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REVISION HISTORY

Version 1.1 Created on 01/10/03 by Po-Kai Shao from:

- 1) Version 1.0 from Po-Kai Shao, 01/06/14.**
- 2) Added operation instructions for additional remarks of WARNING by Po-Kai Shao 01/07/24.**
- 3) To correction for lapse of the pen by Po-Kai Shao, 01/07/23.**
- 4) Edits to various sections by Shu-Gi Ling 01/10/03.**

1. INTRODUCTION AND FEATURES

1.1 Product Introduction

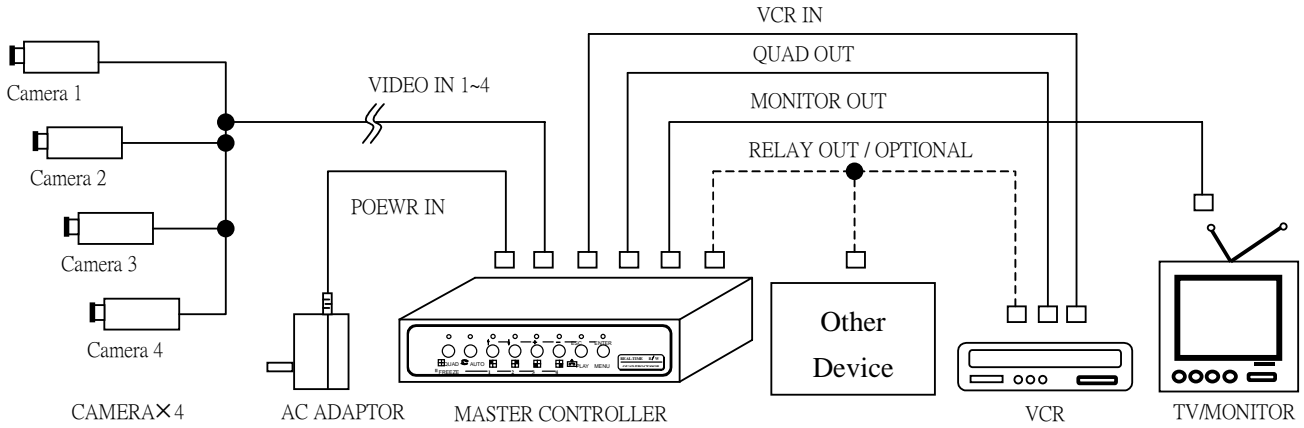
This surveillance kit can be installed in many different places (such as homes, shops, offices, ... etc.). It is designed with 4 objectives : Economical, Complete Functions, Installs Easily, and User Friendly.

1.2 Product Features

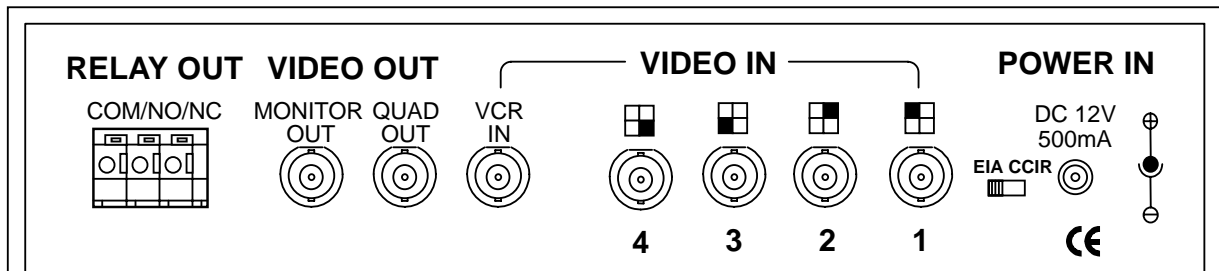
- An economic solution for home, shop or building surveillance system.
- Plug & Play. Installs easily and is suitable as DIY (Do It by Yourself).
- Has Microprocessor, compact dimension, and smart functions. Simple operation mode and user friendly design.
- Full quad display at real time refreshes rate. (EIA : 60 Fields / sec ; CCIR : 50 Fields / sec)
- Both EIA and CCIR system supported in same machine, manual switchable.
- Built-in Buzzer for video loss and motion detected alarms.
- Built-in a Real-Time-Clock (RTC) with OSD IC that can show date and time.
- User-friendly On-Screen-Display (OSD) set-up menu and front panel design.
- Support Borderline display on/off and Borderline width setting.
- Independent title setting, up to 8 characters, for each channel.
- Support zoom-in (2×2) display function in VCR play-back mode.
- Supports freeze function in VCR play-back mode for both of the VCR full and zoom-in (2×2) display.
- Supports 4 Motion detection windows for each channel in QUAD DISPLAY MODE / Windows size : 64 (H) × 64 (V) .
- Supports 4 Motion detect windows on/off and position setting for each channel
- Automatic video loss detection, witch keeps the last image when video input loss occurs.
- Built-in four independent digital contrast adjustment setting for each channel.
- Supports Quad screen / Full screen / Auto-Sequential / Play-Back / Picture In Picture display modes.
- Supporting a smart automatic switcher allows random sequences and programmable dwell time for user.
- Automatically detects unconnected channel and skips that channel in auto-switch mode.
- Supports an alarm–triggered relay output (RELAY OUT) that can control other security systems, related electric devices or to start VCR recording.
- 60 alarms occurrence record and list.

2. INSTALLATION

2.1 System Installation Diagram

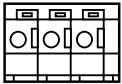










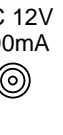
2.2 Installation Procedures



Back Panel

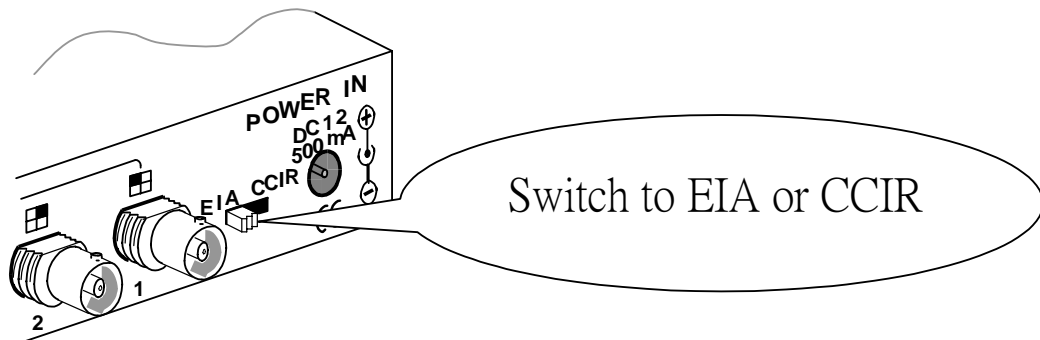
§Terminal Function Description.

