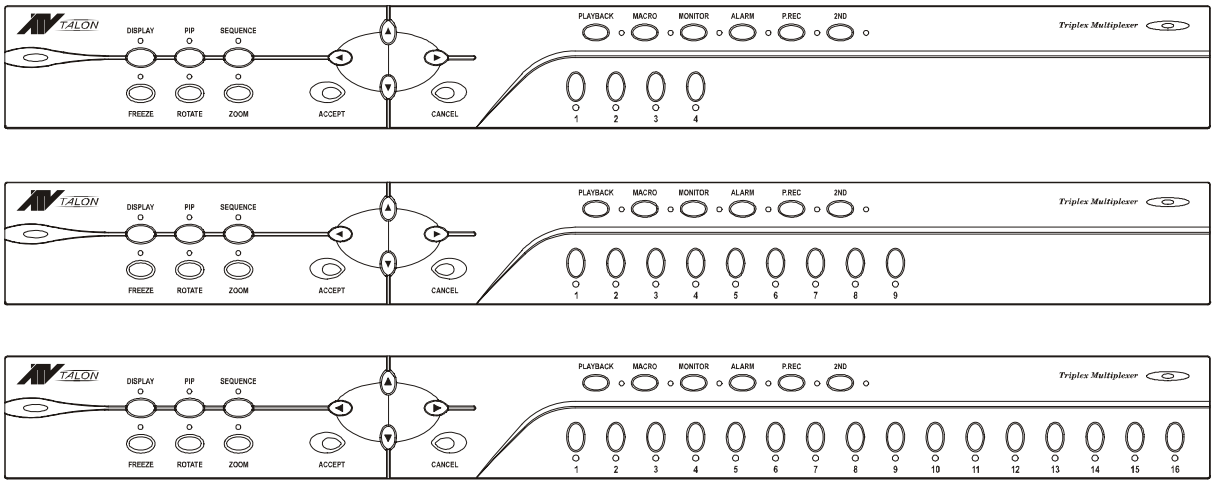
4, 9, &16-Channel
Talon Triplex Color Multiplexers

Installation and Operating Instructions



ISSUE 1 – MARCH 2003

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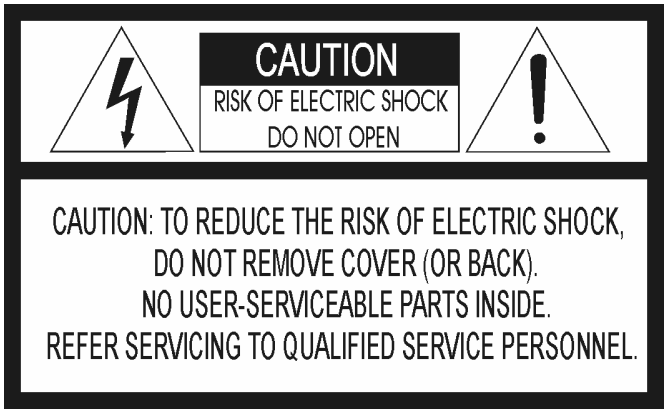
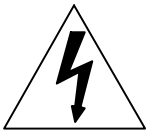
CAUTION



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) instruction in the literature accompanying the product.

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.

CE COMPLIANCE STATEMENT

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFEGUARDS

1. **READ AND RETAIN INSTRUCTIONS**
   Read the instruction manual before operating the equipment. Retain the manual for future reference.

2. **CLEANING**
   Turn the unit off and unplug from the power outlet before cleaning. Use a damp cloth for cleaning. Do not use harsh cleansers or aerosol cleaners.

3. **ATTACHMENTS**
   Do not use attachments unless recommended by manufactured as they may affect the functionality of the unit and result in the risk of fire, electric shock or injury.

4. **MOISTURE**
   Do not use equipment near water or other liquids.

5. **ACCESSORIES**
   Equipment should be installed in a safe, stable location. Any wall or shelf mounting accessory equipment should be installed using the manufacture's instructions. Care should be used when moving heavy equipment. Quick stops, excessive force, and uneven surfaces may cause the equipment to fall causing serious injury to persons and objects.

6. **VENTILATION**
   Openings in the equipment, if any, are provided for ventilation to ensure reliable operation of the unit and to protect if from overheating. These openings must not be blocked or covered

7. **POWER SOURCES**
   The 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 at the installation location, contact your dealer. For equipment designed to operate from battery power, refer to the operating instructions.

8. **GROUNDING OR POLARIZATION**
   Equipment that is powered through a polarized plug (a plug with one blade wider than the other) 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. Do not defeat the safety purpose of the polarized plug.

   Alternate Warning: If the equipment is powered through a three-way grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. Do not defeat the safety purpose of the grounding-type plug. If your outlet does not have the grounding plug receptacle, contact your local electrician.

9. **CORD AND CABLE PROTECTION**
   Route power cords and cables in a manner to protect them from damage by being walked on or pinched by items places upon or against them.

10. **LIGHTNING**
    For protection of the equipment during a lightning storm or when it is left unattended and unused for long periods of time, unplug the unit from the wall outlet. Disconnect any antennas or cable systems that may be connected to the equipment. This will prevent damage to the equipment due to lightning or power-line surges.

11. **OVERLOADING**
    Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

12. **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.

13. **DAMAGE REQUIRING SERVICE**
    Unplug the 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 unit.
    C. If the equipment has been exposed to water or other liquids.
    D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage to the unit.
    E. If the equipment has been dropped or the casing damaged.
    F. When the equipment exhibits a distinct change in performance.

14. **REPLACEMENT PARTS**
    When replacement parts are required, be sure the service technician uses 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.

15. **SAFETY CHECK**
    Upon completion of any service or repairs to the equipment, ask the service technician to perform safety checks to verify that the equipment is in proper operating condition.

16. **FIELD INSTALLATION**
    The installation of equipment should be made by a qualified service person and should conform to all local codes.

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TABLE OF CONTENTS

CHAPTER 1
INTRODUCTION

Features

- Compatible with standard color cameras and other video sources
- Switchable between NTSC and PAL
- Able to decode tapes from many other brands of multiplexers
- Multiple user-selectable formats for displaying camera images.
- Multiple monitor outputs allow simultaneous multi-camera and full-screen viewing. (1 Main and 1 Auxiliary on 4-ch unit; 1 Main and 4 Auxiliary on 9-ch and 16-ch units)
- On-screen display includes date, time, alarm status, video loss, camera number, and 24-character camera titles.
- Programmable day and night motion-detection schedules.
- Each camera has a programmable 256-target (16 x 16) motion-detection grid.
- Programmable vector-based motion detection in any direction.
- Nonvolatile program memory saves all user settings and protects them against power outages.
- One TTL/CMOS contact closure alarm for each camera.
- Up to 4 cameras can be associated with a single contact closure alarm.
- Alarm input polarity is user selectable.
- VCR switch pulse input for synchronization with VCRs having switch pulse feature.
- Full triplex operation allows simultaneous recording, playback, and live viewing.
- 256-event alarm history log.
- Linear zoom IN and OUT up to 32 times.
- IR remote control capabilities.

Technical Overview

The Triplex Multiplexers feature motion detection, alarm association, and multi-lingual setup menus.

The motion detection system senses motion vectors in any direction. The sensitivity can be adjusted and set for day and night motion detection schedules. A motion tracking box gives visual indications for easy setup.

The multiplexer contains both BNC and Y/C mini DIN inputs and outputs for VCR connection. The main monitor connects to either a composite BNC or Y/C mini DIN output. There are four BNC auxiliary outputs to be used for “spot” monitors or as sources of video for other devices.

The multiplexer has a large selection of user selectable display formats. It also has digital zooming up to 32 times the original scene.

A multi-lingual menu allows for easy setup. The user’s configuration is stored in nonvolatile memory to protect against loss of settings during power outages.

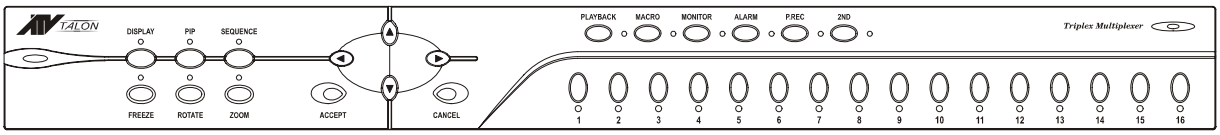
The multiplexer plays back video tapes recorded with many other multiplexers. These include but are not limited to: Dedicated Micros, Robot, Kalatel, and Pelco. Multiplexers can be “daisy chained” and addressed and controlled by a single control panel. The multiplexer can also be addressed by a computer using either an RS-232 or RS-485 connection.

CHAPTER 2
PRODUCT OVERVIEW

This manual is to be used for all three models of the Triplex Color Multiplexers. The features are the same with the exception of camera connection capability. This manual was written based on the 16-channel unit. Note that some screens or option are not available for the 9 or 4-channel units due to reduced camera connections.

Front Panel Buttons

The buttons on the front panel of the multiplexer are used to switch between display modes, operate the features of the unit, and select between the various cameras (4, 9, or 16).



Front View of 16-channel Multiplexer

DISPLAY

The DISPLAY button cycles the monitor display through the various display modes. The complete list of display modes for the 16-channel unit is: 16(4x4), 13(1+12), 10(2+8), 9(3x3), 7(3+4), and (2x2) in live mode. The display modes for the 9-channel unit are: 9(3x3), 7(3+4) and 4(2x2). The display mode for the 4-channel unit is: 4(2x2).

In the VCR playback mode, the available display modes are 4x4, 3x3, and 2x2 for the 16-channel unit, 3x3 and 2x2 for the 9-channel unit, and 2x2 for the 4-channel unit.

PIP

The PIP button inserts a selected camera as a small image in a portion of the main screen. Pressing the PIP button cycles through the PIP display option. To change the display in one of the inset windows, select it using the front panel buttons.

NOTE: The PIP function is not operational during the VCR playback mode.

SEQUENCE

The SEQUENCE button activates the sequential viewing of cameras. Press the SEQUENCE button while in the FULL SCREEN mode to start or stop the User Defined Sequence.

FREEZE

The FREEZE button freezes the camera image(s) on the monitor display. The multiplexer output for the VCR recording is still live during all display modes. Another push of this button (or other buttons: ROTATE, DISPLAY, PIP, ZOOM, PLAYBACK) releases the freeze mode.

ROTATE

The ROTATE mode changes the position of the inset display window on the screen for the PIP, Dual PIP, and SQUISH screen displays.

ZOOM

The ZOOM function expands the selected portion of a full frame camera image in live mode. Pressing the ACCEPT button increases the magnification factor up to 32x. Pressing the CANCEL button decreases the magnification from the zoomed image down to the original image. Holding down the ACCEPT or CANCEL buttons speeds up the zoom process. To exit a zoomed image, press the ZOOM button again.

ACCEPT / CANCEL / ARROW Buttons

The ACCEPT, CANCEL, and ARROW buttons are described together because they can be used in conjunction with each other while maneuvering through the setup menu, as well as being used independently to handle other multiplexer options.

ACCEPT – brings up a pop-up menu when a camera view is highlighted, sets selections on the OSD menu, and decreases numbers or values in the number setup function.

CANCEL – acts as an “ESC” button, clears cameo selections, and increases numbers or values in the number setup function.

UP, DOWN, LEFT, RIGHT – the arrow buttons are used to move the cursor on the screen Up, Down, Left or Right.

PLAYBACK

The PLAYBACK button is used to switch the multiplexer into the VCR playback mode or the VCR preview mode. Pressing the button once puts it into the playback mode. Pressing the 2ND button then the PLAYBACK button switches the unit to the preview mode.

