

Mini Security Recorder

U S E R M A N U A L

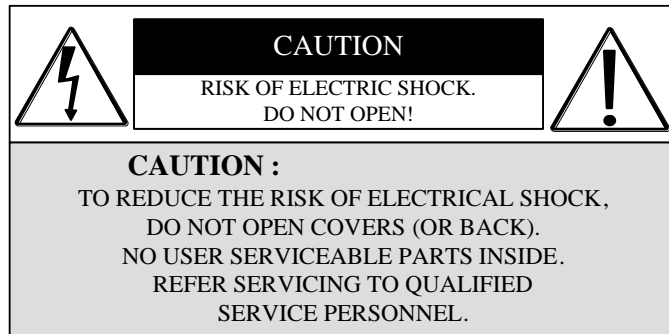


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The author assumes no responsibility for any errors or omissions that may appear in this document nor does the author make a commitment to update the information herein.

1. SAFETY PRECAUTIONS



It is advised to read the Safety Precaution Guide through carefully before operating the product, to prevent any possible danger.

 **WARNING:** This symbol is intended to alert the user to the presence of un-insulated “ dangerous voltage”.

 **CAUTION:** This symbol is intended to alert the user to presence of important operating and maintenance (Servicing) instructions in the literature accompanying the appliance.



Disposal of Old Electrical & Electronic Equipment (Applicable in the European Union and other European countries with separate collection systems).

This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office , your household waste disposal service or the shop where you purchased the product.

Do not Plug and unplug the power cord, it may result product malfunction.

Do not install the product in an environment where the humidity is high.

Unless the product is waterproof or weatherproof, otherwise poor image quality may occur.

Do not drop the product or subject them to physical shocks.

Except for vandal-proof or shockproof product, otherwise malfunctions may occur.

Never keep the product to direct strong light.

It can damage the product.

Do not spill liquid of any kind on the product.

If it gets wet, wipe it dry immediately. Alcohol or beverage can contain minerals that corrode the electronic components.

Do not install the product in extreme temperature conditions.



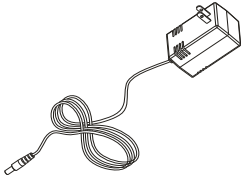

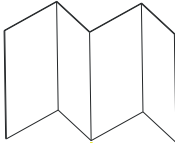
Use the camera under conditions where temperatures are between 5°C(41°F) ~ 45°C(113°F). Be especially careful to provide ventilation when operating under high temperatures.

2. FEATURES

- The DVR supports NTSC or PAL video system, and auto detects video loss.
- The DVR is built-in with MPEG4-SP video and G.726 audio codec. It supports 1 channel video and 1 channel audio recording and playback operation.
- Audio/ Video data are recorded directly on the SD card with FAT16/ 32 file system and ASF file format. Simple data backup method to a PC.
- Audio/ Video data are recorded directly as ASF file format. You can view the data straight from your PC, and playback those ASF files with popular media players.
- For 1 GB SD card, the record time is about 5 hours at Standard Quality for NTSC: 30 fps @ 352 x 240 and PAL: 25 fps @ 352 x 280.
- The DVR supports: manual, motion detection, and schedule recording mode with independent video size, quality, and frame rate set up.
- For motion detection, multiple detection blocks and appropriate motion trigger level can be set up.
- Support key lock function.
- Use anywhere, the device supports either DC power adaptor or nickel metal hydride (NiMH), alkaline batteries.