Terminal	Function Description
 <p>COM/NO/NC Alarm Triggered Relay Out Terminal</p>	<p>This terminal is an auto-switch output (N.O., Normal Open type or N.C., Normal Close type). Whenever alarm is triggered. It can be used to control other equipments.</p>
 <p>MONITOR OUT Video signal output BNC type Terminal</p>	<p>This terminal represents the video signals output for connecting to external Monitor.</p>
 <p>QUAD OUT Video signal output BNC type Terminal</p>	<p>This terminal represents the video signals output for connecting to external VCR.</p>

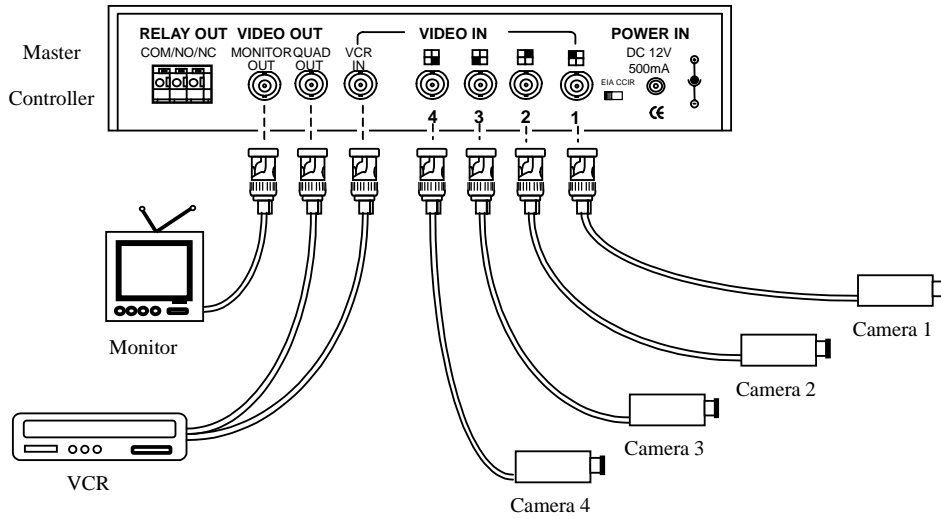
	<p>External video signal input BNC type Terminal from the VCR</p>	<p>This terminal represents the video signals input for connecting to external VCR.</p>
	<p>Video system select switch</p>	<p>Both EIA and CCIR system machine, manual switchable.</p>
	<p>CH4 video signal input BNC type Terminal</p>	<p>This terminal represents the video signals input for connecting from external camera.</p>
	<p>CH3 video signal input BNC type Terminal</p>	<p>This terminal represents the video signals input for connecting from external camera.</p>
	<p>CH2 video signal input BNC type Terminal</p>	<p>This terminal represents the video signals input for connecting from external camera.</p>
	<p>CH1 video signal input BNC type Terminal</p>	<p>This terminal represents the video signals input for connecting from external camera.</p>
	<p>DC Power Input Jack</p>	<p>The DC POWER INPUT terminal : 12Vdc/500mA.</p>

2.3 Illustrate of installation procedures :

Step 1: select the video systems switching to the same as follower the camera video system.
 Before connect to DC POWER Input!



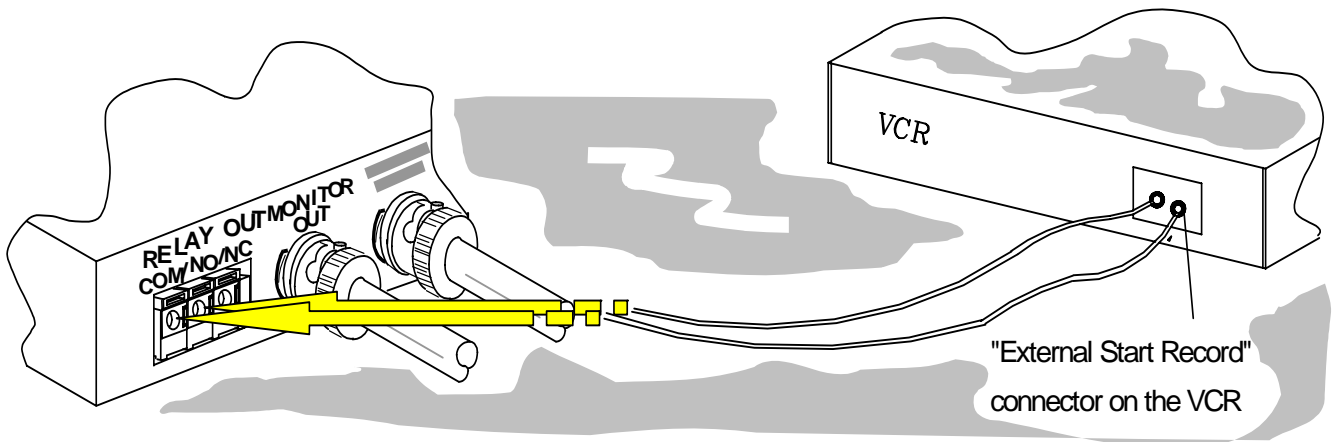
Step 2: Illustration of the external video Cameras, Monitor and VCR. Please refer to figure as shown below.



