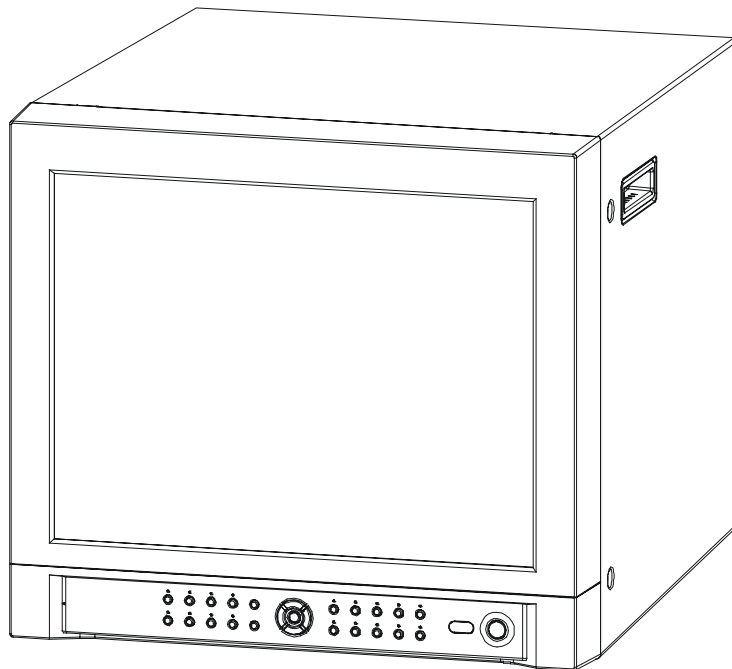


INSTRUCTION MANUAL

21" 8-CHANNEL COLOR MULTIPLEXER MONITOR



Please read this manual thoroughly before use, and keep it handy for future reference.

WARNING AND CAUTIONS

WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.
DO NOT INSERT ANY METALLIC OBJECT THROUGH VENTILATION GRILLS.



CAUTION

DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.

REPLACE ONLY WITH THE SAME OR EQUIPMENT TYPE RECOMMENDED BY THE MANUFACTURER.

DISPOSE OF USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.

Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

PRECAUTIONS

Safety: Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more.

To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

Installation: Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust or mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning: Clean the unit with a slightly damp soft cloth.

Use a mild household detergent. Never use strong solvents such as thinner or benzine as they might damage the finish of the unit.


FCC COMPLIANCE STATEMENT

FCC INFORMATION : 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.

CAUTION : CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.
CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

IMPORTANT SAFEGUARDS

1. READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.
2. RETAIN INSTRUCTIONS – The safety and operating instructions should be retained for future reference.
3. CLEANING – Unplug video monitor or equipment from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
4. ATTACHMENTS – Do not use attachments not recommended by the video monitor or equipment manufacturer as they may result in the risk of fire, electric shock or injury to persons.
5. WATER AND MOISTURE – Do not use video monitor or equipment near water-for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, or the like.
6. ACCESSORIES – Do not place video monitor or equipment on an unstable cart, stand or table. The video monitor or equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.
- 6A. Video monitor or equipment and cart combinations should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn. 
7. VENTILATION – Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the video monitor or equipment and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the video monitor or equipment on a bed, sofa, rug, or other similar surface. Video monitor or equipment should never be placed near or over a radiator or heat register. Video monitor or equipment receiver should not be placed in a built-in installation such as a bookcase unless proper ventilation is provided.
8. POWER SOURCES – Video monitor or equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your video monitor or equipment dealer or local power company. For video monitor or equipment designed to operate from battery power refer to the operating instructions.
9. GROUNDING OR POLARIZATION – This video monitor may be equipment with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Alternate Warnings – This video monitor is equipment with a three-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

10. POWER CORDS – Do not allow anything to rest on the power cord. Do not locate video monitor or equipment where the cord will be to damaged by persons walking on it.
11. HEED WARNINGS – Follow all instructions marked on the video monitor or equipment.
12. LIGHTNING – For added protection for the video monitor or equipment during a lighting storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the video product due to lighting and power-line surges.
13. OVERLOADING – Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.
14. OBJECT AND LIQUID ENTRY – Never push objects of any kind into video monitor or equipment through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.
15. SERVICING – Do not attempt to service the video monitor or equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
16. DAMAGE REQUIRING SERVICE – Unplug the video monitor or equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions :
 - A. When the power-supply cord or the plug has been damaged.
 - B. If liquid has spilled, or objects have fallen into the video product.
 - C. If the video product has been exposed to rain or water.
 - D. If the video product does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the video product to its normal operation.
 - E. If the video product has been dropped, or the cabinet damaged.
 - F. When the video product exhibits a distinct change in performance-this indicates a need for service.
17. REPLACEMENT PARTS – When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.
18. SAFETY CHECK – Upon completion of any service or repairs to this video product, ask the service technician to perform safety checks to determine that the video product is in proper operating condition.
19. FIELD INSTALLATION – This installation should be made by a qualified service person and should conform to all local codes.

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CHAPTER 1

INTRODUCTION

FEATURES

The monitor is an observation system with a color multiplexer processor.

The monitor has revolutionary features not available in most multiplexers. The monitor has sophisticated motion detection system. Motion detection sensitivity can be adjusted and the user can set day and night motion detection schedules. A motion box gives visual indications for easy setup.

The monitor has the following features:

- 21" Flat Color CRT Monitor.
- Compatible with standard color cameras and other standard video sources.
- Switchable between NTSC and PAL automatically according to the video format of camera 1.
- Full triplex operation allows simultaneous recording, playback, and live viewing.
- Forty-six user-selectable display formats. Cameras can be assigned to any display format.
- Multiple monitor outputs (1 Main, 1 Spot) allow simultaneous multi-screen viewing and full-screen viewing.
- Multilingual setup menus include English, French, Italian, German, and Spanish.
- On-screen display includes date, time, sequence, freeze, alarm, motion detection, video loss, audio channel, Pan/Tilt camera, Action box, histogram, and 12-character camera titles.
- Programmable alarm schedule for day and night setting including the motion-detection.
- Motion Box display for visual indications.
- Each camera has two programmable 256-target (16 x 16) motion-detection grids for day and night setting.
- Nonvolatile program memory saves all user settings and protects them against power outages.
- Alarm input polarity is user selectable.
- VCR switch pulse input for synchronization with VCRs having switch pulse feature.
- Linear Zoom in and out up to 32 times.
- Mouse Control.
- IR Remote Control.
- Motorized Dome Camera Pan/Tilt Control.
- Action Control for opening a door remotely using an optional action box.
- Demonstration mode for all screen formats viewing.
- Histogram Equalizer for cameras to increase image contrast.
- Selectable VCR output for Multiplexing mode or main monitor video.
- 256-event alarm history log can be downloaded to PC.

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CHAPTER 2 INSTALLATION

REAR SIDE OF MONITOR

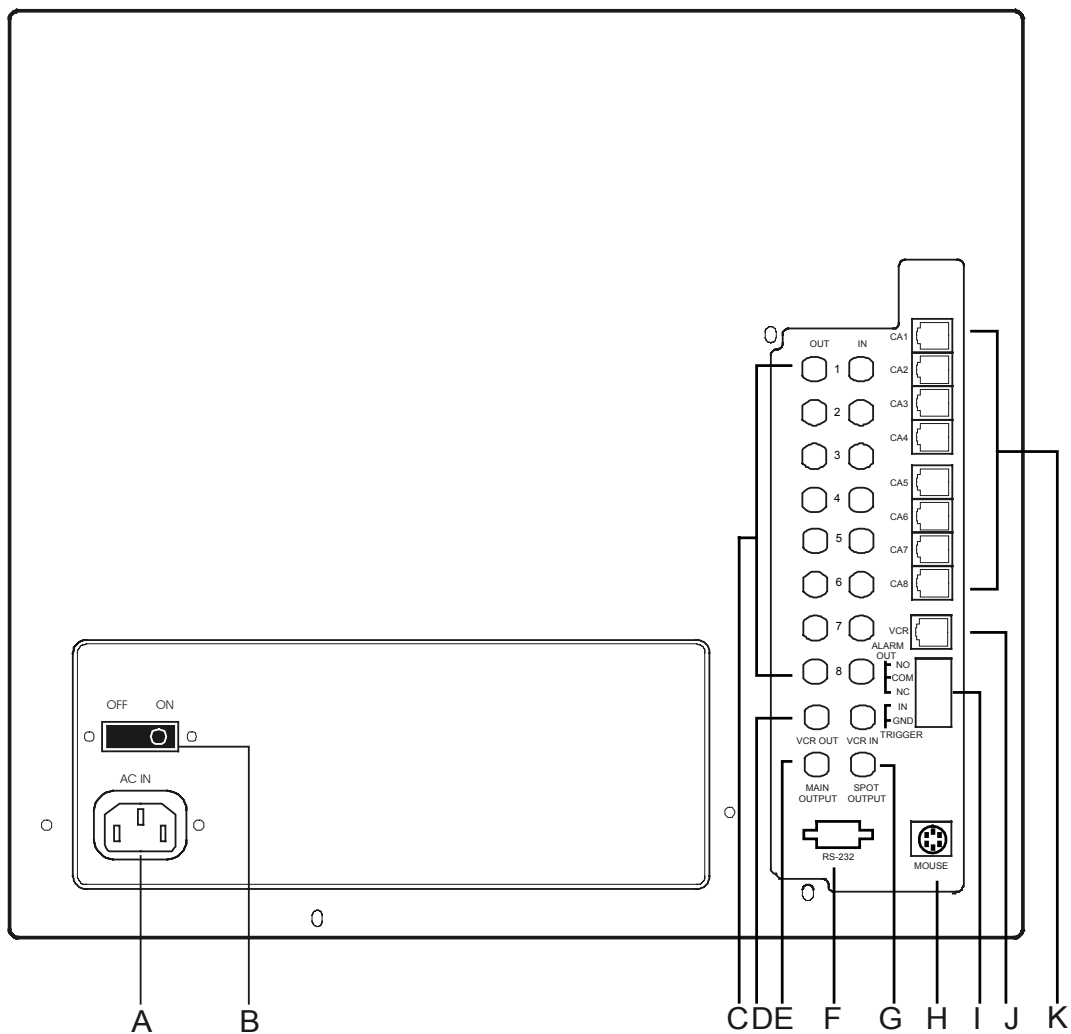
1. GENERAL

The Observation Monitor has easy to use connectors making installations as user-friendly as possible.

2. THE OBSERVATION MONITOR CONNECTIONS

The following connectors are located on the observation monitor.

Monitor Rear View



< OBSERVATION MONITOR CONNECTION LOCATIONS >

- A. AC IN SOCKET – Connect the AC Power cord (supplied) to this socket and to a wall outlet.
- B. MAIN POWER – Set the switch to turn main power on or off.
- C. CAMERA INPUT /OUTPUT BNC CONNECTORS– For camera inputs and video signal loop-out of cameras to standard monitor or to multi-channel DVR.
- D. VCR IN / OUTPUT– BNC jack connector for video output, video input to/from VCR or DVR.
- E. MAIN – BNC jack connector for main output.
- F. RS-232 – DB-9 jack connector for RS-232 communication
- G. SPOT – BNC jack connector for spot output.
- H. MOUSE – DIN jack connector for a mouse.
- I. ALARM OUT– This is a dry relay contact output that changes state whenever an alarm is received on the monitor. The contacts are rated for a maximum of 24 VDC at 1 Amp.
- I. TRIGGER INPUT- This is input for the trigger pulse of VCR or DVR.
- J. VCR – This modular connection is for use with the VCR.
- K. CA 1-8 – These connectors are for observation modular cameras.

Caution: Connectors (CA1-CA8, VCR) are not for connection to telephone line.

VCR

CA1~CA8



1

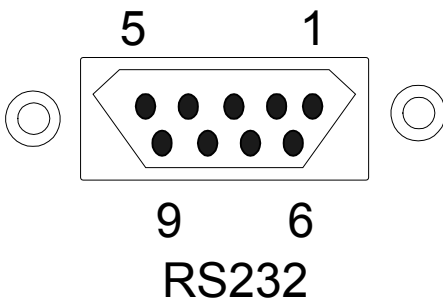


1

Pin 1 ----- Ground
 Pin 2 ----- Audio Out
 Pin 3 ----- Video Out
 Pin 4 ----- Audio In
 Pin 5 ----- Video In
 Pin 6 ----- Ground

Pin 1 ----- Alarm/In
 Pin 2 ----- +15VDC Out
 Pin 3 ----- Intercom Audio Out
 Pin 4 ----- Video In
 Pin 5 ----- Intercom Audio In
 Pin 6 ----- Ground

< Modular jacks >



Pin 2 ----- RX
 Pin 3 ----- TX
 Pin 5 ----- GND
 Pin 9 ----- DN (SW for the program installation)
 Pin 1,4,6,7,8 ----- No Connection

< RS232 CONNECTOR >

MONITOR INSTALLATION WITH CAMERAS

The observation monitor must be installed by qualified service and installation personnel. The installation must be in accordance with all local and federal electrical and building codes.

Perform the following steps to install the observation monitor. **See Figure 1.**

- A. Unpack the observation monitor.
- B. Place the observation monitor in a convenient location.
Do not plug the power cord into a power outlet until step J.

Caution:



The MAIN POWER on the rear of the monitor must be turned off before camera cables are plugged into the camera ports, which are also on the rear of the monitor. Plugging a camera cable into the monitor with the power on could damage the monitor and/or camera.

- C. Select an appropriate location for the cameras.
- D. Install cameras to be connected to the monitor.
- E. Route the assembled cable from the monitor to the camera.

Caution:



Be careful when routing the cable from the camera to the monitor.

Try not to put unnecessary strain on the cable or connectors.

The cable can be damaged if pulled by the connectors.

Do not place the cable next to fluorescent lights; interference may result.

Do not use staples to support the cable, as you may damage the cable.

If the provided camera cable is not long enough, do not substitute a telephone cable.

Using a telephone cable could damage the camera and/or the monitor.

- F. For modular type, plug the cable into the connector port labeled "MONITOR" on the rear of the camera.
- G. For BNC type, plug the cable into the connector port labeled "VIDEO OUT" on the rear of the camera.
- H. Plug the other end of the cable into the corresponding camera connector port on the rear of the monitor. The ports are labeled "CA1" for camera one, "CA2" for camera two, etc.
- I. Repeat steps D through G for additional observation cameras.

Caution:

Do not plug an observation camera and a standard security camera into the same camera port on the rear of the observation monitor; i.e., an observation camera into the RJ-11-E for CA1 and a BNC cabled standard security camera on the BNC input for CA1.

NOTE:

Connecting a cable to the output BNC connector disconnects the termination for that camera input signal, therefore an unused cable should be removed from the BNC connector.

- J. Plug the power cord for the monitor into a power outlet.
- K. Turn on the MAIN POWER switch on the rear of the monitor and the POWER switch on the front of the monitor.
- L. The monitor should display a picture in the 3x3 display mode.

INSTALLATION WITH A VCR OR SECURITY TIME-LAPSE RECORDER

The observation monitor may be installed with a standard VCR, a security event/time-lapse recorder or a digital video recorder. Perform the following steps after installing the monitor. **See Figures 2-1 and 2-2**

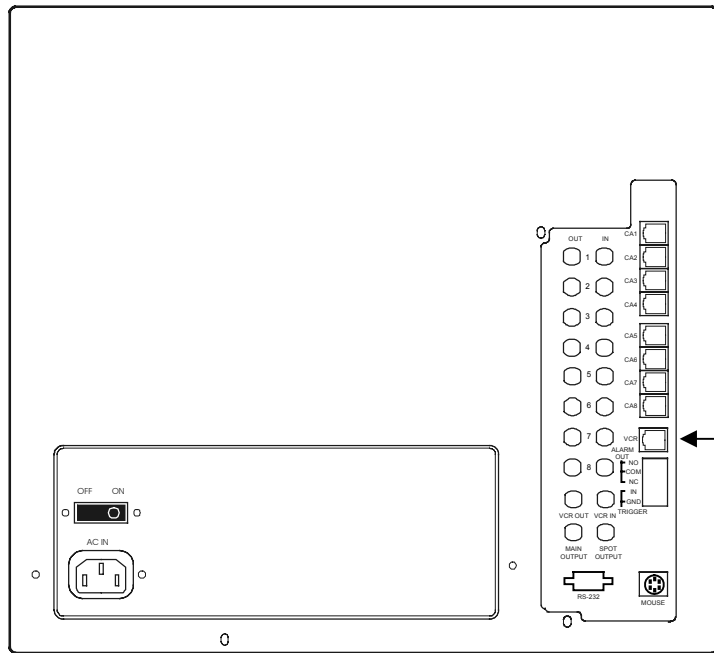
- A. Obtain the following equipment:
 - a. Recorder
 - b. VCR interconnection cable
 - c. Videotape (if using VCR)
- B. Place the recorder in a convenient location.
(usually within reach of the observation monitor)
- C. Turn OFF the MAIN POWER switch on the observation monitor.
- D. Plug the Modular connector of the VCR interconnection cable into the "VCR" port on the rear of the monitor.
- E. For modular type, connect the "Audio In" connector to the "Audio In" port on the VCR or DVR.
- F. For modular type, connect the "Audio Out" connector to the "Audio Out" port on the VCR or DVR.
- G. For modular type, connect the "Video In" connector to the "Video In" port on the VCR or DVR.
Use a RCA to BNC adapter if necessary.
- H. For modular type, connect the "Video Out" connector to the "Video Out" port on the VCR or DVR.
Use a RCA to BNC adapter if necessary.
- I. For BNC type, connect the "VCR Output" port on the monitor to the "Video In" port on the VCR or DVR using the BNC cable and the "VCR Input" port on the monitor to the "Video Output" port on the VCR or DVR using the BNC cable.
- J. Plug the power cord for the recorder into a power outlet.
- K. Turn on the MAIN POWER switch for the observation monitor, and the POWER switch on the front of the monitor.
- L. Press the VCR button on the front of the monitor.
A 3x3 multi-screen picture should be displayed on the monitor.
- M. Program the recorder using the manufacturer's instructions.
- N. Press the VCR button on the front of the monitor to return to a normal operation mode.
- O. Start recording using the manufacturer's instructions.