MACRO

The MACRO button allows the user to program a new macro or activate an already programmed macro. To program a macro, go to the Setup menu and select Macro Setup. When the setup screen appears select the Macro number you want to record, perform the steps of the macro function, then return to the Macro Setup screen to stop recording. To see the recorded macro, press the Macro button then the camera number button.

MONITOR

The MONITOR button is used to assign the camera view to one of the four spot monitor outputs. To assign the output, select the Monitor button, then press the 1, 2, 3, or 4 camera button to select one of the four output, then press the camera button corresponding to the camera video that is to be assigned to the output.

ALARM

Allows the user to generate an alarm. Press the ALARM button, then a camera button to place that camera in the alarm mode.

P.REC

The P.REC button activates the panic record mode. To interrupt the programmed record settings and capture video on a specific camera, press the P.REC button then the camera button number of the desired recording.

2ND

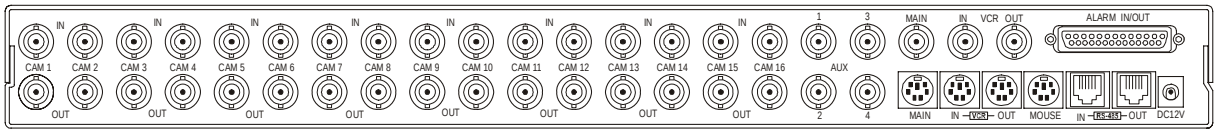
The 2ND button is used to reset alarms and select user defined modes.

CAMERA 1 – 16 Buttons

The Camera buttons are used to select cameras for viewing or as numbers in programming configurations.

Back Panel Connections

The connections on the back of the multiplexer are explained below. The only difference between the 4, 9, and 16-channel unit back panel connections are the number of camera inputs and outputs.



CAM IN (1-4, 1-9, or 1-16)

The CAM IN connectors are used to connect the multiplexer to the video output of a BNC camera.

CAM OUT (1-4, 1-9, or 1-16)

The CAM OUT connectors provide loop-through video options for the cameras connected to CAM IN.

AUX (1, 2, 3, 4)

The AUX connections are Spot Monitor outputs. The Setup Menu allows the user to select which cameras to output on each of the four AUX connections for viewing on accessory monitors. (1 AUX on the 4-ch unit; 4 AUX on the 9-ch and 16-ch units)

MAIN (BNC and S-VIDEO)

The multiplexer offers two options for viewing the main video output from the unit, either through a BNC connection or an S-Video connection.

VCR (IN and OUT) (BNC and S-VIDEO)

The multiplexer connects to an optional VCR through either the BNC or S-Video IN and OUT connections.

MOUSE

As an alternative to the front panel buttons for operation, the menu operations can be accessed through an option mouse.

ALARM IN/OUT

Alarming functions are accessed through the 50-pin alarm connector. Refer to the Alarm Connections section on page 9 for more information on the pin out of the Alarm connector.

RS-485 (IN and OUT)

The RS-485 S-Video connectors are used for remote control operations.

DC12V

The DC12V connection is the main power supply input for the multiplexer.

Setting for NTSC or PAL Operation

Upon initial setup, the multiplexer should be set to the NTSC or PAL configuration. When changing the operation setting, all other unit settings return to the default configuration.

To set the multiplexer for NTSC operation:

1. Turn the power OFF.
2. Press and hold the ALARM and PLAYBACK buttons.
3. Turn ON the power.

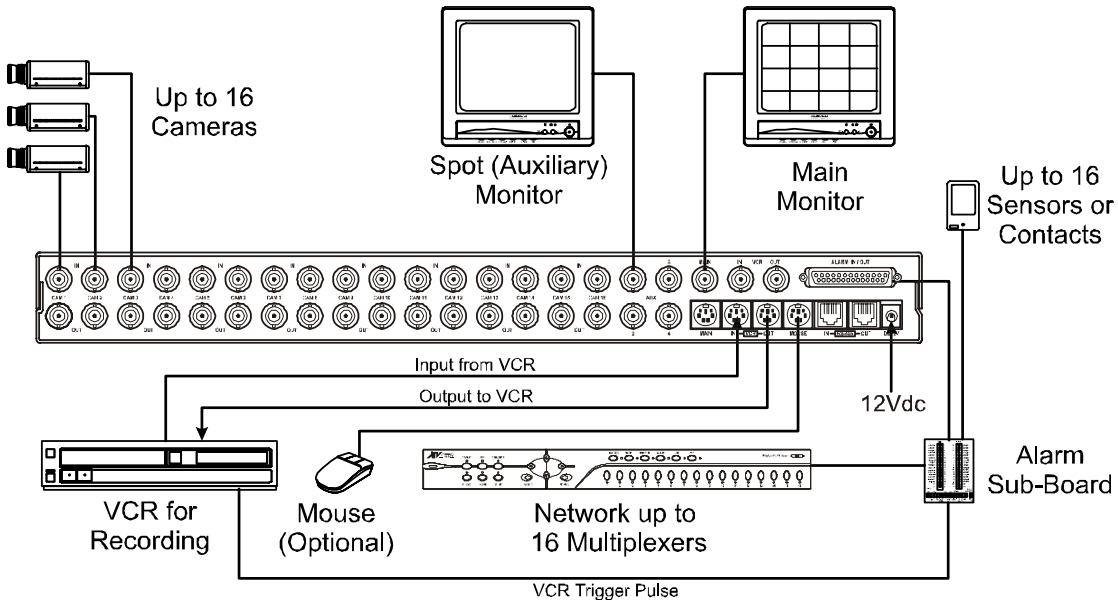
To set the multiplexer for PAL operation:

1. Turn the power OFF.
2. Press and hold the ALARM and MONITOR buttons.
3. Turn ON the power.

CHAPTER 3
INSTALLATION

System Configuration

The Triplex Multiplexer is only one part of a complete system that controls cameras, monitors, recording devices, alarm equipment, and other accessory items. The following figure illustrates the connections feeding off a 16-channel multiplexer for a complete security system solution.



Camera Connections

The multiplexer supports 4, 9 or 16 camera inputs depending on the model. Cameras attach directly to the BNC IN connectors. BNC OUT connections provide loop-out capability with an auto-terminating feature for looping video to another device without additional termination.

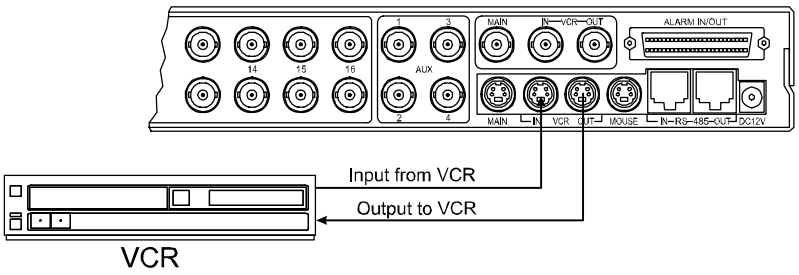
NOTE: Connecting a cable to the loop-through connector switches off the termination. DO NOT connect a cable to the BNC OUT connection unless it is connected to the input of another video device.

Adding Monitors

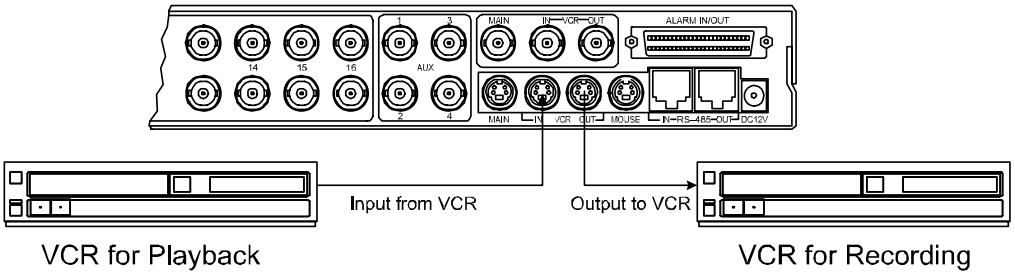
The MAIN BNC output connections are for the primary monitors used with the system. There are two connectors: a BNC connection and an S-VIDEO connection. Up to four auxiliary monitors can be connected to the multiplexer for use as spot monitors or to view live video while playing recorded video on the main monitor. The auxiliary monitors connect to the AUX BNC connectors.

Connecting Recording Devices

The multiplexer has both BNC and S-VIDEO connections for use with a recording device such as a VCR or DVR (Digital Video Recorder). The figures below show examples of one VCR connected to the multiplexer for use in both recording and playback, and two VCRs being used to allow simultaneous recording and viewing of video.



Connection to a Single Recording Device



Using multiple Recording Devices

Mouse Connections

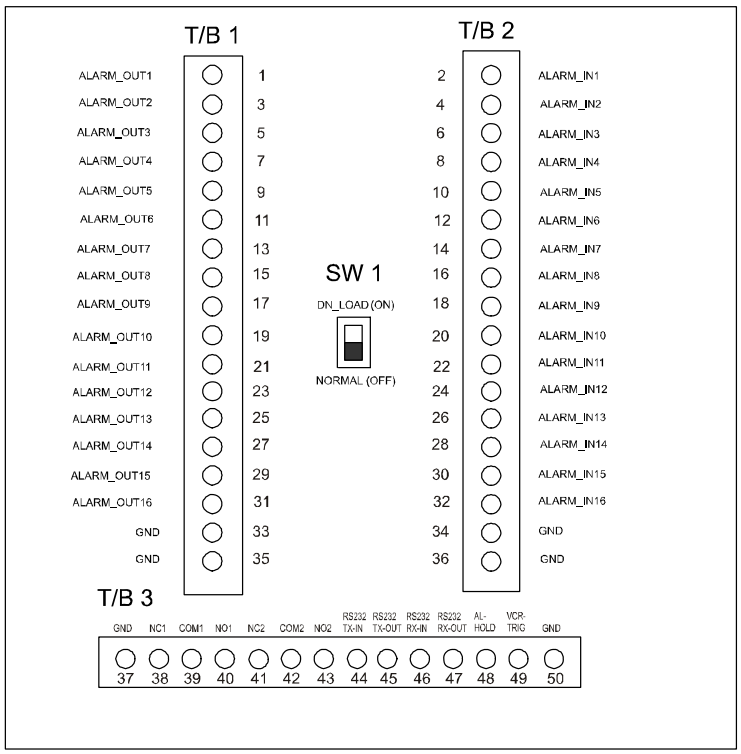
A mouse attached to the multiplexer allows the user the option of accessing setup menu options by pointing and clicking the desired settings rather than using the front panel buttons. A standard serial mouse (ex: Microsoft, Logitech) connects to the mini DIN connector labeled MOUSE.

Daisy–Chaining Equipment

The multiplexer can be daisy-chained to other multiplexers or controlled by a remote keyboard. To add another multiplexer to the system connect the RS-485 OUT connector of the additional unit to the RS-485 IN connector on the initial multiplexer.

Alarm Connections

The 50-pin ALARM IN/OUT connector features 16 alarm inputs, 16 alarm outputs, RS-232 connections, VCR trigger pulse, and various alarm settings. A sub-board is supplied with the multiplexer to simplify connections. The board connects to the 50-pin connector via a ribbon cable. See the following illustration for pin assignments.



CHAPTER 4
MENU SETUP AND OPERATION

Accessing the TOP and BOTTOM Menus

The multiplexers use On-Screen Display (OSD) menus. Navigation through the menus is possible through the front panel buttons, an optional mouse attached to the unit, or through a remote control device.

There are two main menus: Top and Bottom. The Top Menu is accessed by moving the cursor to the top edge of the screen. The Bottom Menu is accessed by moving the cursor to the bottom edge of the screen.

Top Menu

The Top Menu has five options:

Live Selecting Live returns the unit to the last Live mode screen format displayed.

