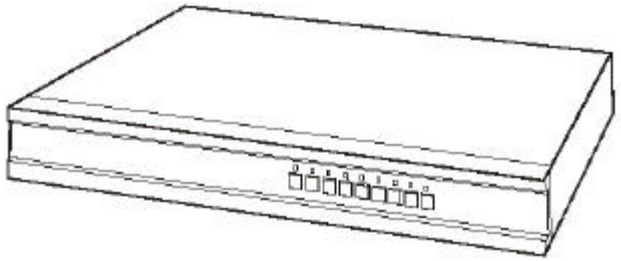
PRODUCTIONRELEASE & REVISION						
REV	DESCRIPT'N/BUYER	DWG No	PARTS No.	BY	CHK	DATE
~~A~~	~~Initial~~	----------	~~50301415~~	~~Y.Y.KIM~~	~~N.C.PARK~~	~~11-05-01~~
B	16page NOTE 문구추가	----------	50301415	Y.Y.KIM	N.C.PARK	03-08-02

INSTRUCTION MANUAL

DIGITAL COLOR QUAD PROCESSOR

4 CHANNEL



297(+/-5)mm

210(+/-5)mm

LABEL MANUAL NAME (50201073)

생산팀에서 인쇄

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

BUYER BRAND TYPE

BRAND	MODEL No.
	POWER RATING / SIGNAL 방식
	ADDRESS

30mm

120mm

ex)

HITRON

Model No./Modéle No.: **HNCQ4N**

(DC24V ⎓ 1.0A / NTSC)

HITRON SYSTEMS INC.
109-19 MAJEON-RI, SAMJUK-MYEON,
ANSUNG-CITY, KYUNGKI-DO, 456-880 KOREA

NOTES

1. MODEL: HNCQ4N, HNCQ4P / ALL BRAND
2. MATERIAL: ART PAPER 100g/m^2 , WHITE
   BIND : STAPLE-2
3. FINISH: ----------
4. COLOR: TEXT-BLACK
5. SIZE: 210(+/-5)mm x 297(+/-5)mm R0.0
6. ANY CHANGE OR ALTERNATION MUST BE APPROVED BY HITRON ENGINEERING.

협의	전자	안전규격	기구설계	영업
	김건호팀원 확인	김성곤팀원 확인		
	02 / 26	11 / 05		

50301415

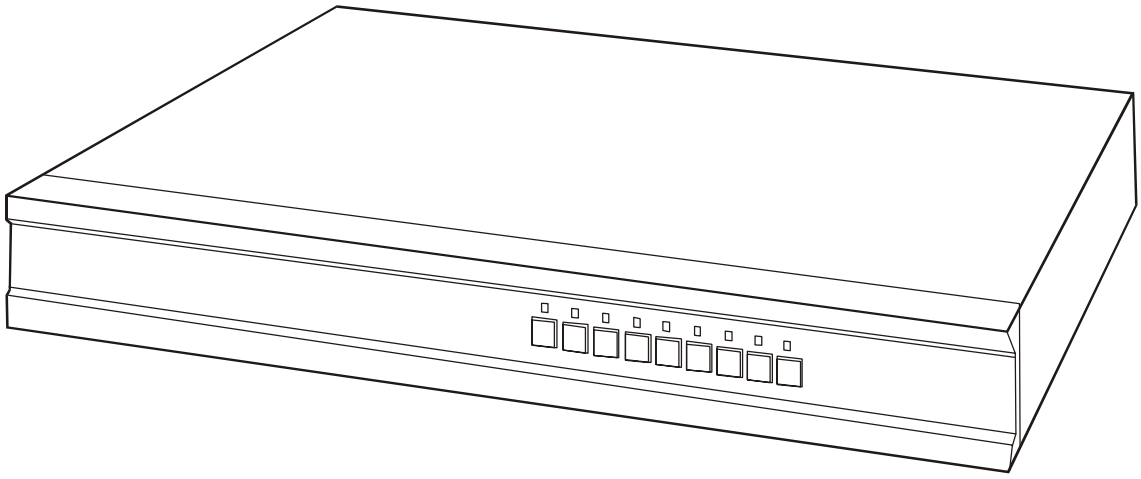
ITEM	DESCRIPTION/MATERIAL	QTY
	PARTS LIST	

UNLESSOTHERWISESPECIFIED ALLDIMENSIONS AREINMM. - TOLERANCE LABEL +/- 1.5 MANUAL +/-3.5 ANGULAR +/- 0.5	APPROVALS	DATE	HITRON
	N.C.PARK	03-08-02	TITLE: MANUAL INSTRUCTION
MATERIAL 2	CHKED		SIZE A4 DWG No REV. B
FINISH 3	DRAWN Y.Y.KIM	03-08-02	P/N SCALE DO NOTSCALE

INSTRUCTION MANUAL

DIGITAL COLOR QUAD PROCESSOR

4 CHANNEL



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

ISSUE 1 - NOVEMBER, 2001

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 COMMECIAL 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 EXPENCE.

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 COMLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

CE COMPLIANCE STATEMENT

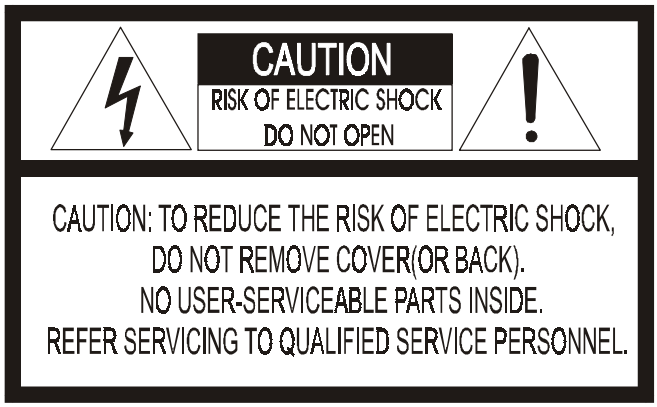
WARNING
THIS IS A CLASS A PRODUCT, IN A DOMESTIC ENVIRONMENT THIS PRODUCT MAY CAUSE RADIO INTERFERENCE IN WHICH CASE THE USER MAY BE REQUIRED TO TAKE ADEQUATE MEASURES.

WARNING AND CAUTION

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



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.

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 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 benzene as they might damage the finish of the unit.

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 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 abused by persons walking on it.

11. HEED WARNINGS – Follow all instructions marked on the video monitor or equipment.

12. LIGHTNING – For added protection for 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 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 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.

TABLE OF CONTENTS

CHAPTER 1. FEATURES

DESCRIPTION

The QUAD processor is a rear-time color QUAD processor with 60 fields per second for NTSC or 50 fields per second for PAL. This stand-alone unit offers advanced features such as zoom on playback of compressed images, sequential switching, and time/date/titling overlays.
This color QUAD processor offers a user friendly on-screen programmable menu. The cameras can be viewed sequentially on alarm in the Full screen or the QUAD mode.

FEATURES

- QUAD Display
- PIP (Picture In Picture) Display – Up to 2 Inset Screens
- Full Screen Display
- Internal four camera Sequential Switcher Display
- User Friendly Programmable Menu
- Digital Zoom from a QUAD to Full Screen on VCR Playback
- Programmable camera skip in sequential mode
- Camera Enable/Disable feature by setup menu
- Screen Freeze Capability (QUAD / PIP / FULL / VCR Zoom mode)
- PIP assign function
- On Screen Display: Time, Date, and Title
- 8 characters for camera title
- Picture Adjustment for camera
- Alarming four Inputs - N.C, N.O, or OFF.
- Selectable display on alarm – QUAD or Full Screen.
- Video Loss Alarm
- Alarm / Video Loss History Log
- Remote Control (RS-485)
- Menu Language: English, German, French, Italian, or Spanish
- Key Lock / Menu Password enabled
- Rack Mount Kit Included
- Auto-terminating Camera In/Outputs

CHAPTER 2. FRONT AND REAR PANEL

THE FRONT PANEL

KEYBOARD CONTROLS The keyboard on the front panel provides the primary operator interface. The table below contains a description for each control keys on the keyboard. Use *Figure 1* as a reference.

