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UltraMedia™ HD

THERMAL IMAGING EQUIPMENT

OPERATOR'S MANUAL

P/N 3210087
Revision - B May 31, 2006

FLIR Systems, Inc.
27700A SW Parkway Avenue
Wilsonville, Oregon 97070, USA
Phone: 503.498.3547
Fax: 503.498.3907

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Page Number	Change Number	Page Number	Change Number
Title	Rev. B	2-1 thru 2-12	Rev. B
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TOC	Rev. B	4-1 thru 4-4	Rev. B
LOT	Rev. B	5-1 thru 5-4	Rev. B
LOF	Rev. B	6-1 thru 6-2	Rev. B
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UltraMedia HD



Chapter 1: General System Introduction

This Operator's Manual includes information applicable to the setup, operation, and general care of your UltraMedia™ HD. There are many helpful suggestions and special notes provided to ensure trouble-free operation of the UltraMedia™ HD.

NOTE

See [Chapter 2: System Operation](#) for all information necessary to operate your UMHD System, and [Chapter 3: Using the Sony Remote Controller](#) to operate the Sony Camera System.

If you have any questions or require assistance, please call the FLIR Systems, Inc., Service Department toll free at 800-868-0639. We suggest that you take the time to read and study this manual before operating your equipment.

1.1 Contents

The UltraMedia™ HD Operator's Manual contains the following chapters:

- Chapter 1 General System Introduction** – Provides general information and a System Overview.
- Chapter 2 System Operation** – Provides specific information on System Operation not related to the camera.
- Chapter 3 Using the Sony Remote Controller** – Provides information necessary to operate the Sony Remote Controller on this system.
- Chapter 4 System Troubleshooting** – Provides information necessary to troubleshoot your system during operation.
- Chapter 5 Routine Maintenance** – Provides information necessary to service and maintain your system.
- Chapter 6 After Sale Support and Service** –

1.2 Manual Terms

Terms you may see in this manual.

NOTE

***Note** statements identify helpful hints or clarifying information.*

CAUTION

***Caution** statements identify conditions or practices that could result in damage to the equipment or other property.*

WARNING

Warning statements identify conditions or practices that could result in personal injury or loss of life.

TIP

Tip indicates methods that require less operator involvement to complete an action.

1.3 System Overview

Your UltraMedia™ HD system includes the following equipment.

1.3.1 Gimbal

The gimbal is mounted on the outside of the aircraft, typically on the nose. However, it can also be mounted on the side of the aircraft. It is a stabilized ball turret that houses the camera and associated lenses. It also houses the electronics, gyros, and motors required to stabilize the camera.



Figure 1.1
UltraMedia™ HD Gimbal

1.3.1.1 Gimbal Assembly

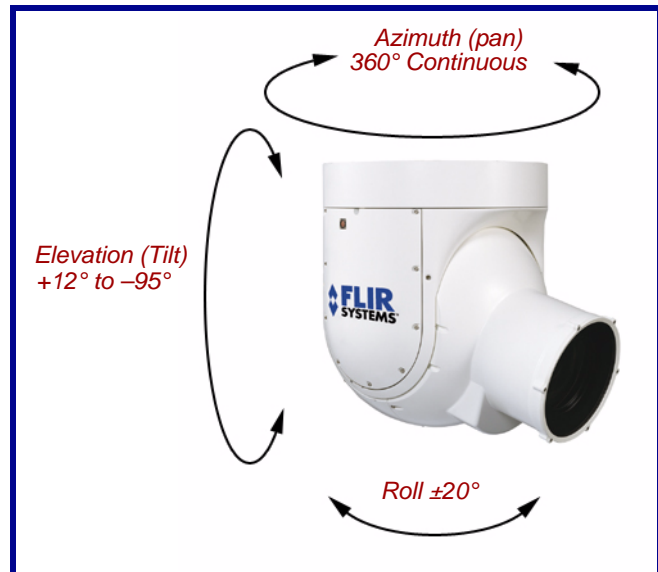
The mechanical portion of the system consists of the Gimbal Assembly. The gimbal consists of five axes: two outer axes for the azimuth and elevation, two inner axes for the azimuth and elevation, and one for the roll axis. The inner azimuth, inner elevation, and roll axes are controlled by gyroscopes and feedback potentiometers. They are automatically adjusted by permanent magnet motors to keep the camera and lens stable. The outer azimuth and elevation axes are moved with permanent magnet motors and the position is indicated with feedback potentiometers. The outer axis will follow the inner axis as a course adjustment for stabilizing the payload.

The inner gimbal consists of three rings. The camera and lens assembly are attached to the inner most ring. This ring is mounted on bearings that allow it to move $\pm 6^\circ$ in elevation (pitch). The bearings that support the inner ring are mounted to the middle ring. The middle ring is mounted on bearings that allow it to move $\pm 6^\circ$ in azimuth (yaw). The bearings that support the middle ring are mounted to the outer ring. The outer ring is mounted on vibration isolators to the yoke assembly.

The yoke assembly is mounted on bearings to the outer gimbal. From a horizontal position the complete ball assembly can move $+12^\circ$ and -95° (EI), and also has roll freedom of $+20^\circ$.

Figure 1.2
Azimuth and Elevation Rotation

The complete outer assembly is mounted on bearings that allow it to rotate 360° in azimuth. All of the electrical connections are made through a slip-ring so the gimbal can rotate continuously in azimuth.



1.3.2 Camera Body Unit (CBU)

The Camera Body Unit (CBU) is mounted inside the aircraft. This unit contains the camera body and electronics necessary to interface among the gimbal, system controller, and the monitoring equipment.

1.3.3 Laptop Control Unit (LCU)

Figure 1.3
Laptop Control Unit

The Laptop Control Unit (LCU) provides directional control of the gimbal and operates the camera. It is connected to the gimbal through the CBU.



UltraMedia HD



Chapter 2: System Operation

2.1 System Operation

The UltraMedia™ HD operator will work primarily in the Stabilized Mode. In the Stabilized Mode, the gimbal directional control is handled using the laptop joystick and the gyros stabilize the system payload. Gimbal control can also be handled using the AZ Drift and EL Drift knobs. In the Position Mode, the joystick is non-functional and directional control is handled using the AZ Pos and EL Pos knobs.

Table 2-1: Directional Control

Stabilized Directional Control	Position Directional Control
<ul style="list-style-type: none">• Joystick	<ul style="list-style-type: none">• AZ Position and EL Position
<ul style="list-style-type: none">• AZ Drift and EL Drift	

CAUTION

Never power up your UltraMedia HD until after the aircraft engines are operating and aircraft system power is stable. Damage can result when the aircraft power is switched between battery and engine powered bus.

NOTE

All gyros need sufficient time (about 5 minutes) to come up to speed and stabilize.

2.1.1 Stabilized Mode

The Stabilized Mode engages the inner axis stabilization system and commands the gimbal to operate as a gyro stabilized gimbal. All axes are now gyro stabilized.

2.1.2 Position Mode (Stow)

Position Mode (Stow) commands the gimbal to a preset position and is generally used when landing or during transit when the system is not in use. In Position Mode (Stow), the unit will point or stow to the position set with the AZ and EL dials, and the joystick control will be non-functional. The Position Mode disengages the inner axis stabilization system and leaves the gimbal operating as an unstabilized pointing device.

2.1.3 Roll Function

The Roll Function ($\pm 20^\circ$) only operates in the Stabilized Mode and is controlled with the Roll knob. If the camera is not level to the horizon, use the Roll function to make a Roll correction when necessary.

2.1.4 Inner Axis

The inner axis is the primary stabilization unit, and adjusts the fine movements to payloads in azimuth, elevation, and roll. By interpreting movements through the dynamic gyros, the inner axis motors are precisely driven to reduce the vibrations.

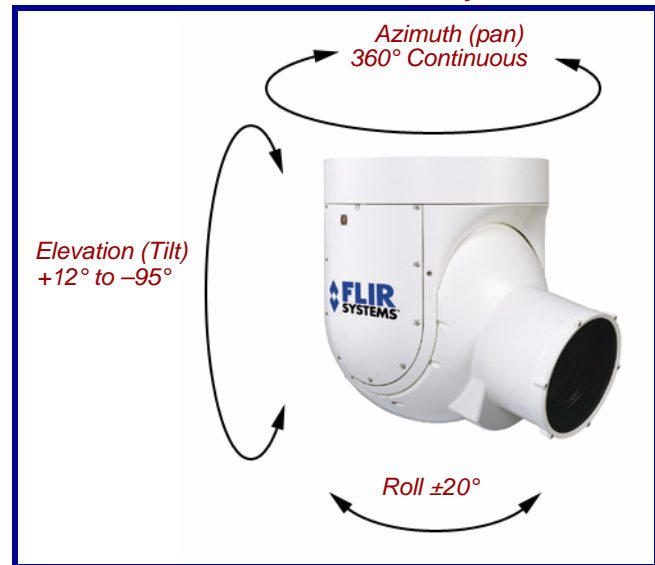
2.1.5 Outer Axis

The outer axis is the secondary stabilization unit and adjusts the coarse movements in both azimuth and elevation. The primary objectives of the outer axis stabilization unit are to provide large rotations of the gimbal, to shield the inner axis from wind loading and to constantly position the window directly in front of the lens.

The UltraMedia™ HD does have look-down capability. However, due to gyro limits, control and stability can be difficult to maintain when the camera is pointed and held straight down. If at all possible, always attempt to keep a viewing angle less than 90° straight down.

In flight-forward position, the gimbal's rotational ability in azimuth is 360° continuous. In elevation it is $+12^\circ$ to -95° , and in roll is $\pm 20^\circ$.

Figure 2.1
System Rotation



CAUTION

When the camera is not in use during flight, it is recommended that the system still have gimbal power applied to keep the system stabilized.

2.2 Laptop Controller

The Laptop Control Unit (LCU) contains all the controls necessary to operate the UltraMedia™ HD.

Figure 2.2
The Laptop Controller Unit



2.2.1 Power Switch

The Power Switch is a three position switch, providing power to the Laptop, Gimbal and Camera Body Unit. In the STBY mode, power is only applied to the gimbal, and the camera is not on. This keeps the gimbal stabilized during transit when the camera is not in use.

2.2.2 Roll Position

The Roll Position knob is used to correct for errors in the roll stabilization. As the aircraft orbits a scene, errors become evident in what the gyros believe is the level horizon. Use the Roll Position knob to adjust the attitude of the camera relative to the true horizon.

2.2.3 Roll Enable

This button toggles between using the roll gyro to put the system in Stabilization Mode, and not using the roll gyro and leaving the system in Position Mode. In the Stabilization Mode, the gyros keep the system stabilized, and effectively isolated from the airframe. In the Position Mode there is no gyro stabilization.

NOTE

All gyros need sufficient time (about 5 minutes) to come up to speed and stabilize.

2.2.4 Position / Stabilization

This alternates the system between Position Mode and Rate Stabilized Mode in both azimuth and elevation. The system is automatically placed into the Position Mode at power-up.

2.2.5 Elevation Reverse

By selecting Elevation Reverse, when the joystick is moved in the elevation axis, the gimbal will move opposite the user input.

2.2.6 AZ / EL Drift

The AZ and EL drift controls are used to control the drift of the subject on the monitor. This feature can be used to either limit or cause drift of imagery. As the system thermally stabilizes, the tendency for drift is lessened. To accurately adjust system drift, first zoom to the maximum focal length with the 2X engaged. Adjust the AZ and EL drift controls to null out any movement.

