

User Manual

TeleEye RM-422M Digital Video Recorder



Before attempting to connect or operate this product,
please read this manual carefully and keep it for future use.



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Version 2.0

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Features and specifications are subject to change without prior notice.

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■ PREFACE

TeleEye RM-422M is an advanced 4 channel standalone digital video recorder, with all in one solution of video multiplexing, and digital video recording in a single easy to use and install package.

It can be easily integrated into your existing surveillance system since it provides 2 video composite outputs to connect CCTV monitor directly. The friendly operations avoid from wasting time to familiarize yourself with extremely complicated DVRs.

■ FEATURES

1. Full Screen Recording and Playback

To record and play back high quality full screen pictures.

2. Two Recording Modes Available – DUAL mode and QUAD mode

In the DUAL mode, user can monitor live pictures or play back the recorded pictures from single channel or all channels simultaneously. In the QUAD mode, the live pictures or the recorded pictures are displayed in quad format only.

3. Play back at the simple touch of one button.

User just simply press the playback key twice to start playback.

4. Extend recording time through motion detection

For avoiding from unnecessary recording, users are allowed to select the cameras to be in motion detection mode in channel by channel.

5. Key Lock

To restrict operating or changing the settings without permission.

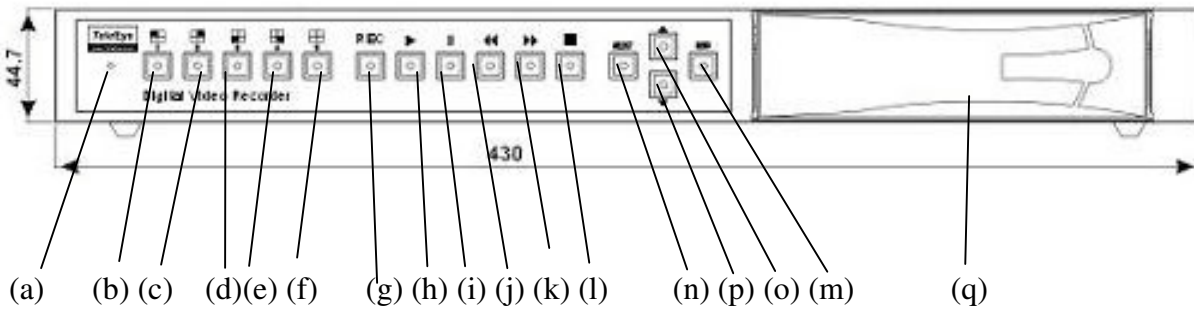
■ SPECIFICATIONS

VIDEO INPUT	STANDARD	PAL/CCIR: 625 lines, 50 fields per second
		NTSC/EIA: 525 lines, 60 fields per second
		composite video, 1Vp-p, BNC, switchable
	NO. OF CHANNELS	4
VIDEO OUTPUT	STANDARD	PAL/CCIR: 625 lines, 50 fields per second
		NTSC/EIA: 525 lines, 60 fields per second
		composite video, 1Vp-p, BNC
	NO. OF CHANNELS	2
RECORDING	MODE	manual, programmable, alarm-driven, motion detection
	RESOLUTION	PAL/CCIR: 720 x 576 pixels
		NTSC/EIA: 720 x 480 pixels
	HD TYPE	IDE interface, removable (Max. 200GB)
	COMPRESSION FORMAT	MJPEG
MAX. RECORDING RATE	PAL/CCIR: 50 fields per second	
	NTSC/EIA: 60 fields per second	
PLAYBACK	SEARCH MODE	date, time, camera
	SPEED	1x, 2x, 4x, 8x
ALARM	ALARM IN/OUT	input: 4x, NC/NO
		output: 1x, dry contact
POWER	VOLTAGE	12V DC
	MAX. RATING	30W
OPERATING ENVIRONMENT	AMBIENT TEMPERATURE	-10°C - 45°C
	RELATIVE HUMIDITY	< 85% (no condensation)
MECHANICAL DESIGN	DIMENSION	430mm x 265mm x 44.4mm
	WEIGHT	4.7kg

Specifications are subject to change without prior notice.

■ MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

1> Front View




(a) Power Indicator

(b)  Display Channel 1 in full screen format


(c)  Display Channel 2 in full screen format

(d)  Display Channel 3 in full screen format

(e)  Display Channel 4 in full screen format

(f)  Display 4 channels in quad screen format

(g) **REC** Start Recording

(h)  Playback

(i)  Pause

(j)  Rewind

(k)  Fast Forward (FF x2, FF x4, FF x8)

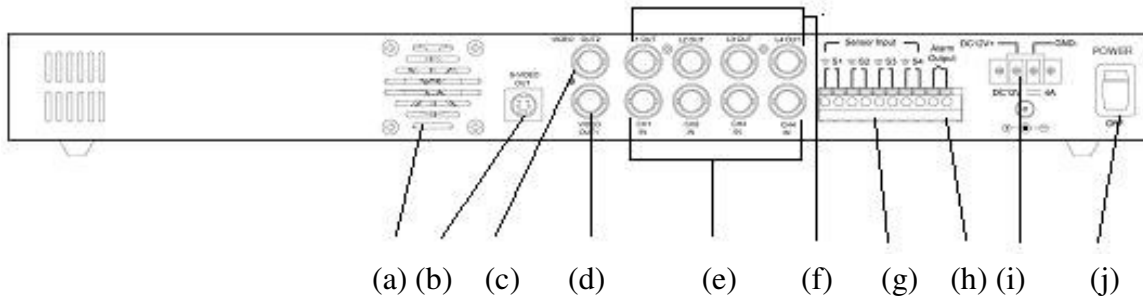
(l)  Stop Recording or Playing Back

(m) **MENU** Enter / Exit the Menu

(n) **SELECT** Select and Adjust

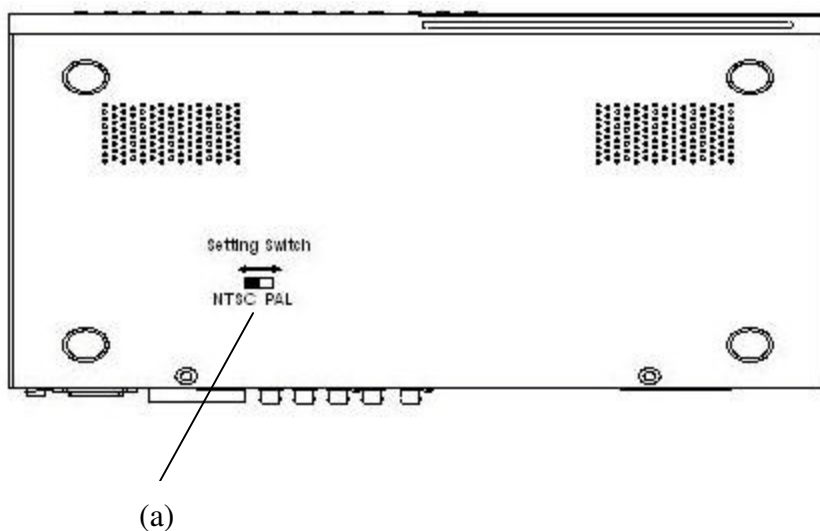
- (o) ▲ Move the > cursor up or left
- (p) ▼ Move the > cursor down or right
- (q) HDD Cartridge

2> Rear View



- (a) Cooling Fan
- (b) Y/C Output
- (c) Video Signal Output 1 (1Vp-p/75Ω)
- (d) Video Signal Output 2 (1Vp-p/75Ω)
- (e) Video Signal Input – Channel 1 – 4
- (f) Video Signal Loop – Channel 1 - 4
- (g) Sensor Input x 4, (NO, NC or Not Installed)
- (h) Alarm Output x 1 (Relay out, NO switches to Alarm Close)
- (i) DC Power Input
- (j) Power ON/OFF Switch

3>Bottom View (NTSC / PAL System SELECT)



(a) To change NTSC / PAL System **SELECT** Switch.