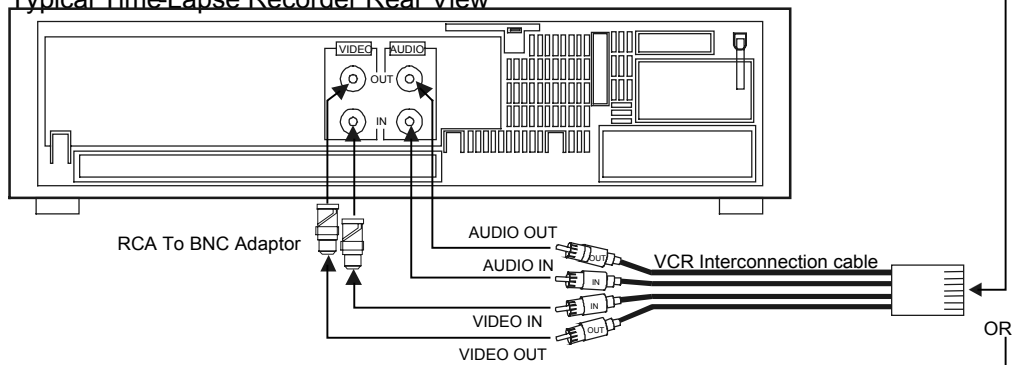
Caution:

User must use only one of the modular and BNC cables for the VCR input.

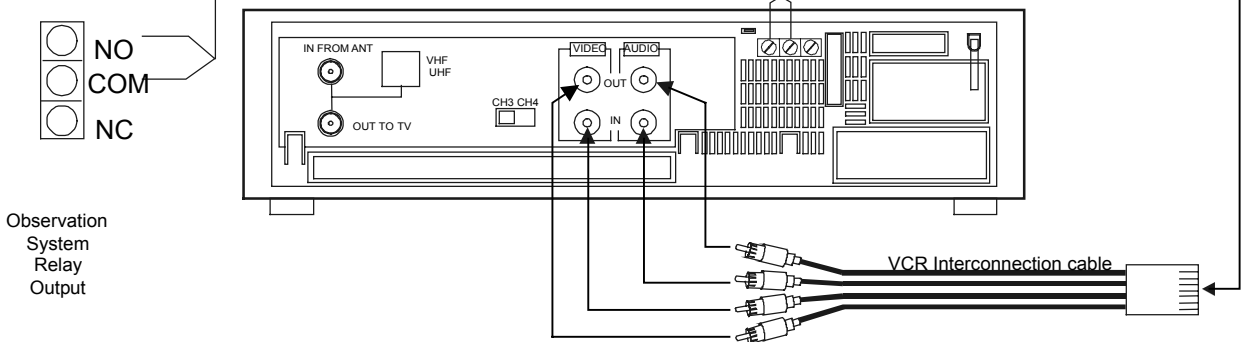
Monitor Rear View



Typical Time-Lapse Recorder Rear View

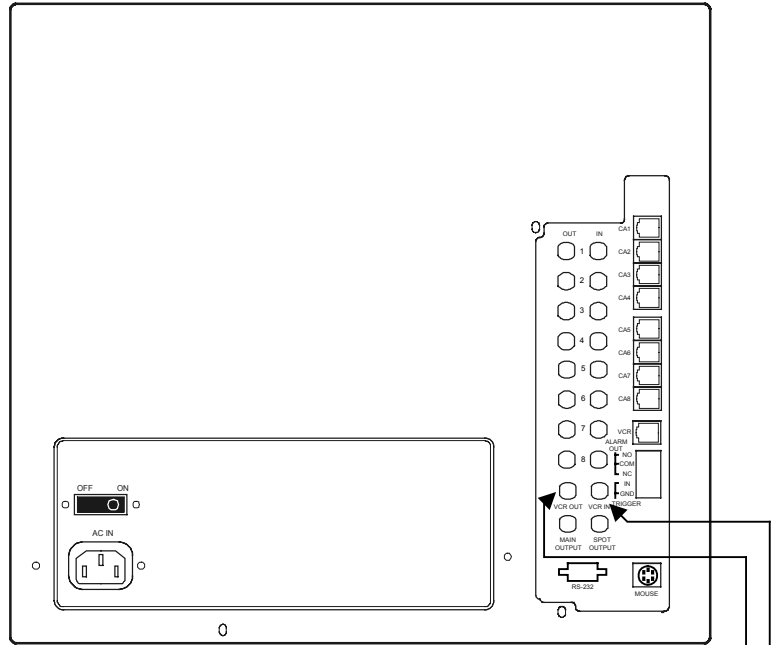


Typical Event Recorder Rear View

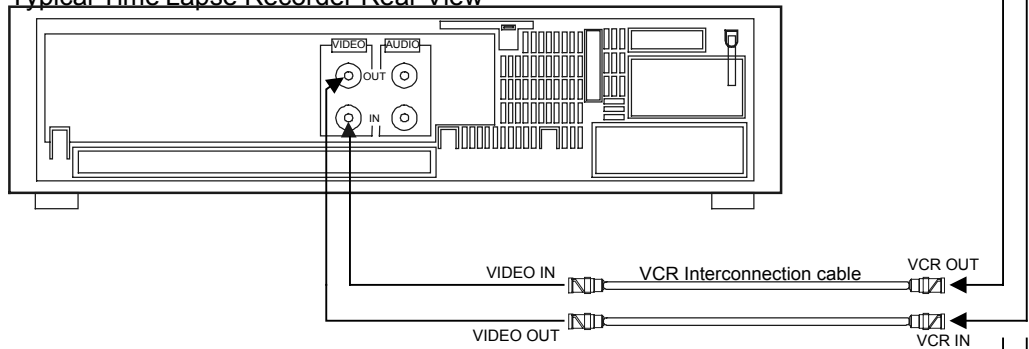


<FIGURE 2-1> OBSERVATION MONITOR WITH A RECORDER (Modular Type)

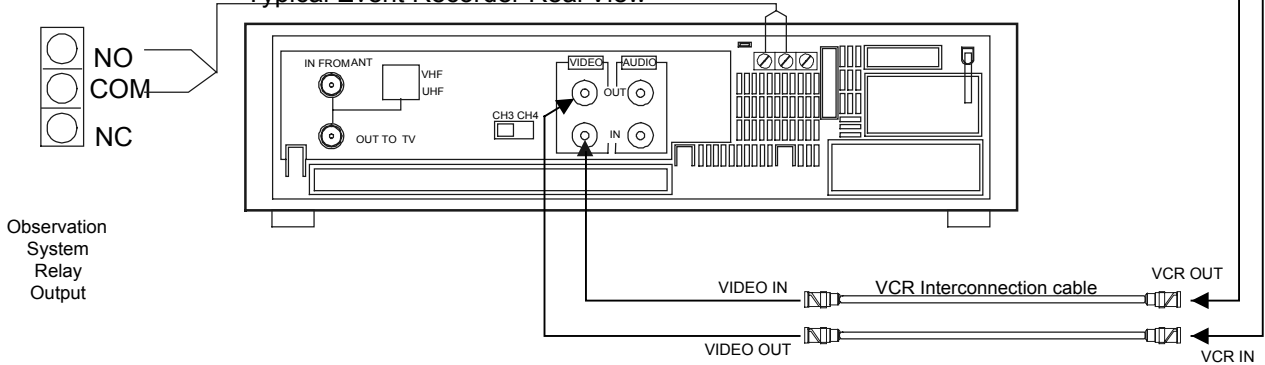
Monitor Rear View



Typical Time-Lapse Recorder Rear View



Typical Event Recorder Rear View



<FIGURE 2-2> OBSERVATION MONITOR WITH A RECORDER (BNC Type)

Installation with Alarm Devices

The monitor can annunciate alarms and activate a recorder or other external alarm device when an alarm is received at the observation monitor.

Perform the following steps after the installation of the monitor. **See Figure 3**

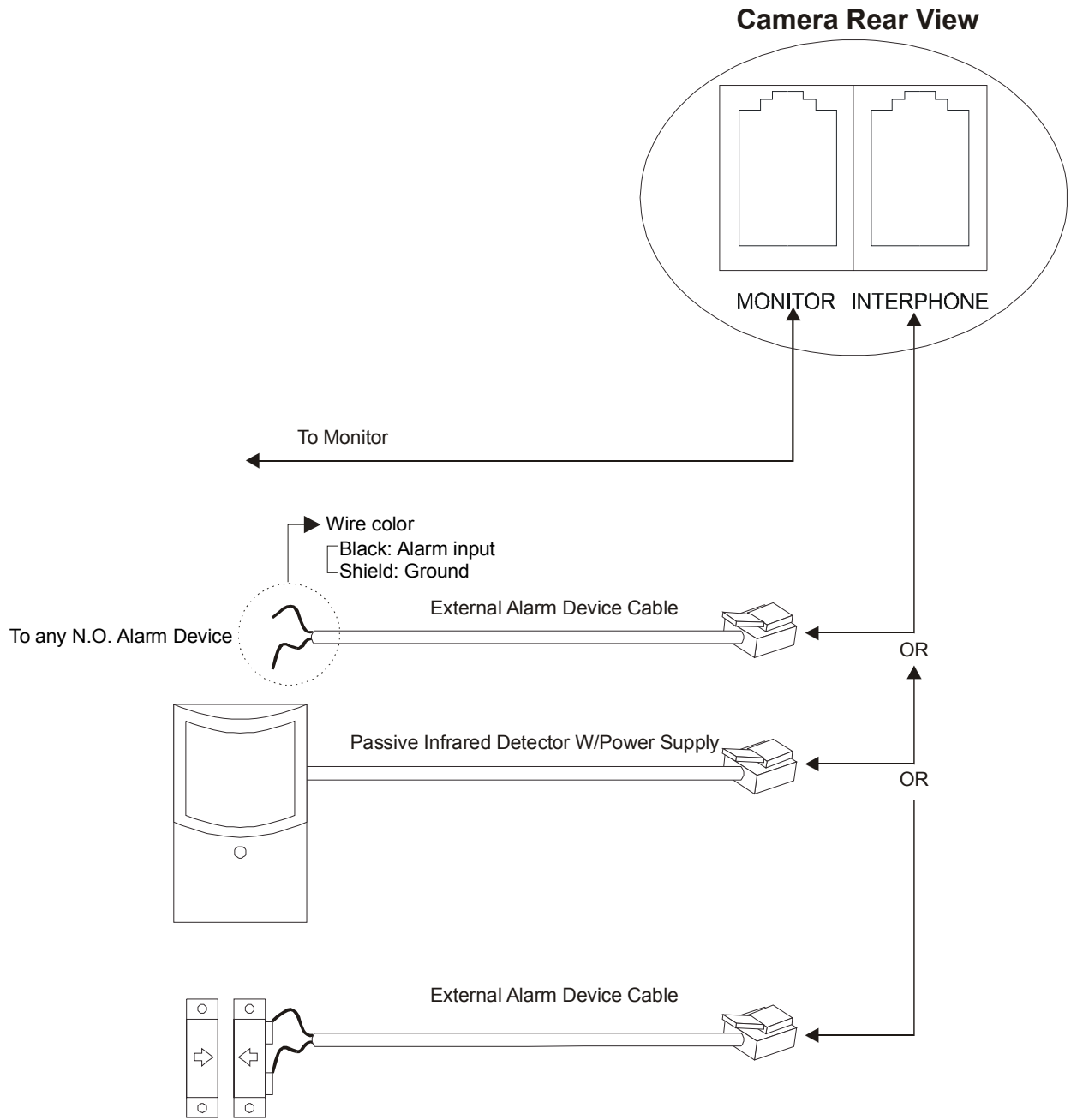
- A. Obtain one of the alarm device units
- B. Locate a suitable location for the alarm device.
- C. Mount the alarm device using the manufacturer's instructions.
- D. Route the alarm device cable from the alarm device to the observation camera.
- E. Connect the ends of the cable to the alarm device following the manufacturer's instructions.
- F. Turn OFF the MAIN POWER switch on the observation monitor.
- G. Plug the RJ-11-E connector of the alarm device cable into the interphone port, on the rear of the camera or plug a dual alarm interface adapter into the interphone port and plug the alarm device cable(s) into the dual alarm interface adapter.

Caution:

Be careful when routing the cable from the camera to the alarm device. Try not to put unnecessary strain on the cable or connectors. The cable can be damaged if pulled by the connectors. Do not place the cable next to fluorescent lights; interference may result. Do not use staples to support the cable, as you may damage the cable. If the provided camera cable is not long enough, do not substitute a telephone cable. Using a telephone cable could damage the camera and/or alarm device. Alarm cable may be added to the alarm device cable if it is not long enough. All connections should be properly connected and insulated to prevent electrical shock and fire hazards.

- H. Turn on the MAIN POWER switch for the observation monitor and the POWER switch on the front of the monitor.

Place the monitor in the desired operating mode.



<FIGURE 3> ALARM DEVICE INSTALLATION (MODULAR TYPE)

INSTALLATION WITH A TWO-WAY INTERCOM

The monitor has the ability to have a two-way intercom between the monitor and the camera location.

Perform the following steps after installing the monitor. **See Figure 4.**

- A. Obtain an intercom station.
- B. Select a suitable location for the intercom station. The typical mounting height should be between 30" and 42" above the floor for easy access.
- C. Route the intercom cable from the observation camera to the intercom station.
- D. Plug one end of the cable into the jack on the rear of the intercom station.
- E. Turn OFF the MAIN POWER switch on the observation monitor.
- F. Plug the RJ-11-E connector of the intercom cable into the interphone port, on the rear of the camera.

Caution:

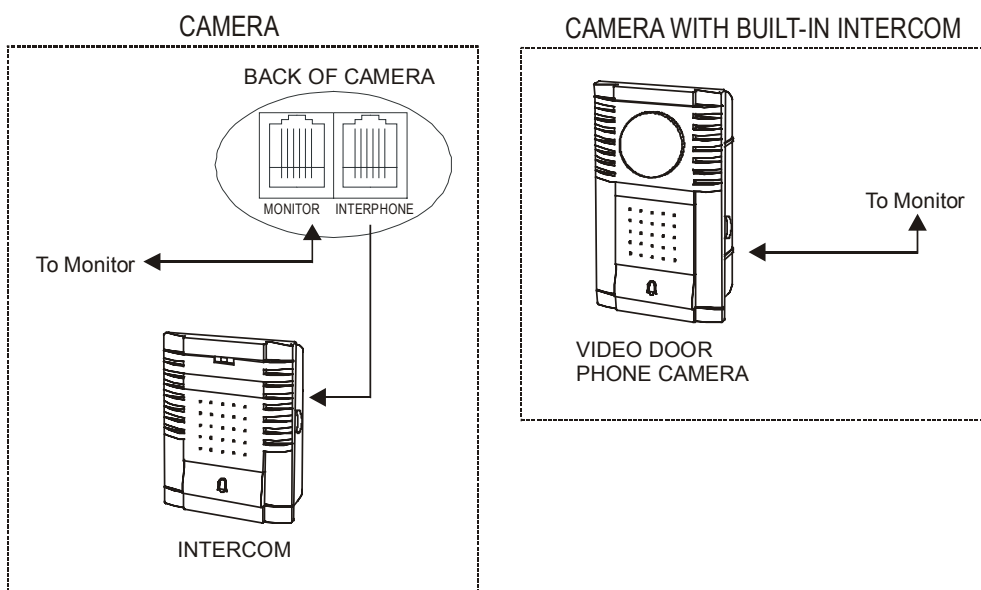
Be careful when routing the cable from the camera to the intercom station.

Try not to put any unnecessary strain on the cable or connectors.

The cable can be damaged if pulled by the connectors.