NOTE

The AZ / EL Position knobs are generally used to “Stow” the turret. Most operators position the gimbal at AZ full rear with EL $\pm 5^\circ$. This allows for safe take-off and landing, and allows the camera to be flown to the scene without airborne debris impacting the lens.

CAUTION

Do not continue to command the gimbal into the elevation stops. The upper and lower elevation limits are $+12^\circ$ to -95° from a flight forward position. Slightly before these limits are reached the slew rate of the gimbal is automatically slowed to signal the approaching limits and to prevent damage to the system.

2.2.7 AZ Position

When the system is initially powered up, it operates in the Position Mode. Use the AZ Position knob to position the gimbal in the azimuth axis. When a position is selected using the AZ knob, the system automatically drives the gimbal to the location indicated on the dial.

2.2.8 EL Position

When the system is initially powered up, it operates in the Position Mode. Use the EL Position knob to position the gimbal in the elevation axis. When a position is selected using the EL knob, the system automatically drives the gimbal to the location indicated on the dial.

2.2.9 Gimbal Sensitivity

Gimbal Sensitivity sets the speed at which the Joystick responds to operator input. It can be set to three levels of sensitivity, as indicated by the LED readouts. The initial start-up default is H (High). Depress the button once to step to M (Medium, and once again to step to L [Low]). The next button depress will move you back to M. Two quick depressions, much like a double mouse click, will return you to the H setting.

2.2.10 2X Extender

This switch is used to select the 2X Lens Extender. When the 2X Extender is engaged, the selection button is illuminated.

CAUTION

Do not toggle this switch rapidly since it is a timed function and may cause premature wear of the tele-extender slip clutch motor assembly.

2.2.11 Back Focus

When a lens does not hold focus at both ends of the zoom range, you may need to adjust its back focus. By adjusting the back focus, you are changing the distance between the CCD Block pick-up device and the rear element of the lens.

2.2.11.1 Adjusting the Back Focus

1. Pick a target with crisp, sharp edges.
2. Zoom lens to full Telescopic with the 2X Extender engaged.
3. Switch the Iris on the Sony CCU to Manual and Full Open.

NOTE

You may need to adjust the Gain or Shutter to prevent image wash-out.

NOTE

DO NOT use the iris to darken the image. You must leave it at full open.

4. Focus on the target with the focus knob on the laptop.
5. Zoom the lens to full Wide.
6. Adjust the Back Focus toggle switch for sharp focus.
7. Perform steps 4 through 6 at least twice for best results.

2.2.12 Focus

This rotary knob is used to control the focus adjustment of the lens.

2.2.13 Zoom

Zooms the lens assembly in or out as selected by the operator.

2.2.14 Zoom Speed

This sets the speed at which the Zoom function responds when selected, allowing from a very slow smooth zoom in or out to a rather rapid zoom in or out.

2.3 Power Down the System

CAUTION

Do not re-power the system until you have waited approximately 3 to 4 minutes following Power Off. This allows the gyros to spin down and come to rest. Failure to do this may cause the system to go into gyro tumble, which shortens the gyro life span.

CAUTION

Always position the gimbal to an aft facing orientation or place the system into Position Mode and position the gimbal to an aft facing orientation prior to shutdown.

After positioning the gimbal into a safe position for storage while the aircraft is on the ground, make sure that all peripheral equipment (such as a VCR) is powered down. Then rotate the power switch through Stby to the Off position.

2.4 Operating Tips and Techniques

2.4.1 Ground Station Contact

Stay in contact with the ground station. The operator is looking at a small screen in a shaking helicopter, frequently in bright sunlight. They do not see the same picture as the people in the studio looking at larger screens. Light levels, image motion, and other artifacts should be reported from the studio for the operator to adjust.

2.4.2 Low Flight Speed for Specific Shots

Fly at speeds less than 60kts for several reasons. First, the relative motion of the aircraft to the ground target is lower at low speeds. Second, helicopter vibration is less at lower speeds. Third, operation of the joystick is easier at lower speeds. If approaching the target at high speeds, image jitter can be minimized by zooming out or switching to the 2X Extender Off.

2.4.3 Orbit

Orbit the target and view the subject from the side of the helicopter. Orbit at a constant radius. Usually this is best from a distance of less than one mile.

2.4.4 Hover

In areas of high traffic or where camera direction is best, the pilot may decide to hover. The smoothest shots will be taken at 90° in azimuth to the aircraft and down 45° or more.

2.4.5 Distance from Target

The best imagery can be taken from within a mile of the target with the 2X Extender turned Off. Drift and other disturbances are minimized.

2.4.6 Hands Off Operation

If the aircraft is in a hover and one is viewing a stationary scene, the best picture will be taken by using the joystick to find the target and then using the drift controls to fine tune the scene in azimuth and elevation.



Chapter 3: Using the Sony Remote Controller

3.1 Using the Sony Remote Controller

WARNING

To prevent fire or shock hazard, do not expose unit to rain or moisture. To avoid electrical shock, do not open system. Refer service to qualified personnel only.

For Customers in the USA

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in

accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

The shielded interface cable recommended in this manual must be used with this equipment in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

The RM-B750 Remote Control Unit is designed for remote control of Sony BVP/HDC-series CCD color video cameras.

Using the supplied special cable, the unit can be directly connected to the camera to control it from a distance of up to 50 m (164 feet).

3.2 Features

The principal features of the RM-B750 are as follows:

- Covering Basic Camera Operations
- Touch Panel with 3 1/2-inch LCD for Various Operations
- VTR Control Functions
- Controlling the Automatic Adjustment Functions
- Controlling the ECS/Shutter Function of the Camera
- Controlling the S-EVS Function of the Camera
- Memory Stick Slot
- Parallel Operation with Another Control Panel
- Attachable to the HDCU-950

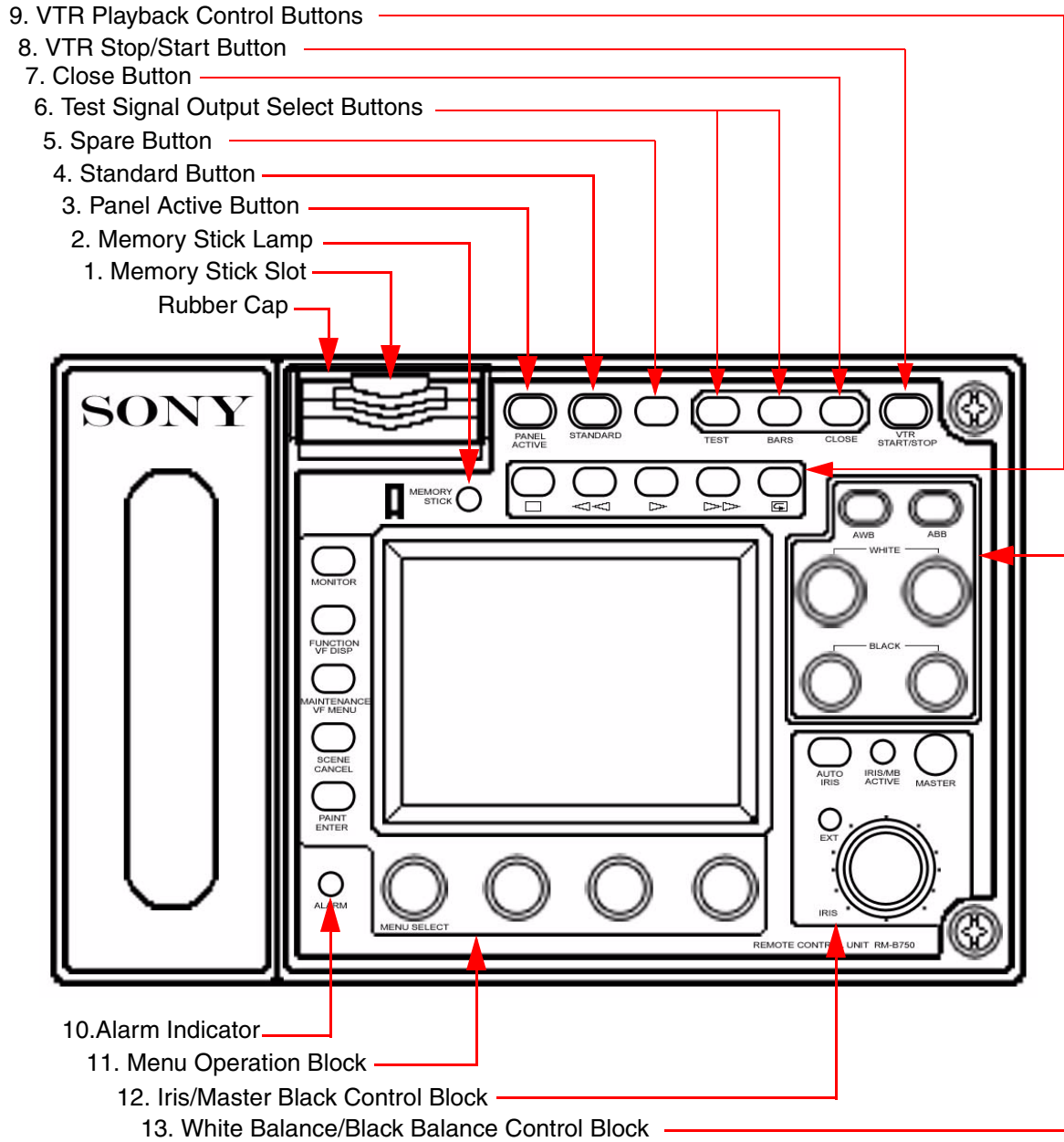


Figure 3.1: Operation Panel

3.2.1 Covering Basic Camera Operations

This remote control unit is provided with essential control functions for basic operation of a camera.

3.2.2 Touch Panel with 3½-inch LCD for Various Operations

This remote control unit has a touch panel that permits various items to be selected and adjusted on the LCD in menu format.

The camera menus that are displayed on the viewfinder screen can also be displayed on the LCD and set from this unit.

3.2.3 VTR Control Functions

Tape transport of a VTR connected via the camera or Camcorder can be controlled from this unit.

3.2.4 Controlling the Automatic Adjustment Functions

Automatic black/white balance adjustments can be performed from this unit.

3.2.5 Controlling the ECS/Shutter Function of the Camera

The ECS (Extended Clear Scan) and electronic shutter functions of the CCD camera can be turned On/Off from this unit. The ECS frequency and shutter speed are also adjusted using the rotary encoder of this unit.

3.2.6 Controlling the S-EVS Function of the Camera

The vertical resolution for the Super EVS (Enhanced Vertical-Definition System) can be adjusted from this unit.

3.2.7 Memory Stick Slot

Various data, including scene files and reference files, can be stored on a Memory Stick and reproduced at any time.

3.2.8 Parallel Operation with Another Control Panel

When this unit is connected to a camera via the specific camera control unit, the camera can be concurrently controlled from this unit and another controller, such as the MSU-700A/750 Master Setup Unit or RCP-700-series Remote Control Panel.

3.2.9 Attachable to the HDCU-950

If you detach the rear cover, this unit can be mounted onto the HDCU-950 HD Camera Control Unit. The camera and the HDCU-950 can be operated as if this unit were the built-in operation panel of the HDCU-950

For details on installation, refer to the Installation Manual of the HDCU-950.

3.3 Operation Panel

3.3.1 Memory Stick Slot

Reference item 1 – Insert a Memory Stick to store setting data, such as reference files and scene files of the video camera or camera control unit.

3.3.2 Memory Stick (Memory Stick Access) lamp

Reference item 2 – The lamp shows the status of the Memory Stick.