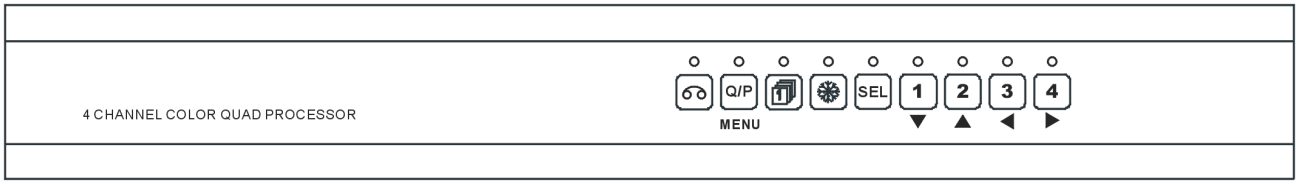


Figure 1. Front Panel

No.	Button	Description
1	**VCR** 	The VCR button will place the unit into a tape review mode allowing tape playback. To exit the VCR mode, press the VCR button again. When an alarm occurs in the VCR playback mode, the unit exits this mode.
2	**Q/P (QUAD/PIP)** 	When the unit is in QUAD display, pressing Q/P will display a full-screen background picture with an inset window (PIP1 display mode). When the unit is in PIP1, pressing Q/P will display a full-screen background picture with two inset windows (PIP2 display mode). Inset windows have 4 positions and two sizes (1/9, or 1/16). When the unit is in PIP2, pressing Q/P will display QUAD again. Pressing Q/P for 2 seconds will show up the MENU Setup screen.
3	**SEQUENCE** 	Pressing SEQUENCE will place the unit to the sequential switching mode in PIP or Full Mode. Any switching camera has an “S” character in the screen. Pressing this button again will exit the switching mode. In the PIP mode, the camera of inset window sequences. In FULL mode, all cameras sequence. By pressing after SELECT button, you can sequence the PIP main picture camera in the PIP mode. ***Note: When the unit is in the VCR playback zoom mode, the SEQUENCE button is disabled.***

No.	Function	Description
4	**FREEZE**	Pressing FREEZE will freeze all camera pictures in any mode, except in the VCR mode when VCR Playback Zoom option is OFF. Pressing this button again will unfreeze all pictures. When the unit is in the freeze mode in QUAD or PIP mode, blinking character 'F's are displayed in near to camera titles. In Full screen mode, non-blinking "FREEZE" is displayed on the top of the screen.
5	**SELECT** SEL	When the unit is in Menu Setup mode, this button selects options and saves changed options. In the PIP mode, pressing Q/P button after SELECT button moves the position of inset window and pressing SEQUENCE after SELECT goes in the main picture sequence mode.
6	**CAMERA 1~4** ▼▲◄►	The camera button will: **In NORMAL mode** 1) display the camera in the full-screen mode. 2) unfreeze or freeze the screen in the freeze mode of PIP or QUAD mode. **In VCR Playback mode** 1) display the camera in the full-screen mode, if VCR Playback Zoom option is OFF. 2) zoom any quadrant image to full image, if VCR Playback Zoom Option is ON. Also, the camera buttons act as DOWN, UP, LEFT, and RIGHT arrow keys in the Menu Setup mode, respectively.

THE REAR PANEL

CONNECTIONS The table below contains a description for each connection on the rear panel of the QUAD processor. Use *Figure 2* as a reference.

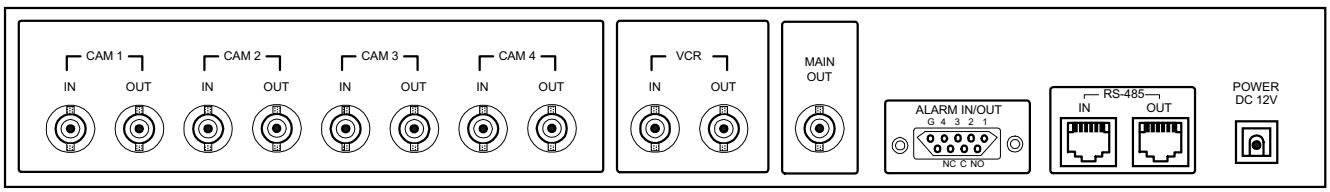
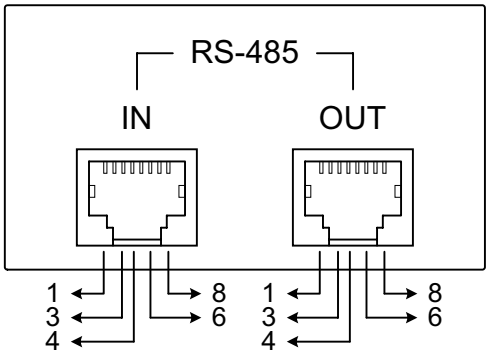


Figure 2. Rear Panel

No.	Label	Description
1	CAM IN	Accepts the input from a camera.
2	CAM OUT	Looping output for use with auxiliary equipment.
3	VCR IN	Inputs from VCR for reviewing a tape.
4	VCR OUT	Buffered MAIN OUT for use with a VCR for recording.
5	MAIN OUT	This is the call output that can display all pictures of FULL, QUAD, PIP, or VCR playback image for a monitor.
6	ALARM IN	These are alarming inputs, Normally Open(N.O) or Closed(N.C), selectable in programming setup mode.
	ALARM OUT	These are Form C dry relay contacts.
7	RS-485	RJ-45 8 pin modular jacks for RS-485 remote control.
8	POWER	This 2.1mm pin jack accepts 12V dc at 1.5A. The center pin is positive.



3: RXS, 4: RXB, 6: RXA

REMOTE CONNECTOR PIN ASSIGNMENT (RS-485)

PIN NO.	PIN ASSIGNMENT
1	NO CONNECTION
2	NO CONNECTION
3	RXS
4	RXB
5	NO CONNECTION
6	RXA
7	NO CONNECTION
8	NO CONNECTION

CHAPTER 3. QUAD PROCESSOR FUNCTIONS

DISPLAY FORMATS

QUAD DISPLAY

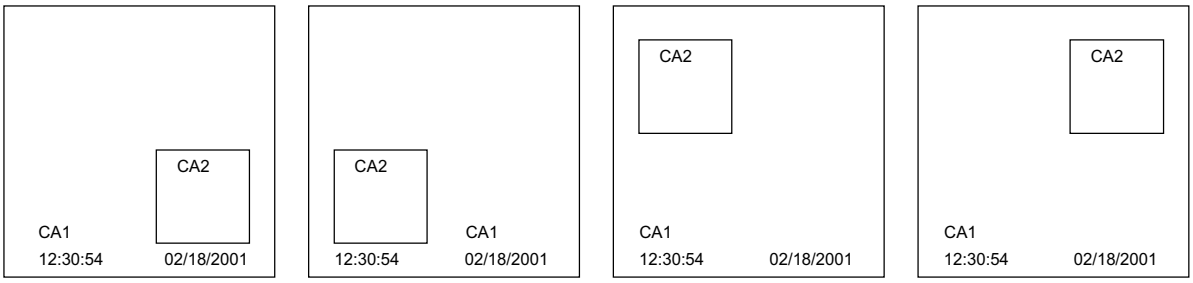
After power on or by pressing Q/P button in PIP2 mode, QUAD screen displays with four camera pictures. Not installed or disabled cameras on the system appear as black pictures. The QUAD page setup is (CAM1, CAM2, CAM3, and CAM4).
Use the following table as a guide for the actions possible in the QUAD mode.

Button(s)	Action
Q/P	Press Q/P button to display a PIP1 screen. Or pressing for 2 seconds will show up the MENU Setup screen.
CAM (1-4)	Press any camera button to change to the FULL screen of the corresponding camera.
SEQUENCE	When QUAD is included in FULL sequence mode, press this button to stop sequencing in QUAD.
FREEZE	Press FREEZE button to freeze or unfreeze the QUAD display. Refer to *FREEZE DISPLAY* on 16.

PIP1 DISPLAY

Pressing Q/P button in QUAD mode will display a full-screen picture with an inset window. The default PIP1 screen is a full-screen picture of camera 1 with a 1/9 size camera 2 inset at Position 1.
Use the following table as a guide for the actions possible in the PIP1 mode.

Button(s)	Action
Q/P	Press Q/P button to display a PIP2 screen. Or pressing for 2 seconds will show up the MENU Setup screen.
CAM (1-4)	Press any camera button to change to the FULL screen of the corresponding camera.
SELECT + Q/P	Press SELECT button, then SELECT LED turns on. Press Q/P button to move the inset window to the next position. Refer to figures on the next page.
SEQUENCE	Sub Sequence mode: Press SEQUENCE button to start the sequence of the inset window. Then 'S' is displayed in the inset window. Press this button again to stop. Channels with no video signal can be sequenced. Refer to *SEQUENCE DISPLAY* on page 15.
SELECT + SEQUENCE	Main Sequence mode: Press SELECT button, then SELECT LED turns on. Press SEQUENCE button to start the sequence of the main picture. Then 'S' is displayed next to the main title. Press this button again to stop. Channels with no video signal can be sequenced. Refer to *SEQUENCE DISPLAY* on page 15.

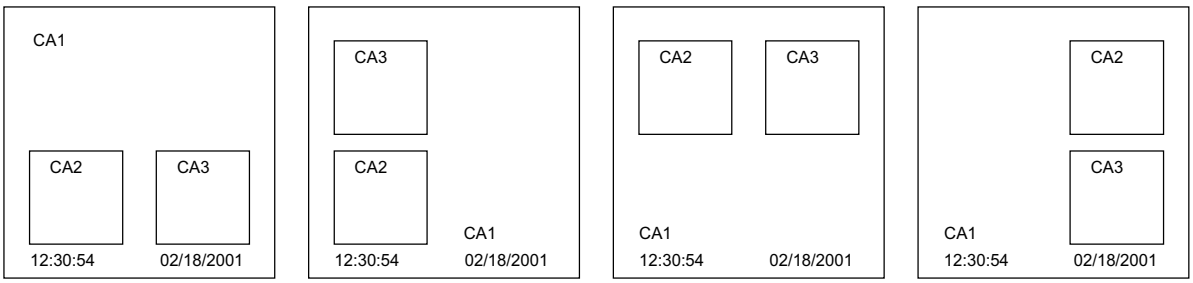


POSITION 1 POSITION 2 POSITION 3 POSITION 4

PIP2 DISPLAY

Pressing Q/P button in PIP1 mode will display a full-screen picture with two inset windows. The default PIP2 screen is a full-screen picture of camera 1 with 1/9 size camera 2 and 3 inset windows at Position 1. Use the following table as a guide for the actions possible in the PIP2 mode.