Do not place the cable next to fluorescent lights; interference may result. Do not use staples to support the cable, as you may damage the cable. If the provided camera cable is not long enough, do not substitute a telephone cable. Using a telephone cable could damage the camera and/or alarm device.

- G. Turn on the MAIN POWER switch for the observation monitor, and the POWER switch on the front of the monitor.
- H. Place the monitor in the desired operating mode.



<FIGURE 4> TWO-WAY INTERCOM INSTALLATION

CONNECTING THE MOUSE

The supplied mouse may be used to control the multiplexer monitor. If you plan to use the mouse, connect it to the mini-DIN connector labeled **MOUSE** on the rear of the monitor.

The monitor is not compatible with all mouse devices available in the market, so note that users are recommended to use the Logitech mouse (Ball mouse only).

- A. Obtain the mouse.
- B. Turn OFF the MAIN POWER switch on the observation monitor.
- C. Plug the connector of the mouse cable into the mouse port on the rear of the monitor.
- D. Turn on the MAIN POWER switch for the observation monitor and the POWER switch on the front of the monitor.
- E. Place the monitor in the desired operating mode.

NOTE:

If you connect a mouse to the monitor when the main power is on, the operation of the mouse will not function properly. The Mouse connection should be performed when the main power is off. If the operation of the mouse still doesn't function properly, execute the mouse setup in the unit setup menu.

CONNECTING AN ACTION BOX

The monitor has the ability to control an action box to remotely open a door.

Perform the following steps after installing the monitor.

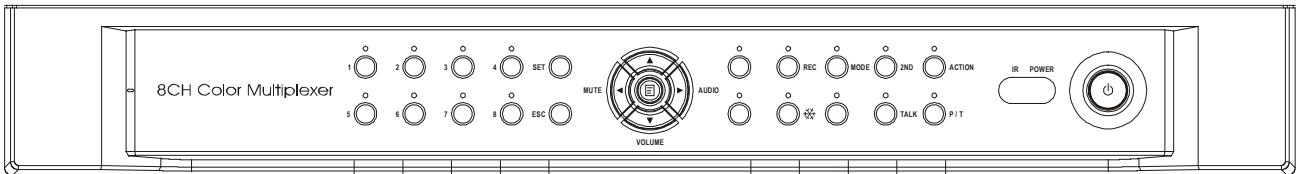
- A. Obtain an Action Box (optional accessory item).
- B. Turn OFF the MAIN POWER switch on the observation monitor.
- C. Place the Action Box in a convenient location near the Camera (within reach of the 16 ft cable).
- D. Connect the Action Box to the Camera by routing the cable between the "CAMERA" port on the Action Box and the "MONITOR" port on the camera.
- E. Connect the Action Box to the monitor by routing the camera cable between the "INPUT" port on the Action Box to the one of the camera inputs on the rear of the monitor.
- F. Turn on the MAIN POWER switch for the observation monitor and the POWER switch on the front of the monitor.
- G. Place the monitor in the desired operating mode.

Refer to the action box manual for more details.

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CHAPTER 3 OPERATION




The monitor can be controlled using the buttons on the front panel, the wireless remote controller, or the supplied mouse device.



< Figure 5 > Front Panel

Buttons and Their Functions

1~8	These buttons are used to display a camera in the full-screen displayed mode.
SET	This button has several functions; it brings up a Popup Menu, sets selections on the OSD menus and decreases numbers in the number setup function. Press SET to bring up the active window box of the cameo then SET to enter the Popup Menu or to set a selected item from on of the menus.
ESC	This button has several functions; it acts as an exit button, clears the active window box of the cameo and increases numbers in the number setup function. Press ESC to cancel entries, exit some Popup menu or to increase the number.
MENU 	The MENU button will place the unit in the programmable setup mode. Pressing MENU again exits the MAIN menu and returns to the previous mode.
ARROW	The Up , Down , Left and Right buttons are used whenever you need to move the cursor, while the active window box of the cameo is displayed. Without the active window box of the cameo, these buttons have other functions as below.
MUTE (LEFT)	Press MUTE to set the audio level to the minimum level when the active window box is not displayed.
AUDIO (RIGHT)	This button brings up the audio selection box when the active window box is not displayed.
Volume UP/DOWN	When the active window box is not displayed, the DOWN button is used to decrease the volume level and the UP button is used to increase the volume level.
VCR 	Press VCR to switch the monitor into VCR playback mode. Press 2nd and then VCR to switch the monitor to preview mode. Set the monitor to the preview mode to watch the general video source without the multiplexing camera signal.

<p>SEQ</p> 	<p>Press SEQ while in the Full-Screen Mode to start or stop a sequence.</p> <p>Press SEQ to start or stop sequence after selecting a cameo while in the multi-screen mode in the live mode only. Press 2nd and SEQ to start or stop Spot Sequences.</p>
<p>REC</p>	<p>Press REC and then a camera button to put that camera in the panic record mode.</p>
<p>FREEZE</p> 	<p>Press FREEZE to freeze or unfreeze the video from the currently selected camera.</p> <p>Press ESC then FREEZE to freeze or unfreeze the video from all the cameras.</p>
<p>MODE</p>	<p>The MODE button is used to change between 3x3, Quad1, Quad2, and PIP screen modes in the live mode and between 4x4, 3x3, Quad1, and Quad2 screen modes in the playback mode.</p> <p>Press 2ND then MODE to change the display mode from User Defined 1 screen mode to User Defined 4 screen mode in the live mode only.</p> <p>The LED above the MODE button is illuminated during the operation.</p>
<p>ZOOM</p> 	<p>Press ZOOM to enter or exit the Zoom Mode.</p>
<p>2ND</p>	<p>This 2ND button has several functions;</p> <ul style="list-style-type: none"> • Press 2ND then camera number button to display the camera in the full-screen mode on the Spot monitor. • Press 2ND and SEQ to start or stop the sequence display on the Spot monitor. • Press 2ND and then VCR to switch the monitor to preview mode. • Press 2ND then MODE to change the display mode from User Defined 1 screen mode to User Defined 4 screen mode. <p>The LED above the 2ND button is lit during the operation.</p>
<p>TALK</p>	<p>Press and hold the TALK button to send audio from the monitor's built-in microphone to the selected intercom or door video camera.</p>
<p>P/T</p>	<p>Press P/T to control the Pan / Tilt camera. The LED above the P/T button will be illuminated when the Pan / Tilt camera is installed.</p>
<p>ACTION</p>	<p>Press ACTION to activate the relay of the action box when an action box is installed. The Action control box icon will be displayed on screen. Press SET on the On icon.</p>
<p>POWER</p>	<p>Press POWER to turn the monitor ON. Press POWER again to turn the monitor OFF. The power LED illuminates while the power switch is in the ON position. The main power switch is located on the back of the monitor.</p>
<p>MIC</p>	<p>Through this microphone, you can communicate to the camera intercom.</p> <p>Hold down TALK while you talk.</p>
<p>SPEAKER</p>	<p>Sound from the camera locations or VCR playback audio can be monitored from the internal speaker.</p>

Accessing Menu Bars

The monitor uses On-Screen Display (OSD) menus. There are three menus: Top, Bottom, and a Popup menu. You can navigate through these menus using the mouse or the arrow buttons.

When the active window box is displayed by pressing SET button, moving the active window box to the top edge of the screen using UP button displays the Top Menu Bar and moving the active window box to the bottom edge of the screen using DOWN button displays the Bottom Menu Bar.

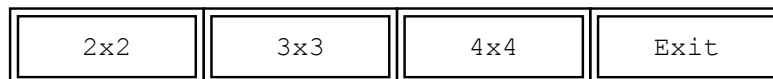
Moving the mouse cursor to the top edge of the screen accesses the Top Menu Bar. Moving the mouse cursor to the bottom edge of the screen accesses the Bottom Menu.



< Figure 6 > Top Menu Bar

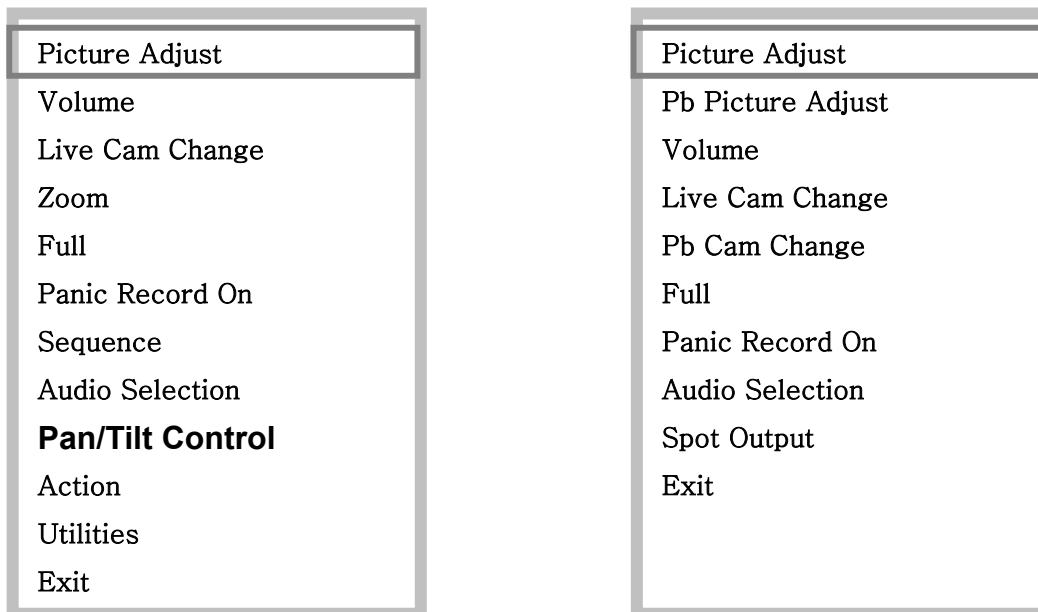


< Figure 7 > Bottom Menu Bar in the live Mode

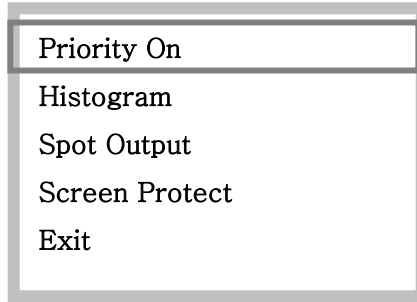


< Figure 8 > Bottom Menu Bar in the VCR Mode

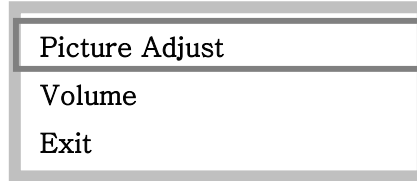
When the active window box is displayed by pressing SET button, pressing SET again displays the Popup Menu. Clicking the right button of the mouse brings up the Popup Menu. The Popup Menu may vary according to the situation.



< Figure 9 > Popup Menu in the Live Camera and in the playback camera



< Figure 10 > Popup Menu of the Utilities in the Live Camera



< Figure 11> Popup Menu in the preview mode

Clicking the left button of the mouse will freeze the cameo window while the active window box is displayed. Clicking the left button of the mouse again will unfreeze the cameo window while the active window box is displayed. Clicking the left button of the mouse will freeze the entire screen while the active window box is not displayed. Clicking the left button of the mouse again will unfreeze the entire screen while the active window box is not displayed.

Picture Adjust

Button	Pressing SET will display the active window box on the cameo. At that time pressing SET again will bring up the Popup Menu. Select the Picture Adjust . Pressing SET will display the picture adjustment screen. Select the button icon you want to adjust using UP key or DOWN key. Press ESC to increase the value and press SET to decrease the value. To exit, press SET after selecting the Exit button icon using UP key or DOWN key.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking the Picture Adjust will display the picture adjustment screen. Click the right button to increase the value and click the left button to decrease the value while the cursor is located on the button icon. To exit, click the left button on the Exit button icon.
Remote Controller	Pressing PICTURE will display the picture adjustment screen. Select the button icon you want to adjust using UP key or DOWN key. Press ESC to increase the value and press SET to decrease the value. To exit, press PICTURE again.



< Figure 12> Picture Adjust

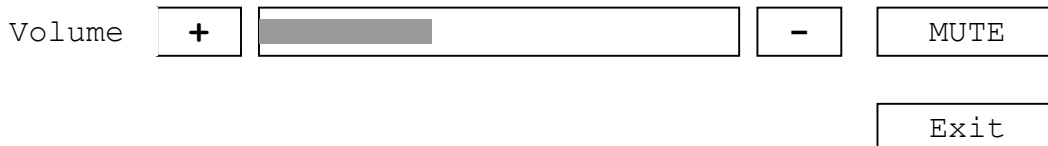
Volume Control

Button	Pressing ESC will cause the active window box on the cameo to disappear. At that time pressing VOLUME UP/ DOWN will increase / decrease the volume level. To exit, press ESC . To mute, press LEFT (MUTE) .
Remote Controller	Press VOLUME UP or VOLUME DOWN . To mute the volume, press MUTE . To exit, press ESC .



< Figure 13-1> Volume Control

Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking Volume will display the volume control screen. To increase the volume, click + button icon. To decrease the volume, click - button icon. To mute the volume, click MUTE button icon. To exit, click Exit button icon.
-------	---



< Figure 13-2> Volume Control

Audio Selection

The audio source is automatically changed to the same camera number as the current displayed camera screen in the full-screen mode.

When user selects the playback mode, the audio source is changed to the VCR or DVR audio input automatically. But the monitor allows you to listen to any audio source using the audio selection function.

Button	Pressing ESC will cause the active box on the cameo window to disappear. At that time pressing RIGHT (AUDIO) will bring up the audio selection box. Select one of the audio sources from the camera selection buttons or the VCR or DVR you want to listen using camera number, UP or DOWN buttons and press SET . To exit, press ESC or press SET after selecting Exit button icon.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking Audio Selection will display the audio selection box.
Remote Controller	Pressing AUDIO will display the audio selection box. Select one of the audio sources from the camera selection buttons or the VCR or DVR you want to listen using camera number, UP or DOWN buttons and press SET . To exit, press ESC or press SET after selecting Exit button icon.

Audio Channel				
1	2	3	4	VCR
5	6	7	8	Exit

< Figure 14> Audio Selection

Camera Change

The monitor allows you to assign any camera to any cameo window.

To assign the live camera, select the Live Cam Change.

To assign the playback camera, select the Pb Cam Change in the VCR mode.

Button & Remote Controller	Pressing SET will display the active box on the cameo window. Select one of cameos you want to change using the arrow buttons. Pressing SET again will bring up the Popup Menu. Select the Live Cam Change or Pb Cam Change . Pressing SET will display the Camera Selection box. Press camera number button or select one of cameras you want to change using the arrow buttons and press SET .
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking the Live Cam Change or Pb Cam Change will display the Camera Selection box. Click one of cameras you want to change.

To change all cameos to the original camera order, click Default.

Camera Change				
1	2	3	4	Default
5	6	7	8	Exit

< Figure 15> Camera Selection

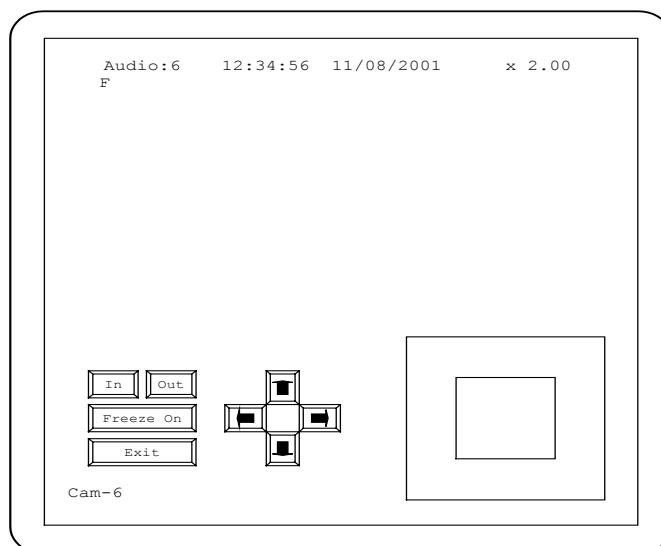
Zoom

The monitor has digital zoom capability from 1 to 32 times only in the live mode.

The digits on the top right of the screen indicate the amount of zoom.

The picture inserted at the bottom right shows the entire scene with a rectangle representing the zoomed area.

Button & Remote Controller	Select camera to zoom. Press ZOOM to enter or exit the zoom screen. Press FREEZE to freeze or unfreeze the zoom screen. Press SET to zoom in the zoom screen. Press ESC to zoom out the zoom screen.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking the Zoom will display the zoom screen. To exit, click Exit button icon .



< Figure 16> Zoom Screen

- **Freeze** : freezes or unfreezes the image on the screen.
- **In**: Zooms in (enlarges). • **Out** : Zooms out.
- **Arrow buttons** : move the zoomed area left, right, up and down.
- **Exit** : exits the Zoom Mode.