■ MENU AND SYSTEM SETUP

There are two pages in setup menu.

- To enter the **MENU 1**, press the **MENU** button on the front panel.
- To enter **MENU 2**, select the **NEXT PAGE** and press the **SELECT** button.
- To exit the setup menu, press the **MENU** button.

A cursor can be moved using the ▲ or ▼ button on the front panel and press the **SELECT** button to choose.

MENU 1		
>	DISPLAY CAMERA SELECT	1 2 3 4
	RECORD CAMERA SELECT	1 2 3 4
	RECORD MODE SELECT	DUAL
	RECORD FIELD RATE	50
	RECORD VIDEO QUALITY	HIGH
	RECORD SCHEDULE	
	SENSOR SETUP	
	MOTION DET SETUP	
	HARD DRIVE SETUP	
	NEXT PAGE (MENU 2)	

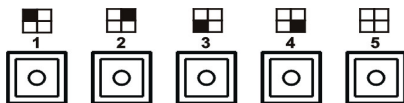
MENU 2		
>	PASSWORD SETUP	
	TIME SETUP	
	LANGUAGE SELECT	ENG/中
	KEY TONE	OFF/ON
	SENSOR ALARM BEEP	OFF/ON
	HDD FULL BEEP	OFF/ON
	RECORD MESSAGE DISPLAY	OFF/ON

1> MENU 1

1.1> DISPLAY CAMERA SELECT

To select cameras to be displayed on monitor.

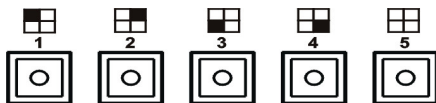
- All options can be completed in rotation by pressing the **SELECT** button.
- User can also press the following buttons to select which cameas to be displayed.



1.2> RECORD CAMERA SELECT

To select cameras to be recorded.

- All options can be completed in rotation by pressing the **SELECT** button.
- User can also press the following buttons to select which cameas to be recorded.



1.3> RECORD MODE SELECT

The recorder provides two recording modes.

1.3.1> DUAL mode

In live monitoring or playing back, user can view full screen images of a specific

1.7> SENSOR SETUP

To enter the SENSOR SETUP menu, press the SELECT button, A sub menu will display as follow,

SENSOR SETUP		
>	POST-ALARM RECORD TIME	30
	ALARM DURATION	20
	CHANNEL-1	TYPE: NORMAL-OPEN
	CHANNEL-2	TYPE: NORMAL-CLOSE
	CHANNEL-3	NOT INSTALLED
	CHANNEL-4	TYPE: NORMAL-OPEN

1.7.1> POST-ALARM RECORD TIME

When sensors are activated, they will trigger the recorder to record. As the activated sensors stop, the recording activity will remain a period of time, which can be adjusted by pressing the **SELECT** button. The options may be 5 sec 、 10 sec 、 15 sec 、 20 sec 、 25 sec and 30 sec.

1.7.2> ALARM DURATION

When any sensor connected to the recorder is activated, the recorder will react an alarm to start the buzzer and relay. The buzzing time may be OFF 、 5 sec 、 10 sec 、 15 sec 、 20 sec 、 25 sec 、 30 sec and CONT (continuous buzzing).

***Note: If under CONT (continuous) mode, press any button on the front panel to clear buzzer and relay out.**

1.7.3> SENSOR TYPE SETTINGS

The NORMAL OPEN, NORMAL CLOSE or NOT INSTALLED is able to be set up for each channel.