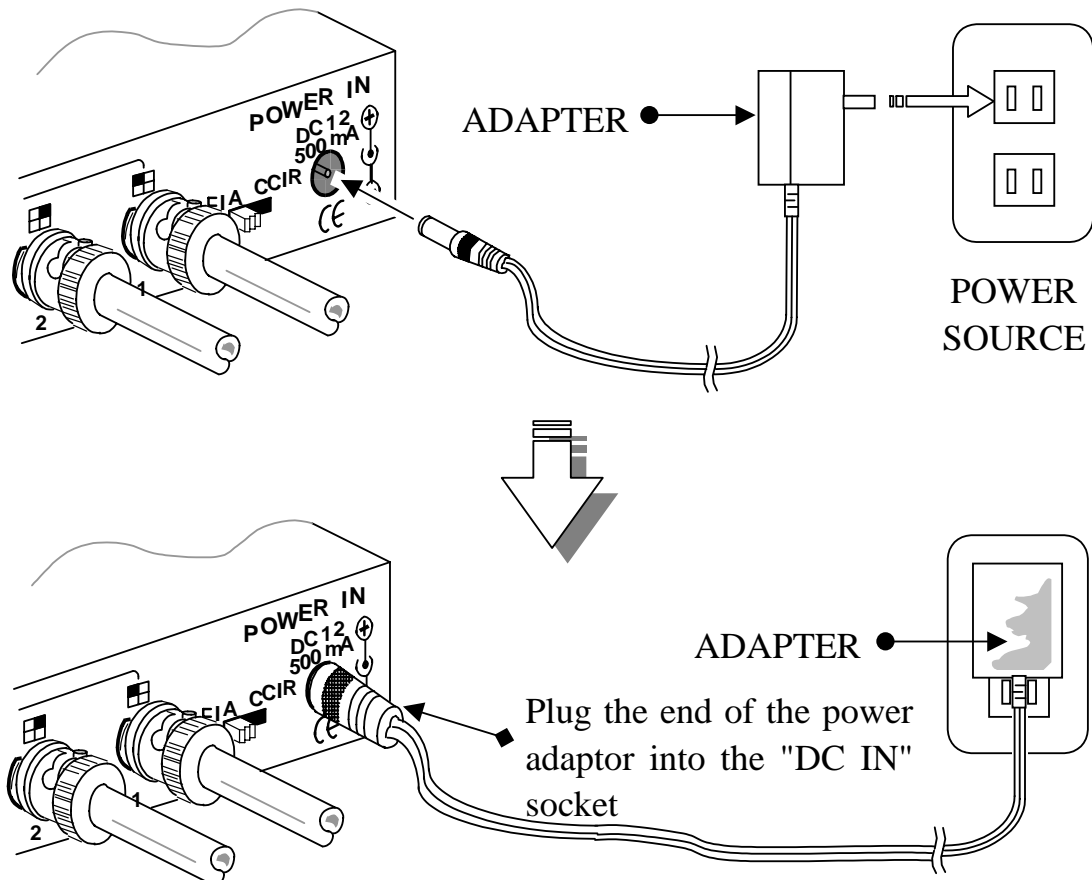
Step 3: You can skip this step if it is not necessary to control other equipment by the MASTER CONTROL.

Item	Diagram	Setup Expatiation
2.3.3-a	<p style="text-align: center;">φ 2.3 mm Max.</p> <p style="text-align: center;">SOLID WIRE</p> <p style="text-align: center;">8.50 mm</p> <p style="text-align: center;">or</p> <p style="text-align: center;">STRANDED</p>	<p style="text-align: center;">Specifications of the Connector Wires :</p> <ul style="list-style-type: none"> ◆ Insulator stripped off length : 8.5 +0.5 / -1.5mm ◦ ◆ Maximum gauge : φ =2.3mm (14~ 24AWG) ◦
2.3.3-b	<p style="text-align: center;">RELAY OUT</p> <p style="text-align: center;">COM/NO/NC</p> <p style="text-align: center;">From : VCR...ect.</p> <p style="text-align: center;">or</p>	<p style="text-align: center;">Time-Lapse VCR “External Start Record” input to master control “RELAY OUT” connection.</p> <p style="text-align: center;">(※ Please check your Time-Lapse VCR user’s manual for configurations of “RELAY OUT” terminal connections. Please take note COM-N.O. and or COM-N.C. !)</p>

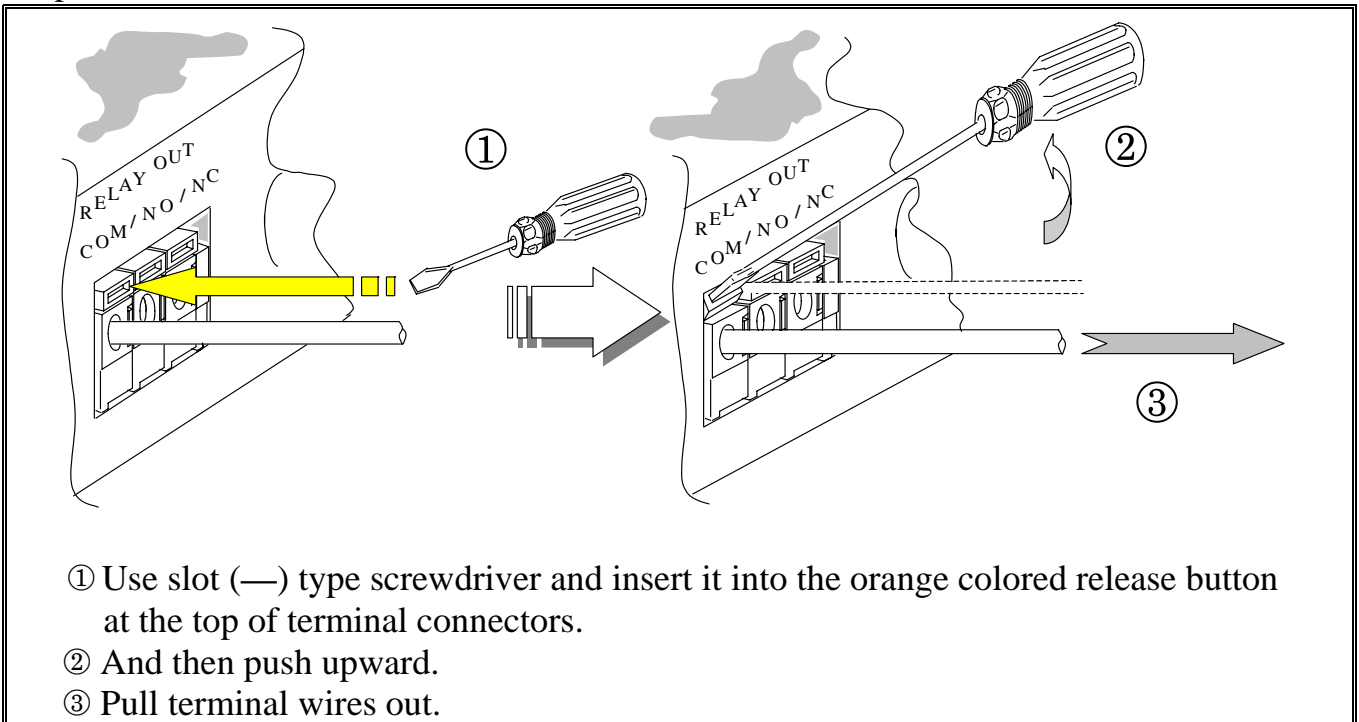
Illustration of a CCTV/VCR setup. Moreover, this "RELAY OUT" port also can be used to control devices such as security main controller, auto-dialling machine, etc.