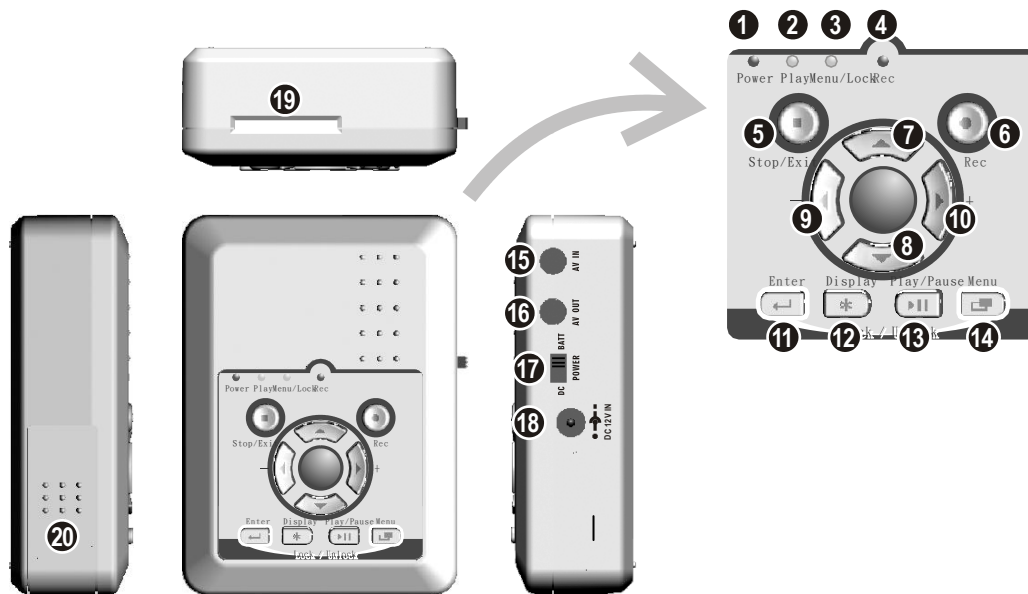
3. PACKING LIST

Check to make sure all of the items shown below are included in your Portable Security Recorder Kit. If something is missing, contact your dealer as soon as possible.

Item Description	Item Picture	QTY
Mini Portable Security Recorder		1
Audio/ Video Cable		2
Power Adaptor DC 12V/ 410mA Input: AC 100~240V Output: DC 12V/ 410mA		1
Manual		1
Quick Guide		1

4. NAME and FUNCTION of EACH PART

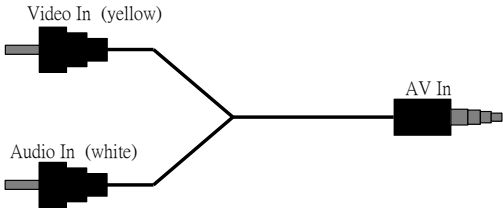
4.1 Front View



- | | | |
|--------|---|---|
| (1) | Power LED | : Power Indicator |
| (2) | Play LED | : Play Indicator |
| (3) | Menu/ Lock LED | : Menu / Key Lock Indicator |
| (4) | Rec LED | : When SD card is writing data during recording, record indicator will flash slowly. When SD card is "read only", recording function is disabled and the record indicator will flash quickly. |
| △ | Warning on Unusual Operation | Record function is invalid when SD card is not inserted, full, damaged, or setup to "read-only", and number (2) (3) (4) LED indicator will flash quickly; press《Enter↵》button to release the warning. |
| (5) | ■ Stop/ Exit Button | : Stop Record or Play/ Exit Menu |
| (6) | ● Rec Button | : Manual Record Button |
| (7&8) | ▲ Up Button
▼ Down Button | : Cursor Movement Up/ Down to select item in the Setup Menu. |
| (9&10) | ◀ / - Left Button
▶ / + Right Button | : Playback – Press to Fast Forward or Fast Rewind.
Step Playback – Press to Step Playback.
Menu – Press to Increase/ Decrease Setup Value. |
| (11) | ↵ Enter Button | : Sub-Menu – Press to enter Sub-Menu.
Press 《Enter↵》 button to release the warning. |
| △ | Key Lock/ Unlock Switch | Monitoring/ Playback – Simultaneously pressing 《Enter↵》 first and then 《Menu□》 button to switch the Key Lock Function "ON/ OFF". |
| (12) | ★ Display Button | : Status Line ON/ OFF switch. |
| (13) | ▶ Play Button
 Pause Button | : Monitoring – Press to Playback.
Playback – Press to Pause.
Pause – Press to Playback. |
| (14) | □ Menu Button | : Press to enter Menu Setup. |

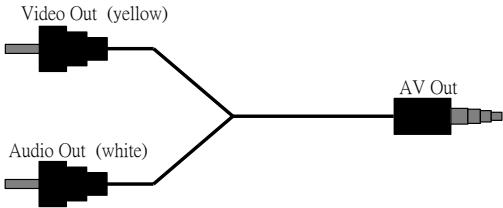
4.2 Side View

(15) AV IN: Audio/ Video Input



Audio/Video IN: 3.5 mm Ø jack for audio/ video line in.