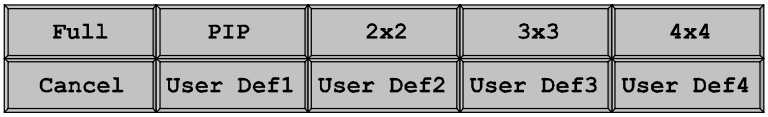
Playback The Playback option returns the unit to the last screen format accessed in the Playback mode.

Preview Selecting the Preview options displays a preview of recorded video.

Setup The Setup option provides access to the Setup menu. This feature is password protected. The options in the Setup menu are described in detail in the following section.

Cancel The Cancel button exits the Top Menu without any changes.

Bottom Menu



The Bottom Menu is only available in the Live Mode. The options available depend on the model of the multiplexer. The menu shown above lists all the options available on the 16-channel model.

Full Switches to a full screen view of a single camera

PIP Switches to the Picture-In-Picture (PIP) display

2x2 Switches to a 4-camera display on the screen

3x3 Switches to a 9-camera display on the screen (not available on 4-ch model)

4x4 Switches to a 16-camera display on the screen (not available on 4 or 9-ch models)

User Def The four User Defined options switch the view on the screen to the user-selected options stored in four different settings.

Cancel Exits the menu without any changes

The options on the 9-channel unit are: Full, PIP1, 2x2, PIP4, 3x3, Cancel, and User Def (1-4).
The options on the 4-channel unit are: Full, PIP1, PIP2, PIP3, 2x2, Cancel and User Def (1-4).

Live

The Live option on the Top Menu returns the display to the last live mode screen format when selected.

Playback

The Playback option on the Top Menu returns the display to the last screen format accessed in the Playback mode.

Preview

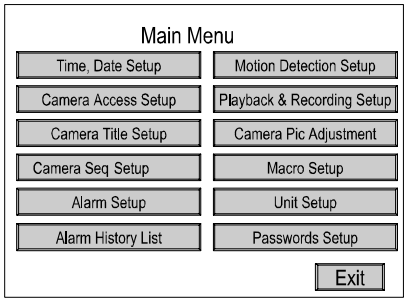
The Preview option displays a preview of recorded images from the VCR.

Setup Menu

To access the Setup Menu move the cursor to the top of the screen. On the Top Menu Bar select the Setup option using the ACCEPT button.

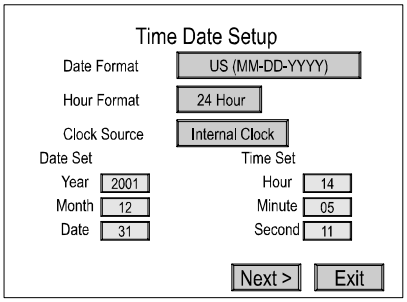
Note: If Password Protect is ON, see the Password Setup section on page 32 for more details.

Upon selecting the Setup option on the Top Menu, the Main Menu screen appears. Access to submenus to change camera, alarm, playback, recording, and password appear on this screen.



Time Date Setup

The Time Date Setup screen is used to format the multiplexer's time and date settings and to setup the daylight savings time option. The NEXT option at the bottom of the screen leads to the Daylight Savings Time setup screen. The EXIT option saves the settings and exits the Time & Date Setup screen.



Date Format: There are three date options to choose from where MM = month, DD = day, and YYYY = year.

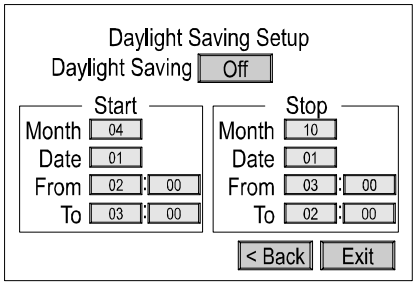
USA	MM-DD-YYYY
EURO	DD-MM-YYYY
ASIA	YYYY-MM-DD

Hour Format: The hour format options are: "24 Hour" for military time, or "AM/PM" for clock time.

Clock Source: The clock source options are Internal Clock and Network Clock. If the multiplexer is connected to a network, set the option to Network Clock and the unit will receive the clock information from the master multiplexer. Otherwise, set the clock source option to Internal Clock.

Date Set: Use the arrow buttons on the front panel (or the mouse) to move the cursor position for the year, month, and date. The ACCEPT button decreases the number. The CANCEL button increases the number.

Time Set: Use the arrow buttons on the front panel (or the mouse) to move the cursor for the hour, minutes, and seconds. The ACCEPT button decreases the number. The CANCEL button increases the number.



Daylight Savings: If you are in an area that does not have Daylight Savings Time, set this option to OFF. When you set this to ON, you must set the start and stop dates and times.

Start: Set the month and day (date) for the beginning of daylight savings time in your area.

Stop: Set the month and day (date) for the ending of daylight savings time in your area.

The BACK option at the bottom of the screen reverts back to the Time & Date Setup screen. The EXIT option saves the settings and exits the Daylight Saving Setup screen.

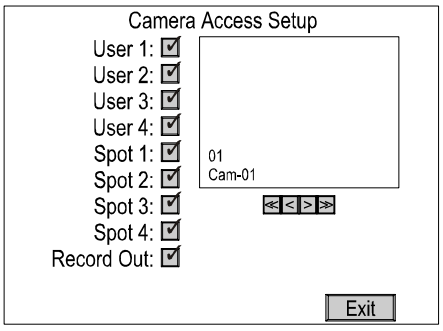
Camera Access Setup

The Camera Access Setup screen is used to assign camera access to different users. It permits or limits the display on Spot (auxiliary) monitors and designates whether a camera can be recorded.

The window appearing on the Camera Access Screen shows the video display for the selected camera. The arrow options under the window move the camera selection to the beginning (<<) or end (>>) of the camera list and, move it back (<) one position or forward (>) one position.

In the check box next to the options User 1 – User 4, Spot 1 – Spot 4, and Record Out, a check mark (√) activates the access for the user, monitor, or recording option for the camera appearing in the window. A circle (O) restricts the access. The access settings must be set for each camera.

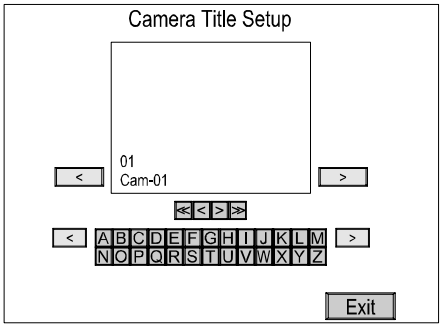
The EXIT option saves the changes and returns the user to the main Setup Menu.



Camera Title Setup

The Camera Title Setup screen allows the user to enter a title for each camera. The maximum length of the title is 24 characters, including spaces.

To set the camera title, select the desired camera so the image appears in the display window. The < and > buttons to the left and right of the display window are used to move the cursor position when using the mouse. The ACCEPT button on the front of the unit is also used to move the cursor position.



Underneath the display window the <<, <, >, and >> arrow buttons are used to select the camera. The << and >> options move to the beginning and end of the list of available cameras, respectively. The < and > options move one position back or forward in the list respectively.

Below the display window buttons are two rows of characters. There are a total of six character sets that can be displayed. To move to the next or previous character set, move the cursor to the < and > button options on the left and right sides of the character set, then press the ACCEPT button. The character set options are as follows:

Set 1: A to Z (upper case letters)

Set 2: a to z (lower case letters)

Set 3: Blank ! “ # $ % & ‘ ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9

Set 4: : ; , = . ? [\ ] ^ _ ‘ { | } ~

Set 5: À Á Â Ä Ç È É Ê Ë Ì Î Ï Ñ Ò Ó Ô Ö Ù Ú Û Ü ß à á â

Set 6: ä ç è é ê ë ì í î ï ñ ò ó ô ö ù ú û ü

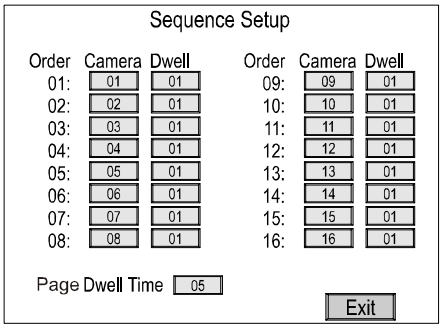
The Exit option at the bottom of the Camera Title Setup screen saves the changes and returns to the main Setup menu.

Camera Sequence Setup

The Camera Sequence Setup screen allows the user to set the order in which the cameras appear when the multiplexer is in the sequence mode. It is also used to set the dwell time of the display from OFF to 99 seconds.

To change the camera or dwell setting, use the arrow keys on the front panel (or the mouse) to move the cursor to the option to be changed. Use the ACCEPT button to decrease and the CANCEL button to increase the number selection.

The Page Dwell Time is the length of time each group of cameras will display. Use the Exit button to save the settings and return to the main Setup menu.

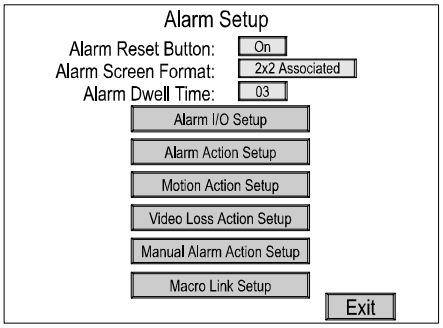


Alarm Setup

When the Alarm Reset Button is set to ON, alarm events can be cleared using the front panel buttons or the Pop Up menu. When set to OFF, the only way to clear the alarm is to enter the Setup Menu.

The Alarm Screen Format option sets the display mode that the multiplexer defaults to when an alarm occurs. The options are: Full, 2x2 Screen, 2x2 Assoc Scrn, 4x4 Screen, and Unchanged (depending on the model).

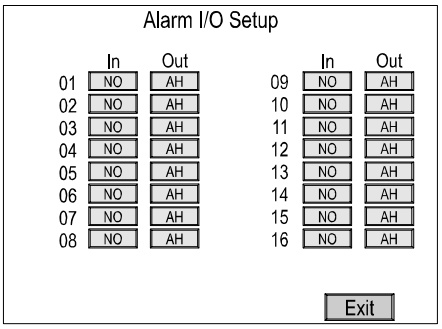
The Alarm Dwell Time can be set from 1 to 99 seconds. The screen will automatically sequence in a multi-alarm condition.



The Alarm setup screen has six sub-menu screens to setup alarm actions. These are described in the following pages.

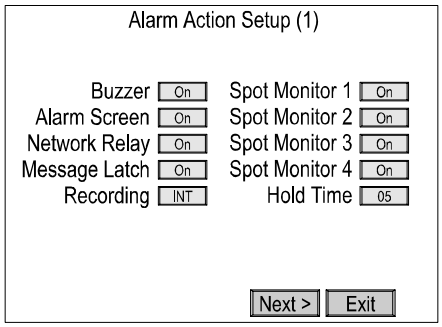
Alarm I/O Setup

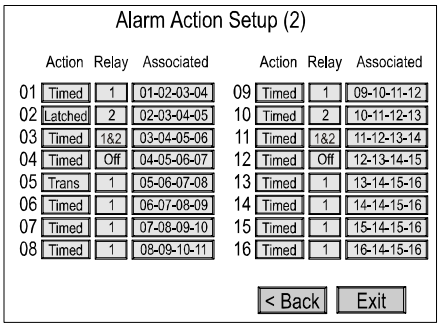
The Alarm In setting options are NO (Normally Open), NC (Normally Closed), or OFF. The Alarm Out setting options are AH (Active High) or AL (Active Low) TTL output. The Exit option saves the changes and returns to the Alarm Setup menu.



Alarm Action Setup

There are two screens for the Alarm Action Setup as shown below. The Next and Back buttons toggle between the two screens. The Exit button saves the settings and returns to the main Alarm Setup menu.