Full

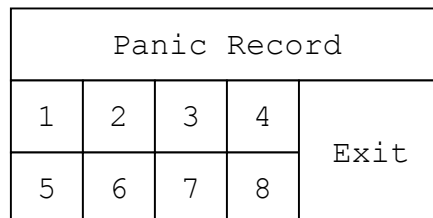
Clicking **FULL** in the Popup menu will switch the screen to full screen display of one camera on the selected active cameo window.

Pressing the **camera number button** will change the screen to the full-screen display.

Panic Record On

The Panic Record On is used to fix the VCR or DVR output to the one camera you want to record. If you set the VCR output to the panic record mode, the buzzer sounds every 20 seconds to warn you the other cameras are not recorded. If you don't want the unit to sound, you can set the Panic Record Buzzer to OFF in the Playback & Recording / VCR System Setup.

Button	Press REC then the LED turns on. At that time press a camera button to put that camera in the panic record mode then the LED blinks.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking Panic Record On will display the Panic Record box. Click the camera button you want to record. To exit, click Exit button icon.
Remote Controller	Pressing REC will display the Panic Record box. Press the camera button you want to record and press ESC to exit.



< Figure 17> Panic Record

Panic Record Off

When the Panic Record On is set, the Popup Menu has **Panic Record Off** to exit the Panic Record mode.

Button & Remote Controller	To exit the Panic Record mode, press REC again.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Click Panic Record Off to exit the Panic Record mode.

Sequence

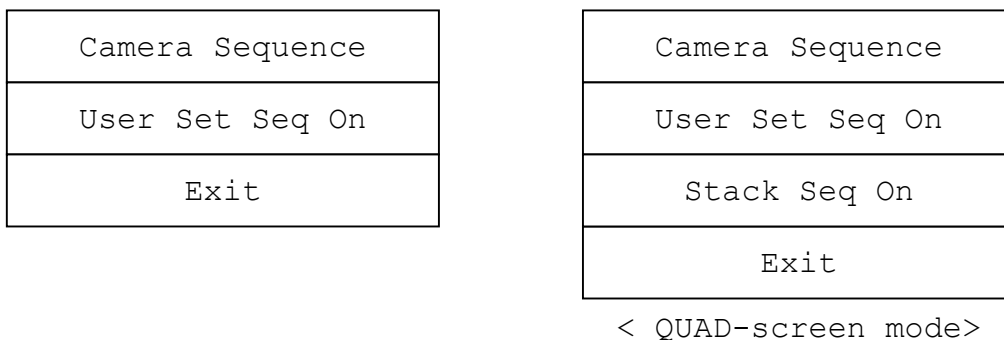
When the monitor is the full-screen mode, pressing SEQ will sequence the screen in the full-screen mode according to the order and the dwell time set in the sequence menu setup.

When the monitor is the QUAD mode, pressing SEQ will sequence the QUAD screen in the stack sequence mode according to stack dwell time set in the sequence menu setup.

When the active box is displayed on the cameo window in any multi-screen display mode, pressing SEQ will sequence the selected cameo window according to the order and the dwell time set in the sequence menu setup.

Videoloss cameras, cameras with the disabled option, and cameras already displayed in the multi-screen display mode will be skipped during the sequence.

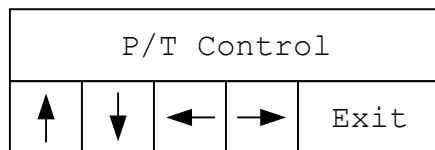
Button & Remote Controller	To sequence cameo, select the cameo window using SET and arrow buttons. Pressing SEQ will sequence cameras of the active window.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking Sequence will save this option and exit.



< Figure 18> Sequence

Pan / Tilt Control


When the Pan / Tilt camera is connected to the monitor before the main power applies, the monitor detects **the camera** at power on and **will display the icon, , in the camera cameo window**. The cameo with the Pan / Tilt camera has the Pan / Tilt Control option in the Popup menu.



< Figure 19> Pan / Tilt Control

Button & Remote Controller	Pressing P/T will display the P/T control box on the screen. At this time pressing the cursor buttons (UP, DOWN, LEFT, or RIGHT) will move the camera position. To exit, press ESC or press SET after selecting Exit button icon.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Click Pan / Tilt Control will display the P/T control box on the screen. At this time clicking the cursor icon (UP, DOWN, LEFT, or RIGHT) will move the camera position. To exit, click Exit button icon.

Action

The action box is an accessory box with a relay to be controlled remotely (for example to open a door). When the Action Box is connected to the monitor before the power supplies, the monitor detects the unit at power on and displays the action box icon, . The cameo with the action box has the Action option in the Popup menu. Pressing On icon one time will activates the relay of the action box for three seconds. As long as On icon is pressed and held, the monitor activates the relay of the action box continuously.

Action Control	
On	Exit

< Figure 20> Action Control

Priority On

When Priority is set to On for a camera, it will display in real time, and the refresh rate of the other cameras will slow down.

Histogram

HEQ1 to 4: Each Histogram Equalizer button increases image contrast. HEQ1 has the weakest equalization and HEQ4 has the strongest equalization.

NOTE: Image noise increases as you use stronger equalization. This is a property of the equalization algorithm and is does not indicate a problem with your system.

Histogram		
HEQ1	HEQ2	Off
HEQ3	HEQ4	Exit

< Figure 21> Histogram Equalizer

Spot Output

This feature allows the user to assign different cameras to the spot monitors.

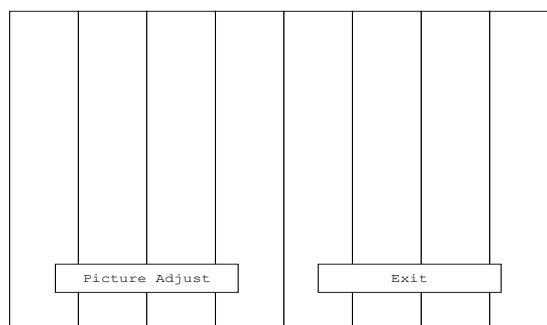
Button	Press 2ND then camera number button to display the camera on the Spot monitor. Press 2ND and SEQ to start or stop the sequence display on the Spot monitor.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking Utilities and then Spot Output will display the spot output box.
Remote Controller	Pressing SPOT will display the spot output box. Press the camera number button to display the camera on the Spot monitor. Press SET to start or stop the sequence display after selecting the Seq. On or the Seq.Off button icon. To exit, press ESC or press SET after selecting the Exit button icon.

Spot Output				
1	2	3	4	Seq On
5	6	7	8	Exit

< Figure 22> Spot Output Control

Screen Protect

The Screen Protect feature allows users to protect the camera images from unauthorized persons and to display the seven-color bar on the screen for the monitor adjustment. This function is inside the utilities popup menu in the live camera **mode**. If the password option **is selected as On**, the password confirmation screen will display when the monitor exits from this mode.



< Figure 23> Screen Protect

Changing Multi-Screen Format

The monitor has various multi-screen displayed formats. If you want to change the user-defined screens refer to the instructions found in the User Defined Screen Setup section of this manual.

Button	Pressing MODE will change between 3x3, Quad1, Quad2, and PIP screen modes in the live mode and between 4x4, 3x3, Quad1, and Quad2 screen modes in the playback mode.
Mouse	Moving the cursor to the bottom edge of the screen accesses the Bottom Menu. Click the screen icon button you want to display. In the QUAD display, pressing 2x2 icon again will display the next QUAD screen. In the PIP display, pressing PIP icon again will swap the main cameo for the sub cameo.
Remote Controller	Press one of PIP , 2x2 , 3x3 , USER1 , USER2 , USER3 , and USER4 in the live mode. Press one of 2x2 , 3x3 , and 4x4 in the VCR playback mode.

Pb Picture Adjust

This option appears on the Pop Up menu only when the unit is in the Playback Mode. It allows the user to adjust images played back from the VCR input.

Button & Remote Controller	Pressing SET will display the active window box on the cameo. At that time pressing SET again will bring up the Popup Menu. Select the Pb Picture Adjust . Pressing SET will display the playback picture adjustment screen. To exit, press SET after selecting the Exit button icon using LEFT or RIGHT arrow button.
Mouse	Clicking the right button of the mouse will bring up the Popup Menu. Clicking the Pb Picture Adjust will display the playback picture adjustment screen. To exit, click the Exit button icon.

Playback Picture Adjust					
Contrast	Bright	Color	Sharp	Tint	
000	000	000	000	000	Exit

< Figure 24> playback picture adjust

CHAPTER 4 MAIN MENU

Accessing the Main Menu

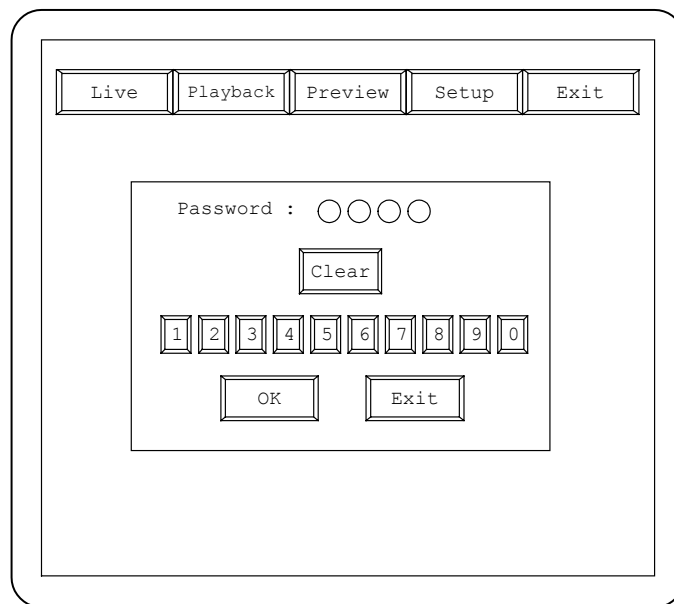
NOTE: To access the Main Menu you must have a Password. The last item of the Main Menu is the Password Setup. Keep the passwords you create in a safe place. The new passwords will be the only way to access certain features of the monitor once you have changed from the factory default passwords.

To access the Main Menu of the setup screens, move the cursor to the top of the screen. The top menu bar appears. Select Setup.



< Figure 25> Top Menu Bar

If the password option is On, the password confirmation screen will display.



< Figure 26> Password Confirmation Screen

Enter the password by moving the cursor over the desired number and clicking on it. As you enter each digit, the circles beside "Password" fill in and move to the right. Once you have entered all four digits, click OK.

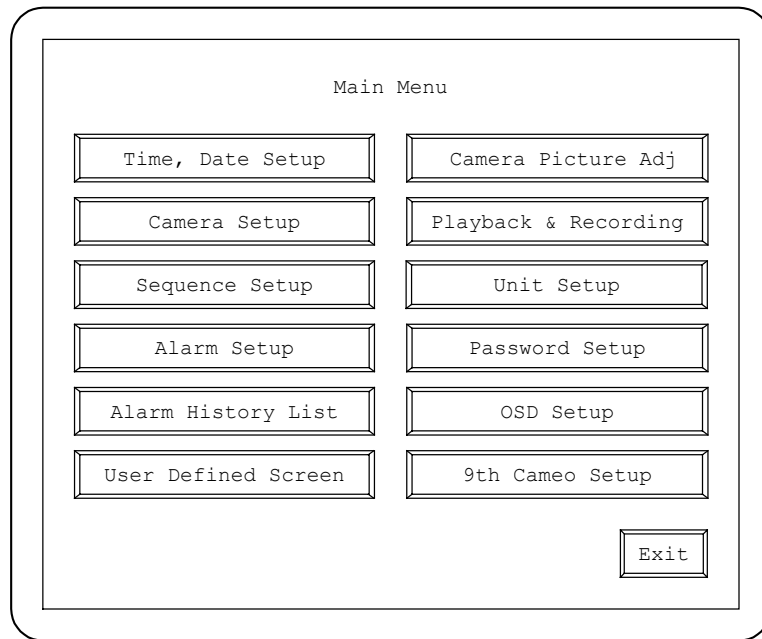
If you have entered the correct four-digit number, the Main Menu will appear. If you have entered an incorrect number, " Incorrect Password " displays.

The factory default passwords are " 1 2 3 4 ".

Click on Exit to exit the Password Confirmation screen and return to live display.

Main Menu Settings

The Main Menu Settings screen provides access to all programming options.



< Figure 27> Main Menu Screen

Time, Date Setup

In addition to setting the time and date, these screens can be used to set the format and select daylight saving time. You can use the arrow buttons on the monitor or mouse to select the menu item. Press SET or the left mouse button to decrease the number. Press ESC or the right mouse button to increase the number.

- **Date Format:** There are three date formats to choose from. The month and days are each two-digit numbers represented by MM and DD. Years are four-digit numbers represented by YYYY. The U.S. format is: MM / DD / YYYY. Europe's format is: DD / MM / YYYY. Asia's format is: YYYY / MM / DD.
- **Hour Format:** There are two hour-display formats to choose from. One is 24- hour (military) time. The second is AM/PM.
- **Year:** Use the arrow or mouse buttons to change the year.
- **Month:** Use the arrow or mouse buttons to change the month.
- **Date:** Use the arrow or mouse buttons to change the date.
- **Hour:** Use the arrow or mouse buttons to change the hour.
- **Minute:** Use the arrow or mouse buttons to change the minute.

- **Second:** Use the arrow or mouse buttons to change the second.
- **Next >:** Selecting this takes you to the second Daylight Saving setup Screen.
- **Exit:** Saves your changes and returns to the Main Menu.

01:23:45 11/08/2002
Time, Date Setup

Date Format

Hour Format

Date Set		Time Set	
Year	<input type="text" value="2002"/>	Hour	<input type="text" value="01"/>
Month	<input type="text" value="11"/>	Minute	<input type="text" value="23"/>
Date	<input type="text" value="08"/>	Second	<input type="text" value="45"/>

< Figure 28> Time Date Setup Screen

01:23:45 11/08/2002
Daylight Saving Setup

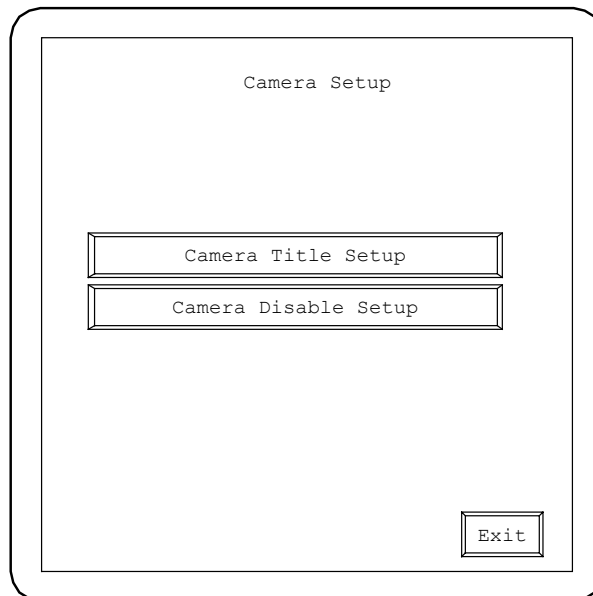
Daylight Saving

Start				Stop			
Month	<input type="text" value="04"/>	Date	<input type="text" value="01"/>	Month	<input type="text" value="10"/>	Date	<input type="text" value="01"/>
From	<input type="text" value="02"/>	:	<input type="text" value="00"/>	From	<input type="text" value="03"/>	:	<input type="text" value="00"/>
To	<input type="text" value="03"/>	:	<input type="text" value="00"/>	To	<input type="text" value="02"/>	:	<input type="text" value="00"/>

< Figure 29> Daylight Saving Setup Screen

- **Daylight Saving:** If you are in an area that does not have Daylight Saving (Summer) Time, set this option to Off. When you set this selection to On, you must set the start and stop dates and times.
- **Start:** Set the Month and Date that your area begins Daylight Saving time. Unless there is an unusual situation, you will not need to set From and To times.
- **Stop:** Set the Month and Date that your area ends Daylight Saving time. Unless there is an unusual situation, you will not need to set From and To times.
- **< Back:** Selecting this takes you back to the first Time, Date Setup Screen.
- **Exit:** Saves your changes and returns to the Main Menu.

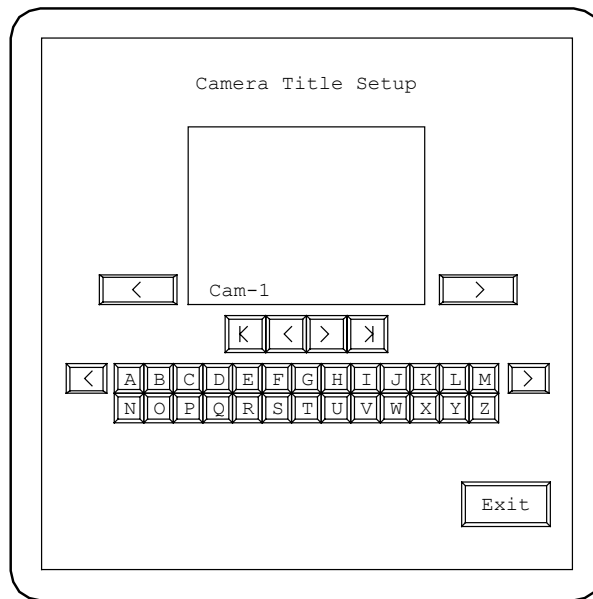
Camera Setup



< Figure 30> Camera Setup Screen

The Camera Title Setup screen allows you to enter titles for each camera and the Camera Disable setup screen allows you to disable a camera from the system even if it is physically connected to the system.