(16) AV OUT: Audio/ Video Output



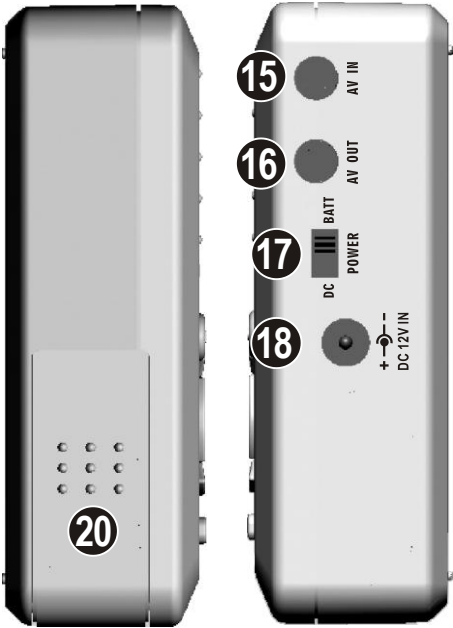
Audio/Video OUT: 3.5 mm Ø jack for audio/ video line out.

(17) POWER: DC/ Battery Power Switch

(18) DC 12V IN: 12V/ 410mA Power Input

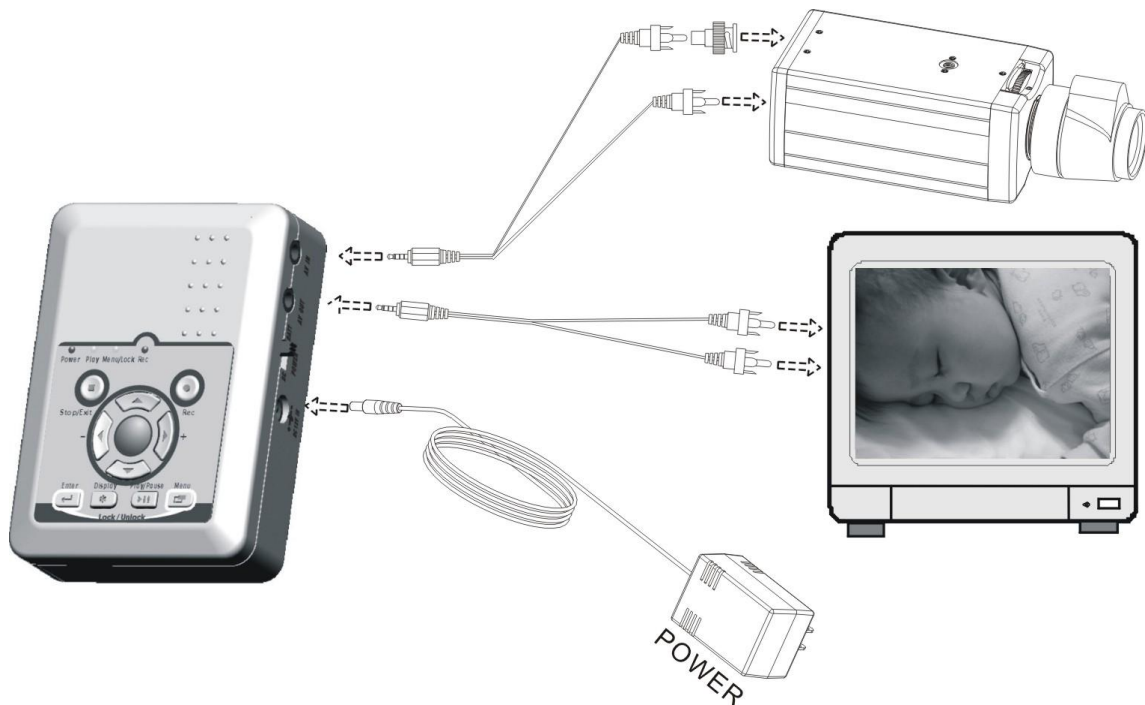
(19) SD Card Slot

(20) Battery Compartment Cover



5. BASIC CONFIGURATION

1. **Power:** Use the power adaptor supplied, nickel metal hydride (NiMH), alkaline batteries.
2. **Video System:** Connect the camera, the device auto detects NTSC/ PAL video system (the output video system will be setup the same as its input video system). Without connecting the camera, the video system setup will be the same as its previous setup.
3. **Power Switch:** Switch to DC when using the supplied power adaptor or switch to BATT when using battery.



- ⚠ Please use appropriate SD Memory Card (256MB or above), otherwise the recording data will present intermittent conditions.
- ⚠ Withdraw SD card only when the device is switched off or currently under main menu display, otherwise system may be unstable or data stored in the SD card may be damaged.

6. OPERATION

6.1 Power On

1. The power switch is situated on the right side of the device, switch to DC when using the supplied power adaptor or switch to BATT when using battery.

NOTE: Each time after power-on, the system auto-detects its peripherals. When the REC LED flashes indicates that the SD card is proceeding testing (complete boot time is several seconds) When an image file error has been detected, the system will initiate auto repairing.

2. After power on, the system auto enters live monitoring. When the system is currently under schedule recording, it auto enters record mode.
3. “■” icon shown on the status line, indicates that SD card is operating normally.
