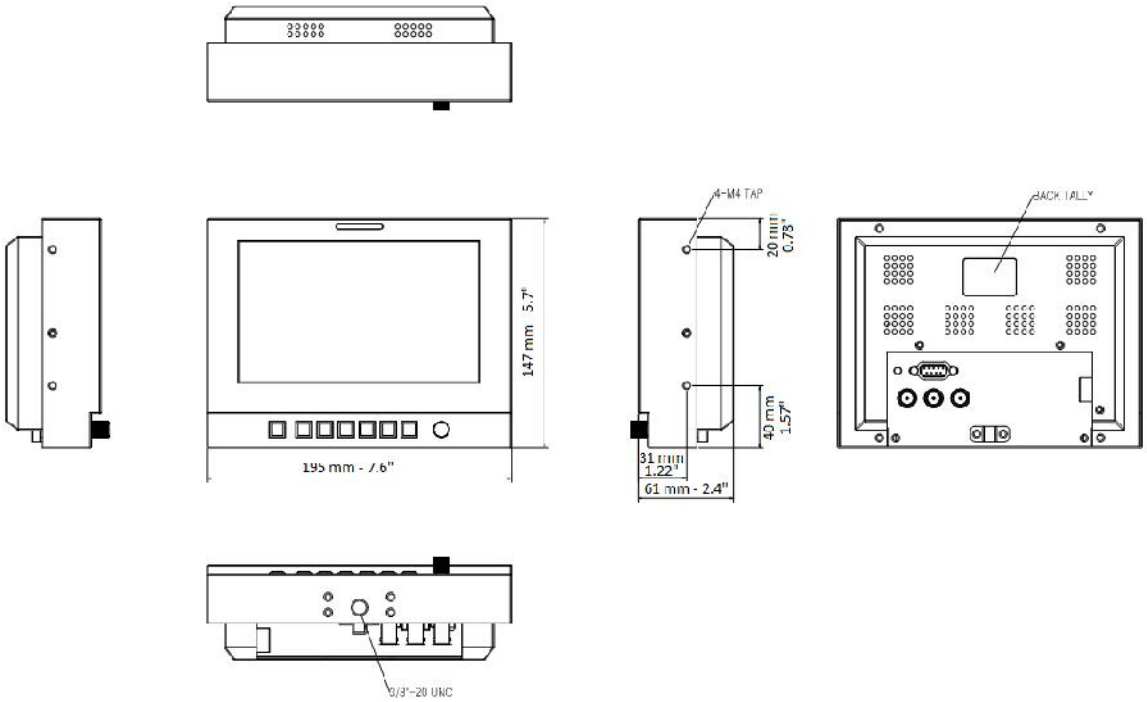
SUPPORTED INPUT MODES

Supported Signals

Items		Specifications
VF-PBM-207 Display	Panel	7” LCD
	Resolution	1024 horizontal. by 600 vertical.(Contrast 900:1)
	Brightness	400 cd/m2
	Viewing Angle	R/L 165 (Typ), U/D 165 (Typ)
Supported Signals	Component(YPbPr/RGB)	1080p 1080i 720P 480i / 576i 480P / 576P
	Analog Input Level	1.0Vpp (Y With sync), 0.7Vpp (Pb/Pr)

Exterior Dimensions

VF-PBM-307



WARRANTY & SUPPORT

Standard Product Warranty

HITACHI WARRANTY: HITACHI KOKUSAI ELECTRIC AMERICA, LTD. warrants your equipment to be free from defects in material and workmanship under normal use from the date of purchase for a period as follows:

VF-PBM307: 1 year parts & labor.

Respective manufacturers warranty to extent transferable to customers.

Such defects will be corrected, by repair or replacement at the option of Hitachi Kokusai, provided the equipment is returned prepaid to our franchised service agency, and prior thereto, you make a request for instructions to our closest regional office listed on our website (see back).

Upon expiration of the above Factory Warranty, standard labor rate charges will apply (inquire with your local service representative) . The warranty on parts and labor of any repaired products is 90 days..

THE WARRANTY ONLY APPLIES TO PRODUCTS PURCHASED FROM HITACHI KOKUSAI OR AN AUTHORIZED HITACHI KOKUSAI DEALER AND NOT TO PRODUCTS PURCHASED FROM A THIRD PARTY. IT DOES NOT APPLY TO EQUIPMENT SHOWING ABUSE OR DAMAGE TO PARTS WHICH IN THE JUDGMENT OF HITACHI KOKUSAI ELECTRIC AMERICA, LTD. ARE NOT DEFECTIVE. NOR DOES IT EXTEND TO ANY EQUIPMENT WHICH MAY HAVE BEEN TAMPERED WITH, ALTERED OR REPAIRED OUTSIDE OUR FACTORY OR AUTHORIZED SERVICE DEPOT.

Your unit must be returned properly packed to an authorized Hitachi Kokusai Service Station. Any damage caused by failure to observe proper packing or to observe instructions for installation, operation and maintenance as contained in the Instruction Manual furnished with each unit, by accident in transit or elsewhere, will not be covered by the Warranty. Shipment to authorized Hitachi Kokusai Service Stations must be prepaid.

This Warranty is in lieu of all other Warranties expressed or implied, and no one is authorized to assume any liability on behalf of HITACHI KOKUSAI ELECTRIC AMERICA, LTD. or impose any obligation on it in connection with the sale of any equipment other than the outlined above. In no event will responsibility be assumed or implied for consequential damages arising from interrupted operation or other causes.

Hitachi Service and Support Offices in the United States

Headquarters & East Coast Parts Center 150 Crossways Park Drive Woodbury, NY 11797 Toll Free Nationwide: (855) 891-5179 Tel. (516) 921-7200 Fax (516) 921-0993	West Coast Parts & Service Center 11258 Monarch Street, Unit H Garden Grove, CA 92841 Tel. (714) 895-6116 Fax (714) 895-6252
Southeast Technical Support Tel. (256) 774-3777	Midwest Technical Support Tel. (989) 345-5379

Additional Information can be found on our website: http://www.hitachikokusai.us
Please use our service and support form on: http://www.hitachikokusai.us/ContactUs/index.html
Our Email for technical and service related inquiries is: engineering@hitachikokusai.us

Hitachi Kokusai Electric America, Ltd.