Step 4: Plug the end of the power adaptor into the "DC IN" socket and plug the other end into the AC power socket as shown below. After that, this whole surveillance system will work perfectly.

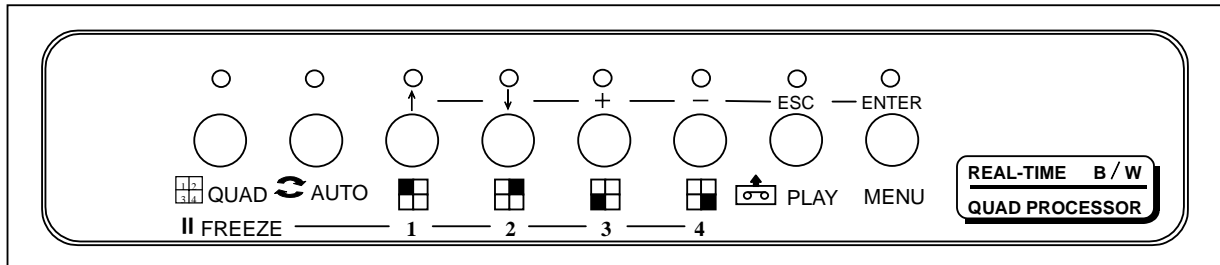


Step 5: To disconnect RELAY OUT terminal wires, Please follow the instructions below :






3. OPERATING INSTRUCTIONS

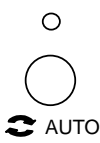

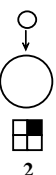
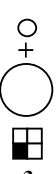
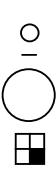
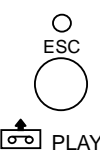

3.1 Introduction of the MASTER CONTROL panel



Front Panel

◆Operation Key Functions Description.

Mode	Normal Mode	AUTO Seq. Mode	FREEZE	PLAYBACK Mode	MENU Mode
Light					
Key					
   QUAD FREEZE	QUAD LED light	AUTO LED dark	QUAD LED light	PLAY LED dark	
	QUAD Display / Enter image freeze mode.	Disengage from AUTO Sequential mode.	Disengage from image freeze mode.	Freeze / Liberate Freeze image.	
	CH3 Full display.	Disengage from AUTO Sequential mode.	Freeze / Release CH3 image.	Freeze / Release 2X2 CH3 image.	Increase value + or ON setting.

Mode	Normal Mode	AUTO Seq. Mode	II FREEZE	PLAYBACK Mode	MENU Mode
Light					
Key		AUTO LED light	QUAD LED flash	PLAY LED light	MENU LED light
	AUTO LED light Enter to AUTO Sequential mode.	AUTO LED dark Disengage from AUTO Sequential mode.			
	1 LED light CH1 Full display.	AUTO LED dark Disengage from AUTO Sequential mode.	1 LED light or dark Freeze / Release CH1 image.	1 LED light Freeze / Release 2X 2 CH1 image.	Move cursor up ↑ or left ←.
	2 LED light CH2 Full display.	AUTO LED dark Disengage from AUTO Sequential mode.	2 LED light or dark Freeze / Release CH2 image.	2 LED light Freeze / Release 2X 2 CH2 image.	Move cursor down ↓ or right →
	3 LED light CH3 Full display.	AUTO LED dark Disengage from AUTO Sequential mode.	3 LED light or dark Freeze / Release CH3 image.	3 LED light Freeze / Release 2X 2 CH3 image.	Increase value + or ON setting.
	4 LED light CH4 Full display.	AUTO LED dark Disengage from AUTO Sequential mode.	4 LED light or dark Freeze / Release CH4 image.	4 LED light Freeze / Release 2X 2 CH4 image.	Decrease value - or OFF setting.
	PLAY LED light Enter to VCR PLAYBACK mode.	AUTO LED dark Disengage from AUTO Sequential mode.		PLAY LED dark Disengage from VCR PLAYBACK mode.	MENU LED dark Escape value adjustment.
	MENU LED light Enter to Menu set-up mode.	AUTO LED dark Disengage from AUTO Sequential mode.			MENU LED light To affirm the setting value.

3.2 OPERATING INSTRUCTIONS

3.2.0 Power On Reset and System Self-Test.

After the Power is on for reset, the 'SYSTEM SELF TEST' will be shown on the monitor.

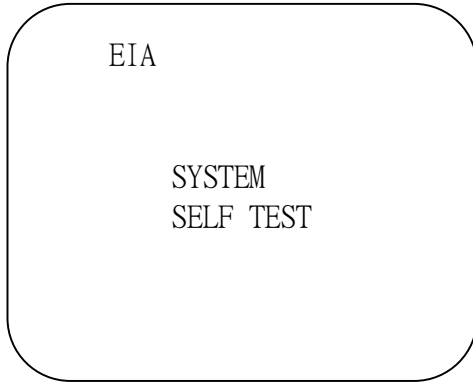


Figure 1A : EIA system self-test message .

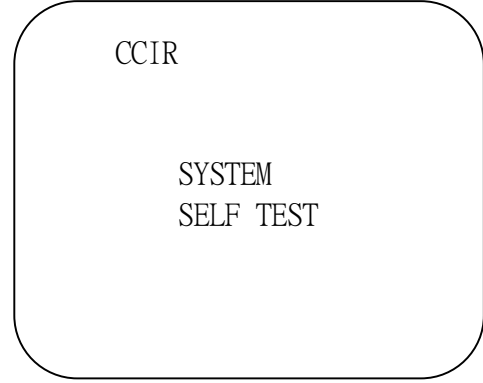


Figure 1B : CCIR system self-test message.