4. When SD card is not inserted or problem occurs on the SD card. Play, Menu, and Rec indicator will flash quickly. Please re-format before proceeding.
5. You can play while the SD card is “read only”, but you cannot record; and Play, Menu, and Rec indicator will flash quickly.
6. When SD card is writing data during recording, record indicator will flash slowly.
7. Simultaneously pressing “Enter” and “Menu” button to switch the Key Lock Function “ON/ OFF”. When function key is locked, key lock indicator will lit.
8. After power-loss the system auto returns to the previous recording mode.

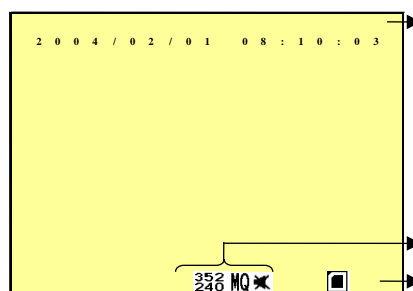
⚠ Do not withdraw the CF card while booting. It may destroy the data stored within the CF card.

6.2 Live Mode

Live mode is the default setup after system start-up.





Monitoring Display:


Press 《★Display》 button to switch between LCD display mode and OSD info.



- ① **Time Display:** System Date and Time.
- ② **Record Status Display:** Manual Record Parameter.
 - $\frac{352}{240}$: Record Resolution, please refer to【7.4 Record Setup】for VIDEO SIZE setup.
 - MQ : Record Quality, please refer to 【7.4 Record Setup】 for VIDEO QUALITY setup.
 - ✖ : Audio Off Record, please refer to 【7.4 Record Setup】 for AUDIO RECORD setup.

③ **SD Card Status:**

-  : SD Card has not been inserted or malfunction.
-  : SD Card is proceeding file testing.
-  : SD Card is functioning normally.
-  : Disk full and overwrite record.

 When SD card is not inserted, record and playback function is inapplicable, but monitoring is applicable.

6.3 Record Mode

1. Start Record: 3 Types of recording mode.




(1) **Manual Record:** Suitable to record at anytime. Press 《Rec ●》 button, to enter manual recording status (start recording). For more information, please refer to 【7.4 Record Setup】 .