Button(s)	Action
Q/P	Press Q/P button to display the QUAD screen.
CAM (1-4)	Press any camera button to change the display to the FULL screen of the corresponding camera.
SELECT + Q/P	Press SELECT button, then SELECT LED turns on. Press Q/P button to move the inset windows to the next position. Refer to the figures below.
SEQUENCE	Sub-Sequence mode: Press SEQUENCE to start the sequence of the inset window. Then 'S' is displayed in the inset window and the SEQUENCE LED turns on. Press SEQUENCE again to stop the sequence and the LED turns off. In this mode, cameras not already displayed can be sequenced. Refer to *SEQUENCE DISPLAY* on page 15.
SELECT + SEQUENCE	Main Sequence mode: Press SELECT button. Then SELECT LED turns on. Press SEQUENCE to start the sequence of the main picture. Then 'S' is displayed on the main title line and the SEQUENCE LED turns on. Press SEQ again to stop the sequence and the LED turns off. In this mode, cameras not already displayed can be sequenced. Refer to *SEQUENCE DISPLAY* on page 15.



POSITION 1 POSITION 2 POSITION 3 POSITION 4

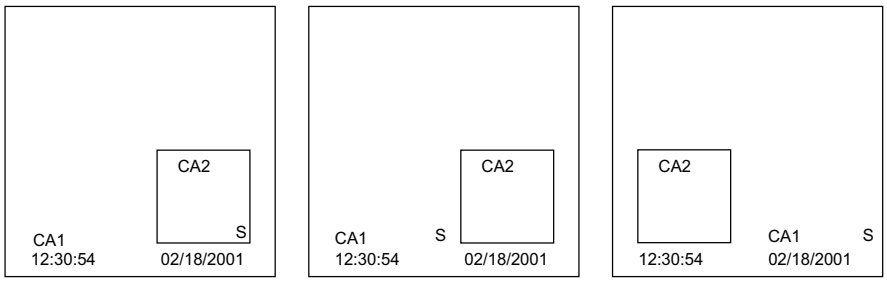
FULL SCREEN DISPLAY

Press any camera button to change the display to the Full screen display mode of the camera. In this mode, the current displaying camera LED is lit.

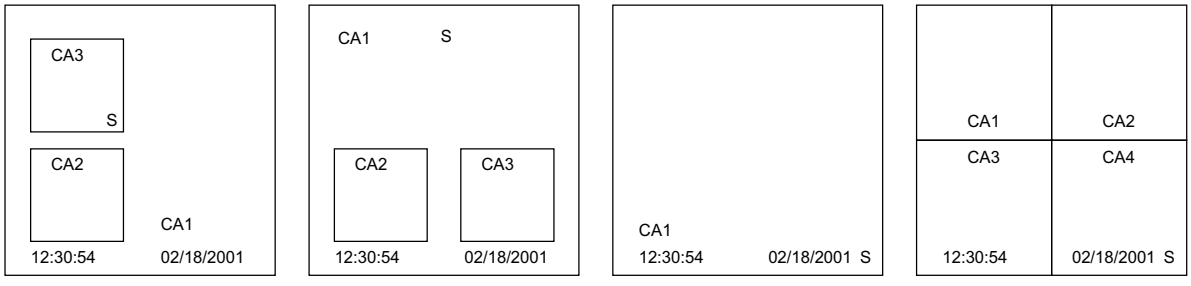
Button(s)	Action
CAM (1-4)	Press camera number button to change the display to the Full screen display mode of the camera. ***Note: The blue screen is displayed for the channels with no video signal.***
SEQUENCE	Press SEQUENCE button to start the sequence of the camera and the camera LED and SEQUENCE LED turns on. Press this button again to stop the sequence and then the SEQUENCE LED turns off. Refer to the figures below.

SEQUENCE DISPLAY

Pressing SEQUENCE button sequences the cameras in order and for dwell time set in the Menu Setup. The displayed camera LED and SEQUENCE LED are lit and an “S” character is displayed on the screen. If the dwell time in the Menu Setup is longer than zero second (OFF) for any uninstalled camera or any disabled camera, the camera sequences with a black background in QUAD/PIP mode or with a blue background in FULL screen mode. If the dwell time is set to OFF for any camera, the camera will be skipped in the sequence even if installed to the system and enabled. The dwell time for each camera can be set individually and sequence order can be set in the Menu Setup. Pressing SEQUENCE again stops the sequential switching mode.



PIP1 SUB SEQUENCE PIP1 MAIN SEQUENCE

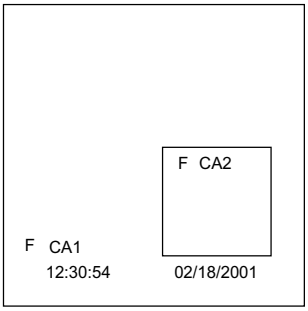


PIP2 SUB SEQUENCE PIP2 MAIN SEQUENCE FULL SEQUENCE QUAD SEQUENCE

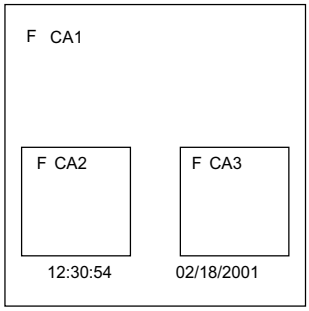
FREEZE DISPLAY

Pressing FREEZE button freezes the screen of the QUAD, PIP, FULL, or VCR playback mode. When the unit is in freeze mode, FREEZE LED is lit and the frozen camera LEDs blink. And the blinking “F” characters are displayed and the images are frozen until the FREEZE button is pressed again or the corresponding camera button of frozen image is pressed.

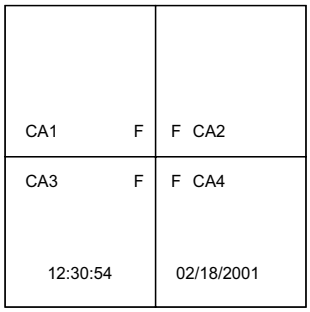
MODE	Button(s)	Action
QUAD FREEZE	CAM (1-4)	Press the camera button of the frozen camera to live the camera, then the camera LED turns ON. To freeze the camera again, press the camera button again, then the camera LED blinks. If all cameras are unfrozen by pressing the camera buttons, the unit exits the freeze mode.
	FREEZE	Press FREEZE button to exit the QUAD FREEZE mode.
PIP FREEZE	CAM (1-4)	Press the camera button of the frozen camera to live the frozen a camera, then the camera LED turns OFF. To freeze the camera again, press the camera button again, then the camera LED blinks. If all cameras are unfrozen by pressing the camera buttons, the unit exits the FREEZE mode. Pressing the camera button not assigned in PIP mode exits FREEZE mode and the unit goes to the FULL screen of the corresponding camera.
	FREEZE	Pressing FREEZE exits the PIP FREEZE mode.
FULL FREEZE	FREEZE	Pressing FREEZE exits the FULL FREEZE mode.
VCR FREEZE	FREEZE	Pressing FREEZE exits the VCR FREEZE mode.
VCR ZOOM FREEZE	FREEZE	Pressing FREEZE exits the VCR PLAYBACK ZOOM FREEZE mode.
	Q/P	Pressing Q/P exits the FREEZE mode and ZOOM mode.



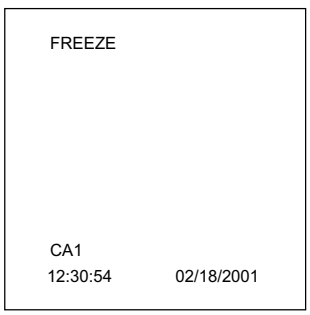
PIP1 DISPLAY MODE



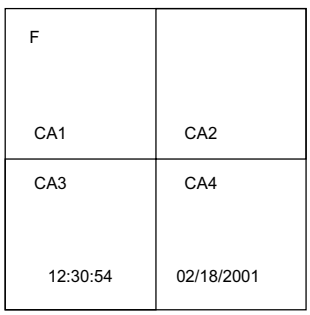
PIP2 DISPLAY MODE



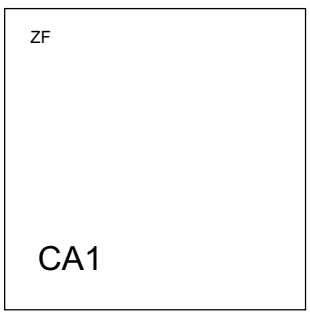
QUAD DISPLAY MODE



FULL DISPLAY MODE



VCR PLAYBACK MODE



VCR ZOOM DISPLAY MODE

VCR OPERATION

The VCR mode allows you to watch recorded pictures from the VCR.

VCR PLAYBACK ZOOM DISPLAY

Pressing the VCR button changes the current display to the VCR mode. By playing the tape, you can watch recorded pictures. If VCR Playback Zoom option is ON in the Menu Setup, you can zoom the recorded pictures. The zoom is a 2X zoom that expands one quarter of the screen to the FULL screen. Pressing the camera button 1 ~ 4 places the unit into a zoomed picture and turns on the camera number LED and displays a character “Z” on the top of the screen.

Note: When the unit is in the VCR playback zoom mode, the VCR output is the same as the main output.

Note: If VCR playback Zoom option is OFF, the VCR PLAYBACK ZOOM mode is disabled and reaction for pressing the buttons is identical to the normal display mode.