- Off: No Memory Stick Inserted
- Lit in Green: There is a Memory Stick in the slot. In this condition you can safely eject the Memory Stick.
- Lit in Red: Data are being read/written. If you eject the Memory Stick in this condition, the data are not guaranteed. All the data may be lost.

3.3.3 Panel Active Button

Reference item 3 – Press to select the control mode for the connected camera system. Each time you press the button with the factory settings, the control mode cyclically switches among FULL, PART, and LOCK modes.

- FULL mode: All controls from this unit are enabled (panel active status). Both this button and the IRIS/MB ACTIVE indicator in the iris/master black control light.
- PART mode: Controls only from the iris/master black control block are enabled (iris/master black active status). This button goes dark, but the IRIS/MB ACTIVE indicator stays lit.
- LOCK mode: All controls for this unit are disabled (lock status). Both this button and the IRIS/MB ACTIVE indicator in the iris/master black control block go dark.

Using the RM Configuration menu under the Maintenance menu, the function of this button can be changed to switch only between FULL and LOCK modes.

The RM Configuration menu operation is possible in any mode.

3.3.4 Standard Button

Reference item 4 – When you press this button, the video camera is initialized to its standard state, and the button lights for several seconds.

If you press the button while lit, the video camera retrieves the state before the button was lit.

3.3.5 Spare Button

Reference item 5 – For future use.

3.3.6 Test Signal Output Select Button

Reference item 6 – Press and light one of these buttons to activate the test signal generator of the video camera and send the respective signals.

- TEST: To send a signal to test the video circuits. You can select the kind of the test signal to be output using the RM Configuration menu under the Maintenance menu.
- BARS: To send a color bar signal.

NOTE

The BARS button takes priority to the TEST button. If the BARS button is lit, press the button to turn it dark before pressing the TEST button.

3.3.7 Close Button

Reference item 7 – Press and light the button to close the iris. To release the close mode, press the button again to that it goes dark.

3.3.8 VTR Stop/Start button


Reference item 8 – Press and light up this button to start a recording operation. When you press the button when lit, it goes dark and recording stops.


Using the RM Configuration menu under the Maintenance menu, you can assign the CALL button function to this button. In this case, press to send a call signal to the video camera, on which the CALL button lights. The tally lamps on the camera control unit light when not lit, or go dark when lit.


When the CALL button on the video camera is pressed, the button on this unit lights and a buzzer sounds.


3.3.9 VTR Playback Control Button

Reference item 9 – Controls VTR playback operations.

 Stop button - Press to stop a rewind, fast-forward or playback operation.

 Rewind button – Press and light this button to start a rewind operation.

 Play button – Press and light this button to start a playback.

 Fast-forward button – Press and light this button to start a fast-forward operation.

 Record / Review Button – Press and light this button to execute a recording review operation.

NOTE

When the VTR Start/Stop button is lit, these buttons are deactivated. To activate the buttons, first press the VTR Start/Stop button to cancel Recording mode.

NOTE

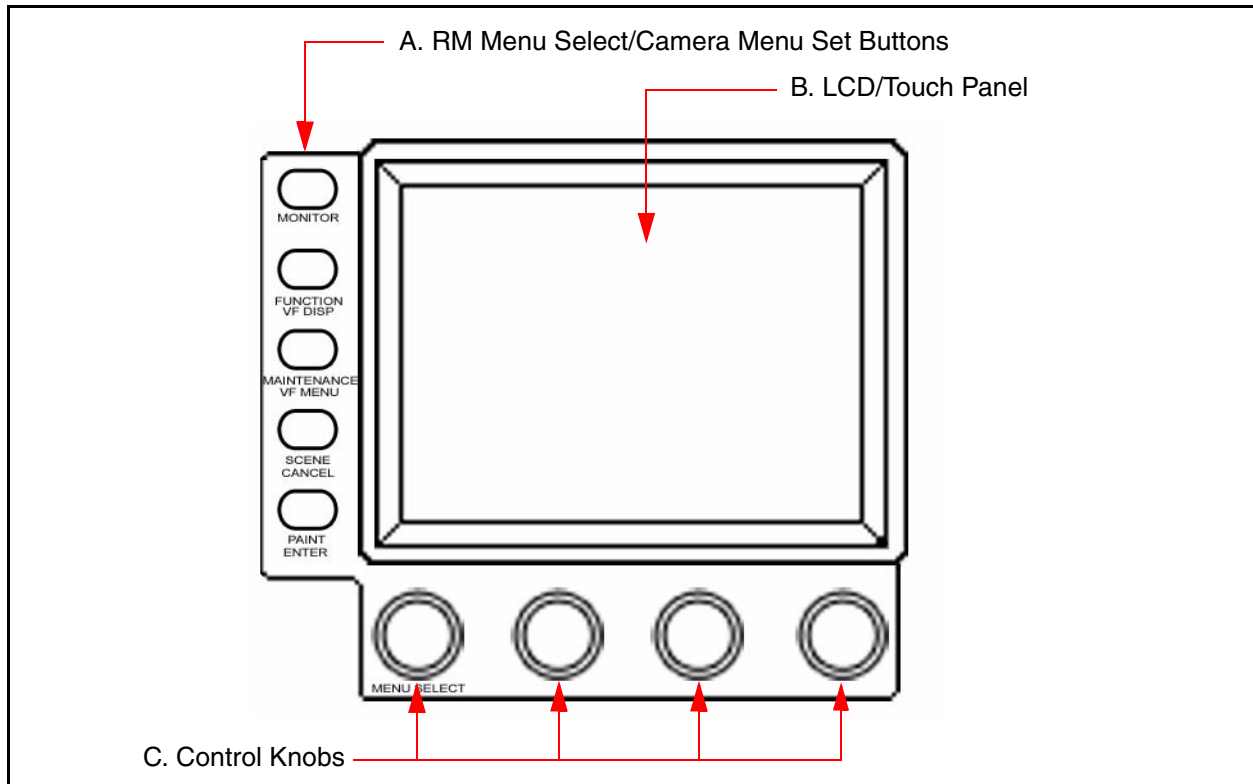
A part of the VTR control functions of this unit may be disabled depending on the combination of the camera and the VTR.

3.3.10 Alarm Indicator

Reference item 10 – Flashes or lights in red when trouble occurs in the camera system and the self-diagnostic function activates at the video camera or the camera control units.

3.3.11 Menu Operation Block

Reference item 11



3.3.11.1 RM Menu Select/Camera Menu Set Buttons

Reference Item A – Monitor – When this button is unlit, you can select the menus of this unit using the other buttons (RM Menu mode in which the functions indicated with white letters for the buttons are valid).

Press and light this button to display the video signal (SDTV signal only) from the connected camera on the LCD. This also permits the menus of the camera to be operated from this unit (the functions indicated with blue letters for the buttons and the left-most control knob are valid).

Reference Item A – Function/VF Disp – (viewfinder display) With the Monitor button unlit, the Function menu of this unit appears on the

LCD when you press and light this button. With the Monitor button lit, the character display of the camera is turned on when you press and light this button.

Reference Item A – Maintenance/VF Menu – (viewfinder menu) With the Monitor button unlit, the Maintenance menu of this unit appears on the LCD when you press and light this button. With the Monitor button lit, the unit enters Camera Menu mode when you press and light this button. The main menu of the camera appears on the LCD.

Reference Item A – Scene/Cancel – With the Monitor button unlit, the Scene File menu of this unit appears on the LCD when you press and light this button. With the Monitor button lit, you can cancel the setting of the camera menu item selected on the LCD by pressing this button.

Reference Item A – Paint/Enter – With the Monitor button unlit, the Paint menu of this unit appears on the LCD when you press and light this button. With the Monitor button lit, you can register the setting of the camera menu item selected on the LCD by pressing this button.

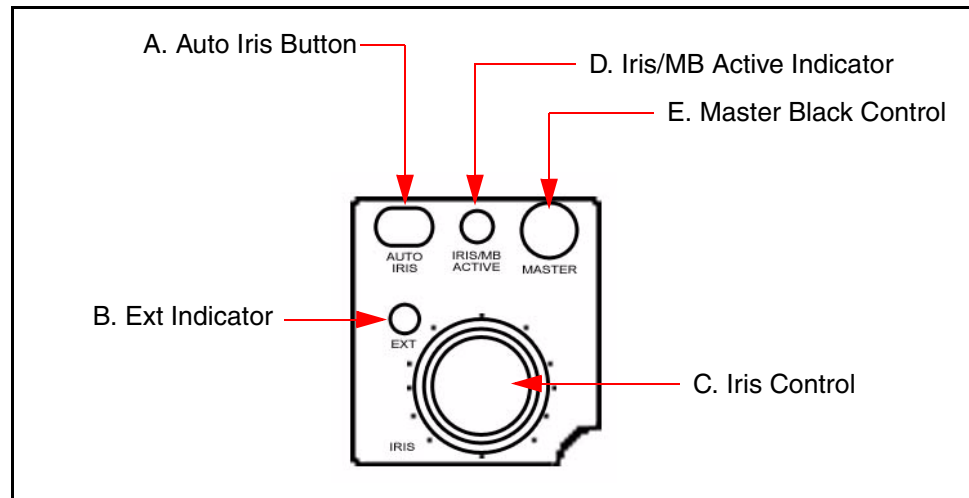
When none of the buttons are lit, the status display is obtained.

Reference Item B – LCD/Touch Panel – Normally displays the statuses. When you press and light the Monitor button, it displays the video signal from the connected camera (SDTV signal only. HDTV signal will not be displayed.). In RM Menu or Camera Menu mode, the selected menu is displayed to permit you to operate the menu.

Reference Item C – Control Knobs (Rotary Encoders) – In RM Menu mode, adjust the selected items in the touch panel. In the Camera Menu mode, select and adjust the menu items using the left-most knob.

3.3.12 Iris/Master Black Control Block

Reference item 12



Reference Item A – Auto Iris Button – Press and light the bottom to automatically adjust the iris according to the amount of input light. If you press the button when lit, it goes dark, and manual iris adjustment is enabled.

Reference Item B – Ext (Lens Extender) Indicator – Lights when the lens extender is used on the connected camera.

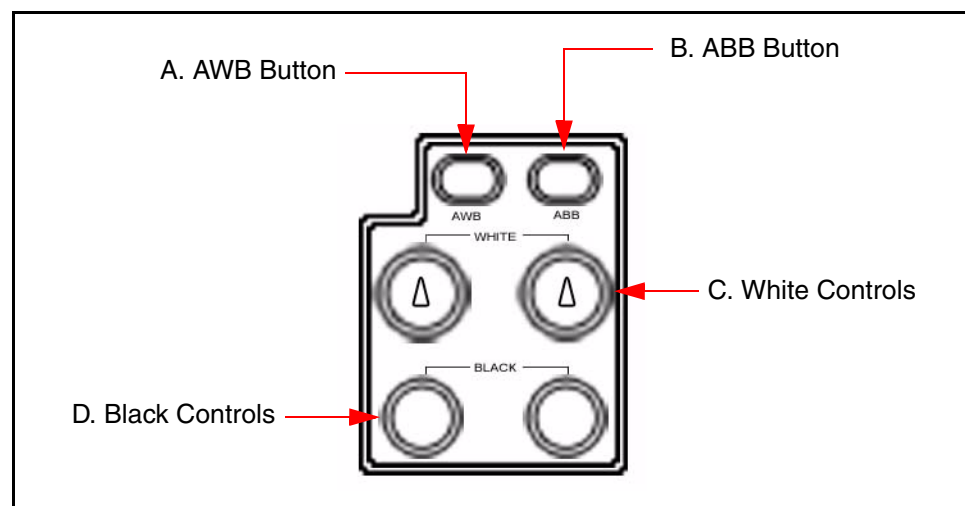
Reference Item C – Iris Control – When the Auto Iris button is not lit, you can adjust the iris manually by turning the control. When The Auto Iris button is lit, you can fine-adjust the reference value for automatic iris adjustment in a range of $\pm 2f$ with this control. The adjustment mode of this control is specified at the factory as Absolute mode, which can also be changed to Relative mode using the RM Configuration menu under the Maintenance menu.