(2) **Motion Detection Record:** Suitable to record, when there are severe image changes. Motion detection triggers schedule recording, but it will only start recording when the variation exceeds the alarm limitation value. For more information, please refer to 【7.3 Record setup】 and 【7.4 Record Setup】 .

(3) **Continuous Record:** Suitable on few constant frame recording or on long-term continuous recording. For more information, please refer to 【7.4 Record Setup】 .

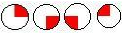
2. Stop Record:

Press 《Stop ■》 button, stops manual recording only. Enter 《Play ▶ II》 or 《Menu □》 schedule recording (Motion Detection and Continuous Record), all kinds of recordings will be stopped. To continue recording, please follow the methods below to restart recording.

 Manual Record	Repress 《REC ●》 button.
 Schedule Record	After exit playback or menu mode, whether the setup has been changed or not, the system will auto re-check the record schedule setup again.
 Motion Detection Record	

3. Record Display:



 : Indicates recording is in progress.

 : Manual Record  : Schedule Record  : Motion Detection Record

4. The event status is determined by the system recording, according to the order of priority.
5. The order of priority: Manual Record, Motion Detection and then Schedule Record.
6. Different recording modes may have different kinds of setups. Basic setup: video size, recording frames, video quality, and audio recording. When different recording modes are triggered, the system starts recording according to the different setup. This kind of design provides flexibility to ensure efficient recording time and quality. Example: Work hour from 8:00am to 6:00pm, setup 「Schedule Record」 to low video quality with less recording frames to extend the recording time. And off work hour, setup 「Motion Detection Record」 to enable high video quality with the highest recording frames, when an event occurs.
7. Video or audio may be recorded into the SD card (SD card is purchased separately). When the video has been stored, the record LED flashes indicates that the system is currently loading the file into the SD card.

⚠ Do not withdraw the SD card while recording. It may destroy the data stored within the SD card.

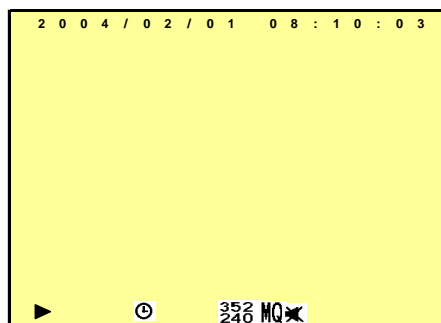
⚠ Power loss during recording results incomplete videos or errors.

⚠ Video loss during recording, the system stops recording, backups the files, and when the videos are normal again, the system will continue recording.

6.4 Playback Mode

Selectable Playback format: Continuous Playback and Searching Playback.

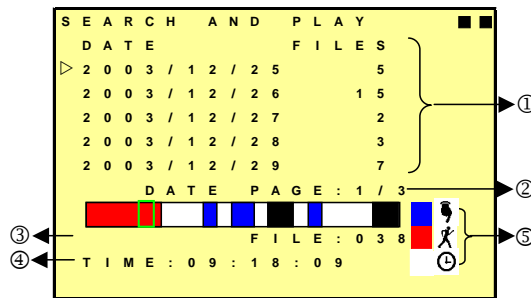
(1) **Normal Playback:** Press 《▶ Play/ ⏸ Pause》 button to playback according to the SD card file order recorded.



- ▶ : Normal speed playback.
- ⏮ ⏭ : Fast Rewind and Fast Forward (Speed: x2/ x4/ x8/ x16/ x32). Press 《▶ Play/ ⏸ Pause》 button to return to normal speed playback.
- ⏸ : During playback, press 《▶ Play/ ⏸ Pause》 button to pause playback and press it twice to return to playback status.
- ⏮ ⏭ : During pause, press 《⏮》 or 《⏭》 button to step back one frame or to step forward one frame and press 《▶ Play/ ⏸ Pause》 button to return to normal speed playback.
- ★Display : Switch to 「Hide Status Info.」, 「Hide LCD Monitor」, and 「Display LCD Monitor and Status Info.」.

Press 《 ■ Stop 》 button to stop playback function and to return to live status.