Note: Some Time Lapse VCRs don’t generate the standard video format signal in time lapse playback mode. If you use these kinds of VCR, you might see abnormal picture on the top of the screen. So it isn’t the problem of this unit.

Button(s)	Action
CAM (1 - 4)	Press a camera button 1 ~ 4 to expand one quarter of the screen to FULL screen and then the camera LED turns on and Q/P LED turns off.
Q/P	Press Q/P button to exit the ZOOM mode and to go to the original picture screen. Then the camera number LED turns off and QUAD LED turns on.
FREEZE	Press FREEZE button to freeze current zoomed picture and display a blanking character “F” on the top of the screen. Then the FREEZE LED is lit.

ALARM MODE

OVERVIEW

The QUAD proccessor has several alarm functions, including single alarm, multiple alarms, VCR mode alarm, and Video Loss alarm. Each of these alarms will be explained in this section.

SINGLE ALARM AND MULTIPLE ALARMS

If the ALARM INPUT has been set to OFF in the MENU SETUP 1, then the alarm input is ignored. If the option is set to N.O or N.C and any alarm occurs, the following actions are carried out.

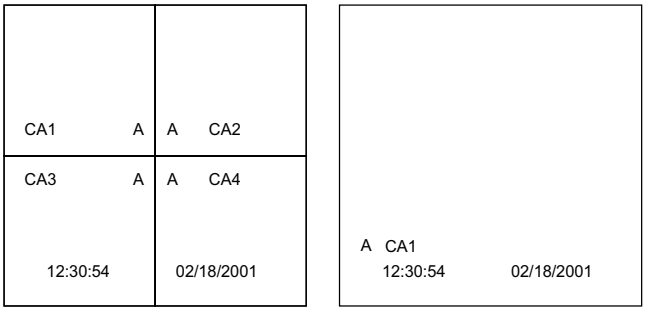
- The LED of the alarmed camera blink once per second.
- The alarm buzzer sounds if BUZZER is set to ON.
- The alarm relays are energized if RELAY is set to ON.
- The blinking character "A" is displayed next to the camera title.
- The MAIN and VCR outputs are switched to the selected display format (FULL or QUAD) set in the ALARM DISPLAY.
- The unit exits the FREEZE mode, the VCR mode, and the VCR PLAYBACK ZOOM mode.
- All above actions are continued until the alarm is reset.
- The message ‘A’ stops blinking after the alarm is reset and if LATCH is set to ON, the ‘A’ stays on the screen until the unit enters the MENU SETUP.
- Pressing any button stops the buzzer sound only before the alarm has released, and by pressing the followed second button the unit goes to the corresponding button display mode.
- When multiple alarms occur, and if the option is set FULL in Main Menu, the outputs are switched between the alarmed cameras in numerical order automatically every two seconds.

The alarm hold time can be set in the TIME of MENU SETUP 2. It starts counting the time just after the alarm input disaprears. The dwell time of the buzzer and the relay starts when an alarm is occurred and stops when the alarm hold time expires.

Note: The alarm is ignored for the camera with “DISABLE” option.

Note: If any alarm happens in Video Loss Mode, the display mode is QUAD.

ALARM DISPLAY



QUAD DISPLAY MODE FULL DISPLAY MODE

VCR MODE ALARM

When an alarm occurs in the VCR PLAYBACK MODE, it exits the mode and performs the alarm operation. When the alarm time has elapsed, it goes to the previous VCR PLAYBACK MODE. When an alarm occurs in VCR mode, the following actions occur:

1. The LED of the alarmed camera blinks.
2. The alarm buzzer sounds, if ON.
3. The alarm relay is energized, if ON.

VIDEO LOSS ALARM

The QUAD processor can detect the video signal loss for all connected cameras. If the VIDEO LOSS has been set to OFF in the MENU SETUP 1, then the video signal loss is ignored. If the option is set to ON and video loss occurs at any camera, the following actions occur:

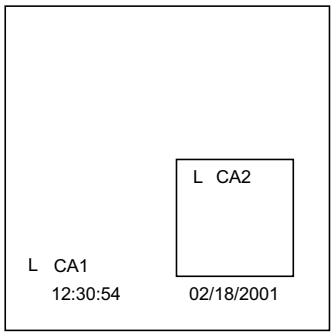
- The display mode is changed to the QUAD mode.
- The LED of the cameras with video loss blinks.
- The relay is energized if RELAY option is set to ON.
- The alarm buzzer sounds if BUZZER is set to ON.
- The blinking character 'L' blinks beside to the camera.
- The last picture of the camera with video loss is frozen in QUAD Mode. If the unit was in other display mode, the black screen displays in QUAD mode.

The video loss hold time of video loss alarm is the same as the VLOSS TIME in the MENU SETUP 2. The video loss time starts counting as soon as the unit detects loss of video signal. The buzzer and the relay start from that moment, and stop after the video time expires. Pressing any button before new video is detected resets the video loss response. Then the unit goes to the corresponding button display mode by any followed button. But the blinking "L" message stops blinking and appears until the unit detects the new valid video signal on the camera with video loss.

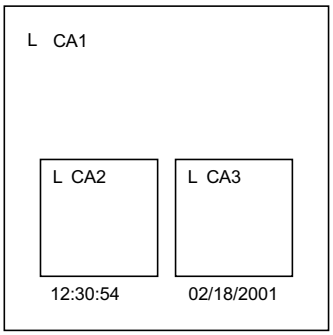
Note: The video loss alarm is ignored in the camera with "DISABLE" option.
Note: When a video loss alarm of the camera not displayed on current screen occurs, the unit goes to QUAD display mode.

VIDEO LOSS ALARM IN VCR MODE

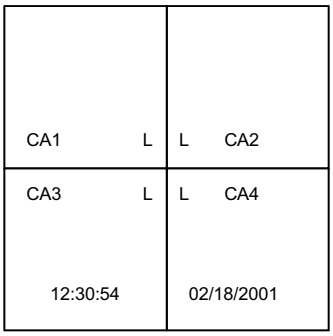
When a video loss alarm occurs in the VCR mode, the unit exits from the mode and goes to QUAD display mode and responses about video loss alarm.



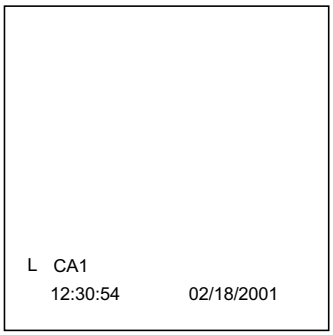
PIP1 DISPLAY MODE



PIP2 DISPLAY MODE



QUAD DISPLAY MODE



FULL DISPLAY MODE

ALARM RESET When one of the following occurs, the alarm action finishes. When the alarm hold time has elapsed, that camera's alarm actions are terminated and the unit goes to previous mode. When the vloss time has elapsed, that camera's video loss alarm action is terminated. Press any button to cancel an alarm action manually and the unit goes to the corresponding button display mode by pressing another button.

CONNECTORS **Alarm Input:**

The unit has four alarm inputs. One alarm input is assigned to each camera input. These inputs can be connected to any security device equipped with either a contact closure or TTL/CMOS standard alarm output. Alarm polarity can be selected for each input via the Alarm Input Setup menu.

Alarm input connections requires two wires. One wire connects to the desired alarm input pin. The second wire connects to ground pin. If the alarm input for a camera has been turned OFF in the Alarm Input Setup menu, then the input is ignored.

Alarm output:

The unit has two alarm outputs that a Form “C” dry contact output. Normally Open (N.O) and Normally Closed (N.C) contacts with shared common.

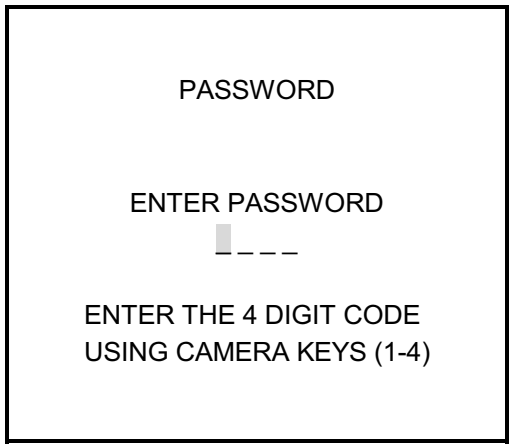
CHAPTER 4. SETUP MODE

OVERVIEW Pressing the Q/P button for 2 seconds will place the unit into the MENU SETUP mode. MENU SETUP mode allows you to customize the unit operation to suit a specific application. In the setup mode, the camera buttons are used as DOWN, UP, LEFT and RIGHT buttons. When the unit comes out from Setup menu, it comes to the previous display mode. In the menu mode, if any button is not pressed for two minutes, it will exit to operate in the previous mode.

Note: In this mode, alarms and video-loss alarm detection are disabled.

PROGRAMMING SCREENS

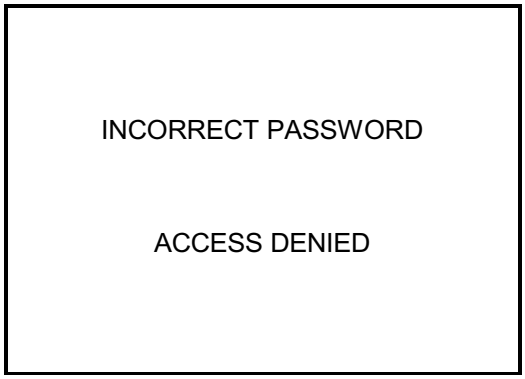
PASSWORD PROTECTION



If the PASSWORD option of MENU SETUP 3 is set to ON, the password confirmation screen displays when entering MENU SETUP. If the PASSWORD option is OFF, the screen is bypassed and the MENU SETUP screen display. The four-digit password must be input with the camera buttons (The camera 1 button means the number 1).