Buzzer: When set to ON, the multiplexer's internal buzzer sounds upon an alarm condition.

Alarm Screen: When set to ON, the screen display changes to the one defined in the Alarm Screen Format menu during an alarm condition.

Network Relay: When set to ON, the multiplexer sends the alarm information to an external relay box via the network during an alarm condition.

Message Latch: When set to ON, an "A" displays on the screen when an alarm conditions occurs. It remains on the screen until it is cleared.

Recording: This allows the user to select how video will be recorded during an alarm condition. INT interleaves images from the camera with an alarm every other field, thereby providing more images from the camera. When there are multiple alarms, the cameras with alarms are interleaved. The ONLY option records images from only the camera with an alarm condition. UNC leaves the recording parameters unchanged.

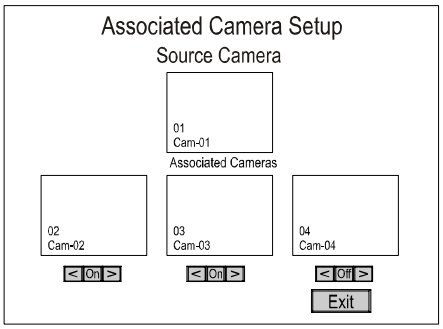
Spot Monitor 1 – 4: When set to ON, the Spot Monitor displays the camera with an alarm condition. When there are multiple alarms, cameras with alarms display sequentially. When set to OFF, the Spot Monitor's display does not change during an alarm condition. (1 AUX on 4-ch unit; 4 AUX on 9-ch and 16-ch units).

Hold Time: The Hold Time setting allows the user to set the alarm actions to last from 1 to 99 seconds. Hold Time is applicable only if the alarm action is set to Timed OUT.

Action: The action options are Timed, Latched, and Trans. When Timed is selected, the alarm "times out" at the designated hold time unless the user clears it earlier. The Latched setting means the alarm remains active until the operator acknowledges it. The Trans (transparent) setting means the alarms are not latched and cannot be cleared by the user.

Relay: The relay options are: 1, 2, 1&2, and OFF. Selecting the 1 or 2 option sets either internal relay 1 or 2 to be activated by the alarm. The 1&2 option sets both the 1 and 2 internal relays as active during an alarm. When set to OFF, neither internal relay is activated by the alarm.

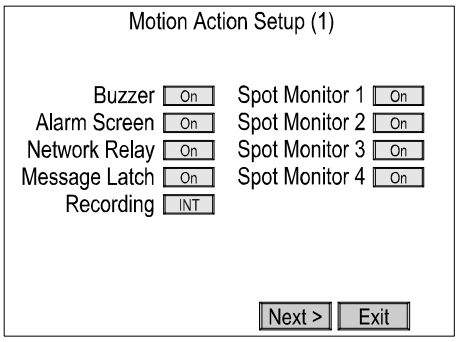
Associated: The associated option allows the user to associate other cameras with the camera in the alarm condition. Upon selection of this option, the Associated Camera Setup sub-menu screen appears.

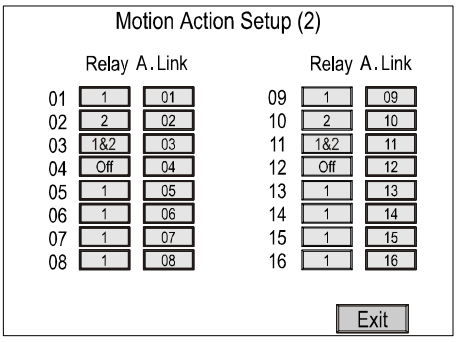


The Associated Camera Setup screen allows the user to associate up to three cameras with another when an alarm condition occurs. The main camera is displayed in the top window; the three associated cameras are shown below it. Under each of the associated cameras is a control bar with the options < (moves the camera selection back one), ON (turns On the associated camera), and > (moves the camera selection forward one). The Exit button saves the settings and returns to the Alarm Action Setup menu.

Motion Action Setup

There are two screens for the Motion Action Setup as shown below. The Next and Back buttons toggle between the two screens. The Exit button saves the settings and returns to the main Alarm Setup menu.





Buzzer: When set to ON, the multiplexer's internal buzzer sounds upon a motion alarm condition.

Alarm Screen: When set to ON, the screen display changes to the one defined in the Alarm Screen Format menu during a motion alarm condition.

Network Relay: When set to ON, the multiplexer sends the alarm information to an external relay box via the network 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.

Recording: This allows the user to select how video will be recorded during a motion alarm condition. INT interleaves images from the camera with an alarm every other field, thereby providing more images from the camera. When there are multiple alarms, the cameras with alarms are interleaved. The ONLY option records images from only the camera with an alarm condition. UNC leaves the recording parameters unchanged.

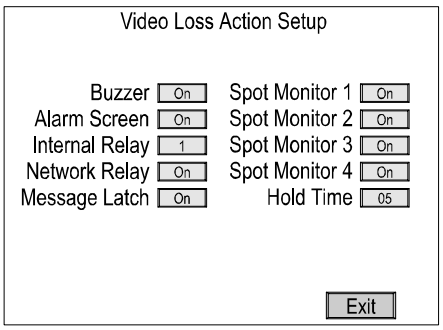
Spot Monitor 1 – 4: When set to ON, the Spot Monitor displays the camera with a motion alarm condition. When there are multiple alarms, cameras with alarms will display sequentially. When set to OFF, the Spot Monitor's display does not change during a motion alarm condition. (1 AUX on 4-ch unit; 4 AUX on 9-ch and 16-ch units)

Relay: The relay options are: 1, 2, 1&2, and OFF. Selecting the 1 or 2 option sets either internal relay 1 or 2 to be activated by the motion alarm. The 1&2 option sets both the 1 and 2 internal relays as active during a motion alarm. When set to OFF, neither internal relay is activated by the motion alarm.

Alarm Link: This option links the motion detection to the alarm action. IT can be set to OFF or any one of the 16 alarm actions. All alarm actions take priority over motion actions.

Video Loss Action Setup

The Video Loss Action Setup screen allows the user to set up the action the multiplexer takes when there is a video loss condition.



Buzzer: When set to ON, the multiplexer's internal buzzer sounds upon a video loss condition.

Alarm Screen: When set to ON, the screen display changes to the one defined in the Alarm Screen Format menu during a video loss condition.

Internal Relay: Selects which internal relays will be activated during a video loss condition. Option 1 selects relay 1. Option 2 selects relay 2. Option 1&2 activates both internal relays. Select OFF to de-activate both internal relays.

Network Relay: When set to ON, the multiplexer sends the video loss information to an external relay box via the network during a video loss condition.

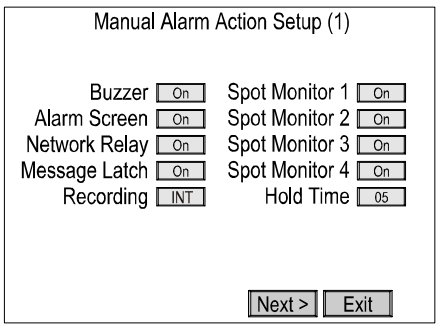
Message Latch: When set to ON, a "V" displays on the screen when a video loss condition occurs. It remains on the screen until it is cleared.

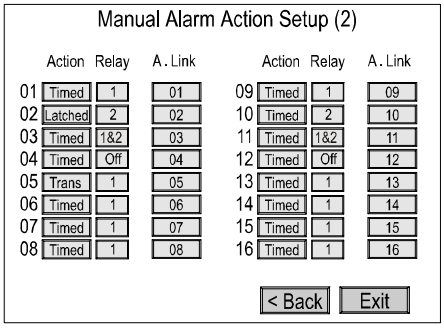
Spot Monitor 1 – 4: When set to ON, the Spot Monitor displays the camera with a video loss condition. When there are multiple alarms, cameras with alarms will display sequentially. When set to OFF, the Spot Monitor's display does not change during a video loss condition. (1 AUX on 4-ch unit; 4 AUX on 9-ch and 16-ch units)

Hold Time: The Hold Time setting allows the user to set the alarm actions to last from 1 to 99 seconds.

Manual Alarm Action Setup

There are two screens for the Manual Alarm Action Setup as shown below. The Next and Back buttons toggle between the two screens. The Exit button saves the settings and returns to the main Alarm Setup menu.





Buzzer: When set to ON, the multiplexer's internal buzzer sounds upon a manual alarm condition.

Alarm Screen: When set to ON, the screen display changes to the one defined in the Alarm Screen Format menu during a manual alarm condition.

Network Relay: When set to ON, the multiplexer sends the alarm information to an external relay box via the network during a manual alarm condition.

Message Latch: When set to ON, an "A" displays on the screen when a manual alarm condition occurs. It remains on the screen until it is cleared.

Recording: This allows the user to select how video will be recorded during a manual alarm condition. INT interleaves images from the camera with an alarm every other field, thereby providing more images from the camera. When there are multiple alarms, the cameras with alarms are interleaved. The ONLY option records images from only the camera with an alarm condition. UNC leaves the recording parameters unchanged.

Spot Monitor 1 – 4: When set to ON, the Spot Monitor displays the camera with a manual alarm condition. When there are multiple alarms, cameras with alarms will display sequentially. When set to OFF, the Spot Monitor's display does not change during a manual alarm condition. (1 AUX on 4-ch unit; 4 AUX on 9-ch and 16-ch units)

Hold Time: The Hold Time setting allows the user to set the alarm actions to last from 1 to 99 seconds. Hold Time is applicable only if the alarm action is set to Timed OUT.

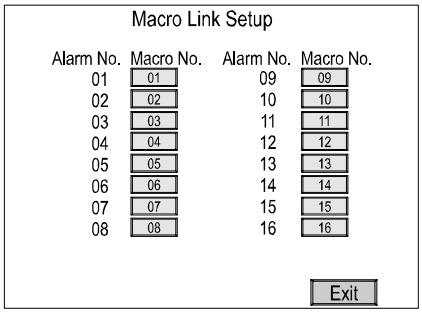
Action: The action options are Timed, Latched, and Trans. When Timed is selected, the alarm "times out" at the designated hold time unless the user clears it earlier. The Latched setting means the alarm remains active until the operator acknowledges it. The Trans (transparent) setting means the alarms are not latched and cannot be cleared by the user.

Relay: The relay options are: 1, 2, 1&2, and OFF. Selecting the 1 or 2 option sets either internal relay 1 or 2 to be activated by the alarm. The 1&2 option sets both the 1 and 2 internal relays as active during an alarm. When set to OFF, neither internal relay is activated by the alarm.

Alarm Link: The Alarm Link option selects whether to link the alarm action. It can be set to OFF or any of the 16 alarm actions. All alarm actions take priority over manual alarm actions.

Macro Link Setup

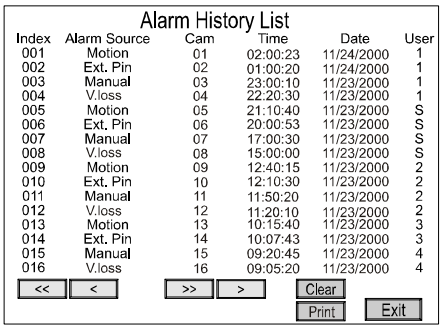
The Macro Link Setup screen allows the user to link macro to alarms. Each alarm can be individual linked or set to OFF. Use the arrow buttons to move the cursor to the desired Alarm Number, then the ACCEPT and CANCEL buttons to decrease or increase the Macro Number. The Exit option saves the changes and returns to the Alarm Setup Screen.



Alarm History List

The Alarm History List displays historical alarm information for up to 256 events. The arrow options moves the screen display forward or backwards within the list. The << and >> options move the screen to the beginning or end of the list, respectively. The < and > options move the screen backward or forward one page, respectively.