1.8> MOTION DETECTION SETUP

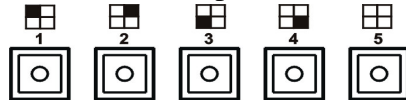
MOTION DET SETUP	
> MOTION DET CAMERA SELECT	1 2 3 4
CH-1 MOTION SENSITIVITY	LOW
CH-2 MOTION SENSITIVITY	NORMAL
CH-3 MOTION SENSITIVITY	HIGH
CH-4 MOTION SENSITIVITY	S-HIGH
VIDEO LOSS CAMERA SELECT	1 2 3 4
VIDEO LOSS ALARM	ON

1.8.1> MOTION DET CAMERA SELECT

To select cameras to enter or exit motion detection mode.

■ All options can be completed in rotation by pressing the **SELECT** button.

■ User can also press the following buttons to complete the selection.



1.8.2> MOTION DET SENSITIVITY

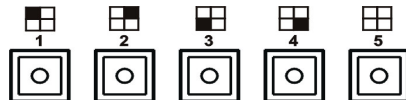
Select the sensitivities of motion detection. There are five sensitivity levels selectable - S-HIGH, SUPER, HIGH, NORMAL and LOW.

1.8.3> VIDEO LOSS CAMERA SELECT

To select cameras to enter or exit Video Loss Detection Mode.

■ All options can be completed in rotation by pressing the **SELECT** button.

■ User can also press the following buttons to complete the selection.



1.8.4> VIDEO LOSS ALARM

ON: Under Video Loss Alarm mode, the DVR beeps when one or all of the 4 Channels lose the video signal.

OFF: No beeping.

1.9> HARD DRIVE SETUP

To enter the **HARD DRIVE SETUP** menu, press the **SELECT** button. A sub menu will show as follow,

HARD DRIVE SETUP			
>	OVERWRITE ENABLED	YES	
	MASTER HDD SIZE	76319 MB	
	MASTER HDD USED	1968 MB	2 %
	MASTER HDD FORMAT		

This menu displays the capacity of hard drive, used capacity and percentage. It also allows user to

- format hard drive
- set up hard drive overwrite

1. 9.1> OVERWRITE ENABLED

YES: If HDD is full, the recording continues. The recorder eventually go into **OVERWRITE** mode; which means that the most updated data replaced by the new data.

NO: If HDD is full, the recorder stop recording.

1. 9.2> HDD FORMAT

To format the equipped HDD, user needs to enter password to format HDD formatted automatically. The default HDD format password is “55555”.

***Note:** To change password, please refer to **2.1 PASSWORD SETUP** on page 10.

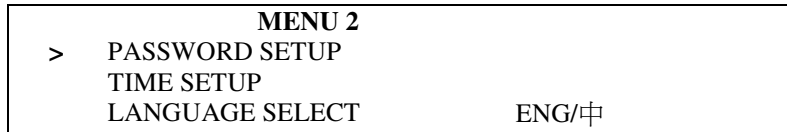
1.10> NEXT PAGE (MENU 2)

MENU 1	
>	NEXT PAGE (MENU 2)

Press the **SELECT** button to enter MENU 2.

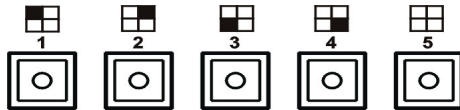
2> MENU 2

Select **NEXT PAGE** in MENU 1 and press the **SELECT** button to enter MENU 2.



2.1> PASSWORD SETUP

Pressing the **SELECT** button to enter the sub menu is as follow.



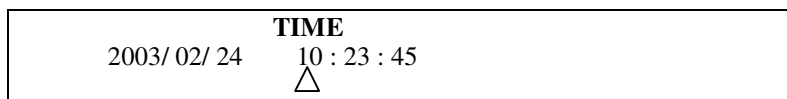
Press the above buttons on the front panel to enter the current password, new password and then enter the new password again to confirm. The buttons represent the numbers above them.