After the system self testing is done, the 'OK' will be shown on the monitor.

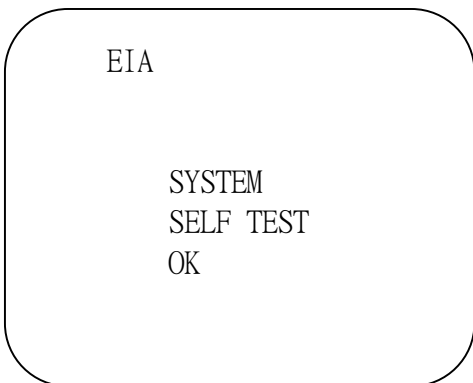


Figure 2A : Message shown when EIA system self-test is done.

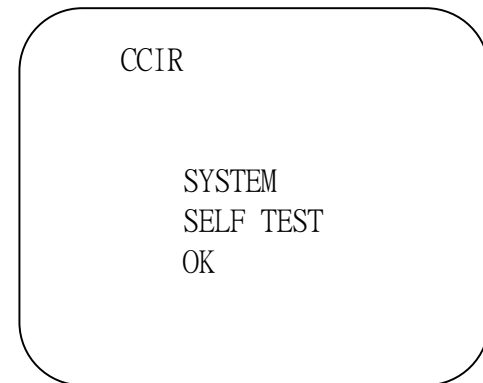


Figure 2B : Message shown when CCIR system self-test is done.

3.2.1 NORMAL DISPLAY MODE.

- **FULL SCREEN DISPLAY** : Press key [1 ~ 4], monitor will show images from Channel 1~4.
- **QUAD SCREEN DISPLAY** : Press [QUAD], monitor will show images by quad from Channel 1~4.
- **FREEZE mode** : press [QUAD] key again when QUAD LED is turned on in Normal mode. Then the QUAD LED will flash until the processor returns to Normal mode.
- **FREEZE the Channel** : Press key [1 ~ 4], the 1~4 LED will turn on and freeze the image. To unfreeze-press [QUAD] key again or wait after the FREEZE HOLD TIME period you set elapse.

3.2.2 SEQUENCE MODE.

- Press the [AUTO] key to enter AUTO SEQUENCE mode, which also turns on the AUTO LED. Processor will automatically be changed to the image, interval time and channels previously set.
- ◆ Under AUTO SEQUENCE MODE, when no sequence are set, the "NO SEQUENCE SETTING" message will be shown on the monitor.
- ◆ When all interval times are set to "0", the "NO SEQUENCE TIME SETTING" message will display on monitor!
- By pressing any key in AUTO SEQUENCE MODE, processor will automatically return to NORMAL DISPLAY MODE.

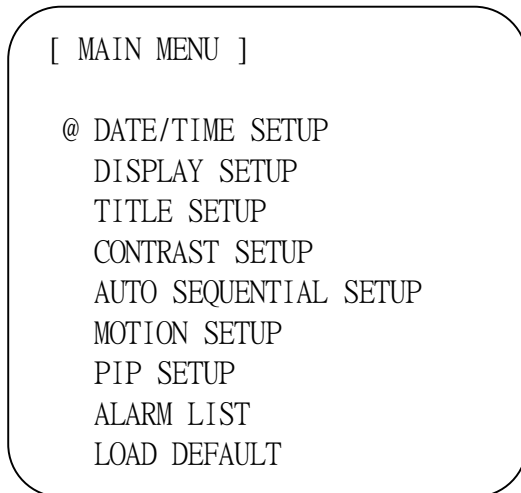
3.2.3 PLAYBACK MODE.

- Press the [PLAY] key, it will then enter to the VCR PLAYBACK MODE, the PLAY and QUAD automatically turns on. The "VCR PLAY" message flashing will be shown on the monitor.
 - Before entering the PLAYBACK MODE the "NO VIDEO IN" message means that there are no VCR signal or that the VCR has been disconnected.
 - After entering the PLAYBACK MODE the "VIDEO LOSS" message means that there are no VCR signal or that the VCR has been disconnected.
- Press the [PLAY] key again in PLAYBACK MODE, processor will return to NORMAL DISPLAY MODE.
- Press the [QUAD] key in PLAYBACK MODE, Display will then freeze and the "FREEZE" message will be shown on the monitor. To unfreeze-press [QUAD] key again or wait after the FREEZE HOLD TIME period you set elapse.
- Press key [1 ~ 4], processor will display **1 ~ 4 quadrant 2×2 zoom image** and "ZOOM 2×2" on the monitor. To release zoom display-press the [QUAD] key.
- Press key [1 ~ 4] again in 2×2 zoom image display, processor will then **freeze 1 ~ 4 quadrant 2×2 zoom image** and "FREEZE" message will be shown on the monitor. To unfreeze-press [QUAD] key.

3.2.4 SYSTEM SETUP.

3.2.4.1 SYSTEM SETUP DESCRIPTION.

- ◆ Press the [MENU] key to go into the follower MAIN MENU setting page.



System set-up Main menu.

Date / Time display set-up menu.

Image quality set-up menu.

Channel title set-up menu.

Contrast set-up menu.

Automatically sequence set-up menu.

Motion set-up menu.

Picture In Picture display set-up.

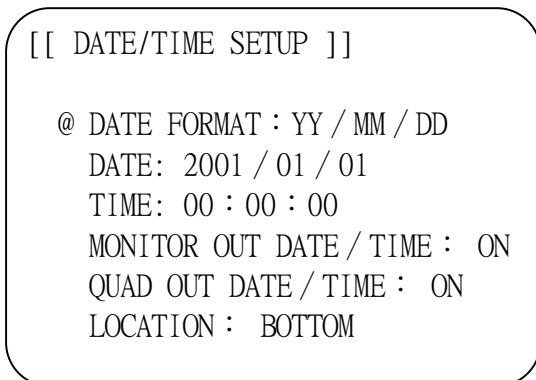
Alarm list display.

Systems setting initialize.

Figure 3. System setup Main menu.