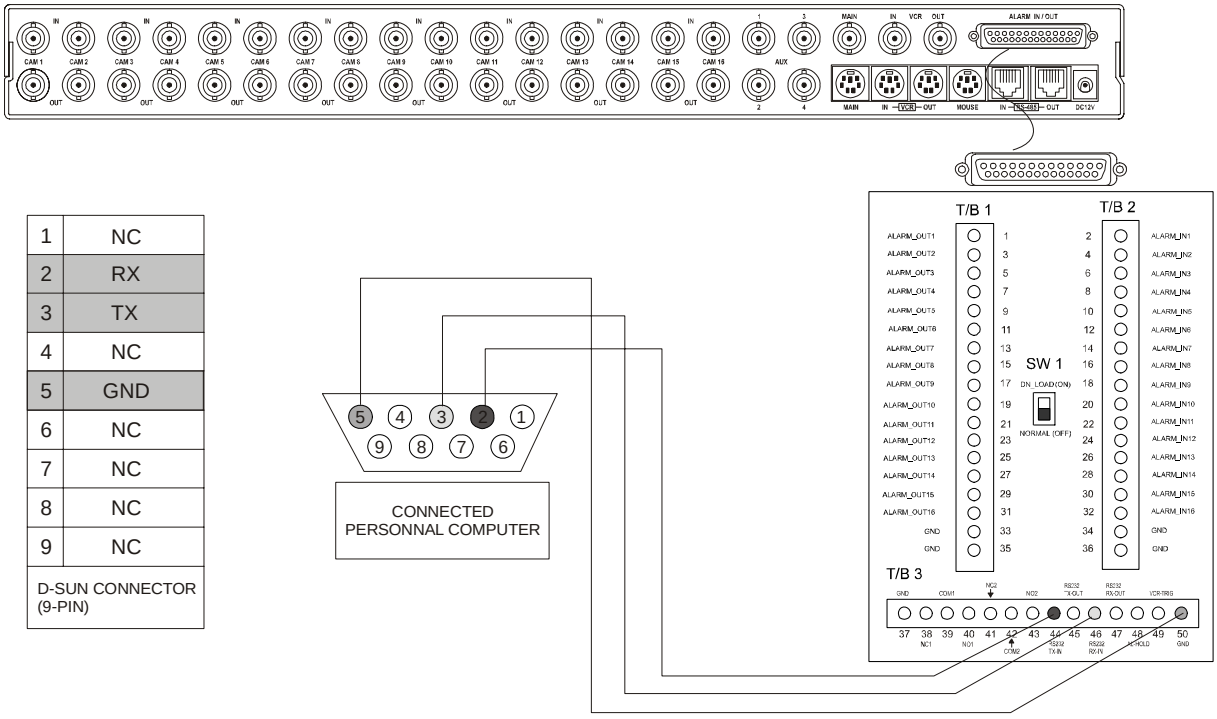
The Clear option erases the information from the list. A confirmation screen appears when this option is selected, allowing you the option of changing your mind before the information is deleted.



To print a copy of the alarm history list it is necessary to have the multiplexer connected to a PC. The diagram on the following page shows the connections The print feature also requires a “Download.exe” program to be loaded onto the PC.

NOTE: Contact ATV at 888-288-7644 or go to their website at: www.atvideo.com

1. Implement the “Download.exe” file and click the icon named “Print Program”.
2. Now user’s are ready to use “Print” function.
3. Perform “Print” on the menu of multiplexer. And then the multiplexer will transfer the alarm history to your PC.



1	NC
2	RX
3	TX
4	NC
5	GND
6	NC
7	NC
8	NC
9	NC

D-SUN CONNECTOR (9-PIN)

After connecting the multiplexer to the PC and downloading the “exe” file from ATV’s website, perform the following steps:

1. Execute the “Download.exe” file.

2. When the screen shown below on the left appears, test the connection from the PC to the multiplexer by checking the “Enter Key” box and entering the text “bd” in the command line. Click the SEND button. The command will change the display format of the screen if the PC and multiplexer are connected correctly. Check your connections if they don’t.

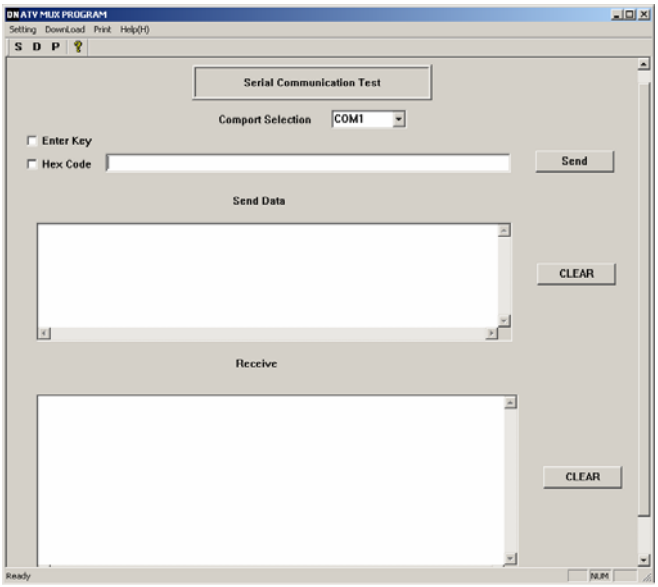
3. On the multiplexer Setup Menu, select the Unit Setup menu option. Set the Network Type to “RS-232” and the Protocol to “A”.

4. In the open program window select the PRINT option from the menu bar (or press the “P” button) then select ALARM HISTORY. The Alarm History window appears on the screen.

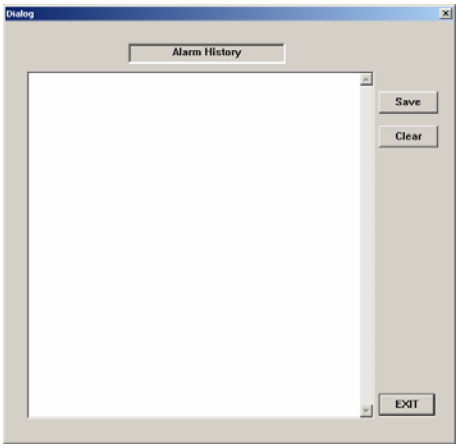
5. On the multiplexer’s Setup Menu, select the Alarm History List option. Select the PRINT button. The alarm history list is downloaded to the computer and appears in the Alarm History window.

6. In the Alarm History window, select the SAVE button to save the information to a file on your computer. Print the saved file from your computer using the standard print features.

Print Program Window

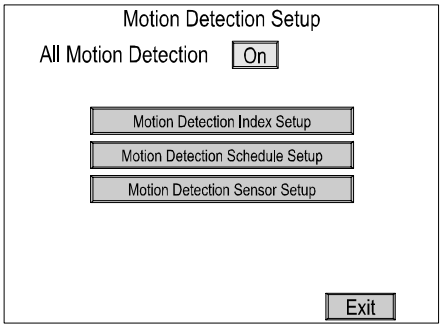


Alarm History Window



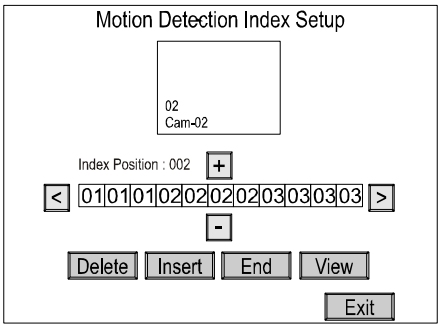
Motion Detection Setup

The Motion Detection Setup menu is used to set the motion detection feature ON or OFF. Three additional submenu's provide further setting options for the index, scheduling, and sensor options. The All Motion Detection option is a global switch that turns the motion detection function ON or OFF for all cameras.



Motion Detection Index Setup

Normally, priority for motion detection is given equally to all cameras connected to the multiplexer. The Motion Detection Index Setup screen however allows the user to provide higher priority to a single camera within an area of the grid.



The screen shown above is used to set the priority of each camera (up to 128 index positions).

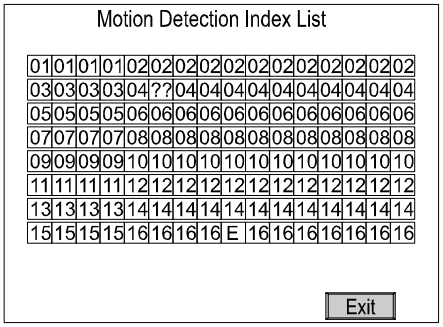
The + and – options increment and decrement the camera number displayed in the box centered between the two. The < and > arrows scroll through the camera array left to right.

Delete: The Delete option deletes the highlighted camera from the array.

Insert: The Insert option inserts a blank into the array.

End: The End option inserts an "E" into the array which set the end mark for the index list.

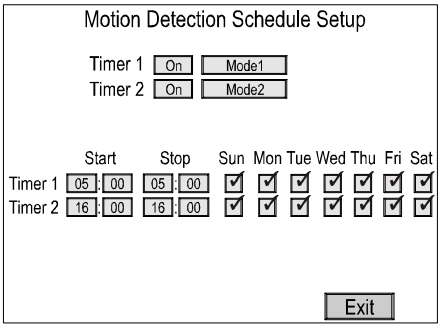
View: The View option displays the Motion Detection Index List as shown in the following figure.



The Motion Detection Index List displays the priorities assigned to the cameras. This screen is for viewing only and does not allow editing options.

Motion Detection Schedule Setup

The multiplexer can be set to detect or ignore motion based on a schedule. This feature allows the motion detection to ignore certain cameras with high activity during normal business hours yet detect generate an alarm condition when the office is closed and activity needs to be monitored.



Timer 1 / Timer 2: Each timer can be set to ON or OFF, and Mode 1 or Mode 2. The Mode settings are described in the Motion Detection Sensor Setup section directly following this Schedule Setup section.

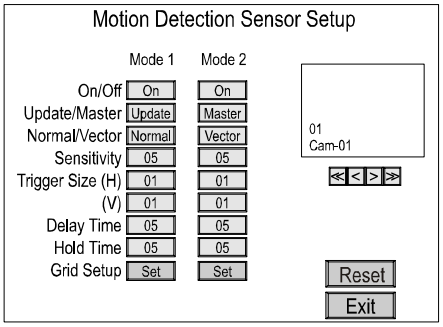
Start / Stop: The Start and Stop times fore each timer using the 24-hr time format.

Days: The timers can be turned ON or OFF for each day of the week. A check mark (√) activates the day. A circle (O) removes the option from the schedule.

Motion Detection Sensor Setup

Each camera can be set to two different modes of motion detection. The parameter sets for each Mode are shown on the following Motion Detection Sensor Setup screen.

A small window in the upper right portion of the screen displays the camera view. The < and > options move the camera displayed in the window back or forward by one. The << and >> options move the camera scene to the first or last in the sequence.



On / Off: This turns the motion detection option for the selected mode either ON or OFF.

Update / Master: When set to the Update option, the multiplexer compares the current field with the previous field. When set to the Master option, the multiplexer compares a master image to continuous video.

Normal / Vector: When set to Normal, the multiplexer detects all motion. When set to Vector, the multiplexer detects motion based on user definitions.

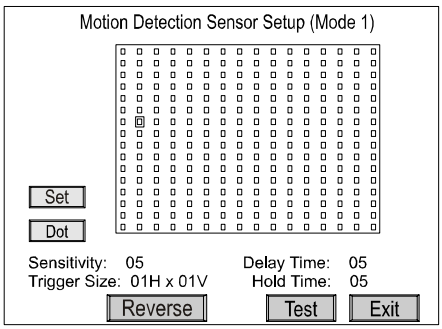
Sensitivity: The Sensitivity option determines the luminance change that must occur in the target area before the multiplexer reads the change as motion. The lowest sensitivity number is 01. The highest sensitivity number is 16.