Camera Title Setup



< Figure 31> Camera Title Setup Screen

The Camera Title Setup screen allows you to enter titles for each camera. Clicking on the letters and characters enters them in the camera title. Each camera title can have a maximum of 12 characters.

- **Top <:** Moves the cursor left.
- **Top >:** Moves the cursor right.
- **Middle K:** Goes to Camera 1.
- **Middle <:** Goes back one camera.
- **Middle >:** Goes forward one camera.
- **Middle >|:** Goes to Camera 8.
- **Bottom <:** Changes the keyboard characters to the previous set.
- **Bottom >:** Changes the keyboard characters to the next set.
- **Exit:** Saves your changes and returns to the Camera Setup.

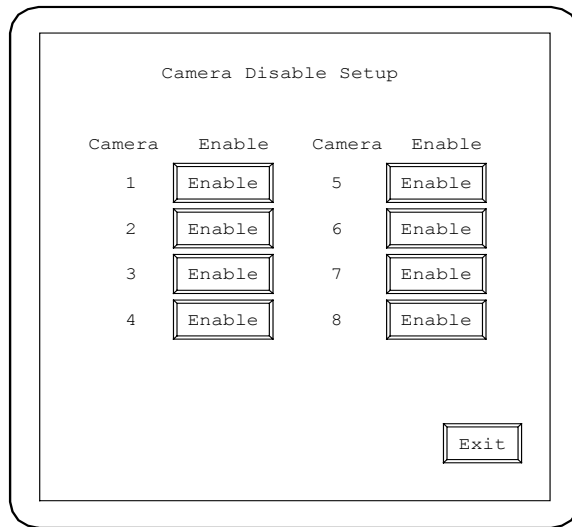
Keyboard Character Set 1: A to Z (upper case)

Keyboard Character Set 2: a to z (lower case)

Keyboard Character Set 3: ! & () + , - . / ~: = ? 0 to 9

Keyboard Character Set 4: Â Ã Ê Ë Ó Ô Õ Ü ß ä ê ë ñ ó ô ö ü

Camera Disable Setup



< Figure 32> Camera Disable Setup Screen

The Camera Disable Setup screen allows you to disable a camera from the system even if it is physically connected to the monitor.

When a camera is disabled, the main monitor displays a gray screen with the title “DISABLED” and the spot monitor displays a blue screen with the title “DISABLED” if no camera is physically connected.

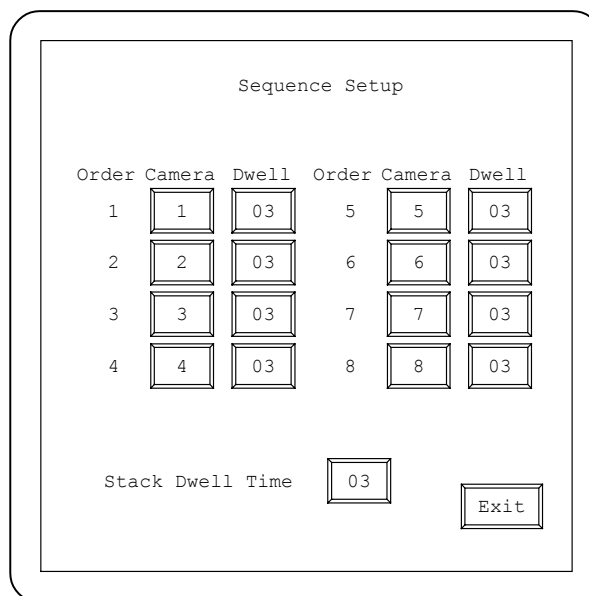
It brings up a screen with no title if the camera is physically connected.

When a camera is disabled, no action is taken on alarms.

The default option is ENABLE.

- **Exit:** Saves your changes and returns to the Camera Setup.

Sequence Setup



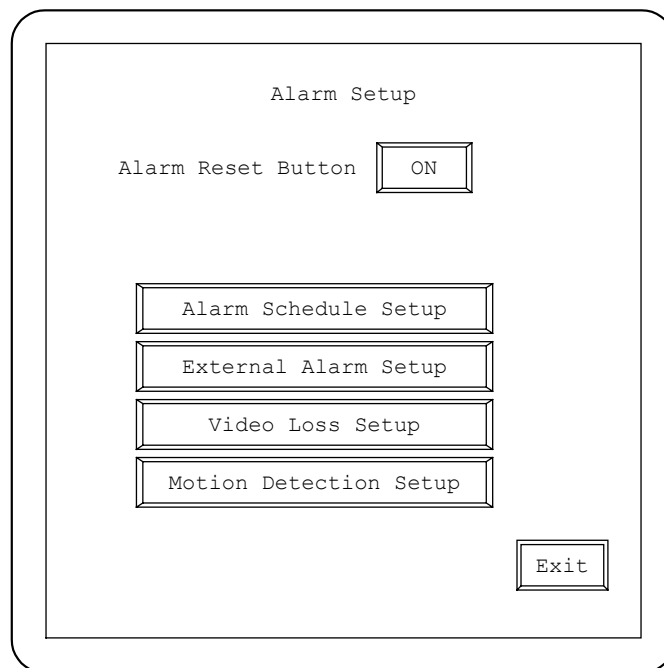
< Figure 33> Sequence Setup Screen

This screen allows you to set the order in which the cameras appear when the monitor is in sequence mode. You can also set the how long each camera will display from Off to 99 seconds.

Enter the camera number under the Camera column and the display time under Dwell. You can also set the Stack Dwell Time, which is the length of time; each QUAD will display when the monitor is in the QUAD display mode. This time is also the dwell time in the demo mode.

- **Exit:** Saves your changes and returns to the Main Menu.

Alarm Setup



< Figure 34> Alarm Setup Screen

The Alarm Setup screen allows you to enter alarm submenus.

- **Alarm Reset Button:** Setting this to On allows users to clear alarm events using the ESC on the front panel button or the right button of a mouse. Setting it to Off requires the user to enter the Setup Menus to clear alarm events.
- **Alarm Schedule Setup:** Enters the Alarm Schedule submenu.
- **External Alarm Setup:** Enters the External Alarm submenu.
- **Video Loss Setup:** Enters the Video Loss submenu.
- **Motion Detection Setup:** Enters the Motion Detection submenu.
- **Exit:** Saves your changes and returns to the Main Menu.

Alarm Schedule Setup

The screenshot shows a screen titled "Alarm Schedule Setup". It contains two rows of input fields for timers T1 and T2. Each row has a "Start" time, a "Stop" time, and seven checkboxes for the days of the week (Sun, Mon, Tue, Wed, Thu, Fri, Sat). An "Exit" button is located at the bottom right.

	Start	Stop	Sun	Mon	Tue	Wed	Thu	Fri	Sat
T1	09:00	17:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
T2	17:00	09:00	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Exit

< Figure 35> Alarm Schedule Setup Screen

The monitor can be set up to detect or ignore alarms based on a defined schedule. For example, you might expect a number of alarms during normal office hours and therefore do not want to schedule the detect motion alarm inputs. However, when the office is closed, the schedule would be changed to enable a motion alarm condition.

Timer 1 & 2: Each timer can be applied the external alarm and the motion detection.

- **Start & Stop:** You can set the start and stop time for each timer. A start time of 18:00 with an end time of 06:00 will go from 6:00 p.m. until 6:00 a.m. of the following morning.

- **Days:** The timers can be turned On or Off for each day of the week.

✓ = On and O = Off.

- **Exit:** Saves your changes and returns to the previous menu.

External Alarm Setup

External Alarm Setup								
Camera	In	T1	T2	Camera	In	T1	T2	
1	N.O	On	On	5	N.O	On	On	
2	N.C	On	On	6	N.O	On	On	
3	Off	On	On	7	N.O	On	On	
4	N.O	On	On	8	N.O	On	On	
Enable		On					Buzzer	On
Screen Format		Full					Message Latch	Off
Dwell Time		03					Spot Monitor	On
Hold Time		20					Recording	INT
Relay		On					Exit	

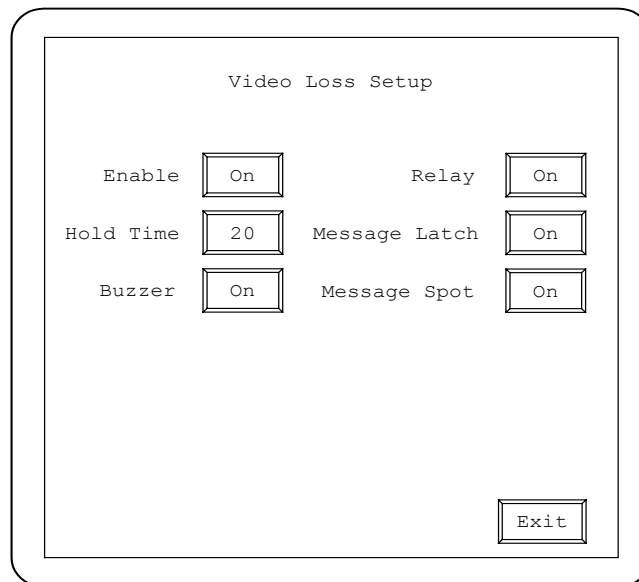
< Figure 36> External Alarm Setup Screen

This screen allows you to set up the actions the monitor will take when there is the external alarm condition.

- **In (Input):** Can set the input for each of the alarm connections.
N.O (Normally Open), N.C (Normally Closed) or Off.
- **T1 & T2 (Timer 1 & 2):** Each external alarm can be set ON or OFF in the timer 1 and 2.
- **Enable:** Each external alarm can be set Timer, ON or OFF.
- **Screen Format:** This sets the display mode the multiplexer will use when an alarm occurs. There are three possible settings: Full, 3x3, and UNC (Unchanged).
- **Dwell Time:** The dwell time can be set from 1 to 99 seconds. The screen will automatically sequence in a multi-alarm condition with the full - screen format.
- **Hold Time:** This allows the user to set the alarm actions to last from 0 to 99 seconds. The hold time starts to count after the alarm releases.
- **Relay:** There are two possible relay settings.
ON: Sets the relay to be activated by an alarm.
OFF: No relay will be activated by an alarm.
- **Buzzer:** When set to On, the monitor's internal buzzer will sound during an alarm condition.

- **Message Latch:** When set to On, an “A” displays on the screen when an alarm condition occurs. It remains on the screen until it is cleared by entering the main menu.
- **Recording:** This allows you to select how video will record during an alarm condition. **INT** interleaves images from the camera with an alarm every other field giving you more images from that camera. When there are multiple alarms, the cameras with alarms are interleaved. **ONLY** records images from only the camera with an alarm condition. **UNC** leaves the recording parameters unchanged.
- **Spot Monitor:** When set to On, that Spot Monitor will display the camera with an alarm condition. When there are multiple alarms, cameras with alarms will display sequentially. When set to Off, that Spot Monitor’s display does not change during alarm conditions.
- **Exit:** Saves your changes and returns to the previous menu.

Video Loss Setup



< Figure 37> Video Loss Setup Screen

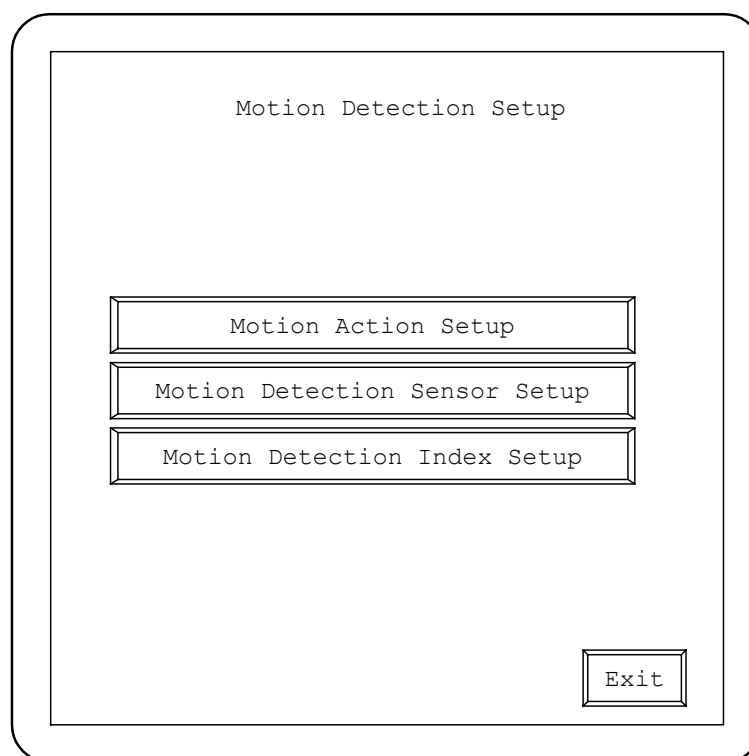
This screen allows you to set up the actions the monitor will take when there is the video loss alarm condition.

- **Enable:** The video loss alarm can be set, ON or OFF.
- **Hold Time:** This allows the user to set the video loss alarm actions to last from 1 to 99 seconds. The hold time starts to count after the video loss alarm occurs.
- **Buzzer:** When set to On, the monitor’s internal buzzer will sound during a video loss alarm condition.
- **Relay:** There are two possible relay settings.
ON: Sets the relay to be activated by a video loss alarm.
OFF: No relay will be activated by a video loss alarm.

- **Message Latch:** When set to On, a “V” displays on the screen when a video loss alarm condition occurs. It remains on the screen until it is cleared by entering the main menu.
- **Message Spot:** When set to On, that Spot Monitor will display a “Vloss 1,2,.. ” with the camera number with a video loss alarm on the current screen. When set to Off, that Spot Monitor’s display does not change during video loss alarm conditions.
- **Exit:** Saves your changes and returns to the previous menu.

Motion Detection Setup

The Motion Detection Setup screen is the starting point for various motion detection setup screens.

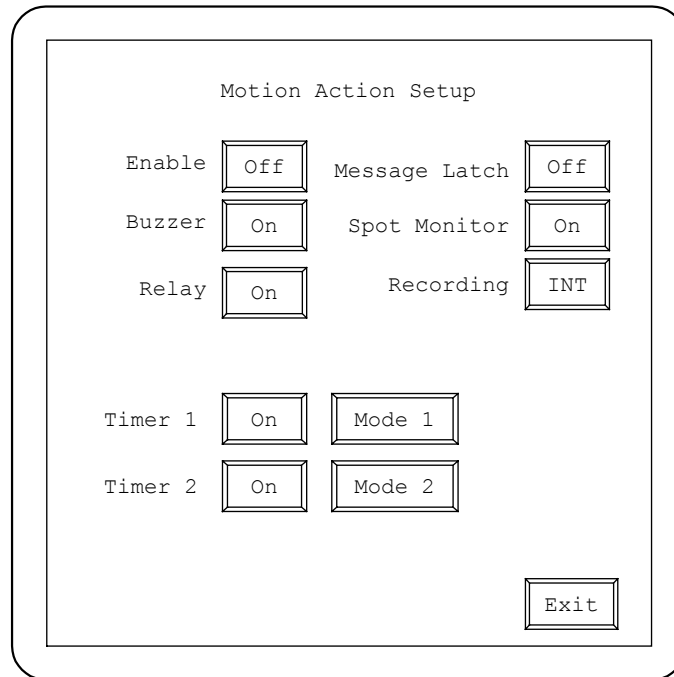


< Figure 38> Motion Detection Setup Screen

- **Motion Action Setup:** Takes you to the submenu.
- **Motion Detection Sensor Setup:** Takes you to the submenu.
- **Motion Detection Index Setup:** Takes you to the submenu.
- **Exit:** Saves your changes and returns to the Main Menu.

Motion Action Setup

This screen allows you to set up the actions the multiplexer will take when there is a motion alarm condition.



< Figure 39> Motion Action Setup Screen

- **Enable:** This is a global switch that turns motion detection for all cameras On, Off or Timer.
- **Buzzer:** When set to On, the internal buzzer will sound during a motion alarm condition.
- **Relay:** When set to On, the internal relay will be activated during a motion alarm condition.
- **Message Latch:** When set to On, an "M" displays on the screen when a motion alarm condition occurs. It remains on the screen until it is cleared.
- **Spot Monitor:** When set to On, that Spot Monitor will display the camera with an motion alarm condition. When there are multiple alarms, cameras with alarms will display sequentially. When set to Off, that Spot Monitor's display does not change during motion alarm conditions.
- **Recording:** This allows you to select how video will record during a motion alarm condition. **INT** interleaves images from the camera with an alarm every other field giving you more images from that camera. When there are multiple alarms, the cameras with alarms are interleaved. **ONLY** records images from only the cameras with an alarm condition. **UNC** leaves the recording parameters unchanged.
- **Timer 1 & 2 :** Each timer can be turned On or Off, and they can be set to Mode 1 or 2. (Modes 1 and 2 are defined in the Motion Detection Sensor Setup screen.)
- **Exit:** Saves your changes and returns to the previous menu.