- ◆ Press the《 ↑ 》and《 ↓ 》buttons to move the cursor(@)up and down, or left and right. By pressing it more then 1 sec., allows the cursor to move quickly up and down or left and right.
- ◆ Press the 《Enter》 key to go into the follower setting pages.
- ◆ Buttons 《 + 》 or 《 - 》 is used for increasing or decreasing a value. By pressing it more then 1 sec., allows the value to increase or decrease by more then one value.
- ◆ After the value is set, press the 《Enter》 key one last time to finalize the set-up. To disengage or to leave any set-up menu, just press the 《ESC》 key one last time or for more times.

3.2.4.2 DATE / TIME SETUP



Date / Time display set-up menu

Format adjustment for Date display.

Date adjustment.

Time adjustment.

Quad Out Date / Time display on/off setting.

Monitor Out Date / Time display on/off setting.

Location adjustment for Date display.

Figure 4.

- **DATE FORMAT** : There are three kinds of DATE format for display:
 - ◆ YY / MM / DD
 - ◆ MM / DD / YY
 - ◆ DD / MM / YY



Figure 5. The DATE formats select rolling mapping.

- **DATE** range : Year data form 2000 to 2099, Month data from 01 to 12, Day data from 01 to 30.
- **TIME** format : HH : MM : SS for display, Hour data from 00 to 23, Minute data from 00 to 59, Second data from 00 to 59.
- If **MONITOR OUT DATE / TIME** is set “ON”, the DATE/TIME will be shown on the MONITOR OUT display.
- If **QUAD OUT DATE / TIME** is set “ON”, the DATE/TIME will be shown on the QUAD OUT display.
- **LOCATION** : There are six position for DATE / TIME display. On the LEFT TOP, TOP, RIGHT TOP, LEFT BOTTOM, RIGHT BOTTOM, BOTTOM and LEFT BOTTOM.

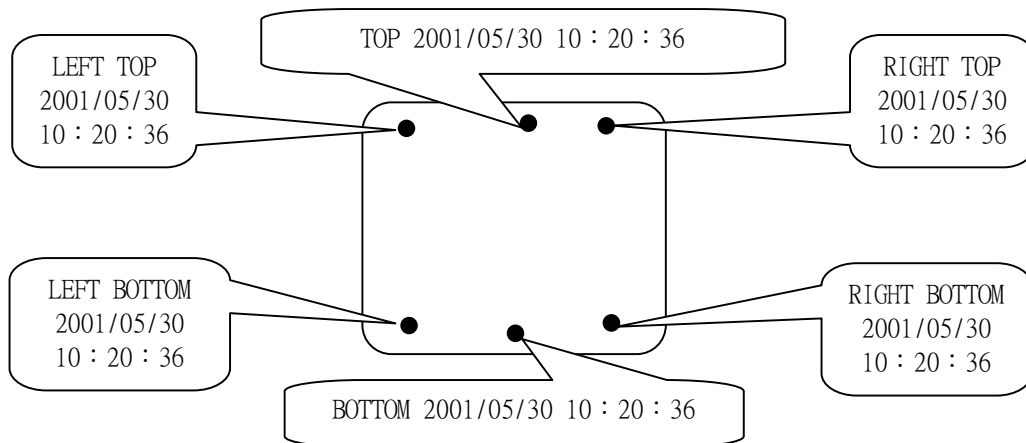


Figure 6. DATE / TIME display location

★ When under PIP mode, the DATE/TIME display will automatically change to the BOTTOM position.

3.2.4.3 DISPLAY SETUP.

```

[[ DISPLAY SETUP ]]

@ MONITOR OUT BORDER LINE: OFF
  QUAD OUT BORDER LINE: OFF
  BORDER LINE WIDTH= 3
  BORDER LINE BRIGHT= 16
  FONT BRIGHT= 192
  DISPLAY MUTE BRIGHT= 80
  MONITOR OFFSET X= 0 Y= 0
  
```

Figure 7. Display setup menu.

- If **MONITOR OUT BORDER LINE** is set “ON”, the borderline will be shown on the MONITOR OUT display.
- If **QUAD OUT BORDER LINE** is set “ON”, the borderline will be shown on the QUAD OUT display.
- **BORDER LINE WIDTH** - adjustable range is from 0~3.
- **BORDER LINE BRIGHT** - adjustable range is from 0~255.
- **FONT BRIGHT** - adjustable range is from 0~255.
- **DISPLAY MUTE BRIGHT** - adjustable range is from 0~255.
- **MONITOR OFFSET** vertical X and horizontal Y adjustable range is from 0~15 °

3.2.4.4 TITLE SETUP.

```

[[ TITLE SETUP ]]

@ MONITOR OUT TITLE: ON
  QUAD OUT TITLE: ON
  VIDEO 1 TITLE <CH1   >
  VIDEO 2 TITLE <CH2   >
  VIDEO 3 TITLE <CH3   >
  VIDEO 4 TITLE <CH4   >

```

Figure 8. Title set-up menu.

- If **MONITOR OUT TITLE** is set “ON”, the channel name will be shown on the MONITOR OUT display.
- If **QUAD OUT TITLE** is set “ON”, the channel name will be shown on the QUAD OUT display.
- **VIDEO 1 TITLE** : Can be set to any name within less then 8 characters.
- **VIDEO 2 TITLE** : Can be set to any name within less then 8 characters.
- **VIDEO 3 TITLE** : Can be set to any name within less then 8 characters.
- **VIDEO 4 TITLE** : Can be set to any name within less then 8 characters.

※、The 47 characters used in title setting are as follows:

↔ / ↔ 0 ↔ 1 ↔ 2 ↔ 3 ↔ 4 ↔ 5 ↔ 6 ↔ 7 ↔ 8 ↔ 9 ↔ : ↔ ; ↔ < ↔ = ↔ > ↔ ? ↔ @ ↔ 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 ↔
 [↔ ↔] ↔

- ◆ Under PIP mode, the title for channel 2 will change position automatically and be shown on the RIGHT TOP, title for channel 3 will be shown on the LEFT BOTTOM and title for channel 4 shown on the RIGHT BOTTOM!
- ◆ If the DATE/TIME location was previously set on the LEFT TOP, When under FULL SCREEN DISPLAY, the title will be shown on the LEFT BOTTOM!