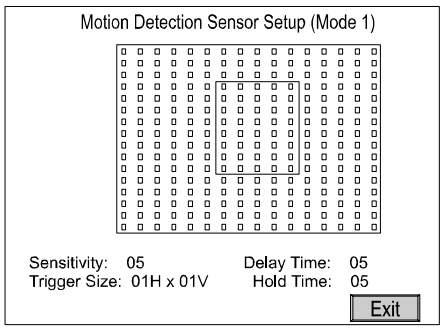
Trigger Size (H) and (V): The Trigger Size sets the minimum number of targets in a vertical row that must change before the multiplexer reads the change as motion. The range is 01 to 16.

Delay Time*:* The Delay Time is used to make adjustments for scenes that have sudden changes such as lights and shadows created by headlights or 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.

Grid Setup: The Grid Setup option brings up the Motion Detection Sensor Setup screen shown below on the left.





For Normal Motion Detection:

- **Set:** Highlights the grid area. (A click of the mouse on this option produces no action.)
- **Dot / Line / All:** Determines how many targets will be turned ON or OFF. DOT = single target, LINE = row of targets, ALL = all of the targets.
- **Reverse:** Sets all targets to the reverse side.
- **Test:** When selected, it brings up the test screen shown on the previous page (to the right of the Motion Detection Sensor Setup screen).

  The Test screen shows when the multiplexer detects motion by drawing a box around the active area. This provides instant feedback on whether the settings are acceptable for the application.

  Note: A Master Screen Set option appears on this screen to save the image when setting in the Master Mode.

For Vector Motion Detection:

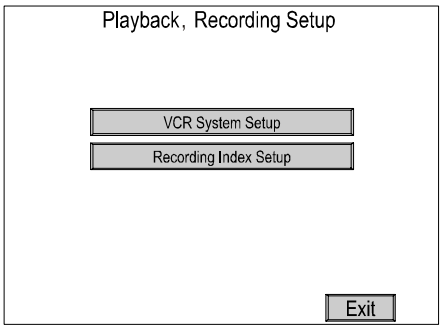
The Vector Motion Detection is the same as Normal except it has two motion grids. To detect left to right motion, define the first grid and then define a second grid to the right of the first grid.

- **A ON:** Used to define first grid.
- **B ON:** Used to define the second grid.

Reset: The Reset option returns all settings to the motion detection sensor setup defaults.

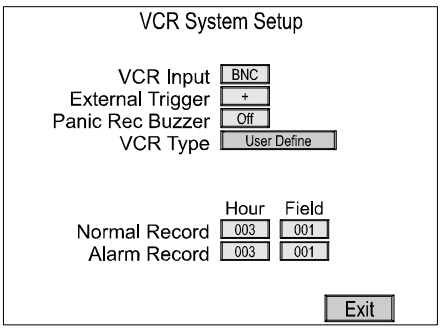
Playback & Recording Setup

The Playback and Recording Setup screen provides access to the submenus for setting up VCR operation with the multiplexer and the recording priorities.



VCR System Setup

The VCR System Setup screen provides optional settings when connecting a VCR with the multiplexer.



VCR Input: A VCR connects to the multiplexer using the BNC or SVHS connections. Set the VCR Input option to the type of connection used.

External Trigger: Set to OFF when not using the VCR synchronizing trigger pulse. When using the VCR's synchronizing trigger pulse, set to match the VCR's signal by selecting + for positive edge sensing and – for negative edge sensing.

Panic Rec Buzzer: When set to ON, a buzzer sounds every 20 seconds. Setting this option to OFF disables the buzzer.

VCR Type: Selecting this brings up a list of VCRs. Select the VCR you are using from the list. If it is not listed select the User Define option. The VCR model numbers available to choose from are listed below.

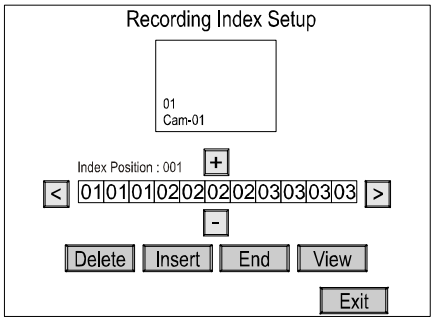
SRT7168	TLC2100	SRL911UB	SVT40E
AG6540	JPTL168	TLC2100HD	SRL911US
HRV30	TLS9072	SRT7072	JPRTR24
KV7024A	HRV68	AGTL500	AGRT600A
KV9096A	KV7168A	HRV60	AGRT650
SVT168	SVT168E	KV9168A	SRT7072

Normal Record / Alarm Record: If a VCR is selected from the list, the user must set the Hour for the Normal and Alarm Record options. If User Define is selected, both the Hour and the Field options must be set. The setting for the Hour ranges from 001 to 960 (1hr to 960 hrs). For Field, the setting ranges from 001 to 480.

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 (024) and Alarm to 2-hr mode (002).

Recording Index Setup

Normally the multiplexer gives the same priority to all cameras. However, you can set the recording index to give higher priority to specific cameras.



The screen shown above is used to set the priority of each camera for recording (up to 128 index positions).

The + and – options increment and decrement the camera number displayed in the box centered between the two. The < and > arrows scroll through the camera array left to right.

Delete: The Delete option deletes the highlighted camera from the array.

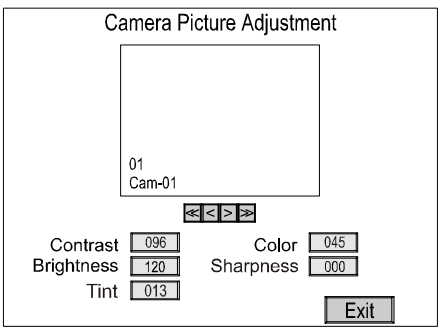
Insert: The Insert option inserts a blank into the array.

End: The End option inserts an "E" into the array which set the end mark for the index list.

View: The View option displays the Motion Detection Index List as shown in the following figure.

Camera Picture Adjustment

The Camera Picture Adjustment screen is used to individually adjust the Contrast, Brightness, Tint, Color, and Sharpness of each of the cameras. It is recommended that no adjustments be made using this option until the actual cameras and monitors have been adjusted.



The center window displays the camera view selected for adjustment. To move backward or forward one camera position, use the < and > options under the center display window. To move to the beginning or end of the camera list, use the << and >> options.

Contrast: The contrast adjustment range is –100 to +153.

Brightness: The brightness adjustment range is –127 to +126.

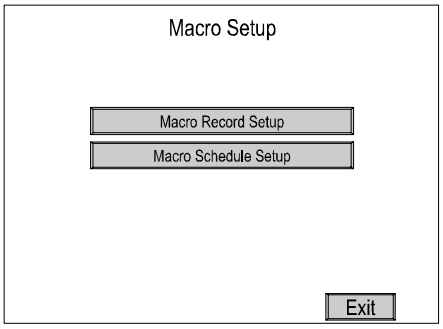
Tint: The tint adjustment range is –127 to +126. (Not available for PAL operation.)

Color: The color adjustment range is –103 to +114.

Sharpness: The sharpness setting ranges from Nominal to 5.

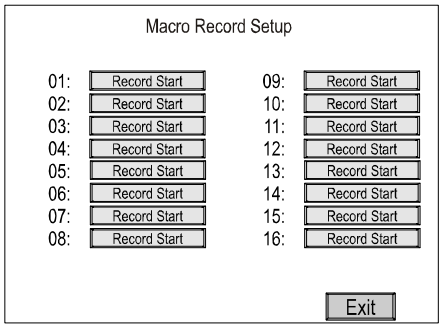
Macro Setup

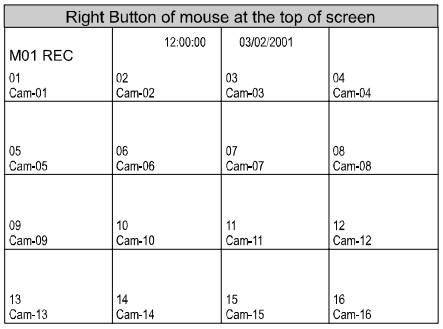
The Macro Setup screen is used to access the recording and scheduling capabilities of the multiplexer.



Macro Record Setup

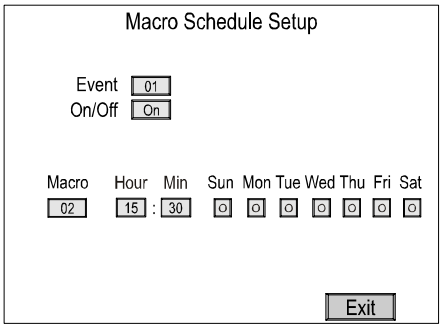
The multiplexer can record up to 16 macros on the 16-channel multiplexer (9 macros on the 9-channel unit, 4 macros on the 4-channel unit). Selecting any of the Record Start buttons brings up a live screen where actions taken on the front panel buttons (or through the mouse operation) will be recorded as a macro. The password protection operations are excluded from this feature.





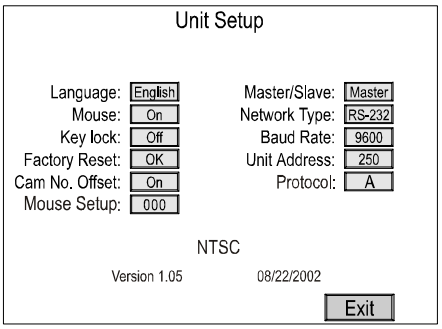
Macro Schedule Setup

The Macro Schedule feature allows the user to schedule up to 20 events that use a recorded macro. Select the Event option (01 through 20) and set the ON/OFF option to ON to activate it. Select the Macro number (01 through 16) to correspond to the event, then set the hour, minute, and day(s) of the week the event is to occur. A check mark (√) indicates the day has been selected (enabled).



Unit Setup

The Unit Setup screen provides options for changing the basic settings on the multiplexer such as language, operation with a mouse, key lock, and resetting the unit to the factory default settings.



Language: The language options for the multiplexer are English, French, Italian, German and Spanish.

Mouse: To use a mouse with the multiplexer, this option must be set to ON.

Key Lock: To prevent unauthorized use of the front panel keys, set this option to ON. When the keys are locked a password is required to access the unit. Pressing any button or clicking the mouse will bring up the password screen. Enter the Admin User password to unlock the keys.

Factory Reset: Selecting the Factory Reset option returns all user defined settings to the factory default setting. A confirmation screen appears when selecting this option to verify the request for a factory reset. See Appendix C for the factory default settings.

Cam No. Offset: When set to ON, the multiplexer will adjust the camera numbers based on the Unit Address. Unit 001 will have Cameras 01 to 16, Unit 002 will have Cameras 17 to 32, etc. When set to OFF, the cameras will be numbered 01 to 16.

Mouse Setup: The sensitivity of the mouse operation can be changed using the Mouse Setup option. The range is: MIN (-009) to MAX (+009).

Master / Slave: When installed as part of a network, this setting determines whether the unit is a master or slave unit in the network.

Network Type: The multiplexer can be set to RS-232, RS-422, or RS-485 when connected to a network.

Baud Rate: When connected to a network, the baud rate can be set to 1200, 2400, 4800, 9600, or 19200.

Unit Address: Networked multiplexers can be assigned addresses from 001 to 255.