Motion Detection Sensor Setup

Each camera can be set up with two sets of motion detection parameters.

The parameter sets are defined as Mode 1 and Mode 2.

(You can schedule when the modes will be used in the Alarm Schedule Setup screen.)

	Mode 1	Mode 2
On /Off	On	On
Sensitivity	01	15
Trigger Size(H)	01	16
(V)	01	16
Delay Time	00	05
Hold Time	01	99
Update / Master	Update	Master
Grid Setup	SET	SET

Cam-1

K < > X

Default

Exit

< Figure 40> Motion Detection Sensor Setup Screen

- **On/Off:** Turns motion detection On or Off.
- **Sensitivity:** Sets how much luminance change there must be in the target area before the multiplexer reads the change as motion. 01 is the lowest sensitivity and 15 is the highest.
- **Trigger Size (H):** This is the minimum number of targets in a horizontal row that must change before the multiplexer reads the change as motion. The range is 01 to 16.
- **Trigger Size (V):** This is the minimum number of targets in a vertical row that must change before the multiplexer reads the change as motion. The range is 01 to 16.
- **Delay Time:** The delay time is used to make adjustments for scenes that have sudden changes such as lights and shadows created by headlights of nearby traffic. The delay can be set from 0 to 5 seconds.
- **Hold Time:** The Hold Time can be set from 1 to 99 seconds.
- **Update/Master:** When using Update, the multiplexer compares the current field with the previous one. When using Master, the multiplexer compares a master image to continuous video.
- **Grid Setup:** Takes you to the Motion Detection Sensor Setup (Grid setup) screen.

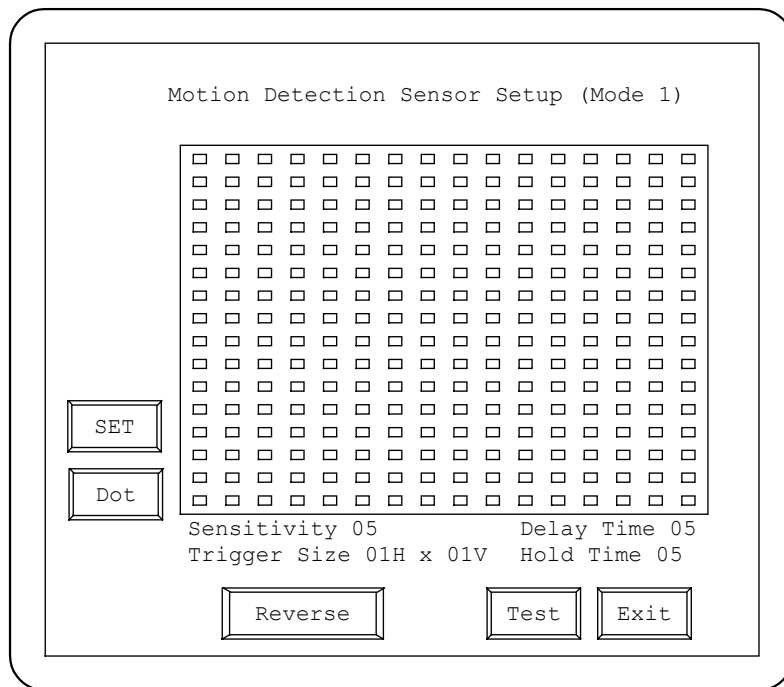
- **I<**: Goes to Camera 1.
- **<**: Goes back one camera.
- **>**: Goes forward one camera.
- **>I**: Goes to Camera 8.
- **Default**: Returns all settings to the factory default.
- **Exit**: Saves your changes and returns to the previous menu.

Motion Detection Sensor Setup (Grid setup)

The Motion Detection Sensor Setup screen is used to setup and test cameras for motion detection. Mode 1 and Mode 2 can be set up.

First, highlight the SET icon using arrow buttons on the front panel to use front buttons. If pressing the SET button on the front panel at this time, the grids area will be highlighted. To exit the grids area, press the ESC buttons on the front panel.

Press the SET button of the front panel to execute any icon after selecting the wanted icon using arrow buttons.

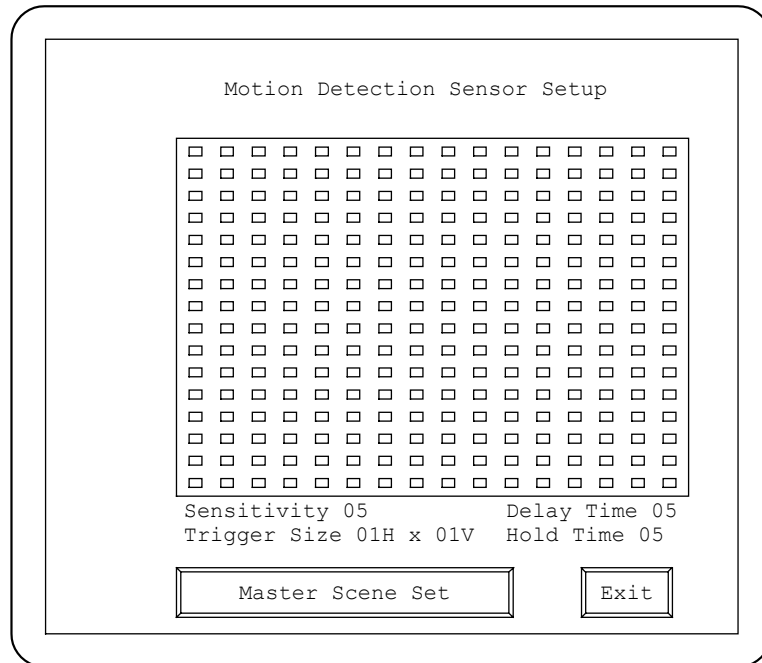


< Figure 41> Motion Detection Sensor Setup (Grid Setup) Screen

- **SET**: Highlights the grids area. Click of the mouse on this icon has no action.
- **Dot/Line/All**: Determines how many targets will be turned on or off.
Dot = single target. **Line** = a row of targets. **All** = all targets.

- **Reverse:** Sets all targets to the reverse side.
- **Test:** Goes to the Motion Detection Sensor Setup test screen.
- **Exit:** Saves your changes and returns to the previous menu.

Motion Detection Sensor Setup (Test Screen)

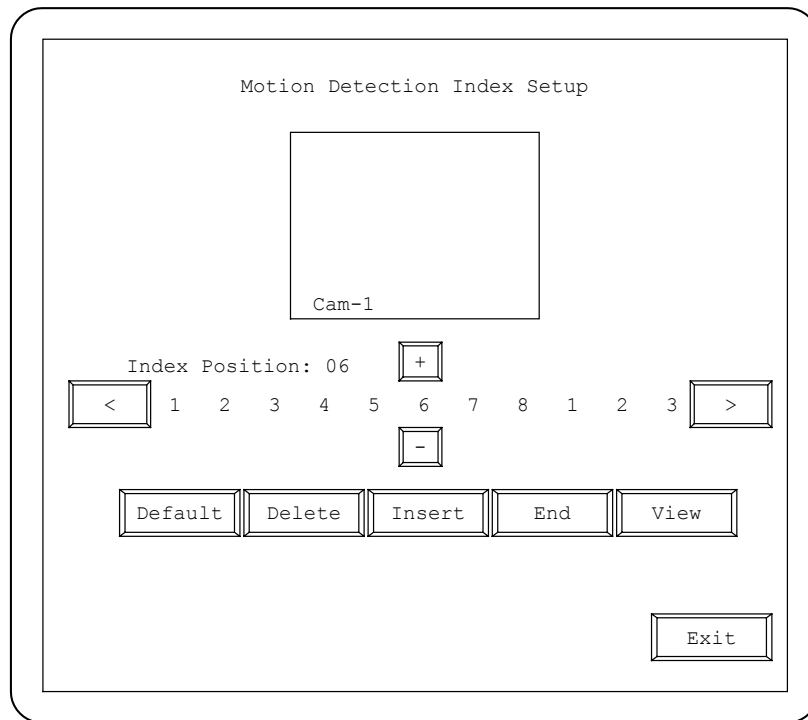


< Figure 42> Motion Detection Sensor Setup test screen

The Motion Detection Sensor Setup test screen shows when the multiplexer detects motion by drawing a box around the active area. This gives you instant feedback letting you know if you have set the correct size and sensitivity for the types of motion you want to detect.

- **Master Screen Set:** Saves the master image.
(This button only appears in the Master Mode.)
- **Exit:** Returns to the previous menu.

Motion Detection Index Setup



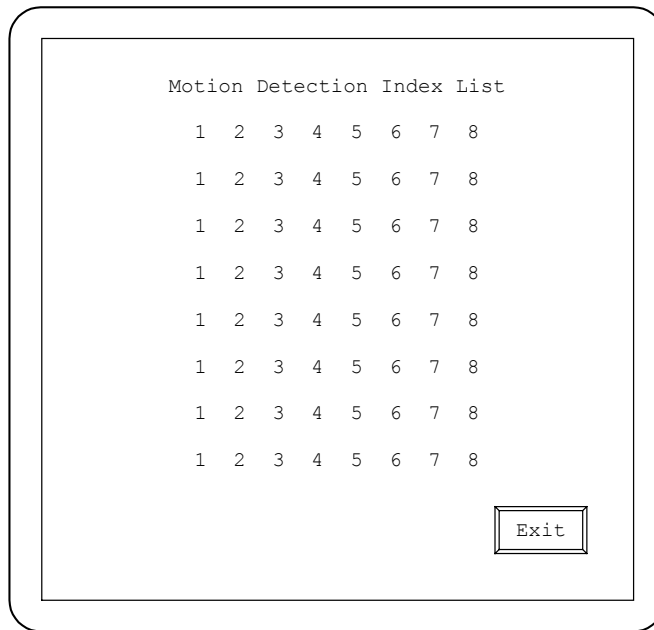
< Figure 43> Motion Detection Index Setup Screen

Normally, the multiplexer gives equal priority to all cameras (1 to 8) for motion detection. However, it is possible to change the priorities.

- **+** : Increases the camera number by one.
- **-** : Decreases the camera number by one.
- **<** : Scrolls through the camera array to the left.
- **>** : Scrolls through the camera array to the right.
- **Default:** Sets all camera arrays to the factory default value.
- **Delete:** Deletes the highlighted camera from the array.
- **Insert:** Inserts a blank into the array.
- **End:** Enters an “E” which sets the end mark for the index list.
- **View:** Displays the Motion Detection Index List.
- **Exit:** Saves your changes and returns to the previous menu.

NOTE: If the Motion Detection Index List has the E mark, the monitor checks the motion of camera continuously from the first number to the number before the E mark.

Motion Detection Index List



< Figure 44> Motion Detection Index List Screen

This screen displays the priorities assigned to the cameras. You cannot edit anything on this screen.

- **Exit:** Returns to the previous menu.

Ex.) If you think the camera 2 is important for the motion detection, you can change the motion detection index list to "1,2,2,3,4,5,6,7,8,E".

Press >, then 2 displays.

Press Insert, then ? displays.

Press +, then 1 displays.

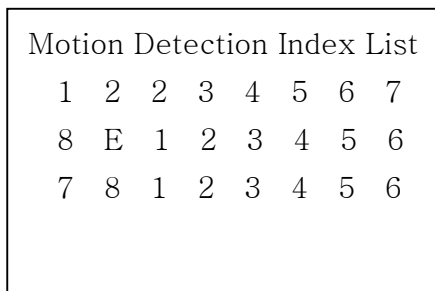
Press +, then 2 displays.

Press > continuously until 8 displays.

Press >, then 1 displays.

Press End, then E displays.

Press View, then the Motion Detection Index List Screen displays as follows.



From this time, the monitor **will check for motion** detection as sequenced by 1,2,2,3,4,5,6,7,8,1,2,2,3,4,5,6,7,8,1,2,2,....

Alarm History List

The screenshot shows a screen titled "Alarm History List" with a table of 16 rows. Each row contains an Index, Source, Cam, Time, and Date (M/D/Y). Below the table are several buttons: a left arrow, a double left arrow, a double right arrow, a right arrow, a "Clear" button, a "Download" button, and an "Exit" button.

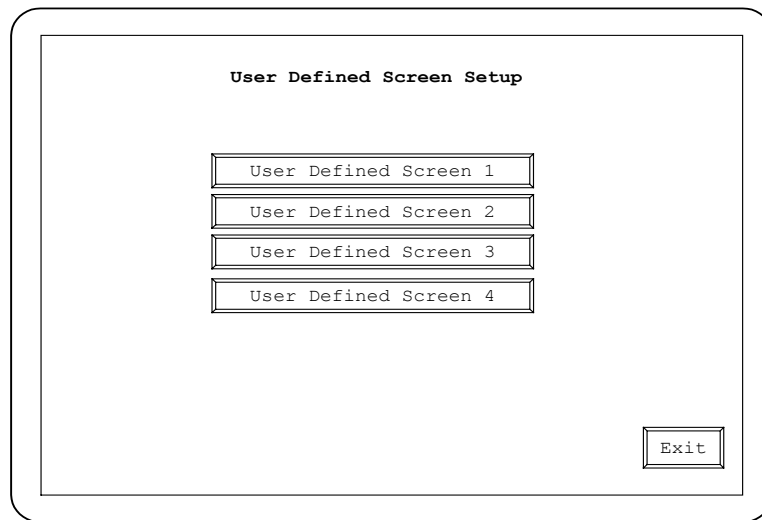
Index	Source	Cam	Time	Date (M/D/Y)
001	Motion	1	15:00:23	11/16 /2002
002	Alarm	2	02:10:43	11/15 /2002
003	VLoss	3	14:20:26	11/14 /2002
004	Motion	4	11:22:35	11/13 /2002
005	Alarm	5	15:00:23	11/12 /2002
006	VLoss	6	02:10:43	11/11 /2002
007	Motion	7	14:20:26	11/10 /2002
008	Alarm	8	11:22:35	11/09 /2002
009	VLoss	1	15:00:23	11/08 /2002
010	Motion	2	02:10:43	11/07 /2002
011	Alarm	3	14:20:26	11/06 /2002
012	VLoss	4	11:22:35	11/05 /2002
013	Motion	5	15:00:23	11 /04/2002
014	Alarm	6	02:10:43	11/03 /2002
015	VLoss	7	14:20:26	11 /02/ 2002
016	Motion	8	11:22:35	11/01 /2002

< Figure 45> Alarm History List Screen

This screen displays a list of alarms. This monitor retains a history of up to 256 events.

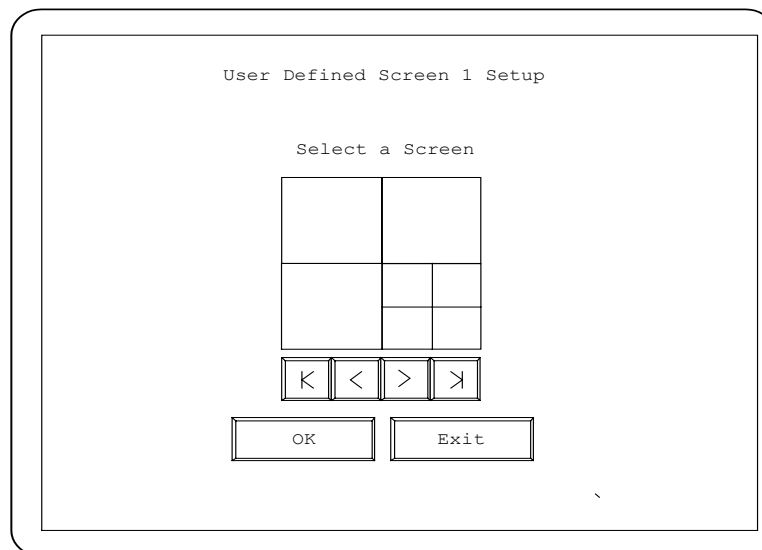
- **I<**: Goes to the first page in the history list.
- **<**: Goes back one page in the history list.
- **>**: Goes forward one page in the history list.
- **>I**: Goes to the last page in the history list. (maximum 16 pages)
- **Clear**: This clears all the information from the history list. You will be asked to confirm that you really want to delete all the alarm history information before it is deleted.
- **Download**: Transmits all alarm history list to PC.
NOTE: Before implementing the "Download" function, make sure the following steps are followed.
 1. Go to the vendor's website.
 2. Download the "Download.exe" file on your PC.
 3. Implement the "Download.exe" file and click the icon named "Download Program".
 4. Click **Download** on the monitor.
- **Exit**: Saves your changes and returns to the Main Menu.