Reference Item D – Iris/MB Active (Iris/Master Black Active) Indicator – Lights when the control mode is set as Full or Part mode with the Panel Active button. When this indicator is lit, Iris/Master Black controls from this unit are enabled.

Reference Item E – Master Black Control – Manually adjusts the Master Black level. The adjustment mode of this control is specified at the factory as Relative mode, which can be changed to Absolute mode using the RM Configuration menu under the Maintenance menu.

3.3.13 White Balance/Black Balance Control Block

Reference Item 13



Reference Item A – AWB (Auto White Balance) Button – Press to automatically adjust the white balance. The button lights during adjustment and goes dark when adjustment is completed. If you press this button when lit, the automatic adjustment is canceled, and the button flashes. To stop the flashing, press the button again.

Reference Item B – ABB (Auto Black Balance) Button – Press to automatically adjust the black balance and black set. The button lights during adjustment and goes dark when adjustment is completed. If you press this button when lit, the automatic adjustment is canceled, and the button flashes. To stop the flashing, press the button again.

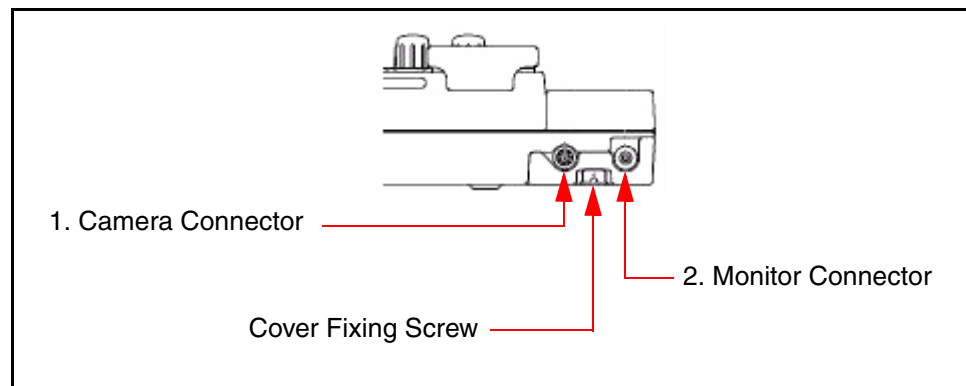
NOTE

When the adjustment mode of the Black controls is specified as Absolute mode, automatic black balance adjustment with the ABB button is disabled.

Reference Item C – White (White Balance) Controls – Adjust the R/B white balance. The adjustment mode of these controls is specified at the factory as Relative mode, which can be changed to Absolute mode using the RM Configuration menu under the Maintenance Menu.

Reference Item D – Black (Black Balance) Controls – Adjust the R/B black balance. The adjustment mode of these controls is specified at the factory as Relative mode, which can be changed to Absolute mode using the RM Configuration menu under the Maintenance Menu.

3.4 Connector Panel

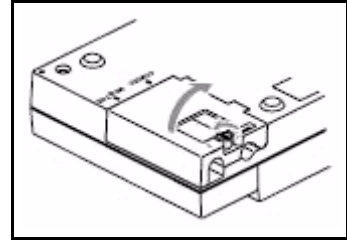


Reference Item 1 – Camera Connector (8-pin) – Connect to the camera using the supplied remote control cable.

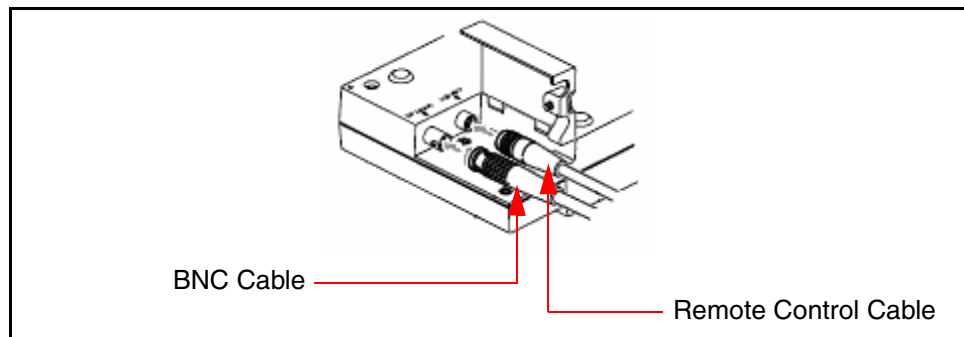
Reference Item 2 – Monitor Connector (BNC) – Connect a color monitor to observe the signal from the camera.

3.5 Connections

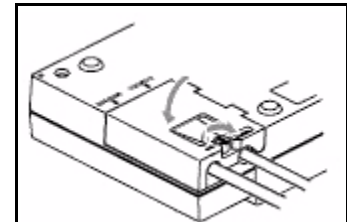
1. Loosen the cover fixing screw on the bottom and open the cover.



2. Connect the remote cable to the Camera connector and the BNC cable to the Monitor connector.

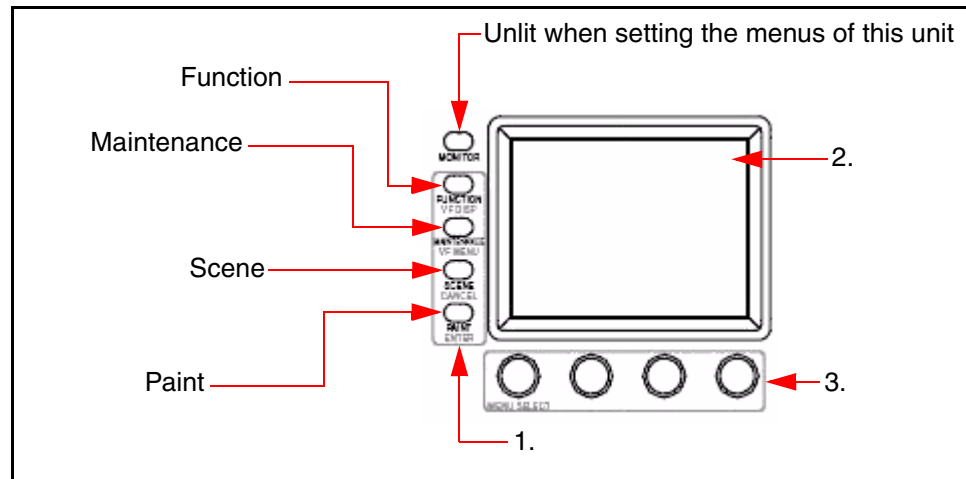


3. Close and cover and secure the screw.



3.6 Basic Operating Procedures

The RM-B750 provides menu operations for various functions such as adjustments of system equipment.



When all the menu select buttons are not lit, the status display is obtained.

1. To display a menu of this unit, press and light one of the menu select buttons. The menu operation mode is initiated and the menu for the pressed button appears on the display.
 - Function: Function Menu
 - Maintenance: Maintenance Menu
 - Scene: Scene File Operation Menu
 - Paint: Paint Menu
2. Select the item to be adjusted. Press the button that shows the name of the item on the menu to obtain the corresponding adjustment display or operation area.

When the selected menu is composed of multiple pages

With the menu that is composed of multiple pages such as Paint menu, press ▲ or ▼ to flip the pages.

When a submenu is shown

Press the desired submenu item to change the display.

3. Set or adjust the item (parameters).
 - Turn the control knobs (or press the button) to adjust (or set) the corresponding item (parameters) to the desired values.
 - When a message is displayed, follow the instructions and press OK.

When the adjustment is finished

- To adjust another item of the same menu, press the names of that item.
- To adjust items of another menu, press the corresponding menu select button.
- To release the menu operation mode, press the lit menu select button.
- You may select Function menu without exiting the currently selected menu. When you exit Function menu by either of the following methods, the previous menu is restored.
 - Press the lit Function button so that it goes dark.
 - Press the lit menu select button for the previous menu

3.7 Basic Configuration of Menu Display

3.7.1 Status Display

When you do not select any of the Menu select buttons (Function, Maintenance, Scene, Paint) of the menu operation block (all units), the LCD shows the following status display:

On the status display, each item is only displayed. TV setting is made with the menu or with the corresponding knob on the operation panel.

You may set these items using the Function menu.

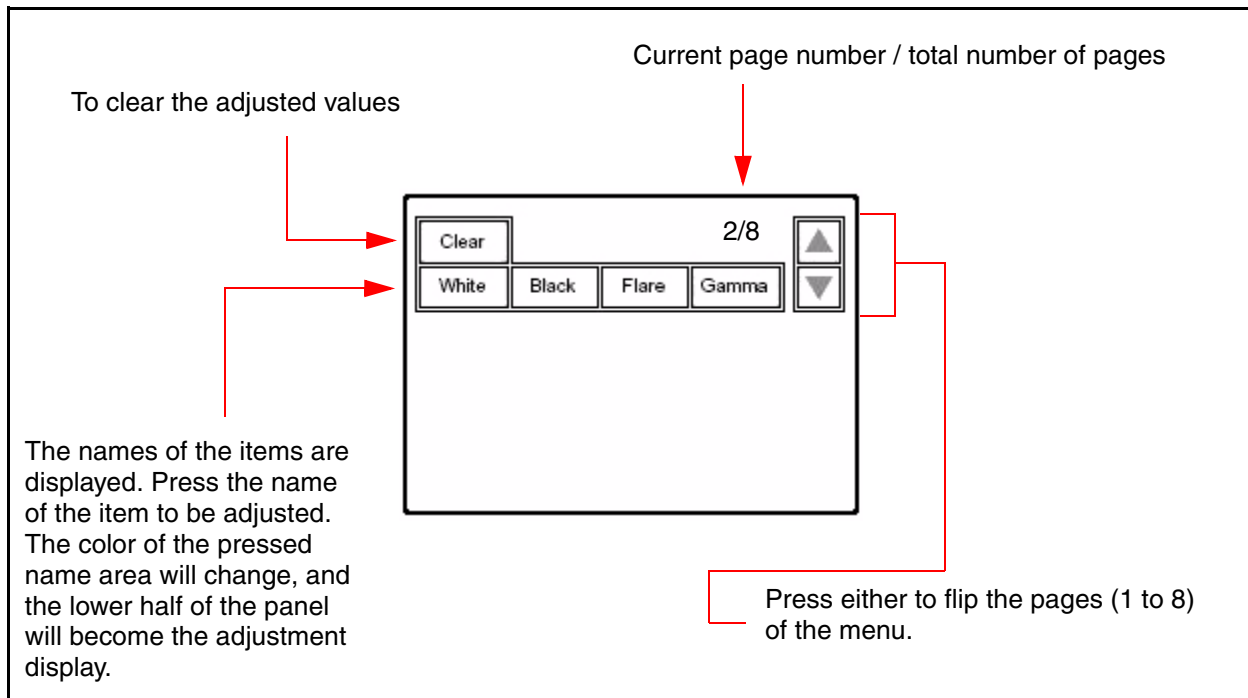
You may adjust these items using the White knobs, Black knobs, MASTER BLACK knob or IRIS knob.