*Note: The default password is “55555”.

2.2> TIME SETUP

To enter the **TIME SETUP** menu which show as follow. Pressing the ▲ or ▼ button to move

the △ cursor and tap the **SELECT** button to adjust date and time.



2.3> LANGUAGE SELECT

The recorder provides the on screen menu in English and in Chinese. Press the **SELECT** button to choose.

2.4> KEY TONE

ON: The DVR beeps as pushing the buttons.

OFF: No beeping.

2.5> SENSOR ALARM BEEP

ON: Under sensor alarm mode, the DVR beeps when it is activated to record.

OFF: No beeping.

2.6> HDD FULL BEEP

ON: The DVR will beep when the running HDD is 99% full. The beeping continues until the HDD is full.

OFF: No beeping.

2.7> RECORD MESSAGE DISPLAY

ON: The related messages are displayed on the screen.

OFF: Not being displayed.

2.8> SECURITY LOCK

DVR allows security lock function for button on the front panel.

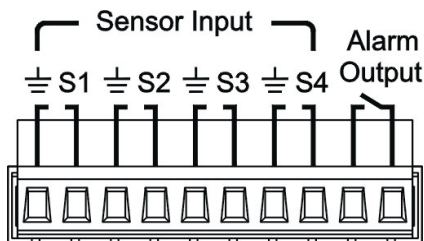
Press five times "||" button into security lock mode. At once under security lock mode, monitor will display ☒ symbol on right-upper corner of screen.

Press five times "||" button again to disable security lock mode. Meanwhile ☒ symbol will disappear on screen.

3> SENSOR ALARM CONNECTION

The recorder has 4 sensor input terminals on the rear panel. In the sensor alarm mode, if one of the sensor is activated, the recorder starts to record the images from the corresponding channel.

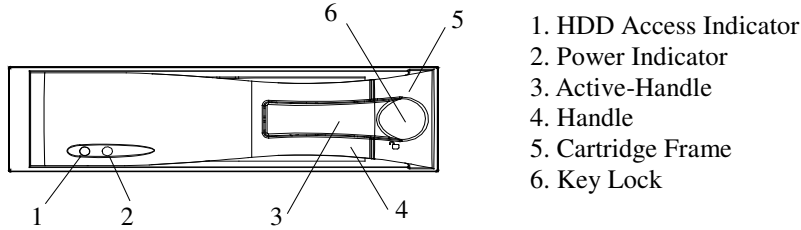
The correspondence chart is as follow.



Sensor	Corresponding Channel
S1	Channel 1
S2	Channel 2
S3	Channel 3
S4	Channel 4

4> HARD DRIVE INSTALLATION

4.1> Front Panel Description

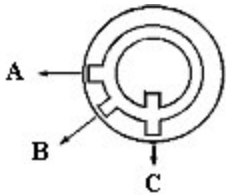


4.2> Power Indicator and HDD Access Indicator

When power is turned on, the indicator will display the following :

Item	Indicator
Power Indicator	Green LED
HDD Access Indicator	Amber LED

4.3> Key Lock

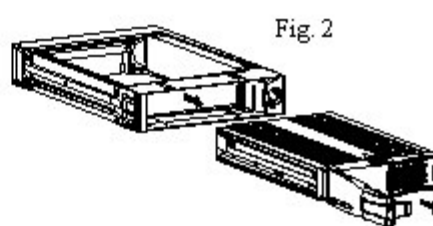


Status Segment	Power status	Security status
A	ON	Locked (Non-removable)
B	OFF	Locked (Non-removable)
C	OFF	Unlocked (Removable)