3.2.4.5 CONTRAST SETUP.

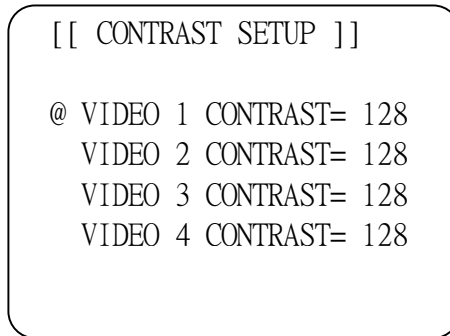


Figure 9 Contrast setup menu.

- **VODEO 1 CONTRAST:** The camera 1 (channel 1) image contrast adjustable by user.
- **VODEO 2 CONTRAST:** The camera 2 (channel 2) image contrast adjustable by user.
- **VODEO 3 CONTRAST:** The camera 3 (channel 3) image contrast adjustable by user.
- **VODEO 4 CONTRAST:** The camera 4 (channel 4) image contrast adjustable by user.
- ※ The contrasts range : 0~255.

3.2.4.6 AUTO SEQUENTIAL SETUP.

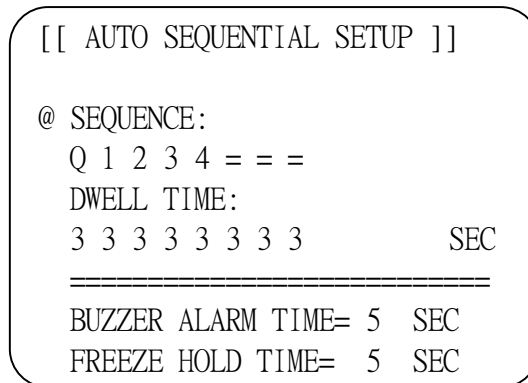


Figure 10 : Sequential switch setup menu.

- **SEQUENCE :** There are eight positions to select and to setup the random switching sequence.

Where : Q→QUAD display; 1→CH1 Full display; 2→CH2 Full display; 3→CH3 Full display; 4→CH4 Full display; ==→Skip.

① **NOTICE :**

1. It automatically skips the channel in auto-switch mode, when the channels are disconnected, dwell time is set to "0" and when video loss occurs.

2. When no sequence are set on the AUTO SEQUENCE MODE, It will display “NO SEQUENCE SETTING” on the monitor, thus alerts the buzzer alarm, the processor will automatically change to NORMAL mode after 5 seconds.
3. When switching intervals are all set to “0”, the “NO SEQUENCE TIME SETTING” message will display on the monitor, thus alerts the buzzer alarm, the processor will automatically change to NORMAL mode after 5 seconds.

- **DWELL TIME** : Set the interval time corresponding to each sequence position. (Time range : 0~30 seconds.)
- **BUZZER ALARM TIME** : The buzzer time, depends on the time period that has previously been set. (Time range : 0~240 seconds.)
- **FREEZE HOLD TIME** : The processor will automatically release freeze image after the time period that was set elapses. (Time range : 0~15 seconds.)

3.2.4.7 MOTION SETUP.

```

[[ QUAD MOTION SETUP ]]

@ QUAD SCREEN MOTION: OFF
MOTION SENSITIVE= 255
CH1:OFF POSITION X= 32 Y= 32
CH2:OFF POSITION X=106 Y= 32
CH3:OFF POSITION X= 32 Y= 88
CH4:OFF POSITION X=106 Y= 88
TIME INTERVAL IN BETWEEN
THE TWO MOTIONS= 5 SEC

```

Figure 11. QUAD motion setup menu.

- **QUAD SCREEN MOTION** : The QUAD SCREEN MOTION function ON/OFF setting.
- **MOTION SENSITIVE** : The adjustable range is from : 0~255.
- **CH1** : The position of the motion detection from Camera 1 is adjustable by ON/OFF.
- **CH2** : The position of the motion detection from Camera 2 is adjustable by ON/OFF.
- **CH3** : The position of the motion detection from Camera 3 is adjustable by ON/OFF.
- **CH4** : The position of the motion detection from Camera 4 is adjustable by ON/OFF.

※ Position setting limit table (Channel 1 ~ 4 Motion detect windows) :

System	Motion detection windows	X position limit	Y position limit
EIA	Window 1	12~60	14~50
	Window 2	80~130	14~50
	Window 3	12~60	70~104
	Window 4	80~130	70~104
CCIR	Window 1	8~60	16~64
	Window 2	80~130	16~64
	Window 3	8~80	84~130
	Window 4	80~130	84~130

Table 1.

※ If the QUAD SCREEN MOTION setting OFF then Channel 1 ~ 4 Motion detection windows position can't setting.

● **TIME INTERVAL IN BETWEEN THE TWO MOTIONS** : Range 0~15 seconds.

※ 8 second function for "RELAY OUT" activation after motion detecting.

3.2.4.8 Picture In Picture SETUP.

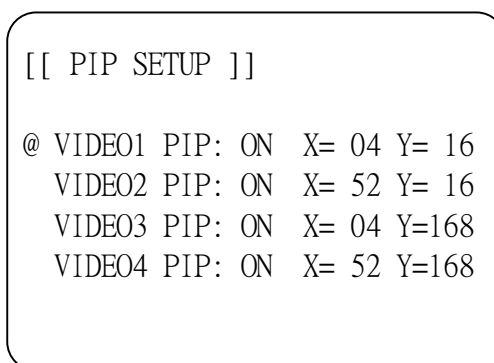


Figure 12. Picture In Picture setup menu.

● **VIDEO 1 PIP** : The position of Picture In Picture window display is adjustable by ON/OFF .

● **VIDEO 2 PIP** : The position of Picture In Picture window display is adjustable by ON/OFF .

● **VIDEO 3 PIP** : The position of Picture In Picture window display is adjustable by ON/OFF .

● **VIDEO 4 PIP** : The position of Picture In Picture window display is adjustable by ON/OFF .

※ Position setting limit table (Channel 1 ~ 4 Picture In Picture windows) :

System	Picture In Picture Windows	X position limit	Y position limit
EIA	Windows 1~4	4~53	16~168
CCIR	Windows 1~4	3~53	10~210

Table 2.