Shutter	M. Gain	White	
60	0dB	0	0
Gamma	ND ND	Black	
0.45	1 A	0	0
White Mem : A		M. Blk	
Scene File : 1		0	
		Iris	
		CL	

The file number selected with the Scene File Operation menu is displayed.

3.7.2 Initial Display (Paint Menu)


When you press and light the PAINT button of the menu operation block, the Paint menu display is obtained. The Paint menu consists of 8 pages.



3.7.3 Adjustment display (Paint menu)

When you select an item on the initial display of the Paint menu, the lower half of the panel becomes the adjustment display for the selected item.

When you press this, the upper half of the panel becomes the monitor output setting display.



The name of the item selected on the initial display is displayed. If you press this area after pressing CLEAR, all the adjustment values for the selected item are initialized to standard.

When there are any On/Off functions related to the adjustment, the names of the functions are displayed on this line.

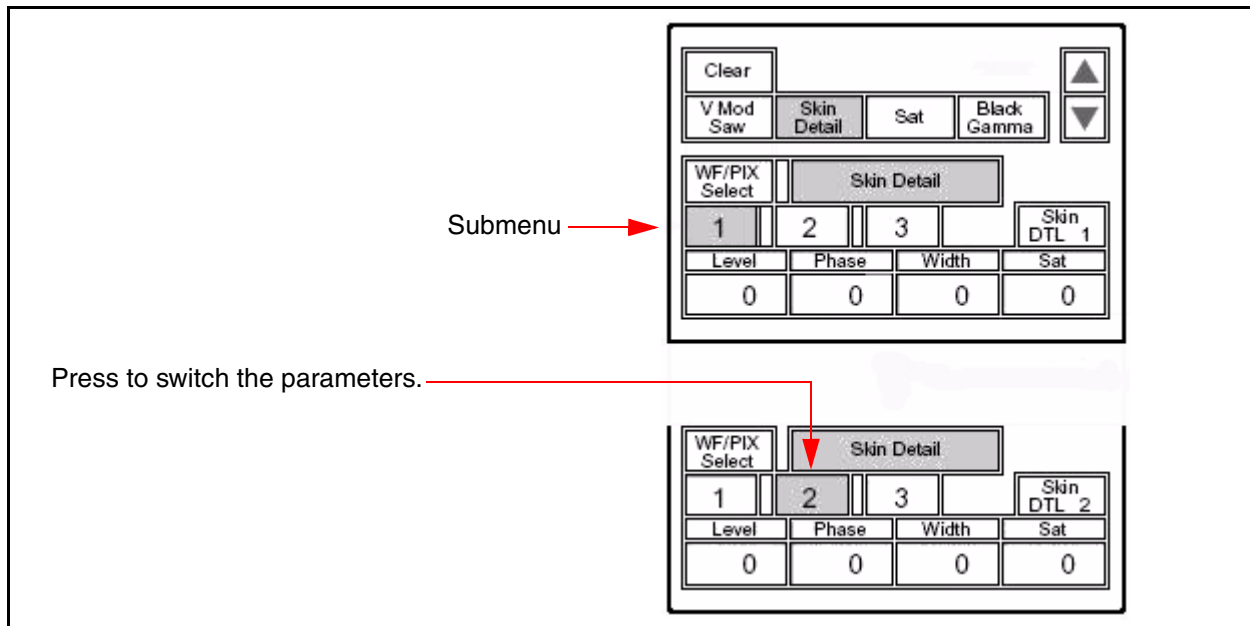
The adjustment parameters for the selected item and their adjustment values are displayed.

You may adjust these items using the corresponding control knobs.

If you press a value area after pressing pressing CLEAR, that adjustment value is initialized to standard.

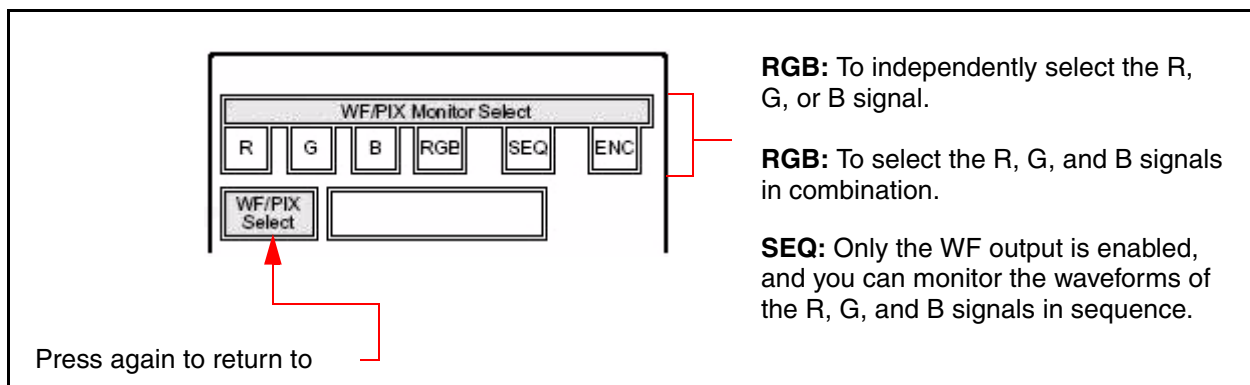
3.7.3.1 Submenu

If the selected item has many parameters, a submenu is displayed.



3.7.4 Monitor output set display (Expansion menu)

When you press the **WF/PIX Select** on an adjustment display of the Paint menu, the upper half of the panel becomes the monitor output setting display.



3.7.5 Scene File Operation menu display

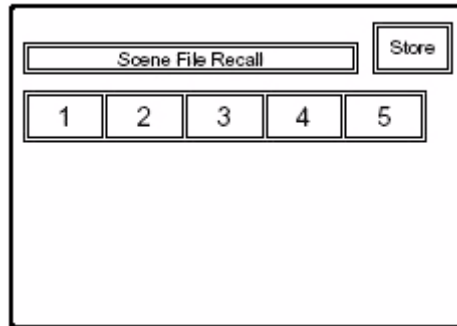
When you press and light the SCENE button of the menu operation block, the Scene File Operation menu display is obtained.

To recall a scene file:

Press the number of the desired scene file, and the setting stored in the corresponding scene file will be retrieved.

The color of the number of the retrieved file changes.

When you press the same number again, the previous condition will be restored.

**To store the current settings in a scene file:**

First press and light STORE, then select the desired scene file number.

When file registration is finished, STORE returns to its original color.

3.7.6 Function menu displays

When you press and light the FUNCTION button of the menu operation block, the Function menu display is obtained.

When "Operation" is selected

Press ▲ or ▼ to select the desired filter. The number of ND and CC filters you may select depends on the camera.

Press ▲ or ▼ to set the gamma value. You may need to change it in ± 0.05 steps.

Press ▲ or ▼ to set the master gain. The value increases when ▲ is pressed and decreased when ▼ is pressed.

When "SW" is selected

Current page number / total number of pages.

Press either to flip pages of the menu.

These buttons turn On and Off the corresponding functions.

Any button whose designation includes "Off" turns the respective function Off when you light it. Other buttons turn the respective functions On when you light them.

3.8 Menu Items

The Control items marked with a • are those assigned to the control knobs. The other items are operated on the menu display.

3.8.1 Paint Menu

Paint menu consists of pages 1 to 8. Pressing ▲ or ▼ of each page flips pages 1 through 8 in sequence.

Table 3-1: Paint Menu

Page	Menu	Submenu	Control Item	Function
Paint 1/8	Detail 1	HD ^a	• Level	Adjusts the HD detail level.
			• Limiter	Adjusts the HD detail limiter.
			• Crispening	Adjusts the HD detail crispening.
			• Level Dep	Adjusts the HD level dependence.
			Detail Off	Turns the HD detail On/Off.
			SD DTL Off	Turns the SD detail On/Off.
		SD ^a	• Level	Adjusts the SD detail level.
			• Limiter	Adjusts the SD detail limiter.
			•Crispening	Adjusts the SD detail crispening.
			• Level Dep	Adjusts the SD level dependence.
			Detail Off	Turns the HD detail On/Off.
			SD DTL Off	Turns the SD detail On/Off.
	Skin Detail	1/2/3 9common)	• Level	Adjusts the skin detail level.
			• Phase	Adjusts the skin detail phase.
			• Width	Adjusts the skin detail width.
• Saturation			Adjusts the skin detail saturation.	
DTL Gate #			Turns the skin detail gate On/Off (each channel).	

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
			Auto Hue #	Executes the skin detail auto hue setup (each channel).
			Skin DTL #	Turns the skin detail On/Off (each channel).
	Flare		• R/G/B	Adjusts the flare balance.
			Flare Off	Turns the flare On/Off.
	Gamma/Knee		• Gamma	Adjusts the master gamma.
			• Blk Gamma	Adjusts the master black gamma.
			• Knee Point	Adjusts the master knee point.
			• Knee Slope	Adjusts the master knee slope.
			Gamma Off	Turns the gamma On/Off.
			Knee Off	Turns the knee On/Off.
Paint 2/8	White		• R/G/B	Adjusts the white balance.
			ATW	Executes the auto-trace white balance adjustment.
	Black		• R/G/B/Master	Adjusts the black balance.
	Flare		• R/G/B	Adjusts the flare balance.
			Flare Off	Turns the flare On/Off.
	Gamma		• R/G/B/Master	Adjusts the gamma.
		Gamma Off	Turns the gamma On/Off.	
Paint 3/ 8	V Mod Saw		• R/G/B/Master	Adjusts the V modulation.
			V Mod Saw Off	Turns the V modulation On/Off.
	Skin Detail	1/2/3 (common)	• Level	Adjusts the skin detail level.
			• Phase	Adjusts the skin detail phase.
			• Width	Adjusts the skin detail width.
			• Saturation	Adjusts the skin detail saturation.
			DTL Gate #	Turns the skin detail gate On/Off (each channel).
			Auto Hue #	Executes the skin detail auto hue setup (each channel).

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>		
			Skin DTL #	Turns the skin detail On/Off (each channel).		
	Saturation		• Saturation	Adjusts the saturation.		
			Saturation	Turns the saturation On/Off.		
	Black Gamma	RGB	• R/G/B/Master	Adjusts the black gamma.		
		Y	• Y	Adjusts the black gamma.		
Paint 4/8	Detail 1	HD ^a	• Level	Adjusts the HD detail level.		
			• Limiter	Adjusts the HD detail limiter.		
			• Crispening	Adjusts the HD detail crispening.		
			• Level Dep	Adjusts the HD level dependence.		
			Detail Off	Turns the HD detail On/Off.		
			SD DTL Off	Turns the SD detail On/Off.		
				SD ^a	• Level	Adjusts the SD detail level.
					• Limiter	Adjusts the SD detail limiter.
					• Crispening	Adjusts the SD detail crispening.
					• Level Dep	Adjusts the SD level dependence.
					Detail Off	Turns the HD detail On/Off.
					SD DTL Off	Turns the SD detail On/Off.
	Detail 2	HD ^a	• H/V Ratio	Adjusts the HD detail H/V ratio.		
				• Frequency	Adjusts the HD detail boost frequency.	
				• Mix Ratio	Adjusts the HD detail mix ratio.	
				• Comb	Adjusts the HD detail comb.	
				Detail Off	Turns the HD detail On/Off.	
				SD DTL Off	Turns the SD detail On/Off.	
			SD ^a	• H/V Ratio	Adjusts the SD detail H/V ratio.	
				• Frequency	Adjusts the SD detail boost frequency.	
				• Mix Ratio	Adjusts the SD detail mix ratio.	
				Detail Off	Turns the HD detail On/Off.	
				SD DTL Off	Turns the SD detail On/Off.	