If the incorrect password is entered, the screen displays an access denied message for two seconds and the display returns to previous mode.

INCORRECT PASSWORD MESSAGE SCREEN



- Examples
  If your password is “1 2 3 4”, press the keys as CAM1, CAM2, CAM3, CAM4.
- Factory Default 1 1 1 1.

MAIN MENU SETUP

OVERVIEW The MENU SETUP is consist of 3 pages and provides access to all programming facilities. The table below describes the functions of the programming and camera select controls.

Control	Description
Q/P	Exits the menu setup and return to the previous mode. Press this button returns to the upper menu setup from a sub menu setup.
SELECT	Selects and saves a new setup option. Enters a sub menu setup.
∨	Moves the cursor down or scrolls through the available options.
∧	Moves the cursor up or scrolls through the available options.
>	Moves the cursor right.
<	Moves the cursor left.
SEQUENCE	Moves to next MENU SETUP.
1 ~ 4	Enters a number from 1 to 4 for the password access.

MENU SETUP 1

MENU SETUP 1

	CAMERA TITLE	CAMERA DISABLE	ALARM INPUT	VIDEO LOSS
CA1:	CA1	ENABLE	N.O	ON
CA2:	CA2	ENABLE	N.O	OFF
CA3:	CA3	ENABLE	N.C	ON
CA4:	CA4	ENABLE	N.O	ON

TITLE DISPLAY : ON

DATE : MM/DD/YYYY
TIME : HH:MM:SS
FORMAT : US
DISPLAY : ON

CAMERA TITLE

The CAMERA TITLE setup is used to set each camera title. An 8-character title can be designated for each camera, and this title appears on the screen when the DISPLAY option is ON and the camera is selected. The default camera title is “CA” with the corresponding number. Followings are the available characters for camera titles regardless of the language setting:

A B C D E F G H I J K L M N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m n o p q r s t u v w x y z
- . / 0 1 2 3 4 5 6 7 8 9 : = , ( )
BLANK

The steps below provide an example for setting camera titles. In this example, set “CA1” to “1:LOBBY”.

Step	Action
1	Press ∧ or ∨ until the camera number which you want is selected.
2	Press SELECT button to select the title.
3	Press ∧ or ∨ until the “1” character is displayed. Pressing ∧ scrolls one character at a time in ascending order. Pressing ∨ scrolls one character at a time in descending order. Holding down the ∧ or ∨ button for two seconds will scroll the characters automatically. Stop pressing ∧ or ∨ to stop scrolling.
4	Press > to move the cursor to the right. Press ∧ or ∨ until the “:” is displayed.
5	Press > to move the cursor to the right. Press ∧ or ∨ until the “L” is displayed.
6	Press > to move the cursor to the right. Press ∧ or ∨ until the “O” is displayed.
7	Press > to move the cursor to the right. Press ∧ or ∨ until the “B” is displayed.
8	Press > to move the cursor to the right. Press ∧ or ∨ until the “B” is displayed.
9	Press > to move the cursor to the right. Press ∧ or ∨ until the “Y” is displayed.
10	Press SELECT button. The title is saved and the cursor moves to camera number.

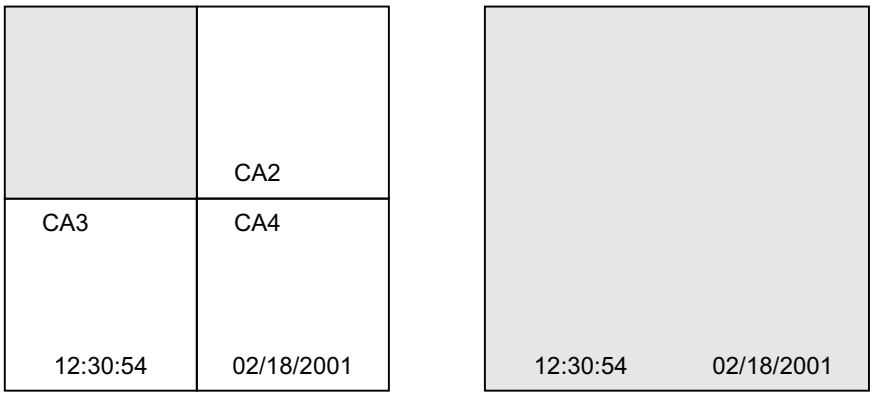
CAMERA DISABLE

The CAMERA DISABLE setup screen allows you to disable a camera from the system even if it is physically connected to the system.

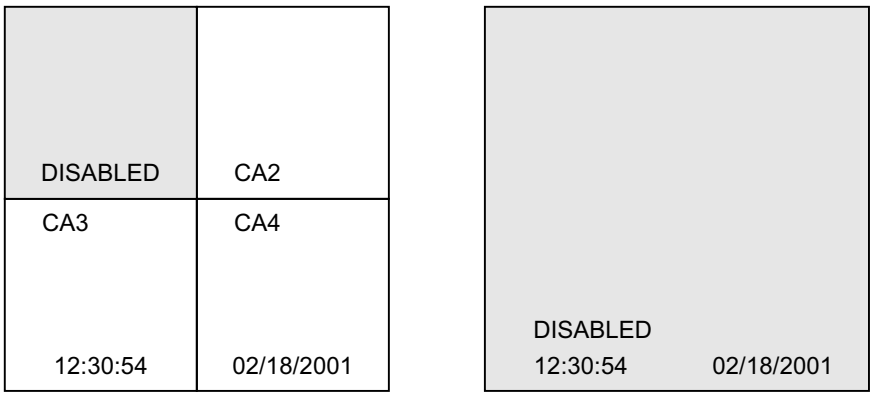
When a camera is disabled, pressing the camera button for full screen viewing brings up a blue screen with the title “DISABLED” if no camera is physically connected. It brings up a blue screen with no title if the camera is physically connected.
When a camera is disabled in QUAD/PIP mode, a black quadrant with the title “DISABLED” will be displayed if no camera is physically connected. It will display a black quadrant 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.

Step	Action
1	Press ∧ or ∨ to move the cursor to the desired camera number.
2	Press SELECT button to select the option.
3	Press > or < until CAMERA DISABLE field is selected.
4	Select the desired option (ON or OFF) by using ∧ or ∨ button.
5	Press SELECT button. The selected option is saved and the cursor moves to CA1.
6	Repeat steps 1 - 5 for remaining CA2 - CA4.

a) When the camera has "DISABLE" option and the camera is physically connected.



b) When the camera has "DISABLE" option and no camera is physically connected



ALARM INPUT

ALARM INPUT option defines the way connectors respond to external input, in terms of whether they are normally open (N.O), normally closed (N.C), or if they ignore the input. The default is N.O. The alarm input setup screen allows you to set these options.

Note: Any alarm that occurs while in the setup mode is ignored

Step	Action
1	Press ∧ or ∨ to move the cursor to the desired camera number.
2	Press SELECT button to select. Press > or < to move the cursor to the ALARM INPUT field.
3	Select a new option using ∧ or ∨ button. Valid settings are: • N.O: The unit looks for a short for alarm condition. This is default. • N.C: The unit looks for an open for alarm condition. • OFF: The alarm input is ignored.
4	Press SELECT button to save the change.
5	Repeat steps 1 through 4 for all other desired cameras.

VIDEO LOSS The VIDEO LOSS option allows you to turn the video loss alarm on or off for each camera when video input is lost. Use the following steps to change this option.

Step	Action
1	Press ∧ or ∨ to move the cursor to the desired camera number
2	Press SELECT button to select the current option. Press > or < to move the cursor to the VIDEO LOSS field
3	Press ∧ or ∨ to change the value. Select from the following: • ON: Executes video loss alarm operation during loss of video. This is default. • OFF: Ignores the loss of video.
4	Press SELECT button to save the change.
5	Repeat steps 1 through 4 for all other desired cameras.

TITLE DISPLAY The TITLE DISPLAY option on the camera titles setup screen allows you to select whether or not to display camera titles on the screen. The default option is ON. Change the display option using the steps in the following steps.

Step	Action
1	Press ∧ or ∨ until TITLE DISPLAY is selected.
2	Press SELECT button to select the option.
3	Select the desired option (ON or OFF) using ∧ or ∨ button.
4	Press SELECT button. The selected option is saved and the cursor is moved to TITLE DISPLAY.

DATE The DATE option is used to set the current date. The format displayed on the screen is dependent on the data format option set in the preceding steps. Use the following steps to set the current date.

Step	Action
1	Press ∧ or ∨ until DATE is selected.
2	Press SELECT button to select the first two digits of the date.
3	Select the desired number using the ∧ or ∨ button.
4	Select the next two digits using the > or < button.
5	Repeat steps three and four until the desired date is set.
6	Press SELECT button. The option is saved and the cursor is moved to DATE.

TIME The TIME option is used to set the time in a 24-hour format. Use the same steps above for setting the time.