User Defined Screen Setup



< Figure 46> User Defined Screen Setup Screen

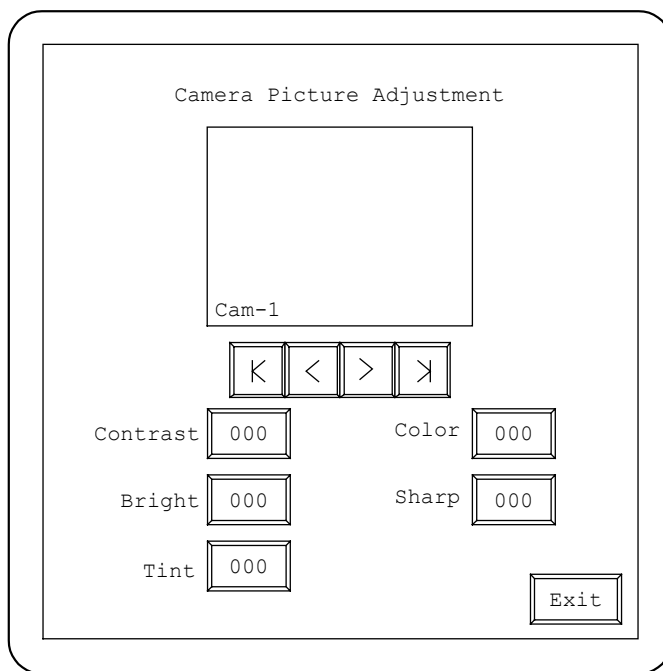
This menu allows the user to select one of four displays that were defined in the Bottom Menu. After selecting one of the User Defined Screen icons, the Select a Screen menu appears.



< Figure 47> Select a Screen Menu

- **I<**: Jumps back through the first screen formats at a time.
- **<**: Scrolls back through the screen formats one at a time.
- **>**: Scrolls forward through the screen formats one at a time.
- **>I**: Jumps forward through the last screen formats at a time.
- **OK**: Confirms the screen format selection.
- **Exit**: Exits the Select a Menu without any changes.

Camera Picture Adjustment Setup



< Figure 48> Camera Picture Adjustment Screen

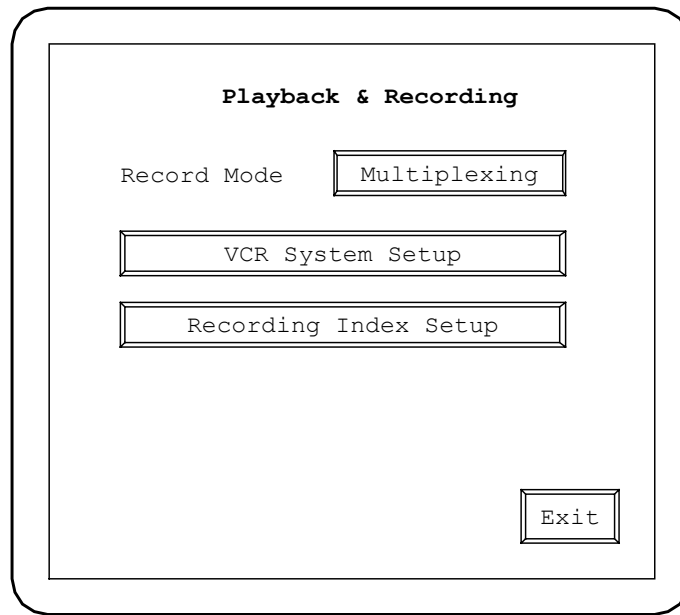
NOTE: Do not make any adjustments with this screen until all of the cameras and monitors have been adjusted properly.

- **I<:** Goes to Camera 1.
- **<:** Goes back one camera.
- **>:** Goes forward one camera.
- **>I:** Goes to Camera 8.

The following adjustments have a default setting of 000. These values can be adjusted from MIN = minimum to MAX = maximum.

- **Contrast:** Adjusts contrast.
- **Color:** Adjusts color.
- **Brightness:** Adjusts brightness.
- **Sharpness:** Adjusts Sharpness. (000 ~ MAX)
- **Tint:** Adjusts tint. (Not available when the multiplexer is set for PAL operation.)
- **Exit:** Saves your changes and returns to the Main Menu.

Playback & Recording Setup



< Figure 49> Playback & Recording Setup Screen

The Playback & Recording Setup screen gives you access to submenus for setting up playback and recording and selecting the VCR output format “Multiplexing” or “Main Monitor”.

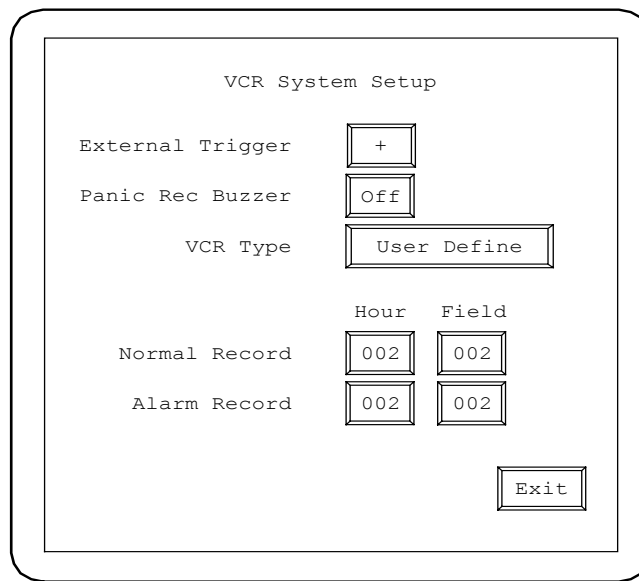
- **Record Mode:** Sets the VCR output format to one of “Multiplexing” and “Main Monitor”.

NOTE: When this option is “Main Monitor”, the VCR output goes out the same image as the main screen of the live mode. But when the monitor is in the VCR playback mode or in the preview mode, the VCR output goes out multiplexed camera images.

Set the monitor to the preview mode to watch the videotape recorded with the Main Monitor option.

- **VCR System Setup:** Opens the submenu.
- **Recording Index Setup:** Opens the submenu.
- **Exit:** Saves your changes and returns to the Main Menu.

VCR System Setup



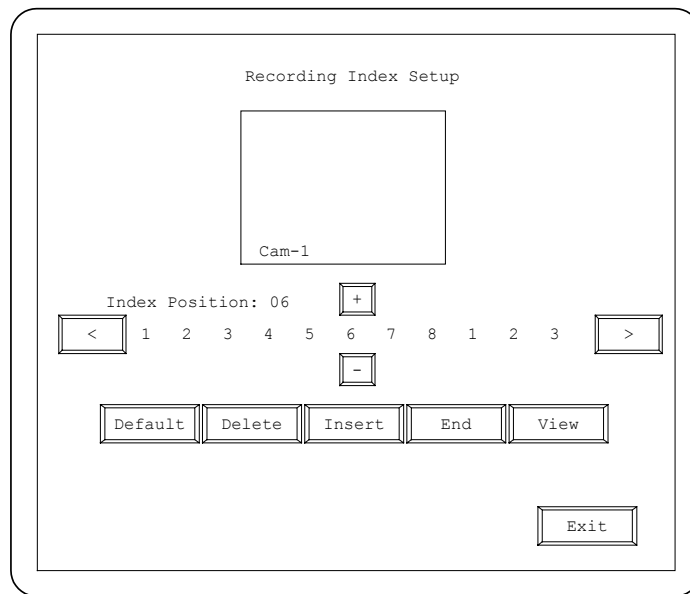
< Figure 50> VCR System Setup Screen

The VCR System Setup screen is used to synchronize this monitor with your VCR or DVR.

NOTE: *If your VCR or DVR has a synchronizing trigger pulse, using it will save time when setting up the system.*

- **External Trigger:** Set to Off if you are not using the VCR's synchronizing camera switching trigger pulse. When using your VCR's synchronizing trigger pulse, set to match the VCR's signal; + for positive edge sensing and – for negative edge sensing.
- **Panic Rec Buzzer:** When On, the buzzer will beep every 20 seconds in the panic record mode.
- **VCR Type:** Selecting this brings up a list of VCRs. Select your VCR from the list. If your VCR is not on the list, select User Define.
- **Normal & Alarm Record:** If you selected a VCR from the list, all you need to set is the hours. If you selected User Define, you need to set the hours and field delay. Although you can set Normal and Alarm hours the same, you usually want higher quality video in an alarm situation. For example, you might set Normal to 24-hour time-lapse and Alarm to 2-hour mode. You will need to get the field delay rates from your VCR manufacturer.
- **Exit:** Saves your changes and returns to the Main Menu.

Recording Index Setup



< Figure 51> Recording Index Setup Screen

This Recording Index Setup Screen allows you to set the order and weighting of cameras for recording. Normally, the multiplexer gives the same priority to all cameras. However, you can set it so that cameras are given different recording priorities.

- **+** : Increases the camera number by one.
- **-** : Decreases the camera number by one.
- **<** : Scrolls through the camera array to the left.
- **>** : Scrolls through the camera array to the right.
- **Default:** Sets all camera array to the factory default value.
- **Delete:** Deletes the highlighted camera from the array.
- **Insert:** Inserts a blank into the array.
- **End:** Enters an "E" which sets the end mark for the index list.
- **View:** Displays the Recording Index List.
- **Exit:** Saves your changes and returns to the previous menu.

Ex.) If you think the camera 2 is important and want to record more, you can change the recording index list to "1,2,2,3,4,5,6,7,8,E".

Press >, then 2 displays.

Press Insert, then ? displays.

Press +, then 1 displays.

Press +, then 2 displays.

Press > continuously until 8 displays.

Press >, then 1 displays.

Press End, then E displays.

Press View, then the recording index list screen displays as above.

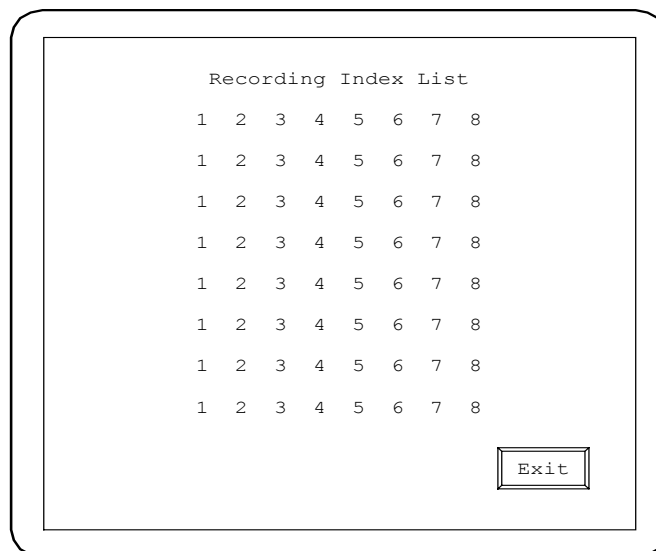
From this time, the monitor continuously outputs cameras as the sequence of 1,2,2,3,4,5,6,7,8 in the normal record mode.

Recording Index List							
1	2	2	3	4	5	6	7
8	E	1	2	3	4	5	6
7	8	1	2	3	4	5	6

Ex.) If you want **to omit the recording of** camera 2 in the normal record mode, you can change the recording index list to "1,3,4,5,6,7,8,E" using the delete icon. In this case, the camera 2 is not recorded in the normal mode and is recorded in the alarm mode.

Ex.) If you want **to omit the recording of** camera 2 in any record mode, you should delete camera 2 in the recording index list as like "1,3,4,5,6,7,8,E" and set the alarm input Off in the External Alarm Setup and set the value of On/Off option Off about Mode 1 and Mode 2 in the Motion Detection Sensor Setup. In this case, the camera 2 is not recorded in the normal mode **and** in the alarm mode.

Recording Index List

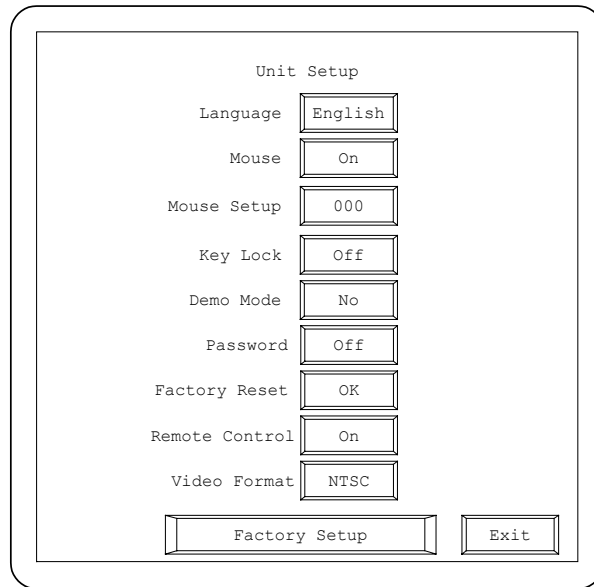


< Figure 52> Recording Index List Screen

This screen displays the priorities assigned to the cameras. You cannot edit anything on this screen.

- **Exit** : Returns to the previous menu.

Unit Setup



< Figure 53> Unit Setup Screen

This screen allows you to change the basic settings.

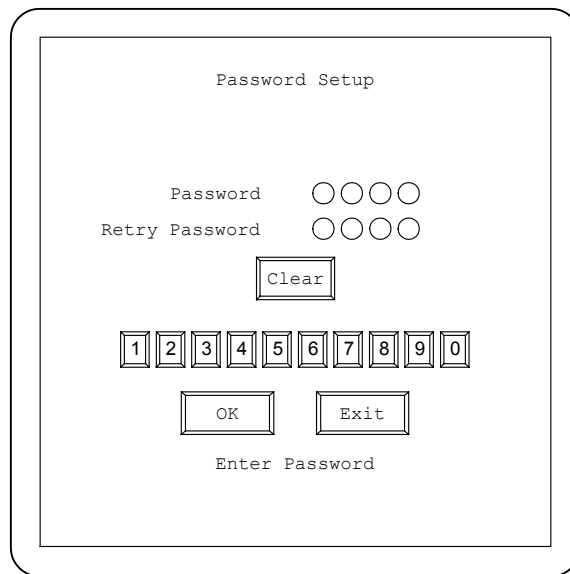
- **Language:** There are five languages available: English, French, Italian, German and Spanish.
- **Mouse:** If you plan to use a mouse, set this to On.
- **Mouse Setup:**
If the mouse is not functioning properly, select this option using **the front panel** buttons.
Change the value of this option using SET or ESC buttons on the front panel while moving the mouse. If the mouse doesn't move quickly, change the value again using SET or ESC buttons on the front panel. **When** the mouse operates well, stop the adjustment.
- **Key lock:** When On, all buttons except the menu button on the front panel and the remote controller are inoperative.
Pressing MENU or clicking the mouse will open a screen asking for a password.
- **Demo Mode:** When On, all available screen formats will sequence according to the stack dwell time.
- **Password:** When On, only an authorized user can enter and make changes in the Setup Menu.

NOTE : *Keep a copy of the password in a safe place. Once you have changed the password from the factory default, you will not be able to access protected menus without it. (the factory default: 1234)*

- **Factory Reset:** Returns all settings to the factory default. A confirmation screen will ask you if you really want to reset the system.
- **Remote Control:** If you plan to use a wireless remote controller, set this to On.

- **Video Format:** If you use NTSC type cameras, set this to NTSC. If you use PAL type cameras, set this to PAL.
In general, the monitor checks the video system of the camera number 1 at the main power on and sets the video system automatically.
- **Factory Setup:** This button is for after sales service. When you mistakenly press and enter the sub menu, if you are not a qualified service technician, press the Exit button.
- **Exit :** Saves your changes and returns to the Main Menu.

Password Setup

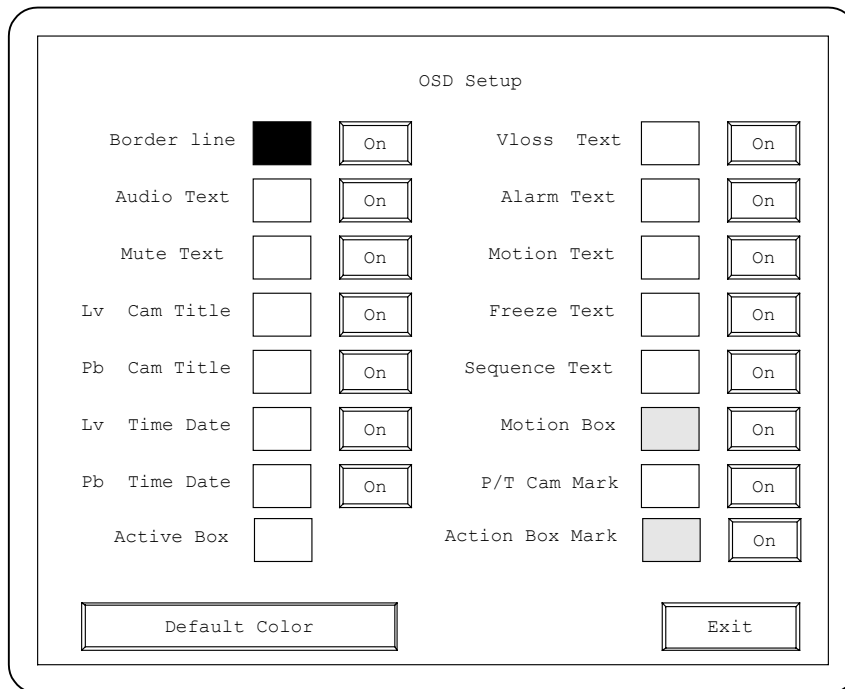


< Figure 54> Password Setup Screen

Use the numbers to enter a four-digit PIN.