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
			• Comb	Adjusts the SD detail comb.
			Detail Off	Turns the HD detail On/Off.
			SD DTL Off	Turns the SD detail On/Off.
	Detail 3	HD ^a	• W.Limiter	Adjusts the HD detail white limiter.
			• B.Limiter	Adjusts the HD detail black limiter.
			• Fine	Adjusts the HD fine detail level.
			• Knee Apert	Adjusts the HD knee aperture.
			Fine Detail	Turns the HD fine detail On/Off.
			Knee Aperture	Turns the HD knee aperture On/Off.
		SD ^a	• W.Limiter	Adjusts the SD detail white limiter.
			• B.Limiter	Adjusts the SD detail black limiter.
			• Coring	Adjusts the coring for SD cross color reduction.
			• Level	Adjusts the level for SD cross color reduction.
			Crs Col Reduce	Turns the cross color reduction On/Off.
	Cross Color Suppression		• CCS Level	Adjusts the level for cross color suppression.
			• N.Level	Adjusts the notch level.
			• Frequency	Adjusts the notch frequency.
CCS			Turns the cross color suppression On/Off.	
Paint 5/8	Knee Point		R/G/B/Master	Adjusts the knee point.
			Knee Off	Turns the knee On/Off.
	Knee Slope		• R/G/B/Master	Adjust the knee slope.
			Knee Off	Turns the knee On/Off.
	Matrix	Matrix1	• R-G/G-B/B-R	Adjusts the matrix coefficients.
				User Matrix
Preset Matrix				Turns the preset matrix On/Off.
Matrix Off				Turns all the matrixes On/Off.

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>	
		Matrix 2	• R-B/G-R/B-G	Adjusts the Matrix coefficients.	
			User Matrix	Turns the user matrix On/Off.	
			Preset Matrix	Turns the preset matrix On/Off.	
			Matrix Off	Turns all the matrixes On/Off.	
	Multi-Matrix			• Phase	Adjusts the multi matrix phase.
				• Hue	Adjusts the multi matrix hue.
				• Sat	Adjusts the multi matrix saturation.
				Multi Matrix	Turns the multi matrix On/Off.
				Matrix Off	Turns all the matrixes On/Off
				All Clear	Clears all the matrix settings.
	Paint 6/8	Gamma/Knee		• Gamma	Adjusts the master gamma.
• Blk Gamma				Adjusts the master black gamma.	
• Knee Point				Adjusts the master knee point.	
• Knee Slope				Adjusts the master knee slope.	
Gamma Off				Turns the gamma On/Off.	
Knee Off				Turns the knee On/Off.	
Knee Saturation				• Knee Point	Adjusts the master knee point.
				• Knee Slope	Adjusts the master knee slope.
				• Level	Adjusts the knee saturation.
				Knee Off	Turns the knee On/Off.
				Knee Sat	Turns the knee saturation On/Off.
Low Key Saturation				• Level	Adjusts the low key saturation level.
				Low Key Sat	Turns the low key saturation On/Off.
White Clip				• R/G/B/Master	Adjusts the white clip.
				White Clip Off	Turns the white clip On/Off.

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>	
Paint 7/8	Gamma Table		• Standard	Adjusts the gamma table.	
			• User	Adjusts the user gamma table.	
			Standard	Selects the standard gamma table.	
			User	Selects the user gamma table.	
			Gamma Off	Turns the gamma On/Off.	
	Auto Knee		• Point Limit	Adjusts the point limit for auto knee.	
			• Auto Slope	Adjusts the knee slope for auto knee.	
			Adaptive	Turns the adaptive highlight control for auto knee On/Off	
	Auto Iris			Knee Off	Turns the knee On/Off.
				• Phase	Adjusts the skin tone auto iris phase.
				• Width	Adjusts the skin tone auto iris width.
				Normal Mode	Selects Normal mode for auto iris.
				Skin Mode	Selects Skin mode for auto iris.
				Iris Auto Hue	Executes the auto hue.
	ECS/S-EVS			Auto Iris Gate	Turns the skin tone auto iris gate On/Off.
				• Shutter	Adjusts the shutter speed.
				• ECS	Adjusts the ECS frequency.
				• S-EVS	Adjusts the Super EVS.
				Shutter	Turns the shutter mode On/Off.
				ECS	Turns the ECS mode On/Off
Paint 8/8	SD Gamma		S-EVS	Turns the Super EVS mode On/Off.	
			• SD Gamma	Adjusts the SD gamma.	
			• Blk Gamma	Adjusts the black gamma.	
			M Gamma	Adjusts the master gamma.	
			Gamma Off	Turns the gamma On/Off.	

Table 3-1: Paint Menu

<i>Page</i>	<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
	Cross Color Reduce		• Comb	Adjusts the comb for cross color reduction.
			• Coring	Adjusts the coring for cross color reduction.
			• Level	Adjusts the level for cross color reduction.
			Crs Col Reduce	Turns the cross color reduction On/Off.

3.8.2 Maintenance Menu

Table 3-2: Maintenance Menu

<i>Menu</i>	<i>2ndary Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>	
Adjusting	Black Shading	R/G/B	• H Saw/H para/ V Saw/V Para	Adjusts the black shading.	
			Auto B Shading	Executes the auto black shading.	
	White Shading	R/G/B	• H Saw/H para/ V Saw/V Para	Adjusts the white shading.	
			Auto W Shading	Executes the auto white shading.	
	Phase	H Phase	• H Step	Adjusts the H phase.	
			• H Coarse		
			• H Fine		
		SC Phase	• SC	Adjusts the SC phase.	
			• BF	Adjusts the black burst signal phase.	
	Auto Iris			• (patterns)	Selects the Auto Iris patterns.
				• Level	Adjusts the auto iris level.
				• APL Ratio	Adjusts the auto iris APL ratio.
			• Iris Gain	Adjusts the auto iris gain.	

Table 3-2: Maintenance Menu

<i>Menu</i>	<i>2ndary Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
Auto Setup	Auto White			Performs automatic white balance adjustment.
				Performs automatic black balance adjustment.
				Performs automatic white shading adjustment.
				Performs automatic black shading adjustment.
				Performs automatic level adjustment.
				Performs automatic skin detail auto hue adjustment.
	Auto Hue	Skin Detail 1		Performs the corresponding automatic skin detail auto hue adjustment.
	Skin Detail 2			
	Skin Detail 3			
			Skin Auto Iris	Performs skin tone auto iris adjustment.
Camera Config	Preset Matrix		SMPTE-240M	Sets the preset matrix.
			ITU-709	
			SMPTE Wide	
			NTSC	
			EBU	
			ITU-601	

Table 3-2: Maintenance Menu

Menu	2ndary Menu	Submenu	Control Item	Function	
RM Config	RM Adjusting	Buzzer Volume	• Call	Adjusts the volume of the call buzzer.	
			• Touch	Adjusts the volume of the response sound of the touch panel.	
			• Switch	Adjusts the volume of the confirmation sound of self-illumination switches.	
			• Master	Adjusts the total buzzer sound volume.	
			Call Buzzer	Turns the call buzzer On/Off.	
			Touch Click	Turns the response sound of the touch panel On/Off	
			SW Click	Turns the confirmation sound of switches On/Off.	
			All Off	Turns all the buzzers On/Off.	
		LED Brightness	• Switch	Adjusts the brightness of the corresponding LEDs.	
			• Other		
			• Master	Adjusts the master brightness of the LED's	
		Date/Time	Date	• Year	Adjusts the date for the built-in clock of this unit.
				• Month	
				• Day	
	Set				
	Cancel				
	Time		• Hour	Adjusts the time for the built-in clock of this unit.	
			• Minute		
			• Second		
			Set		
Cancel					
SW Setting	Active Mode Setting	Active Mode	Switches the mode of the Panel Active button. Mode 2. Full/Lock Mode 3. Full/Part/Lock.		
	Test	Test Mode	Select the signal to be output when pressing the Test button (Saw, 3Step, 10Step).		
	VTR Start/Stop	SW Mode	Switches between VTR and Call functions.		
Cable Comp		Length	Sets the cable compensation value when using the video signals.		
VR Setting	White R/B	ABS/REL	Switches between Absolute and Relative modes for manual white adjustment.		
		Scale	Selects the variable range of the white level in relative mode (1/1, 1/2, 1/4).		

Table 3-2: Maintenance Menu

Menu	2ndary Menu	Submenu	Control Item	Function
		Black R/B	ABS/REL	Switches between Absolute and Relative modes for manual black adjustment.
		Master Black	ABS/REL	Switches between Absolute mode and Relative mode for master black adjustment.
			Scale	Selects the variable range of the master black level in Relative mode (1/1, 1/2, 1/4).
		Iris	ABS/REL	Switches between Absolute mode and Relative mode for manual iris adjustment.
			• Min	Sets the minimum iris level.
		• Max	Sets the maximum iris level.	
	Information			Displays the software version of this unit.
Security			Sets the security requirements of this unit.	
LCD	LCD Brightness		• Bright	Adjusts the brightness of the LCD of this unit.
File	Reference File Store			Stores a reference file.
	Reference File Transfer		CAM → MS	Transfers a reference file (from a camera to a Memory Stick).
			MS → CAM	Transfers a reference file (from a Memory Stick to a camera).
	Scene File Transfer		CAM → MS	Transfers a scene file (from a camera to a Memory Stick).
			MS → CAM	Transfers a scene file (from a Memory Stick to a camera).
OHB File Store				Stores a OHB file.
Super Motion	Field Rate		[x1, x3]	Sets the field rate when using a Super-Motion camera.
	Frame Interpolation		[Off, A, B, C]	Sets the pattern to make the reference output picture in 3-times mode.
	Flicker Reduction		[Off, Normal, Strong]	Sets the flicker suppression in 3-times mode.
Memory Stick	Memory Stick		Format	Formats a Memory Stick.

3.8.3 Function Menu

Table 3-3: Function Menu

<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
Operation		Filter Ctrl	Selects the filter remote or local mode.
		ND (1/2/3/4/5)	Selects ND filters.
		CC (A/B/C/D/E)	Selects CC filters.
		Gamma	Selects the step gamma.
		Master Gain	Selects the master gain.
		Shutter	Turns the shutter mode On/Off.
		ECS	Turns the ECS mode On/Off.
		• Shutter	Selects the shutter speed.
		• ECS	Selects the ECS frequency.
SW	page 1	5600K	Turns 5600K electric color temperature conversion function On/Off.
		Auto Knee	Turns the auto knee function On/Off. When this button is in inverse video (On), the knee point is automatically adjusted according to the light content of the picture.
		Skin Detail	Turns the skin detail function On/Off.
		Detail Gate	Skin tone detail gate function. When this button is in inverse video (On), the adjustment range of the skin tone detail is displayed in white on the monitor screen.
		Black Gamma	Turns the black gamma function On/Off.
		Knee Aperture	Turns the knee aperture function On/Off.
		Knee Sat	Turns the knee saturation function On/Off.
		Sat	Turns the saturation function On/Off.
		Mono	Turns the mono color function On/Off. This function mixes the chroma signals of a single hue to the luminance signal.
		S-Skin Knee	Turns the Super-skin knee function On/Off.
		Low Key Sat	Turns the function to compensate the chroma level in dark areas On/Off.
		ATW	Turns the auto-tracing white function On/Off.
		PsF	Turns the CCD progressive read function On/Off.