FORMAT The FORMAT option on the time and date setup screen is date format. This is used to select between the following three date formats:

FORMAT	DISPLAY	EXAMPLE
US (default)	MM/DD/YYYY	09/18/2001
EURO	DD/MM/YYYY	18/09/2001
ASIA	YYYY/MM/DD	2001/09/18

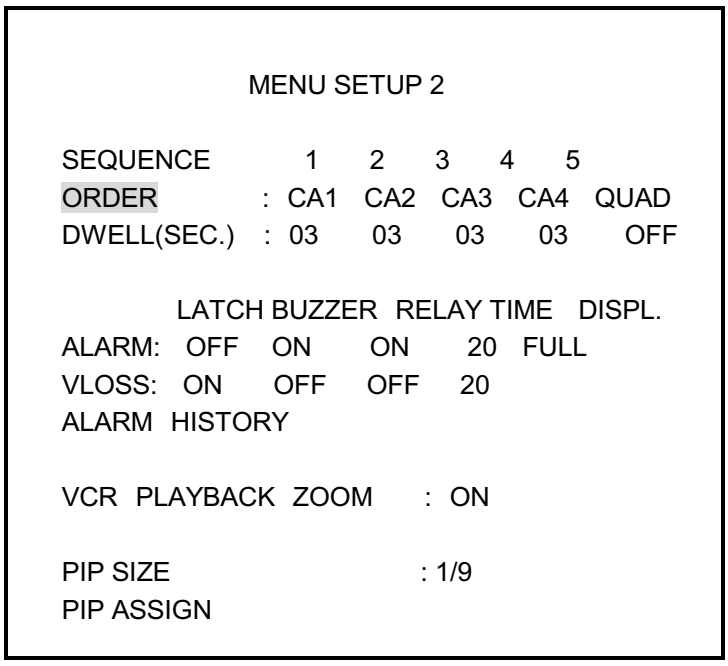
Use the following steps to set the date format option.

Step	Action
1	Press ∧ or ∨ until FORMAT is selected.
2	Press SELECT button to select the option.
3	Select the desired option using ∧ or ∨ button.
4	Press SELECT button. The selected option is saved and the cursor is moved to FORMAT.

DISPLAY The DISPLAY option on the time and date setup screen allows you to select whether to display the time and date on the screen. The default option is ON. Change the display option using the steps in the following steps.

Step	Action
1	Press ∧ or ∨ until DISPLAY is selected.
2	Press SELECT button to select the option.
3	Select the desired option (ON or OFF) using ∧ or ∨ button.
4	Press SELECT button. The selected option is saved and the cursor is moved to the DISPLAY option.

MENU SETUP 2



SEQUENCE The SEQUENCE setup allows you to select whether or not to display cameras in the sequential switching modes, and if so, specify the number of seconds each camera displays. The order and dwell time in the full sequence option applies to the PIP sequence display mode.

ORDER The ORDER option allows you to select the switching order in the sequential switching modes. A camera can be set more than once in the sequence order. Change this option using the following steps.

Step	Action
1	Press SELECT button to set the sequence order.
2	Press > or < to move the cursor to the desired order.
3	Select the new option (CA1 ~ CA4, QUAD) using the ∧ and ∨ button.
4	Repeat steps 2 and 3 for all other orders.
5	Press SELECT button to save the change.

DWELL TIME The DWELL TIME option is used for the sequential switching mode for each camera. Valid dwell times are from 00 to 99 seconds. If 00 second is selected, “OFF” is displayed on the screen. Three seconds is the default dwell time. Use the following steps to set the dwell time for each camera.

Step	Action
1	Press SELECT button to set the sequence dwell order.
2	Press > or < to move the cursor to the desired order.

3	Set the new dwell time using the ∧ and ∨ button.
4	Repeat steps 2 and 3 for all other orders.
5	Press SELECT button to save the change.

Cameras that have a dwell time set to “OFF” are excluded from the switching sequence, even if they are connected to the system. Cameras with dwell times of 01 ~ 99 seconds sequence.

ALARM LATCH

The ALARM LATCH option is used to determine how long the alarm message will display in the main monitor.

Step	Action
1	Press ∧ or ∨ to move the cursor to the ALARM.
2	Press SELECT button and press > or < to move the cursor to the LATCH option.
3	Press ∧ or ∨ to change the value. Select from the following: • ON: All alarm messages remain on screen until manually cleared by entering the MENU SETUP. • OFF: Each alarm message remains on screen until the alarm hold time expires or manually cleared by pressing any button. This is the default setting.
4	Press SELECT to save the new option and return the cursor to ALARM.

ALARM BUZZER

The ALARM BUZZER option allows you to select whether the alarm buzzer sounds or not. Use the following steps to change this option.

Step	Action
1	Press ∧ or ∨ to move the cursor to the ALARM.
2	Press SELECT and press > or < to move the cursor to the BUZZER option.
3	Press ∧ or ∨ to change the option. Select from the following: • ON: activates the alarm buzzer until the alarm hold time expires or manually cleared by pressing any button. This is the default setting. • OFF: The buzzer doesn’t sound.
4	Press SELECT to save the new option and return the cursor to ALARM.

ALARM RELAY

The ALARM RELAY option allows you to select whether the alarm relay activates or not. Use the following steps to change this option.

Step	Action
1	Press ∧ or ∨ to move the cursor to the ALARM.
2	Press SELECT button and press > or < to move the cursor to the RELAY option.

3	Press ∧ or ∨ to change the option. Select from the following: • ON: activates the alarm relay until the alarm hold time expires or manually cleared by pressing any button. This is the default setting. • OFF: The relay doesn't response.
4	Press SELECT button to save the new option and return the cursor to ALARM.

ALARM TIME

This ALARM TIME option is used to set the time that the alarm relay and alarm display continues after the alarm has released. Change this option using the following steps.

Step	Action
1	Press ∧ or ∨ to move the cursor to the ALARM.
2	Press SELECT button and press > or < to move the cursor to the TIME option.
3	Press ∧ or ∨ to change the number of seconds. Valid settings are from 00 to 99 seconds. The default setting is 20 seconds.
4	Press SELECT button to save the new option and return the cursor to ALARM.

ALARM DISPLAY

The ALARM DISPLAY option allows you to select the display mode regardless of the video loss alarm when the external alarm occurs. The possible displays are FULL and QUAD. The default alarm display is FULL. Change this option using the following steps.

Step	Action
1	Press ∧ or ∨ to move the cursor to the ALARM.
2	Press SELECT button and press > or < to move the cursor to the DISPL. option.
3	Press ∧ or ∨ to move the cursor to the desired alarm display (FULL, QUAD).
4	Press SELECT to save the new option and return the cursor to ALARM.

VLOSS LATCH

The VLOSS LATCH option is used to determine how long the video loss alarm message will display in the monitor.

tep	Action
1	Press ∧ or ∨ to move the cursor to the VLOSS.
2	Press SELECT button and press > or < to move the cursor to the LATCH option.
3	Press ∧ or ∨ to change the value. Select from the following: • ON: All video loss messages remain on the screen and the LEDs of cameras without video signal will blink until manually cleared by entering the Menu Setup. • OFF: Each video loss message remains on screen until the VLOSS TIME expires or manually cleared by entering the setup menu. This is the default setting.
4	Press SELECT to save the new option and return the cursor to VLOSS.

VLOSS BUZZER

The VLOSS BUZZER option allows you to sound or not the buzzer when the video loss alarm occurs. The buzzer sounds until the VLOSS TIME expires, if ON. Use the following steps to change this option.

Step	Action
1	Press ∧ or ∨ to move the cursor to the VLOSS.
2	Press SELECT button and press > or < to move the cursor to the BUZZER option.
3	Press ∧ or ∨ to change the value. Select from the following: • ON: Sounds the buzzer until the VLOSS TIME expires or manually cleared by pressing any button. This is the default setting. • OFF: The buzzer doesn't sound.
4	Press SELECT button to save the new option and return the cursor to VLOSS.

VLOSS RELAY

The VLOSS RELAY option allows you to select whether the relay is turned on or off. Use the following steps to change this option.

Step	Action
1	Press ∧ or ∨ to move the cursor to the VLOSS.
2	Press SELECT button and press > or < to move the cursor to the RELAY option.
3	Press ∧ or ∨ to change the option. Select from the following: • ON: activates the relay until the VLOSS TIME expires or manually cleared by pressing any button. This is the default setting. • OFF: The relay doesn't response.
4	Press SELECT button to save the new option and return the cursor to Relay.
	The VLOSS TIME option is used to set the time that the video loss alarm relay, buzzer and display continues after video loss occurred. Change this option using the following steps.

VLOSS TIME

Step	Action
1	Press ∧ or ∨ to move the cursor to the VLOSS.
2	Press SELECT button and place the cursor at the TIME option.
3	Press ∧ or ∨ to change the number of seconds. Valid settings are from 01 to 99 seconds. The default setting is 20 seconds.
4	Press SELECT button to save the new option and return the cursor to VLOSS.

ALARM HISTORY

The ALARM HISTORY option is used to display the history for up to 120 alarm events. The history data including alarm source, camera number, time and date is displayed in 12 different pages. The alarm history is kept in a cyclic. So the last 120 alarm events are recorded with the oldest alarm event being deleted when triggered again.