(2) **Search and Playback:** Enter MENU and select 【SEARCH AND PLAY】 item.



- ① File directory shows dates and the amount of contents under the directory. The user may press 《 ▲ 》 or 《 ▼ 》 button to move the cursor up or down.
- ② Current location page.
- ③ Each color distinguishing different recording events, the user may press 《 ◀ / + 》 or 《 - / ▶ 》 button to move the cursor left or right and immediately shows the first image of the highlighted event on the screen display background.
- ④ Displays the time highlighted by the event bar.
- ⑤ Blue: Manual Record/ Red: Motion Detection Record/ White: Schedule Record.
- ⑥ Press 《 STOP ■ 》 button to stop playback and the system will return to 【SEARCH and PLAY】 selection and enables the user to select the preferred input source.

⚠ The device supports playback only to images recorded by our device, other ASF video files are not guaranteed.

6.5 PC Playback

1. The device uses SD card as its main storage. User may read the data stored in the SD card from the computers that supports SD card reader device.
2. All files (under DVMPG4 folder) has approximate size of 1MB and file names are ordered according to recorded times (sequence).

File Playback: User may use Microsoft® – Media Player or DivX – DivX Player (<http://www.divx.com/>) to playback video files.

Backup Playback: may playback backup files from the computer (copy files to the SD card under \DVMPG4 folder).


⚠ When first time using Media Player to playback, it requires the most updated decoder from the Microsoft® software website.

6.6 SD Card Maintenance

1. The device supports only FAT16/ 32 file system; therefore it is unable to determine other file systems. Please format the SD card (enter **【MENU/ SD CARD OPTIONS】** and select “Format”).
2. The system supports only partial SD card file system repair. The system is unable to detect any file system damage, therefore please format the SD card (enter **【MENU/ SD CARD OPTIONS】** and select “Format”).

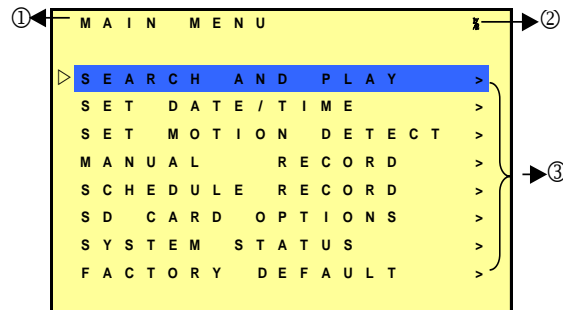
6.7 How to Download the Updated Software

1. Use the SD card to update your system firmware.
2. Please follow the steps below to update the software:
 - (1) Copy the new system firmware into the new directory of the SD card from your computer.
 - (2) Insert the SD card; switch off the main power and then restart.
 - (3) Wait for 5 to 6 seconds, the system update will be completed and returns back to live mode.

 Do not withdraw the SD card while booting, when power-loss occurs while proceeding step (3), please repeat step (2) and (3).

7. MENU SETUP

7.1 Main Menu



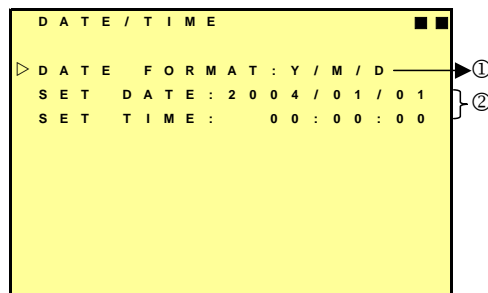
- ① **MAIN MENU:** Item subject.
- ② **Menu Layer Indication:** The device consists of three menu layers.

- : First Menu Layer (Main Menu)
- ■ : Second Menu Layer
- ■ ■ : Third Menu Layer

- ③ **MENU Content:** Basic Menu Operations.
 - Press $\langle \blacktriangle \rangle$ or $\langle \blacktriangledown \rangle$ button, to move the highlight-bar and the cursor (\triangleright).
 - Press $\langle \text{MENU/ENTER} \square \rangle$ button, to enter the sub menu ($>$).
 - Press $\langle \text{STOP} \blacksquare \rangle$ button:
 - Under second or third menu layer, the system will return to the previous menu layer (second layer to first layer or third layer to second layer).
 - Under main menu (first menu layer), the system will enter live mode.
 - Press $\langle \blacktriangleleft \rangle$ or $\langle \blacktriangleright \rangle$ button, to increase or decrease the setting values that has been highlighted.