- **Clear:** Deletes all entered numbers, and you can restart entry.
- **OK:** Opens the re-enter screen after the first try. Compares the entry to the first password, and exits the Setup Menu if they match.
- **Exit:** Exits the Setup Menu.



OSD Setup



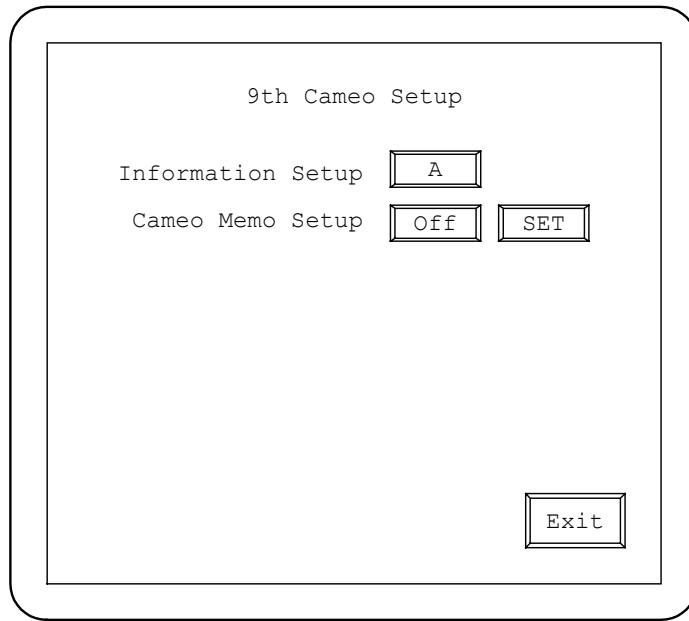
< Figure 55> OSD Setup Screen

The OSD Setup screen allows you to select the text displayed and what color the text will be. (Available colors: Black, Gray, White, Red, Green, Yellow, Magenta, Cyan and Blue)

- **Border Line:** The borderline around the images.
- **Audio Text:** The OSD of Audio text.
- **Mute Text:** The OSD of Mute text.
- **Lv Cam Title:** The live camera's title.
- **Pb Cam Title:** The playback camera's title.
- **Lv Time Date:** The live camera's time and date.
- **Pb Time Date:** The playback camera's time and date.
- **Active Box:** When the cameo is selected, the active window box displays.
- **Vloss Text:** When the video loss alarm occurs, a "V" is displayed on the screen.
- **Alarm Text:** When an alarm occurs, an "A" is displayed on the screen.
- **Motion Text:** When motion is detected, an "M" is displayed on the screen.
- **Freeze Text:** When an image is frozen, an "F" is displayed on the screen.

- **Sequence Text** : When the multiplexer is in sequence mode, an “S” is displayed on the screen.
- **Motion Box** : When motion is detected, a box showing the area is displayed on the screen.
- **P/T Cam Mark**: When a P/T camera is used, an “” is displayed on the screen.
- **Action Box Mark**: When an Action box is used, an “” is displayed on the screen.
- **Default Color**: Clicking this button resets the colors to factory default.
- **Exit**: Saves your changes and returns to the Main Menu.

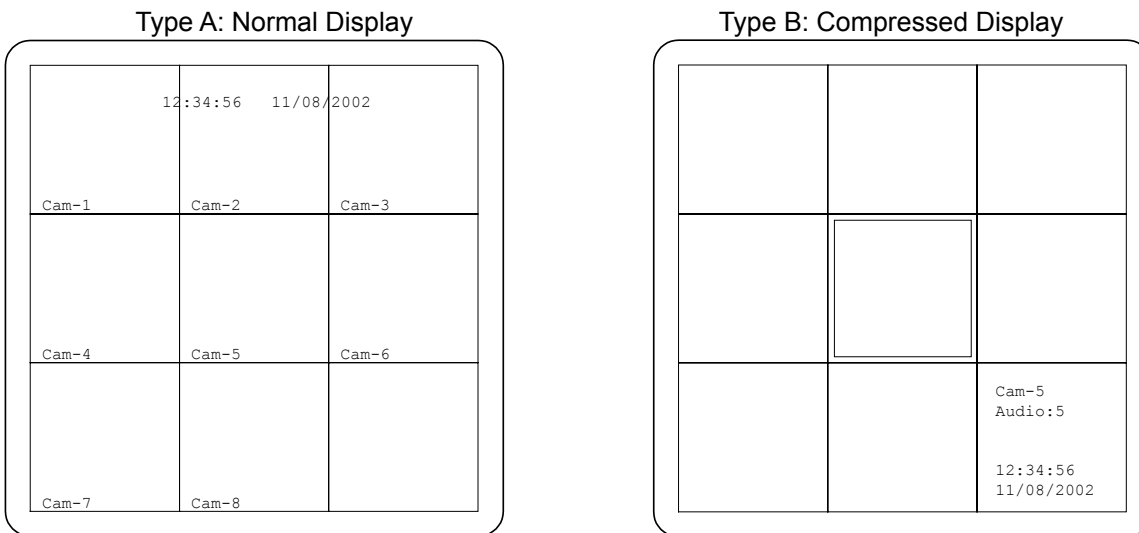
9th Cameo Setup



< Figure 56> 9th Cameo Setup Screen

The 9th Cameo Setup screen allows you to select what text will be display in the 9th Cameo window.

- **Information Setup:** Sets the type of the 9th Cameo to one of A and B.



< Figure 57> OSD Display

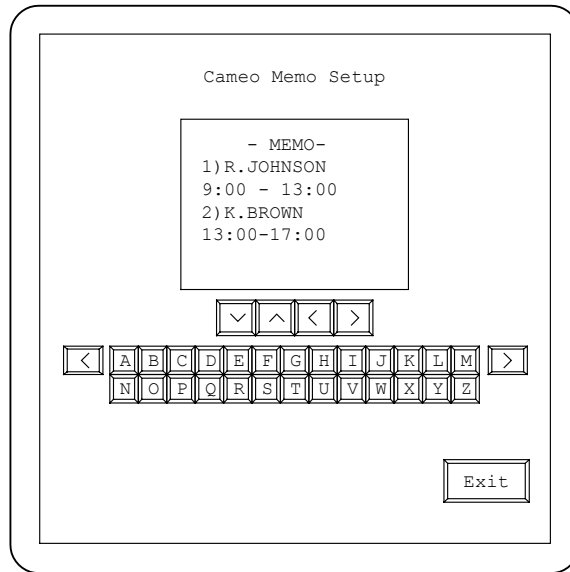
- **Cameo Memo Setup:** When On in the information setup A-type, the memo set in the cameo memo setup will display in the 9th Cameo window.

12:34:56 11/08/2002		
Cam-1	Cam-2	Cam-3
Cam-4	Cam-5	Cam-6
Cam-7	Cam-8	- MEMO- 1) R. JOHNSON 9:00 - 13:00 2) K. BROWN 13:00-17:00

< Figure 58> the information setup A type Display with Memo

- **SET:** Enters the Cameo Memo Setup submenu.
- **Exit:** Saves your changes and returns to the Main Menu.

Cameo Memo Setup



< Figure 59> Cameo Memo Setup Screen

The Cameo Memo Setup allows you to insert the memo with 16 columns x 6 lines size.

- ↓: Moves the cursor down.
- ↑: Moves the cursor up.
- ←: Moves the cursor left.
- →: Moves the cursor right.
- **Bottom** ←: Changes the keyboard characters to the previous set.
- **Bottom** →: Changes the keyboard characters to the next set.
- **Exit**: Saves your changes and returns to the previous menu.

The page intentionally left blank.

APPENDIX A. SYNCHRONIZING WITH VCRES AND DVRS

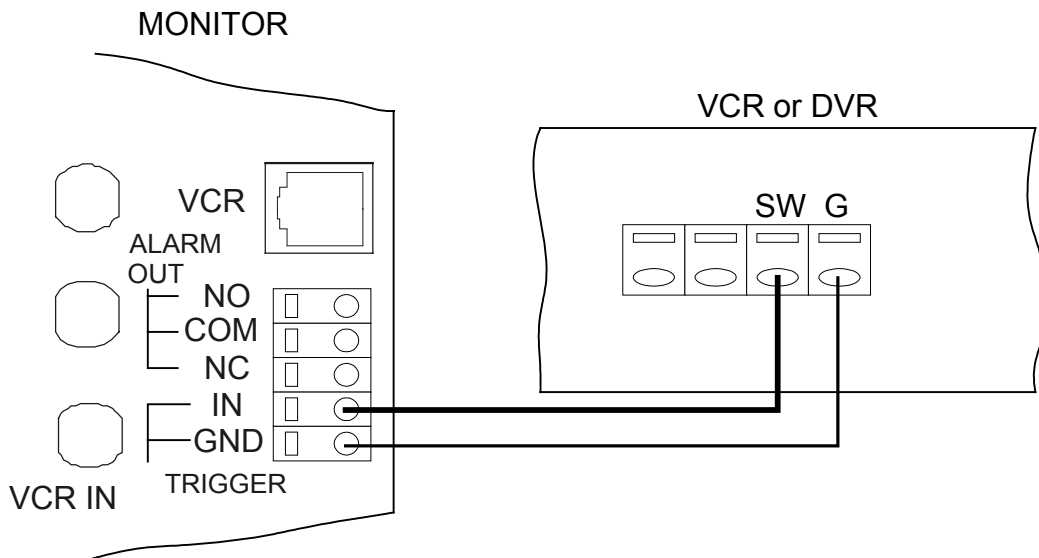
The best method of synchronizing your monitor and VCR or DVR is to use the trigger pulse. Wire the trigger pulse output of your VCR or DVR to the trigger pulse input on the rear of the monitor.

The trigger pulse output of your VCR or DVR is the camera switching pulse.

Refer to your VCR or DVR manual for proper VCR or DVR configuration.

Using this configuration, you should set the external Trigger option to + or – according to your VCR or DVR manual in the VCR System Setup screen selected from the Main Menu.

Refer to your VCR or DVR manual and enter the required information to synchronize the VCR or DVR and the multiplexer.



* When your VCR or DVR has no the trigger pulse output and is not listed in the VCR type of the VCR system setup menu, you should select the User Define in the VCR type. And you should match the record speed of our unit and your VCR or DVR. Some DVR lists the recording speed in IPS (Images Per Second). The field delay is calculated by IPS as below.

SYSTEM	IPS	Field Delay
NTSC	N	=60/N
Example	1	60/1=60
PAL	N	=50/N
Example	2	50/2=25

APPENDIX B

TROUBLESHOOTING PROCEDURES

B.1 GENERAL

If problems occur at the initial installation phase, verify the equipment has been wired properly and installed in accordance with the procedures in this manual and with other operating equipment.

The following problems and solutions highlight basic troubleshooting guidelines.

Problem Possible Solution

Item	Solution
No Video	<ol style="list-style-type: none"> 1. Verify power to all pieces of equipment in the monitor. 2. Verify that the power switches are in the ON position. 3. Verify that the camera lens cap has been removed from the lens or that the iris of the lens is open.
Video, But No Control	Power down the monitor for one minute and then turn the power back ON.
Some noise in VCR mode	Check the VCR tape recorder set the play mode.
No action of the mouse	<ol style="list-style-type: none"> 1. Power down the monitor for one minute and then turn the power back ON. 2. If the operation of the mouse still doesn't function properly, execute the mouse setup in the unit setup.
No action of the dome camera	<ol style="list-style-type: none"> 1. Power down the monitor for one minute and then turn the power back ON. 2. If it still doesn't work, check the channel select switch inside the pan/tilt motorized dome camera. The value of the channel select S/W should be CH1 (1:OFF, 2:OFF) for all dome camera used with this monitor.
No action of the action box	<ol style="list-style-type: none"> 1. Power down the monitor for one minute and then turn the power back ON. 2. If it still doesn't work, check the box switch inside the action box. The Box DIP Switch must be set to BOX2 position.

APPENDIX C

MAINTENANCE

C.1 GENERAL

This section contains the information on preventive maintenance and cleaning procedures for the unit.

C.2 PREVENTIVE MAINTENANCE

Preventive maintenance allows detection and correction of minor faults before they become serious and cause equipment failure.

Every three months, perform the following steps:

1. Inspect all connecting cables for deterioration or other damage.
2. Clean components with a damp clean cloth.
3. Verify that all of the mounting hardware is secure.

Equipment Specifications

Operating defaults	Format	3X3 Screen Display
	Display	Live
Factory defaults	Date format	US (MM/DD/YYYY)
	Hour Format	24hour
	Daylight Saving	OFF
	Camera titles	Cam-1 ~ Cam-8
	Camera Disable	Enable
	Sequence order	CA1, CA2, CA3, CA4, CA5, CA6, CA7, CA8
	Sequence, Stack Dwell time	3 seconds. (Off ~ 99 seconds)
	Alarm Reset Button	ON
	Alarm Enable	Enable
	Alarm Input Polarity	Normally Open (NO)
	Alarm Screen Format	FULL
	Alarm buzzer	ON
	Alarm Dwell time	3 seconds. (01 ~ 99 seconds)
	Alarm hold time	20 seconds (0 ~ 99 seconds)
	Alarm Timer 1,2	ON
	Alarm Timer 1,day	09:00~17:00,ON
	Alarm Timer 2,day	17:00~09:00,ON
	Alarm Message Latch	OFF
	Alarm relay	ON
	Alarm Recording	INT
	Alarm Spot Monitor	ON
	Video loss Enable	Enable
	Video loss buzzer	ON
	Video loss hold time	20 seconds (01 ~ 99 seconds)
	Video loss relay	ON
	Video loss Message latch	OFF
	Video loss Message Spot	ON
	Motion Enable	OFF
	Motion buzzer	ON
	Motion Hold time	05 seconds (01 ~ 99 seconds)
	Motion relay	ON
	Motion Spot Monitor	ON
	Motion Recording	INT
	Motion Message latch	OFF
	Timer 1	ON (MODE1)
	Timer 2	ON (MODE2)
	Password	OFF
	Password code	1 2 3 4
	Key lock	OFF
	Mouse	ON
	Mouse Setup	000
Language	English	
Demo Mode	OFF	
Remote Control	ON	

Video format	NTSC	525 lines, 2:1 Interlace
	PAL	625 lines, 2:1 Interlace
Video level	Camera	1.0Vp-p, 75 Ohms
	VCR input	1.0Vp-p, 75 Ohms
	VCR output	1.0Vp-p, 75 Ohms
Audio level	Audio inputs	line level
	Audio outputs	line level
Alarm	Alarm output	One NO and NC contact with shared common; 1.0A and 24V dc (resistive only)
Display	Gray shades	256 (8 bits)
	Color	16 million
	Sampling	720 X 480 pixels (NTSC), 720 X 576 pixels (PAL)
	Full-screen (active)	648 X 448 pixels (NTSC), 648 X 518 pixels (PAL)
	Display rate	Real time refresh rate (FULL-Screen Mode)
	Resolution	400 TV lines (at center)
Connections	Alarm input	6-pin modular jack
	Alarm output	Terminal Block
	Audio input	6-pin modular jack : audio input from cameras
	Audio output	6-pin modular jack : audio output
	VCR in	6-pin modular jack and BNC: video input from VCR
	VCR out	6-pin modular jack and BNC: video output to VCR
	Camera in (1-8)	6-pin modular jack and BNC: composite video input from cameras
	Camera output (1-8)	BNC (auto terminating) : video looping output
	Spot output	BNC: video output for Spot
	Main output	BNC: video output for Main identical to the monitor screen
	Mouse	mini DIN jack
	RS-232	DB-9
	Trigger Input	Terminal Block

Power requirement	AC 100V ~240V \pm 10%	50Hz /60Hz 2.3A
Power consumption	150W (with 8 cameras)	
Physical characteristics	Picture tube	21-inch flat, 90 deflection angle, 0.74mm stripe, in-line
	Dimensions	490W X 441.5H X 474.8D mm
	Weight	31Kg (approx.)
Operating environment	Ambient temperature	0° - 35° C (32° - 95° F)
	Ambient humidity	10% - 90% (non-condensing)

**21" 8-CHANNEL COLOR
MULTIPLEXER MONITOR**

50301609A