There are three different sources:

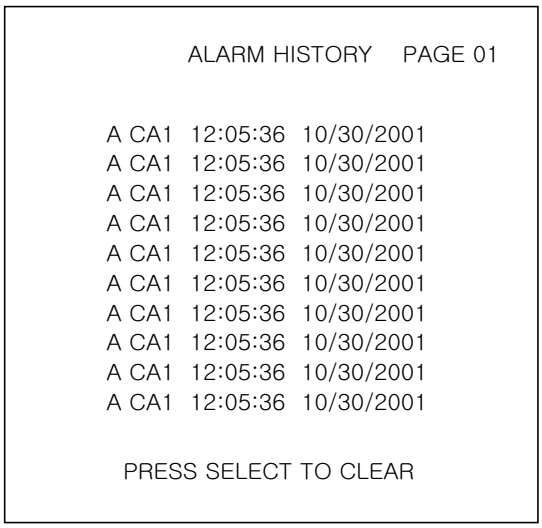
"A" means that the alarm was triggered by the external alarm sensor.

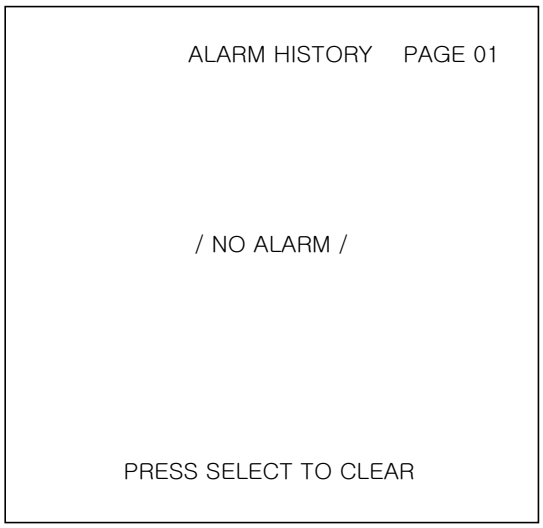
"L" means that the video loss was triggered by the loss of the video signal from the camera input.

Use the following steps to display the alarm history for each alarm and restart the alarm history for all cameras.

Note: The factory default operation clears the alarm history.

Step	Action
1	Press ∧ or ∨ until ALARM HISTORY is selected.
2	Press SELECT button to display the current ALARM HISTORY.
3	Press UP/DOWN button to display the next/previous page, or press SELECT button to clear all pages.
4	Press the Q/P button to exit this menu and to the configuration menu.





VCR PLAYBACK ZOOM

The VCR PLAYBACK ZOOM setup allows you to use or not the VCR playback zoom facility. The default option is OFF.

Note: When the VCR PLAYBACK ZOOM option is ON, after pressing the play button of the VCR, press the VCR button of this unit. If the VCR does not play the a tape, there may be some noise signals. It isn't problem because there is no signal.

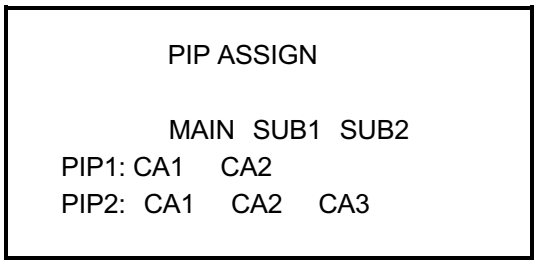
Step	Action
1	Press ∧ or ∨ until the VCR PLAYBACK ZOOM option is selected.
2	Press SELECT button to select the option.
3	Select the desired option (ON or OFF) by using the ∧ or ∨ button.
4	Press SELECT button to save this option.

PIP SIZE The PIP SIZE setup allows you to select the inset picture size in the PIP mode. The default option is 1/9 size.

Step	Action
1	Press ∧ or ∨ until the PIP SIZE option is selected.
2	Press SELECT button to select the option.
3	Select the desired option (1/9 or 1/16 size) using the ∧ or ∨ button.
4	Press SELECT button to save this option.

PIP ASSIGN The PIP ASSIGN setup allows you to customize the configuration of PIP mode.

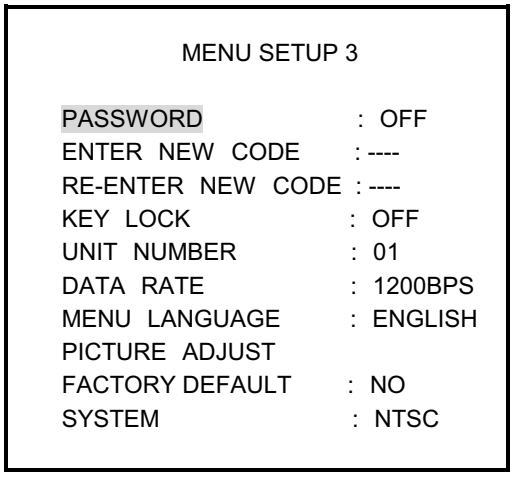
Step	Action
1	Press ∧ or ∨ until the PIP ASSIGN option is selected.
2	Press SELECT button to select the option. Then the PIP ASSIGN SETUP screen shows up.
3	Press ∧ or ∨ and select PIP mode to configure.
4	Select the PIP assignment (Main and Sub) using arrow buttons.
5	Press SELECT button to save this option.
6	Repeat 3 ~ 5 for another PIP mode.



MENU SETUP 3

PASSWORD The PASSWORD option protects the programming setup from unauthorized access. If this option is ON, when the unit enters the Menu Setup mode the password confirmation screen displays.

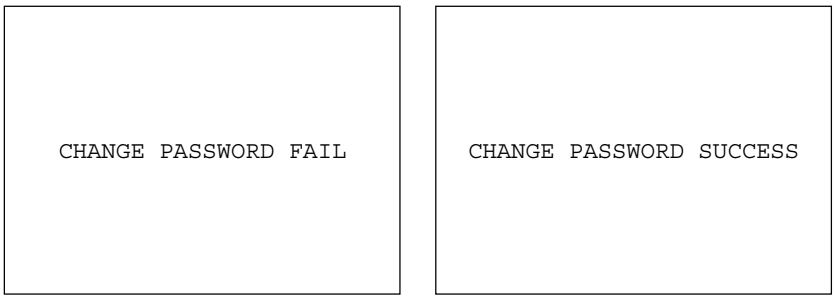
Step	Action
1	Press ∧ or ∨ until PASSWORD is selected.
2	Press SELECT button to select the option.



3	Select the desired option (ON or OFF) using the ∧ or ∨ button. OFF is default.
4	Press SELECT button to save the setting and move the cursor to the PASSWORD option

CHANGING PASSWORD The ENTER NEW CODE and RE-ENTER NEW CODE fields are used to change the password for the unit. Use the following steps to change the password. The default password is 1111.

Step	Action
1	Press ∧ or ∨ until ENTER NEW CODE is selected.
2	Press SELECT button to select the first digit of the password.
3	Enter four digits for the new password by using the camera number buttons 1 ~ 4.
4	The first digit (-) of the Re-enter new password field is automatically selected.
5	Re-enter the same four digits as above and press SELECT button.
6	If the changing password code was successful, “CHANGE PASSWORD SUCCESS” message is displayed and the cursor places at the ENTER NEW CODE item automatically. If not, “CHANGE PASSWORD FAIL” message is displayed and the cursor places at the ENTER NEW CODE menu-item automatically. In this case, repeat the same steps.



KEY LOCK The KEY LOCK option is used to protect the control buttons against unauthorized operation. Use the following steps to set the key lock option.

Step	Action
1	Press ∧ or ∨ until KEY LOCK is selected.
2	Press SELECT button to select the option.
3	Press ∧ or ∨ to select the new option. Valid settings are: • ON: The front panel is inoperable except for entering the MENU SETUP. • OFF: The front panel is operable and key lock is off. This setting is default.
4	Press SELECT button to save the setting and move the cursor to the KEY LOCK option.

UNIT NUMBER The UNIT NUMBER option is used to setting the unit number. Use the following steps to set the unit number. Refer to the chapter 5.

Step	Action
1	Press ∧ or ∨ until Unit Number is selected.
2	Press SELECT button to select the option.
3	Press ∧ or ∨ to select the desired number from 00 to 99. The default setting is 01.
4	Press SELECT button to save the changes and return to the UNIT NUMBER option.

DATA RATE The DATA RATE option is used to assign the data rate for remote control. Available settings are 1200 bps, 2400 bps, 4800 bps, and 9600 bps. Use the following steps to set the unit number.

Step	Action
1	Press ∧ or ∨ until DATA RATE is selected.
2	Press SELECT button to select the option.
3	Press ∧ or ∨ to select the desired rate, 1200, 2400, 4800, and 9600 BPS. The default setting is 1200 BPS.
4	Press SELECT button to save the changes and return to the DATA RATE option.

MENU LANGUAGE

The MENU LANGUAGE option allows you to select the language of the displayed setup men. The default setting is 1 (ENGLISH). Use the following steps to change this setting.