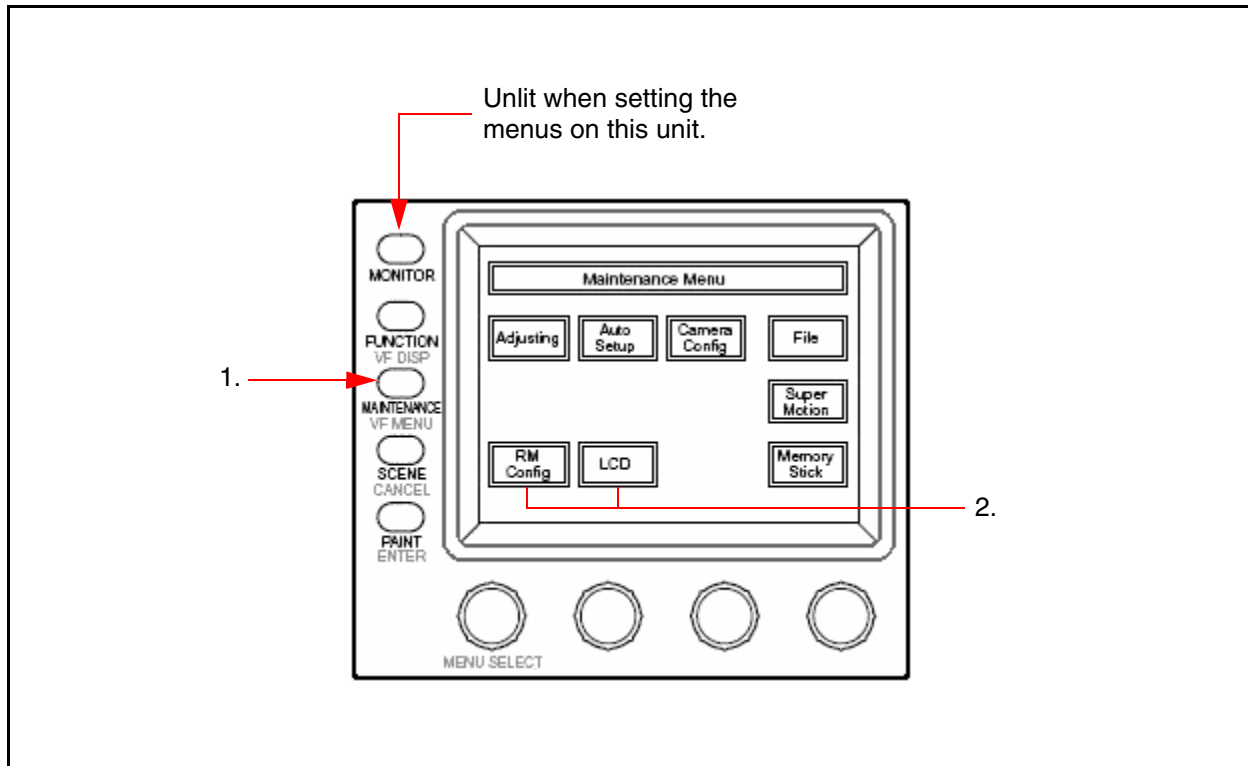
Table 3-3: Function Menu

<i>Menu</i>	<i>Submenu</i>	<i>Control Item</i>	<i>Function</i>
	page 2	Knee Off	Turns the knee compensation function On/Off (Off when lit).
		Gamma Off	Turns the gamma function On/Off (Off when lit)
		Detail Off	Turns the detail compensation function On/Off (Off when lit).
		Matrix Off	Turns the linear matrix function to enhance color fidelity On/Off (Off when lit).
		White Clip Off	Turns the limiter function for highlight signals On/Off (Off when lit).
		Level Dep Off	Turns the level dependence which controls the details in the dark part of a picture On/Off (Off when lit).
		Chroma Off	Turns the chroma function On/Off (Off when lit).
		SD Detail Off	Turns the detail function for SD output On/Off with a HDTV camera connected (Off when lit).
		SD Matrix Off	Turns the linear matrix function for the SD output On/Off with a HDTV camera connected (Off when lit).
White		Preset	Selects the preset white balance setting.
		Memory A	Selects the white balance setting in memory A.
		Memory B	Selects the white balance setting in memory B.

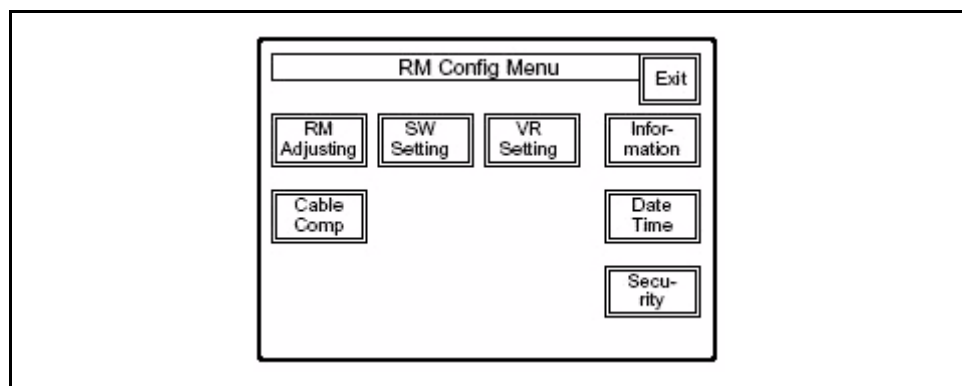
3.9 Setting the Operating Conditions of the RM-B750

By using the RM Configuration menu or LCD setting display, you can set the built-in clock of the RM-B750 and adjust various conditions of the RM-B750, such as the sound volume of the warning buzzer and the brightness of the indicators and LCD.

To display the RM Configuration menu/LCD setting display



1. Press to light the Maintenance button of the menu operation block. The Maintenance menu appears.
2. To display the RM Configuration menu, press RM Config. The RM Configuration menu appears.



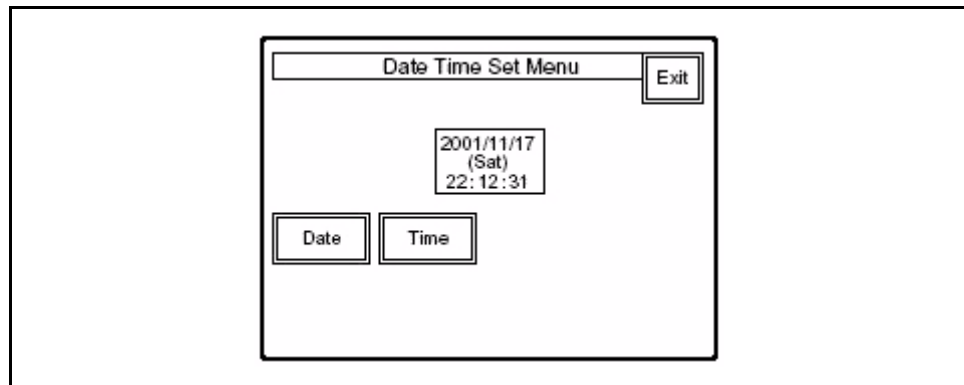
To obtain the LCD setting display, press LCD. The LDC setting display appears.

3.9.1 Setting the Built-in Clock

The RM-B750 has a built-in clock to record the date and time when reference and scene files are saved to Memory Sticks.

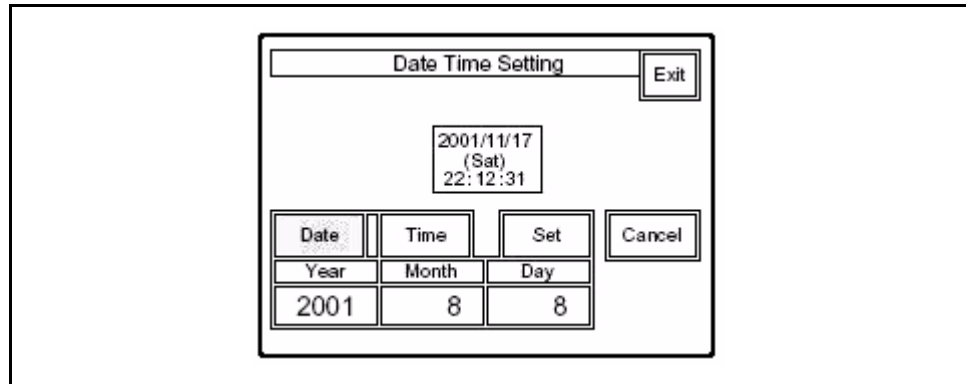
To set the clock, proceed as follows:

Press Date/Time on the RM Configuration menu. The current setting is displayed on the Date/Time Set menu.



To set the date:

1. Press and light Date.



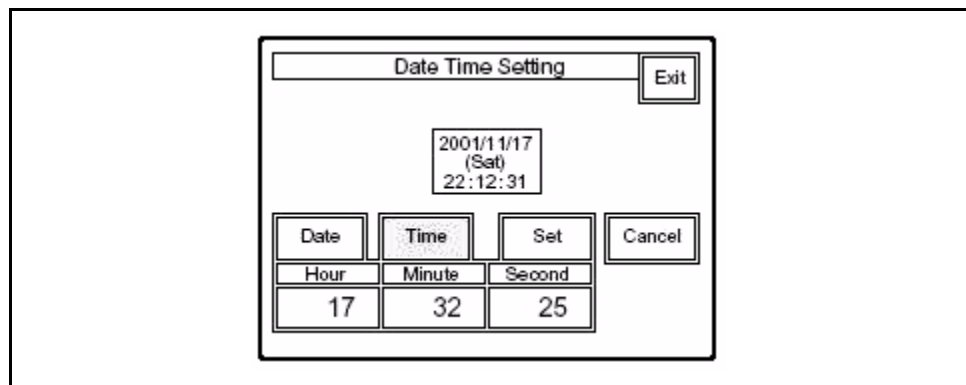
2. Set the Year, Month and Day with the left three control knobs.
3. Press Set.

The set date becomes valid.

To restore the previous setting, press Cancel instead of Set.

To set the time:

1. Press and light Time.



2. Set the Hour, Minute and Second with the left three control knobs.
3. Press Set in synchronization with a time signal

The set time becomes valid.

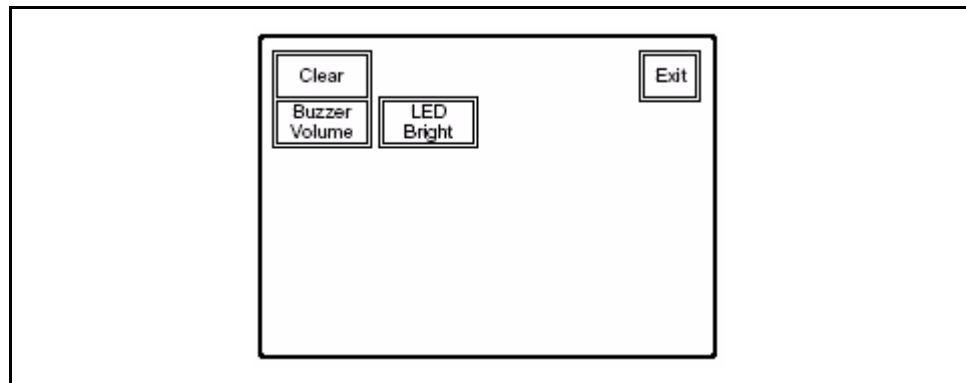
To resume the previous setting, press Cancel instead of Set.

When the clock setting is completed, press Exit to leave the menu.