4.4> Installing Hard Drive into Cartridge

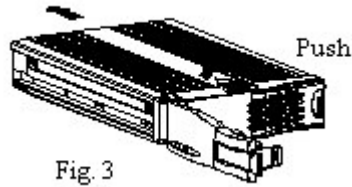
● Step 1

- 1-1. Pull the active-handle outwards and use the miniature key provided and insert into the key hole, turning the key anti-clockwise, then the handle will auto-eject for pulling out. (Fig.1)
- 1-2. Pull the handle outwards to remove the carrier body away from the cartridge frame. (Fig. 2)



● **Step 2**

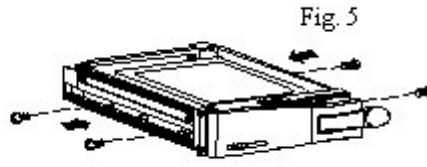
2-1. Push the released latch to slide the top cover backwards and remove. (Fig.3)



● **Step 3**

3-1. Insert the DC power cable and IDE cable on the HDD. (Fig.4)

3-2. Position the HDD into carrier body and secure the HDD using the four 6#-32 screws provided. (Fig.5)



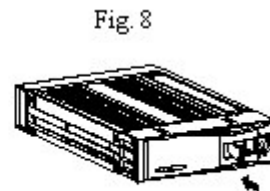
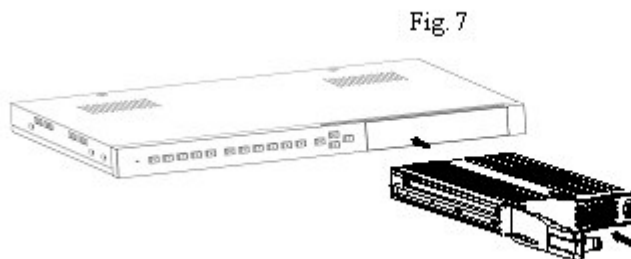
● **Step 4**

4-1. Slide the top cover back to the carrier body by sliding forward to secure. (Fig.6)



● **Step 5**

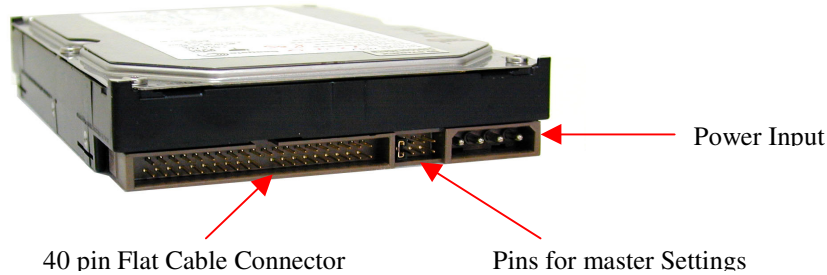
5-1. Slide the carrier body into the recorder and push carrier body further into cartridge frame until it is fully inserted. (Fig.7 and Fig.8)



5> HARD DRIVE CONFIGURATION

■ The swappable hard drive installed in the recorder should be set as master drive.

For master configuration, please refer to instruction guide of HDD manufacturers. An example is as follows ,



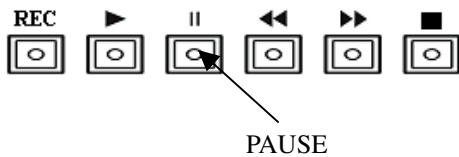
Refer to this chart and set the jumpers

(7-8)(5-6)(3-4)(1-2)	
	Limited capacity to 32 Gbytes
	Master or single drive
	Drive is a slave
	Master with a non-ATA-compatible slave
	Enable cable select

Setting Master HDD

6> KEY LOCK


To lock or unlock buttons, press the || button(PAUSE) 5 times continuously.



■ RECORDING AND PLAYBACK



1.>RECORDING

Press the **REC** button in the front panel to start recording. Push the  button to stop recording.