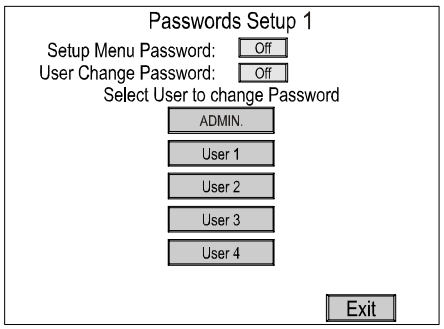
Protocol: To use the multiplexer protocol, set to option A. To use a camera controller protocol, set to option B1.

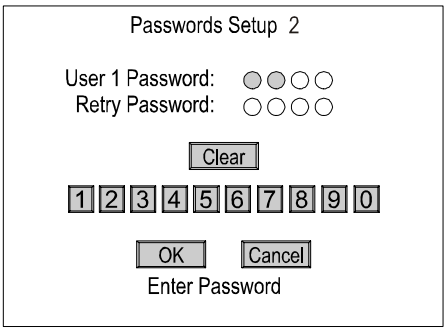
Password Setup

The Password Setup screen allows the user to assign PIN codes to the Administrator and up to four users. Keep a copy of the Administrator password in a safe place. Once you have changed the ADMIN password from the default setting, you will not be able to access protected areas without it.

An Administrator password is required to access the Setup Menu. After changing the passwords, keep it in a safe place. The new passwords will be the only way to access certain features of the multiplexer once you have changed from the factory default passwords.

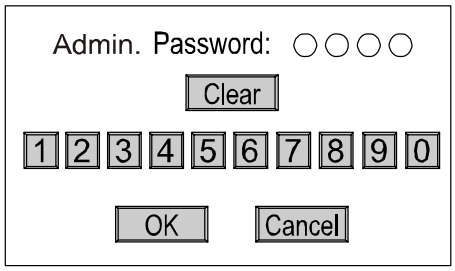
NOTE: The factory default passwords are listed in the Technical Specifications section at the back of this manual.





Setup Menu Password: When set to ON, only the Administrator can access the Setup menu and make changes.

The Admin Password screen shown below appears. Enter the password by moving the cursor over the desired number and pressing the ACCEPT key. As you enter each digit, the circles fill in and the cursor moves to the right one position. Once you have entered all four digits, select OK. If you have entered an incorrect number, an Incorrect Password message displays for ten seconds, then the unit returns to a live display. Repeat the process and re-enter the correct Admin Password.



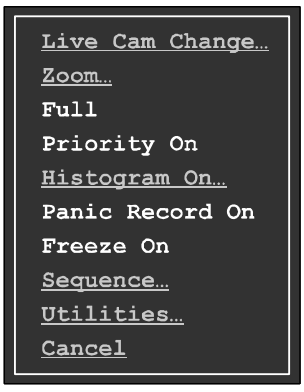
Select CANCEL to exit the Administrator Password screen at any time and return to a live display.

User Change Password: When set to ON, a password will be required to make screen configuration changes or to access items on the Pop-Up menu.

ADMIN / User 1 – User 4: Selecting the Administrator (ADMIN) or one of the User option brings up the second password screen for entering or changing assigned passwords. On the second password screen, select a number between 0 and 9 for each of the four spaces allotted in the password. The password must be entered twice (Retry Password) to match and confirm the entry. Use the CLEAR option to erase all the numbers entered and the OK option to save a new password.

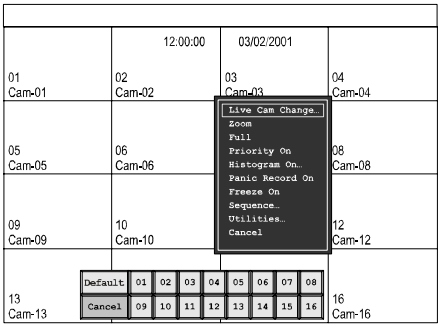
POP–Up Menu

Clicking the right mouse button or pressing the ACCEPT button on the front of the unit causes the Pop Up menu to appear. The menu options includes Live Cam Change, VCR Cam Change, Zoom, Full, Priority, Histogram, Panic Record, Freeze, Sequence, and Utilities.



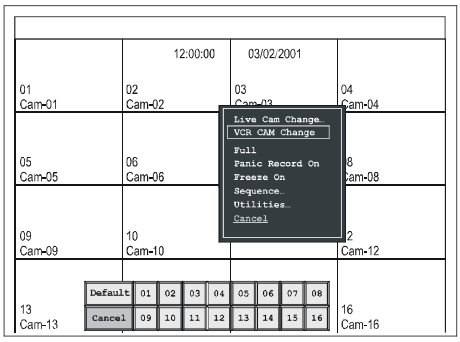
Live Camera Change

The Live Cam Change option on the Pop Up menu allows the user to assign any camera to an active cameo. The following screen shows the options for the 16 channel unit.



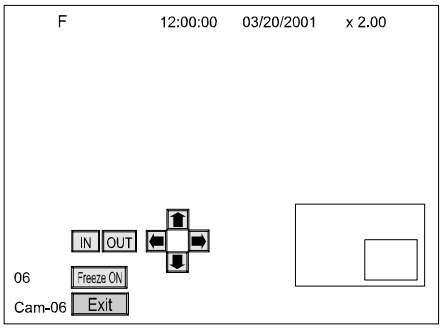
VCR Camera Change

The VCR Camera Change option on the Pop Up menu is only available when the unit is in the VCR Playback mode. Like the Live Camera Change, the VCR Camera Change option allows the user to assign any camera to a cameo view. The following screen shows options for the 16 channel unit.



Zoom

The digits on the top right of the screen indicate the amount of zoom. The maximum zoom is X32. The picture insert at the bottom right shows the entire scene with a center rectangle representing the zoomed area. Use the IN and OUT options to zoom in or out of the area. Use the arrow buttons to move the center rectangle left, right, up or down, to position it in an area to zoom. Use the FREEZE option to freeze the displayed image on the screen.



Full

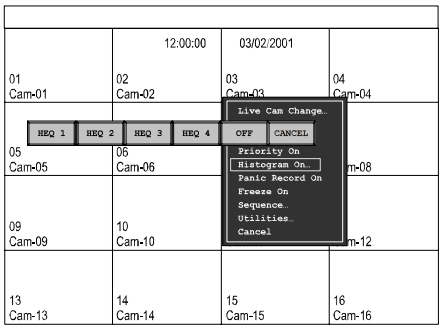
Selecting the Full option causes the active camera to display full screen.

Priority

When Priority is set to ON for a camera, it will display in real time while the refresh rate of the remaining displayed 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. Image noise increases with the strength of the equalizer. This is a property of the equalization algorithm and does not indicate a problem with the system.



Panic Record

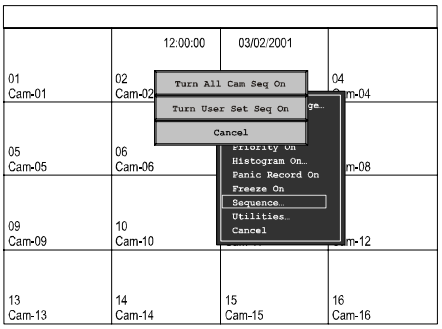
When Panic Record is ON, only the selected camera is recorded and it is recorded in real-time mode.

Freeze

When Freeze is ON, the image is frozen on the screen until it is reset.

Sequence

The Sequence option on the Pop Up menu can activate the sequencing for all the cameras not currently displayed on the screen or a sequencing pattern defined in the Setup Menu. The options are: Turn All Cam Seq On and Turn User Set Seq On. Select the Cancel option on the menu to exit without any changes.



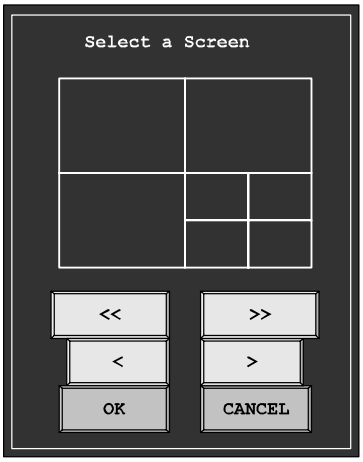
Utilities

The Utilities option on the Pop Up menu brings up another Pop Up menu with additional options.

User Screen Change

The User Screen Change option has four user defined display formats that can be setup in various viewing formats. Selecting the UserDef1 – UserDef4 option button brings up a screen format window.

On the screen shown below, the << and >> buttons jump to the beginning and end of the format option list. The < and > buttons should be used to move backward or forward one format option. When the desired format option appears on the screen, select the OK button to save it to the selected UserDef option.

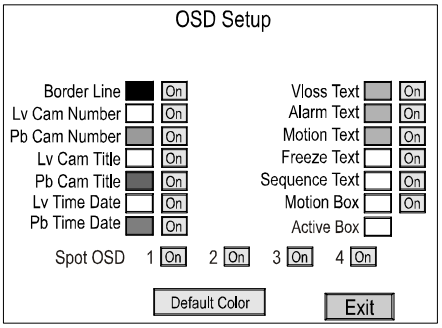


OSD Change

The OSD Setup screen allows the user to select the text that is to appear on the screen and to select the color. Border Line is the border around the images. “Lv” stands for Live. “Pb” stands for Playback. The Camera Number, Camera Title, and Time & Date text can be set to On or Off.

Text can be turned On or Off for Vloss (V), Alarm (A), Motion (M), Freeze (F) and Sequence (S). The Motion Box text is the box that appears on the screen showing the area where motion has been detected. The Active Box refers to the window box of the actively selected camera.

Color options for the text and border are: black, gray, white, red, green, yellow, magenta, cyan, and blue. To reset the text and board colors to the factory default setting, select the Default Color option button.



Screen Protect

The Screen Protect feature allows the user to protect their setup against unauthorized use.

Manual Alarm

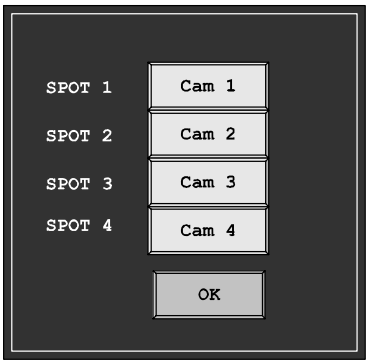
The Manual Alarm option allows the user to trigger an alarm manually.

Alarm Reset

Alarm Reset is used to reset a sounding alarm.

Spot Output

The Spot Output screen allows the user to assign different camera to the spot monitors.

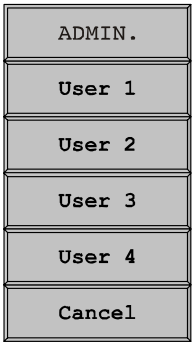


Macro Playback

The Macro Playback option allows the user to select which macro will play.

User Change

Selecting ADMIN or one of the user numbers open a password screen allowing the user to long on. The Administrator has access to all the menus and setup features. Users can be assigned different levels of access with some camera views or options restricted.

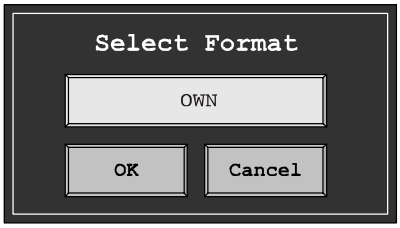


Alarm List

The Alarm List option brings up the Alarm History List.

Playback Format

The multiplexer can play back tapes that were recorded using multiplexers designed by different manufacturers. The Playback Format option allows the user to select from the settings: OWN, ATV, Dedicated Micros, Robot (Sensormatic), Pelco, and Kalatel (Impac).



PB Picture Adjust

The PB Picture Adjust option only appears on the Utilities Pop Up menu when the multiplexer is in the VCR Playback mode. It allows the user to adjust images played back from the VCR.

Contrast: The contrast adjustment range is –100 to +153.

Brightness: The brightness adjustment range is –127 to +126.

Tint: The tint adjustment range is –127 to +126. (Not available for PAL operation.)