3.2.4.9 ALARM LIST.

[[ALARM LIST]]			
CH	AT	DATE	TIME
P01	=====		
01	MD	2001/01/01	10:23:50
02	VL	2001/01/01	09:01:14

This menu is read only !

Figure 13 : Alarm list.

- P01~P10 : Alarm list page number.
- 01~60 : Alarm number.
- CH : Active channel.
- AT : Active Type.
 - ★ MD : Motion Detect.
 - ★ VL : Video Loss.
- DATE : Alarm active date.
- TIME : Alarm active time.

3.2.4.10 LOAD DEFAULT.

[[LOAD DEFAULT]]
@ LOAD FACTORY DEFAULT ONLY
LOAD FACTORY DEFAULT AND
CLEAR ALARM LIST

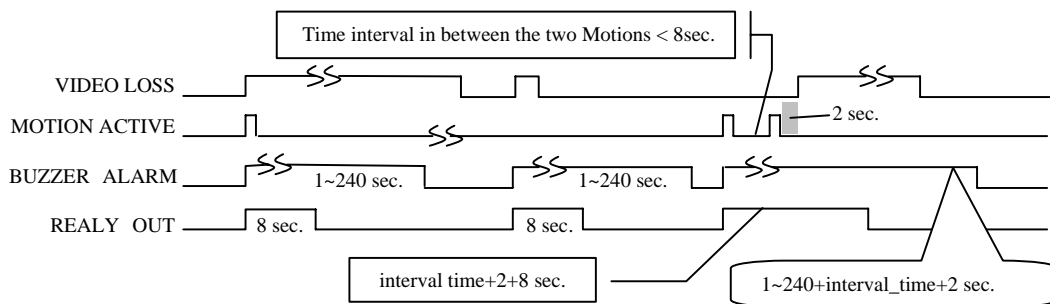
Figure 14. Load Default

- **LOAD FACTORY DEFAULT ONLY** : All system setting will return to factory initial.
- **LOAD FACTORY DEFAULT AND CLEAR ALARM LIST** : All system setting will return to factory initial and clear all alarm list record.

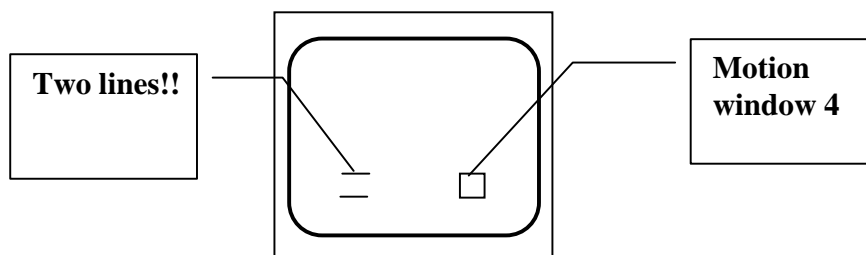
4. WARNING

-
1. Keep away from moisture, fire, and vibration. Do not remove the covers on the camera and master control to avoid the risk of electric shock.
 2. Keep the temperature between 3°C~45°C, relative humidity lower than 85%.

3. Keep the unit under ventilation. Don't put anything on the top of this processor. Do not expose it to extreme moisture please turn off the power and send this processor to a repair center.
4. Please do not use any accessories that not supported by us. It is strictly prohibited to insert any other plug into DC IN socket, please use the specified DC12V±5% / 500mA power adapter. Otherwise, it may cause system damage, and result in injury.
5. RELAY OUT, Motion Detection, Video Loss and Buzzer alarm timing diagram.



6. When under the presence of *LOAD DEFAULT MODE to operate or to depart from #MENU SETUP has event to power failure. Please manipulate the following steps 3.2.4.10 for system load default after the power returns. (*Reference page 17 §3.2.4.10; #Reference page 10 §3.2.4.1)
7. When selecting to *adjust video system switch (EIA/CCIR). Please manipulate following steps 3.2.4.10 for system load default. (*Reference page 4 §2.3)
8. To avoid overlap, the position setting of windows is set to *PIP SETUP. (*Reference page 16 §3.2.4.8)
9. When the motion window 4 sets to ON in *QUAD MOTION SETUP, two lines will appear on motion window 3. It does not interfere with the original settings of the motion window 3. (*Reference page 15 §3.2.4.7)



5. SPECIFICATIONS

(Note: Design and specifications are subject to change without prior notice.)

Video Input Ports	4 Cameras.	
Picture Refresh Rate	EIA : 60 Fields / sec ; CCIR : 50 Fields / sec	
Video Format	EIA or CCIR Monochrome video signal.	
Video Input	4 BNC connectors. 75 Ω Loaded.	
Video Output	2 BNC connectors.	
VCR IN	1 BNC connectors. 75 Ω Loaded.	
Quad Out	QUAD Only video output 1 Vp.p / 75 Ω Load.	
Monitor Out	Full screen or Quad output 1 Vp.p / 75 Ω Load.	
Resolution (H×V)	Quad screen	EIA : 320×240 / CCIR : 320×288 pixels.
	Full screen	EIA : 640×480 / CCIR : 640×576 pixels.
	PIP	EIA : 160×110 / CCIR : 160×110 pixels.
Synchronous System	Internal, Negative Synchronous.	
Zoom Function	2×2 Zoom.	
Timer Generator	Built-in Real Time Clock.	
Title Generator	Up to 8 characters for each channel	
Quad Motion Detection	4 Motion detection windows size : 64 (H) × 64 (V) pixels.	
Auto Sequential Dwell Time	Adjustable : 0~30 sec. (3 sec. for first system initialization)	
Freeze Duration	Adjustable : 0~30 sec. (5 sec. for first system initialization)	
Alarm Buzzer Timing	Adjustable : 0~240 sec. (5 sec. for first system initialization)	
Motion Interval Timing	Adjustable : 0~15 sec. (5 sec. for first system initialization)	
Alarm Relay Out	Normal Open / Normal Close ×8 sec.	
Power Supply	DC 12V±5% / 500mA	
Power Consumption	5 Watt. (Max.)	
Dimension : W × H × D	218mm (W) × 44mm (H) × 204mm (D)	
Weight	1220 grams.	
Operating Temp.	-10 ~ +50°C (14 ~ 122°F)	