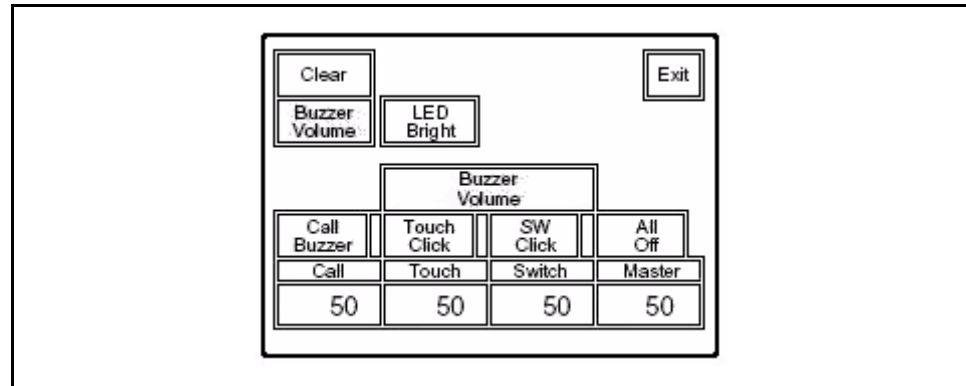
3.10 Adjusting the Buzzer Sound

A buzzer sounds on the RM-B750 when it receives call signal or a panel control is operated. When required, you may turn on/off the buzzer or adjust the sound volume. To adjust the buzzer, proceed as follows:

1. Press RM Adjusting on the RM Configuration menu. The RM adjustment menu appears.



2. Press and light Buzzer Volume. The lower half of the display becomes the Buzzer Volume adjustment display.



- Adjust the levels with the corresponding control knobs (50 is the standard value with all items).

Call: Sound volume of the buzzer when a call signal is received.

Touch: Sound volume of the buzzer when a button displayed on the menu display is operated.

Switch: Sound volume of the buzzer when a button on the panel is operated.

The master volume can be adjusted with the rightmost control knob (Master).

To turn on/off the buzzers independently, press the corresponding button. When it is lit, the buzzer is on.

Call Buzzer: For the buzzer to sound when a call signal is received.

Touch Click: For the buzzer sound when a button displayed on the menu display is operated.

SW Click: For the buzzer sound when a button on the panel is operated.

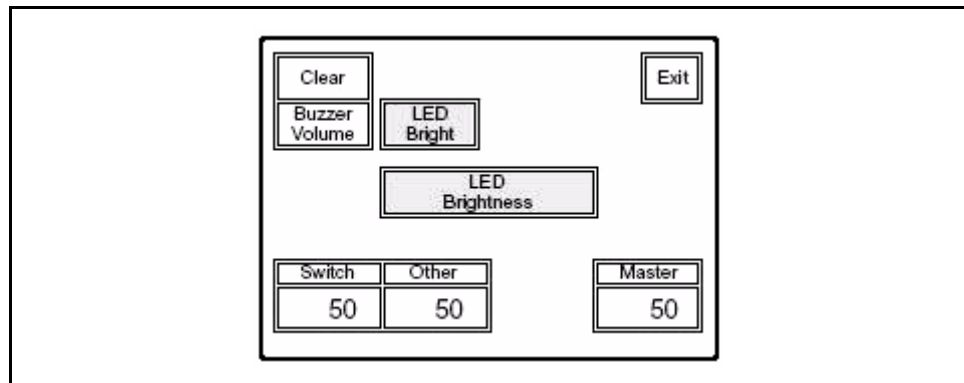
To turn off all buzzers, press and light All Off.

When the adjustment is completed, press Exit to leave the menu.

3.11 Adjusting the Brightness of the LEDs

You can adjust the brightness of the LEDs of the panel buttons and indicators. To adjust the brightness, proceed as follows:

1. Press RM Adjusting on the RM Configuration menu to display the RM adjusting menu.
2. Press and light LED Bright. The lower half of the display becomes the LED Brightness adjustment display.



3. Adjust the brightness with the corresponding control knobs (50 is the standard value with all items).

Switch: Brightness of the built-in LEDs of the control buttons.

Other: Brightness of the other LED indicators/lamps.

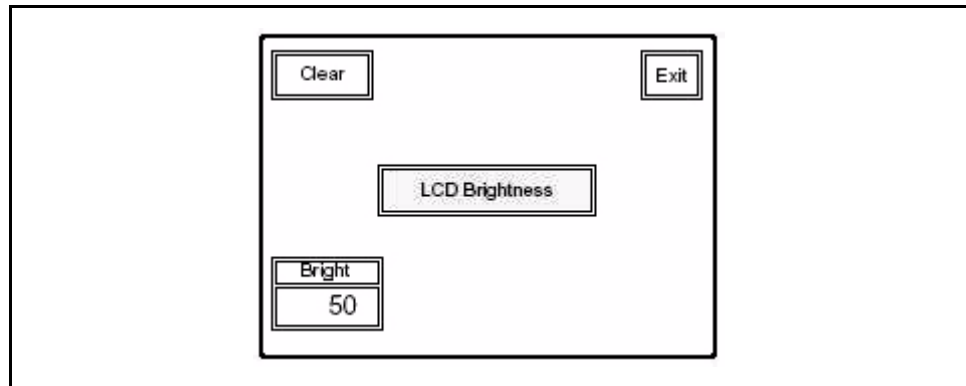
The master brightness can be adjusted with the rightmost control knob (Master).

When the adjustment is completed, press Exit to leave the menu.

3.12 Adjusting the Brightness of the LCD

You can adjust the brightness of the display of the menu control block. Proceed as follows:

1. Press LCD on the Maintenance menu to display the LCD setting display.



2. Adjust the brightness with the leftmost control knob (50 is the standard value).

When the adjustment is completed, press Exit to leave the menu.

UltraMedia HD



Chapter 4: System Troubleshooting

4.1 General

CAUTION

Removing any panels on your system will void your warranty. If any part of the FLIR should require service, contact the customer service department of the nearest FLIR Systems, Inc. authorized service facility. See [Chapter 6: After Sale Support and Service](#).

- Confirm power is available to the system.
- Confirm the power switch is in the ON position.
- Check the circuit breaker on the Camera Body Unit (CBU).
- Check fuse panel on turret for blown fuses. Contact FLIR Systems for additional fuse information.

UltraMedia HD



Chapter 5: Routine Maintenance

5.1 Desiccant Cartridge

The gimbal contains one desiccant cartridge to remove excess humidity from the top assembly. The frequency that the desiccant material requires replacement will depend on the operating environment of the system. Removal and replacement of the desiccant does not require re-purging the system with nitrogen.

5.1.1 Inspection

Figure 5.1
Desiccant Indicator
(FLIR P/N 3205562)

The desiccant cartridge must be checked regularly and changed as necessary. The desiccant module status can be determined by examining the color of the three sections of the indicator located on the end of the desiccant cartridge. The desiccant indicator can be observed by looking at the cartridge through the window on the desiccant cartridge cap. When two sections (20 and 40) of the desiccant indicator are lavender, it is time to change the desiccant cartridge.



To replace the desiccant cartridge, carefully loosen and remove the existing desiccant cartridge. Replace using the approved desiccant (FLIR P/N 3205562). Any other desiccant cartridges in the field are to be replaced using this updated part number.

CAUTION

Do not use old desiccant cartridges that allowed desiccant material to be removed and baked. This new desiccant replaces all previously installed cartridges.

5.1.2 Nitrogen Purge

To keep moisture within the system to a minimum, the sensor package and the turret are filled with dry nitrogen. It is recommended that the nitrogen within the system be replaced at regular intervals (determined by the operational environment and operating frequency), and following any system service (except

desiccant replacement). Contact the FLIR Systems, Inc. Service Department when replacement is required or to acquire the adapter and hose fittings kit.

NOTE

Operation in a humid environment, or salty environment such as near the ocean, will require more frequent dry nitrogen purging than operation in a very dry environment.

CAUTION

Regulated pressure must not exceed 5psig (.35 kg/cm²) or damage to the system may occur. The release valve will automatically open when the pressure reaches 2-3 psi. Purge should continue for approximately 45 minutes after the pressure relief valve opens.

UltraMedia HD



Chapter 6: After Sale Support and Service

This section discusses the warranty for your UltraMedia™ HD and describes how to obtain service for your system. With the purchase of your FLIR Systems, Inc. UltraMedia™ HD, the customer receives the assurance that the product will perform to specifications. FLIR Systems, Inc. strives to maintain the highest standards in design, manufacturing, and the after-sales service of all its products. This philosophy is part of our commitment to you, our customer.

6.1 Warranty

FLIR Systems, Inc. warrants its products to be free from defects in materials and workmanship for a period of 1 year or 1000 hours from the date of invoice to the customer, whichever comes first. This warranty includes other manufacturers' products that are supplied as part of the system. During the 1-year/warranty period, FLIR Systems, Inc. will, at its option, either repair or replace any products found to be defective. No other warranty is expressed or implied,

other than those specifically stated above. FLIR Systems, Inc. specifically disclaims the implied warranties of merchantability and fitness for a particular purpose. This warranty will not apply to defects resulting from:

- Unauthorized modification or misuse
- Improper installation
- Improper or inadequate maintenance by the buyer
- Operation of the system outside of the environmental specifications

6.2 Service Contracts for Customers

FLIR Systems, Inc. and its sales representatives have a variety of standard service contracts that provide on-site and off-site factory service. These factory service programs can ensure the customer quick response time at a fixed cost. If interested in this service, please contact our customer service manager or the local sales representative.

6.3 Product and Repair Service

FLIR Systems, Inc. and its sales representatives provide both in-warranty and out-of-warranty service. Arrangements must be made in advance with the local customer service manager before shipping products for repair. Out-of-warranty service is charged at a fixed hourly rate or on a per repair basis. The customer will be given a quotation for the repair costs before work is started. See Warranty Statement for complete details.

6.4 Module Exchange Program

Many FLIR products are modular in design and can be serviced quickly and less expensively by replacing the complete module assembly. The module exchange program allows customer flexibility to service the products. To get complete information on the module exchange program, please contact the customer service manager.

6.5 Replacement of Spare Parts

FLIR Systems, Inc. maintains an inventory of spare parts ready for fast delivery when required. The Model Number and Serial Number of the unit for which the parts are required will assure that correct parts are supplied. Normally, parts are shipped within 48 hours. In the event a customer requires quicker turnaround time, special handling services are available to meet emergency needs. All prices are F.O.B. EXW factory in Wilsonville, Oregon, U.S.A. unless otherwise noted (Incoterm 2000).

6.6 Recommended Spare Parts Listing

Recommended spare parts listings are available to assist the customer in stocking spare parts on site. FLIR Systems, Inc.'s sales department or the customer service manager can recommend a selection of parts to meet specific needs.

6.7 Repair Procedures

If any part of the FLIR should require service, contact the customer service department of the nearest FLIR Systems, Inc. authorized service facility. If it is ascertained that the defective item must be returned for repair, a return authorization number (RA) will be issued. The defective item should then be packaged and sent

prepaid to the appropriate repair facility. A written description of the problem(s) experienced should accompany the return item. The R.A. should be noted on the report and be printed on the address label. For example:

TO: FLIR Systems, Inc.
27700A SW Parkway Avenue
Wilsonville, OR 97070

Attention: Customer Service Department - R.A. ###

No billable repair will be performed without a purchase order or letter of authorization. Written or verbal estimates will be supplied at customer request. For any warranty or service inquiry, call or refer all correspondence to:

Your Local Distributor -or-

FLIR Systems, Inc.
Customer Service Department
27700A SW Parkway Avenue
Wilsonville, OR 97070
Telephone: 800.868.0639
Fax: 503.498.3907