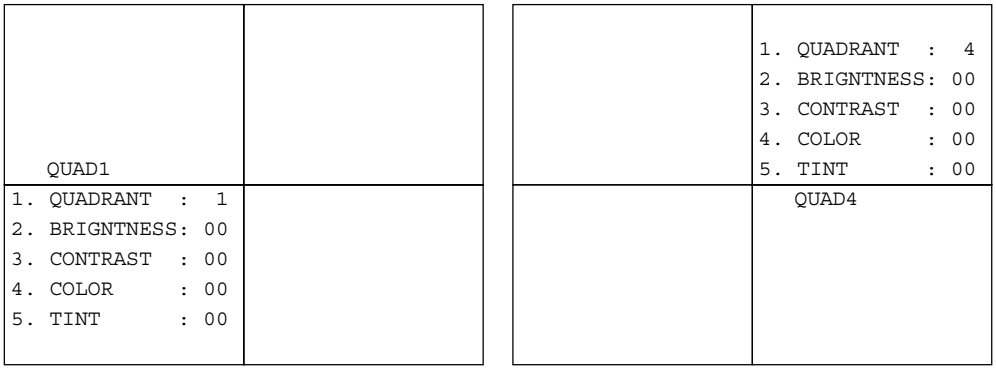
Step	Action
1	Press ∧ or ∨ until MENU LANGUAGE is selected.
2	Press SELECT button to select the option.
3	Press ∧ or ∨ to select the desired language, English, French, German, Italian, and Spanish. The default is English.
4	Press SELECT button to save the changes and return to the MENU LANGUAGE option

PICTURE ADJUST

The PICTURE ADJUST option allows you to modify the picture quality of the selected camera. This option allows you to adjust the level for brightness, contrast, colo(u)r, and tint (not shown in PAL) of the selected camera. Each level has the 64 steps from MIN to MAX. The 00 means the normal value and is default setting. Change the values for picture control using the following steps.

Step	Action
1	Press ∧ or ∨ to move the cursor to the “1. QUADRANT” field.
2	Press SELECT button and press ∧ or ∨ to select one of the 4 quadrants to adjust picture.
3	Then the screen goes to the selected quadrant.
4	Press ∧ or ∨ to move the cursor to the desired item (2. BRIGHTNESS ~ 5. TINT).
5	Press SELECT button and press ∧ or ∨ to change the value.
6	Press SELECT button to save the selected option and the cursor moves to the item.
7	Repeat steps 1 through 6 for all other desired quadrant and item.
8	Press the Q/P button to go to Upper menu.

PICTURE ADJUST SCREEN



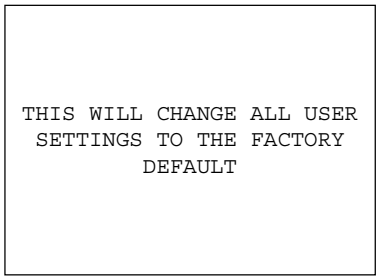
FACTORY DEFAULT

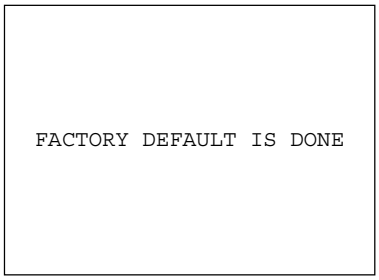
The FACTORY DEFAULT option allows you to return to all options of the unit to all factory defined default values. The default setting is NO. Use the following steps to reset the unit to factory defaults.

Warning: This action erases all user settings and cannot be undone.

Note: TIME, DATE, and SYSTEM are not changed after factory default.

Step	Action
1	Press ∧ or ∨ until FACTORY DEFAULT is selected.
2	Press SELECT button to select the option. A warning message is displayed on the screen: WARNING THIS WILL CHANGE ALL USER SETTINGS TO THE FACTORY DEFAULT.
3	Select the desired option (YES) using the ∧ or ∨ button.
4	Press SELECT button to run the factory default. Then “FACTORY DEFAULT IS DONE” is displayed on the screen. And then the Menu Setup 3 is refreshed.





SYSTEM

The SYSTEM option is used to change the overall system video format. Use the following steps to set the type.

Note: This option is not changed by the factory default operation.

Note: After this unit checks the video format of the camera 1 at the power on, it operates as follows:

1. If the video format of the camera 1 is not same as this option value, it changes this option value to the system format of the camera 1 and sets the whole system video format.

2. If the camera 1 is not installed, this unit sets the whole system video format as same as that of SYSTEM option in Menu Setup.

Step	Action
1	Press ∧ or ∨ until the SYSTEM OPTION is selected.
2	Press SELECT button to change the option.
3	Select the desired option (NTSC or PAL) using the ∧ or ∨ button.
4	Press SELECT button to save and affect the new option to the whole system video format.

CHAPTER 5. REMOTE CONTROL

OVERVIEW

This unit provides the remote control method using the rear panel RS-485 remote connectors.

RS-485 DATA

This unit can be controlled by the RS-485 data coming from a remote computer or ASCII communications terminal. The unit recognizes three character groups as a remote button press command. Each command represents a single button press.
The RS-485 pin (RXA, RXB) is used only to receive data. The unit does not echo commands or output data of any type.

RS-485 CONNECTION

RS-485 remote control is through a RJ-45 connector on the rear panel.
RS-485 remote connection requires a cable with two wires to RS-485 IN of the rear panel. One wire connects to the RS-485 RXA and the other connects to the RS-485 RXB. And the RS-485 RXS and RS-485 RXB should be connected externally. But if you connect more than two units to control, you should have more cables to connect to RS-485 IN to RS-485 OUT of other units.
Note: Twist the wires together to help eliminate noise from the signal.

COMMUNICATION PROTOCOL

The communication protocol supported by this unit is as follows:

- Data Rate: 1200bps, 2400bps, 4800bps, 9600bps (Selectable)
- Characters: 8
- Parity: None
- Stop bits: 1

REMOTE COMMAND SET

The remote commands used consist of three ASCII characters. All commands, except unit number commands, begin with the forward slash (/) character. The two characters following the slash identify the command. So if you want to operate this unit by serial communication, you must send the valid formation that consists of the exact unit number or #00 followed by one of the commands. The following table lists each valid command and the button press it represents.

REMOTE COMMAND SET

FUNCTION	COMMAND
MENU button	/MU
VCR button	/VR
Q/P button	/QP
SEQUENCE button	/SQ
FREEZE button	/FR
SELECT button	/SL
CAMERA 1 ~ 4 button	/01 ~ /04
QUAD mode	/QU
PIP1 mode	/P1
PIP2 mode	/P2
UP button	/UP
DOWN button	/DN
LEFT button	/LT
RIGHT button	/RT
FREEZE Mode	/FM
UNFREEZE mode	/UM
Unit Number	#00 ~#99

The unit operates according to all commands after power on. If the unit receives the command, Unit Number, the unit compares the received unit number command with it self in the menu setup. On receiving the wrong unit number, the unit does not operate by command until receiving #00 or the exact unit number.

CHAPTER 6.

TECHNICAL SPECIFICATIONS

Power ON	Display Format	Quad Screen Display
Factory Defaults	Menu Language	ENGLISH
	Time/date Display	ON
	Date format	US (MM/DD/YYYY) for NTSC, or EURO(DD/MM/YYYY) for PAL
	Camera Titles	ON (CA1 ~ CA4)
	Camera Disable	All Enable
	Alarm Input Polarity	N.O (Normally Open)
	Alarm Display	FULL
	Alarm Buzzer	ON
	Alarm Hold Time	20 seconds
	Alarm Latch	OFF
	Alarm Relay	ON
	Video Loss Alarm	ON
	Video Loss Latch	OFF
	Video Loss Time	20 seconds
	Video Loss Relay	ON
	Sequence Order	CA1, CA2, CA3, and CA4
	Dwell Time	3 seconds
	Password	OFF
	Password Code	1 1 1 1
	Key Lock	OFF
	Factory Default	NO
	Data Rate	1200bps
	Unit Number	01
Alarm	Camera Alarm Input	Four inputs with individual polarity selection. Activated by contact closure or TTL/CMOS signal.
	Alarm Output	Two N.O and N.C contacts with shared common. 1.0A at 24 VDC (resistive only)
	Alarm Hold Time	20 seconds (default) Programmable 00 to 99 seconds.
	Alarm Buzzer	On/Off programmable.
	Relay	On/Off programmable.
Operating Environment	Ambient Temp.	32°F to 95F (0°C to 35°C)
	Ambient Humidity	10% to 90% (non-condensing)

Electrical	Signal Format	NTSC: 525 lines, 2:1 Interlace; PAL: 625 lines, 2:1 Interlace
	Video Inputs	1.0 Vp-p 75 Ohm, BNC(×4)
	Video Outputs	BNC with switch for changing input impedance automatically. Composite video output from camera (passive loop through).
	VCR Output	1.0 Vp-p, 75 Ohm, BNC
	VCR Input	1.0 Vp-p, 75 Ohm, BNC
	Monitor Output	1.0 Vp-p, 75 ohm unbalanced, BNC, OSD
	Pixel Resolution	720 x 480 pixels for NTSC 720 x 576 pixels for PAL
	Shades of Gray	256
	Colors	16.7 Million
	Display Rate	Real Time Refresh Rate (60 for NTSC or 50 fields per second for PAL)
	Video Dwell	OFF, 01 to 99 seconds programmable
	Alarm Inputs	Normally Open or Normally Closed (Programmable), Terminal Strip
	Alarm Outputs	Form C Dry Contact, Terminal Strip (x2)
	Video Loss Alarm	OSD Display (“L”), Buzzer, and Relay
	Freeze Annunciation	OSD Display (“F”)
	Annunciation	Alarm Buzzer (On/Off)
	Camera Titles	8 characters per Camera
Power Requirement	12V DC / 1.5A	
Physical Characteristics	Dimensions (W x H x D)	17.5” x 1.73” x 13.1” (444.5mm x 44mm x 334mm)
	Weight	2.0 Kg

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DIGITAL COLOR
QUAD PROCESSOR

4 CHANNEL

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