Color: The color adjustment range is –103 to +114.

Sharpness: The sharpness setting ranges from Nominal to 5.

APPENDIX A - TROUBLESHOOTING

Problem	**Check**
No Video (black screen)	Check power connections
No Video (one camera)	Check camera power and coaxial cable
No Video (jumbled colors)	Make certain the multiplexer is set correctly for your system (NTSC or PAL)
Fuzzy Image (one camera)	Check camera focus
Bad video (one camera)	Check the loop through connector. If a cable is attached, make certain it is connect to another video device on the other end.
Wrong Language	Change the language in the Setup Menu
Buttons do not work	Unlock buttons in Setup Menu
Recorded Video Rolls	Check VCR configuration in Setup Menu. Use the trigger pulse from the multiplexer for optimum synchronization with a time-lapse VCR.
Tape Plays Only 4x4	Make certain the video cable to the VCR input is connected to the VCR OUT of the multiplexer.
Too Many Motion Alarms	Adjust the sensitivity of the motion detection grid. Adjust size of grid required to activate motion alarm. Make certain only the area you want to detect motion is activated.
Motion Not Detected	Adjust the sensitivity of the motion detection grid. Adjust size of grid required to activate motion alarm. Make certain only the area you want to detect motion is activated.

APPENDIX B -
REMOTE CONTROL OPERATION

RS-232 Remote Control Interface

The multiplexer has a built-in RS-232 serial interface which supports remote control operation through simple ASCII commands. The commands provide access to the front panel button operations just like the IR remote control.

The multiplexer serial interface is fixed at 9600 baud, 8-bit, 1 stop bit, and no parity. The command format is:

command - return

The command is 2 characters or 2 characters plus parameter, and must be followed by a "carriage return".
The multiplexer will respond with:
> if the command was recognized, or
? if the command was not recognized or is invalid

Button Commands

BD	DISPLAY button	BR	REC button
BP	PIP button	B2	2nd button
BS	SEQUENCE button	BA	ACCEPT button
BF	FREEZE button	BC	CANCEL button
BQ	ROTATE button	MU	Move UP
BZ	ZOOM button	ML	Move LEFT
BV	PLAYBACK button	MR	Move RIGHT
BO	MACRO button	MD	Move DOWN
BM	MONITOR button	UNIT n	N = 1 ~ 255 unit number
BL	ALARM button	PREV	Preview
BC n	N = 1 ~ 16 Camera number		

Immediate Commands

DM m, c, c, ---, q	Set display mode m = display mode, c = camera mode, q = quadrant m : 0 = full, 1 = 2x2, 2 = 3x3, 3 = 4x4, 4 = PIP, 5 = Dual PIP, 6 = Split, 7 = Squish, 8 = Center Insert 9 = Split Quad, q : 0 = lower right, 1 = lower left
TIME hh:mm:ss	Set time
DATE dd/mm/yy	Set date
Ec n	Echo characters. n : 0 = echo off, 1= echo on
EXIT	Main exit menu
ENTER	Enter menu

HELP	Help command
VER	Version – Software version number
GETCFG n	Get configuration n = 0 or no parameter : All configuration parameter without time and date. n = 1 : All configuration parameters n = 2 : Time and date only

Time / Date Commands

AMPM n	AM/PM display enable. n : 0 = display 24 hour format, 1 = display 12 hour format. Date / Time enable. n : 0 = off, 1 = Live on, 2 = VCR on, 3 = VCR and display on

VCR Commands

VOPT I,j,k	VCR options i – VCR input setting. i : 0 = BNC, 1 = SVHS j – VCR external trigger. j : 0 = off, 1 = “+”, 2 = “-“ k – Panic recorder buzzer on/off k : 0 = off, 1 = on
LPBO n	VCR playback options n : 0 = OWN, 1 = ATV, 2 = DM, 3 = ROBOT, 4 = PELCO 5 = KALATEL

Camera Commands

LBLE n	Camera label enable. n : 0 = off, 1 = Live on, 2 = VCR on, 3 = Both enable
CLBL n, “label”	Set camera number n : Camera number, “label” : Camera label

Motion Commands

MOTE n	Motion enable. n : 0 = 1, 1 = on
MTHR n,k,m	Motion thresholds n : camera number, k : mode (0,1), m : thresholds value (1~16)

Sequence Commands

SALL n	Sequence all. n : cameo number
SUSER n	Sequence user. n : camera number
SDTIME n	Stack sequence dwell time. n : stack dwell time

Alarm Commands

AEXIT i,j,k	Alarm external input and output i : camera number j : 0 = NO, 1 = NC, 2 = off (alarm input) k : 0 = AH, 1 = AL (alarm output)

ABUZ n,m	Alarm buzzer on/off n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, 3 = Motion alarm m : 0 = off, 1 = on
ASCR n,m	Alarm screen on/off n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, 3 = Motion alarm m : 0 = off, 1 = on
AMSG n,m	Alarm message latch on/off n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, 3 = Motion alarm m : 0 = off, 1 = on
AHLD n,m	Alarm hold time set n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, 3 = Motion alarm m : Alarm hold time (1~99)
AREC n,m	Alarm recording set n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, m : 0 = INT, 1 = ONLY, 2 = UNC
AMON n,m	Alarm spot monitor set n : 0 = External alarm, 1 = Manual alarm, 2 = Vloss alarm, 3 = Motion alarm m : First bit = 1, Second bit = 2, Third bit = 3, Fourth bit = 4 (0x00 ~0x0f) Bit = 0 : Spot monitor off Bit = 1 : Spot monitor on

Other Commands

MCLK n	Menu lock and user change lock n : 0 = Setup menu lock off, User change lock off 1 = Setup menu lock on, User change lock off 2 = Setup menu lock off, User change lock on 3 = Setup menu lock on, User change lock on
LANG n	Language set n : 0 = English, 1 = German, 2 = French, 3 = Italian, 4 = Spanish

APPENDIX C -
FACTORY DEFAULT SETTINGS

Setting	**Default Configuration**
Date Format	US (MM/DD/YY)
Time Format	24-hour
Clock Source	Internal clock
Daylight Savings	OFF
Camera Access	All cameras ON
Cameras to Record	All cameras ON
Page Dwell Time	3 seconds
Sequence Dwell Time	3 seconds
Alarm Reset Button	ON
Alarm Screen Format	4x4
Alarm Dwell Time	3 seconds
Alarm Input Polarity	NO (Normally Open)
Alarm Output Polarity	AH (Active High)
Alarm Buzzer	ON
Alarm Screen	ON
Alarm Network Relay	OFF
Alarm Message Latch	ON
Alarm Recording	INT (Interleaving)
Alarm Spot Monitor Output	ON
Alarm Hold Time	20 seconds
Alarm Action	Timed Out
Alarm Relay	1&2
Alarm Associated	3 sequential cameras followed by alarm camera
Motion Alarm Buzzer	OFF
Motion Alarm Screen	OFF
Motion Alarm Network Relay	OFF
Motion Alarm Message Latch	ON
Motion Alarm Recording	INT (Interleaving)
Motion Alarm Spot Monitor Output	OFF
Motion Alarm Action	Timed Out
Motion Alarm Relay	OFF

Setting	Default Configuration
Motion Alarm Link	Off
Vloss Buzzer	ON
Vloss Screen	OFF
Vloss Network Relay	OFF
Vloss Message Latch	ON
Vloss Spot Monitor Output	ON
Vloss Hold Time	20 seconds
Manual Alarm Buzzer	ON
Manual Alarm Screen	ON
Manual Alarm Network Relay	OFF
Manual Alarm Message Latch	ON
Manual Alarm Recording	INT (Interleaving)
Manual Alarm Spot Monitor Output	ON
Manual Alarm Hold Time	20 seconds
Manual Alarm Action	Timed Out
Manual Alarm Relay	1&2
Manual Alarm Associated	OFF
Alarm to Macro link	OFF
All Motion Detection	OFF
Motion Detection Timer	OFF
Update / Master	Update
Normal / Vector	Normal
Sensitivity	10
Trigger Size (H x V)	1 x 1
Delay Time	0 seconds
Motion Hold Time	5 seconds
Target Grids	All Grids ON
VCR Input	BNC
External Trigger	OFF
Panic Record Buzzer	ON
VCR Type	Standard VHS
VCR Normal Record Time	2 Hours (NTSC), 3 Hours (PAL)
VCR Alarm Record Time	2 Hours (NTSC), 3 Hours (PAL)
Camera Contrast	00

Setting	Default Configuration
Camera Brightness	00
Camera Color	00
Camera Tint	00
Language	English
Mouse	ON
Key Lock	OFF
Camera Number Offset	OFF
Mouse Setup	000
Master / Slave	Slave
Network Type	RS-485
Baud Rate	9600
Unit Address	001
Protocol	B1
Setup Menu Password	OFF
User Change Password	OFF
Password Code	ADMIN – 5555 User 1 – 1111 User 2 – 2222 User 3 – 3333 User 4 – 4444
VCR Picture Adjustment	00
Priority Display	OFF
Histogram Equalization	Off
Border Line	ON (Black)
Live Camera Number	ON (White)
PB Camera Number	ON (Blue)
Live Camera Title	ON (White)
PB Camera Title	ON (Blue)
Live Time, Date	ON (White)
PB Time, Date	ON (Blue)
Vloss Text	ON (White)
Alarm Text	ON (White)
Motion Text	ON (White)
Freeze Text	ON (Red)
Sequence Text	ON (White)
Motion Box	OFF (Blue)

APPENDIX D - SPECIFICATIONS

Operating Defaults

Display Format	4x4 multi-screen format
Operation Mode	Live

Video Format

NTSC / PAL	Standard

Video Level

Camera Inputs / Outputs	1.0V p-p, 75 ohms
Loop through Output	1.0V p-p, 75 ohms
VCR Input: Composite	1.0V p-p, 75 ohms
VCR Input: S-Video	Luma 1.0V p-p, 75 ohms
	Chroma (burst) 0.286V p-p, 75 ohms
Main Output: Composite	1.0V p-p, 75 ohms
Main Output: S-Video	Luma 1.0V p-p, 75 ohms
	Chroma (burst) 0.286V p-p, 75 ohms
Auxiliary Output	1.0V p-p, 75 ohms

Resolution

Sampling	720 x 480 (720 x 576)
Full (Active)	648 x 448 (648 x 518) (10 to 9 down-scaling)
1/ 4 Size	324 x 224 (324 x 259)
1/ 9 Size	216 x 149 (216 x 173)
1/ 16 Size	162 x 112 (162 x 129)
4/ 9 Size	432 x 298 (432 x 346)
9/ 16 Size	486 x 336 (486 x 387)
VCR Out (full)	720 x 480 (720 x 576)
Spot Out	Analog

Sampling Standard

Y:Cb:Cr	CCIR 601 (4:2:2)
Gray Scale	256 levels
Color	16 million (True Color)

Video Memory

Main Display	64Mb SDRAM
VCR Output	64Mb / 16Mb SDRAM

Refresh Rate (fields / sec)

Full, PIP, Squish, Zoom, Spot Out		60
Split format	(1-2 cameras)	60
	(3 – 16 cameras)	60 / number of cameras
Priority mode	(major)	60
	(minor)	30 / number of cameras
Spot Out		60

Power Requirement

12 Vdc, 2.5A	
Adapter	100 - 240 Vac Universal Adapter

Dimensions

Unit size (D x W x H)	12.2” x 17” x 1.73” 310mm x 432mm x 44mm
Unit Weight	5.31 lbs (2.4 Kgs)

Operating Environment

Ambient Temperature	32° to 95° F (0° to 35° C)
Ambient Humidity	10% to 90% non-condensing

4, 9, &16-Channel
Talon Triplex Color Multiplexers

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