While in the recording mode, some symbols will be displayed on the monitor screen as follows,

(R) CH1	CH2 (R)	CH1	CH2
(R) CH3	CH4 (R)	CH3	CH4
DUAL REC [M] (A) 16 %	2003/05/13 12:00:00	QUAD REC [M] (S) 24% [OVWR]	2003/05/13 12:00:00

1.1>DUAL REC / QUAD REC

- **DUAL REC:** In live monitoring or playing back, user can view full screen images of a specific camera or the images of all selected cameras in quad format.
- **QUAD REC:** User can view live quad format images and play back the quad format images in real-time speed.

1.2>[M]

- **[M] :** Images are recorded to master hard disk drive.

1.3> (A) / (S) / (-)

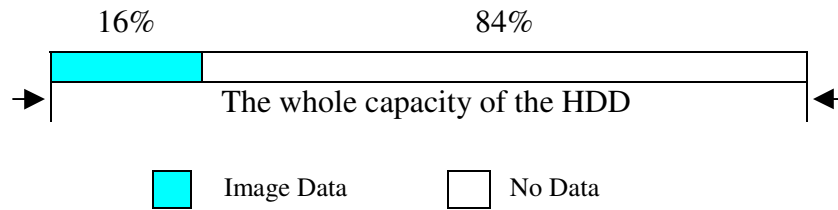
- **(A) :** The recorder records continuously.
- **(S) :** The recorder reacts to start recording while activated by any sensor connected to the recorder.
- **(-) :** No recording.

1.4>[R]

The symbol [R] means that the recorder is recording. It also indicates which channel is recorded.

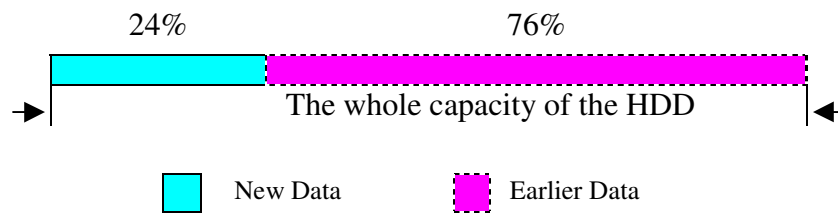
1.5> 16%

This symbol indicates the percentage of the running HDD capacity storing images.



1.6> 24% [OVWR]

This symbol means that the recorder is in OVERWRITE mode. At the 24 % of the HDD capacity is saved with new data.



2. >PLAYBACK

To play back, Press the ► button to enter playback menu.

SEARCH TIME			
HARD DRIVE: MASTER			
03/04/27	08:05:34	--	03/05/12 18:27:09
----- RECORD LIST -----			
01	CONT	2003 / 05 / 12	07: 43 : 12
02	SENSOR	2003 / 05 / 12	02 : 23: 54
03	SENSOR	2003 / 05 / 12	01 : 44 : 35
04	CONT	2003 / 05 / 11	10: 17 : 22
:			

Step 1: Select hard disk drive to play back.

Step 2: Go to the dates and times shown under hard drive option. Press the ▲ or ▼ button to move the cursor and press the SELECT button to set the date and time to start playback.

OR

Press the ►► button to enter RECORD LIST, select a record and press the ► button to play back. **To exit the RECORD LIST, Press the ►► button.**

▬▬ button : Press this button to freeze picture when play back.

►► button : Press this button to fast forward, and press button again to adjust speed at 2 / 4 / 8 times.

◄◄ button : Press this button to fast rewind.

■ TROUBLESHOOTING

Trouble	Possible Causes	Solution
The system restarts automatically and continuously.	Remove the Harddisk Cartridge when the system is Power On.	<p>Step1: Power Off the system and remove the Harddisk Cartridge.</p> <p>Step 2: Press “STOP” continuous and Power On at the same time. Then the messages “ALL DATA IS INITIALIZED”, “DVR RESET COMPLETED”, “TURN OFF AND ON THE DVR” will be shown on screen.</p> <p>Step 3: Power Off the system and install the Harddisk Cartridge.</p> <p>Step 4: Power On again.</p>