NOTE: All words underlined and bold indicates 「Default Value」.

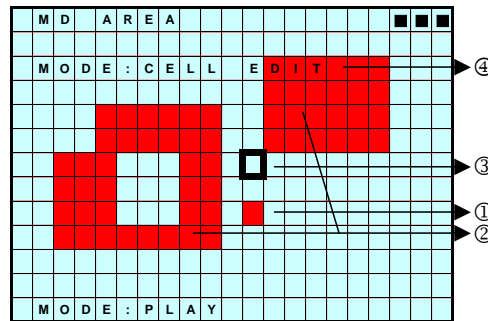
7.2 Date/ Time



- ① **Date Format:** Y/M/D M/D/Y D/M/Y
- ② **Date/ Time Adjustment:** Year settings are from 2000 to 2099.

7.3 Motion Detection

1. Window setup:



- ① Detection Cell: Whole screen is divided into 22x15 square cells.
- ② Detection Block: Two or more cells form a block.
- ③ Cursor: Press 《PLAY》 button to switch to Select/ Edit mode.
- ④ Detection Block.

2. Cursor Movement: Press 《PLAY》 button, switch cursor to setup mode (cursor color is black). Press 《▲/ ▼/ ◀/ ▶》 button to move the cursor freely.

3. Detection Area Setup:

(1) Press 《PLAY》 button to select edit detection block function.

FUNCTION	DESCRIPTION
CELL EDIT	Single detection cell setup (detection/ non-detection)
DEL BLOCK	Disable a block.
DEL ALL	Disable all cells.
ADD BLOCK	Enable a block.
ADD ALL	Enable all cells.

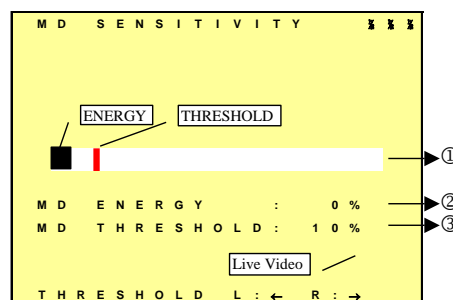
(2) Press 《PLAY》 button, switch cursor to edit mode (cursor color is pink). Press 《▲/ ▼ / ◀/ ▶》 button, follow step (1) to change the size of the detection block.

(3) Detection area is displayed by color red and non-detection area by color blue. Press 《Enter↵》 to enable/ disable the detection area.

4. When a detected object is moving in the detection area, detection area turns from red to transparent (color turns from red to transparent indicates moving status).

5. Video Detection Block Sensitivity Setup:

Changing the alert value setup may affect the recording sensitivity of the Motion Detection.

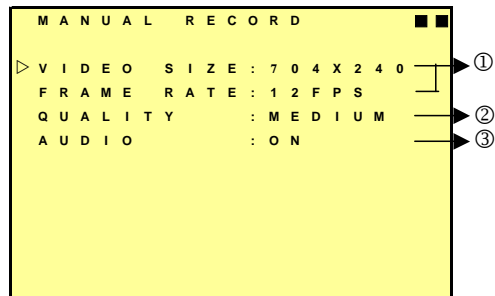


- Sensitivity Bar** : Color black indicates image variable value and color red indicates the MD threshold.
- MD Energy** : Current image variation value.
- MD Threshold** : Press « ‹‹ » or « ‹› » button, to change the motion detection threshold value.

7.4 Manual Record & Schedule Record

Selectable manual or schedule recording, basic setups are shown below:

1. MANUAL RECORD: Press (● Rec) button to start recording.



① Video Size/ Frame Rate:

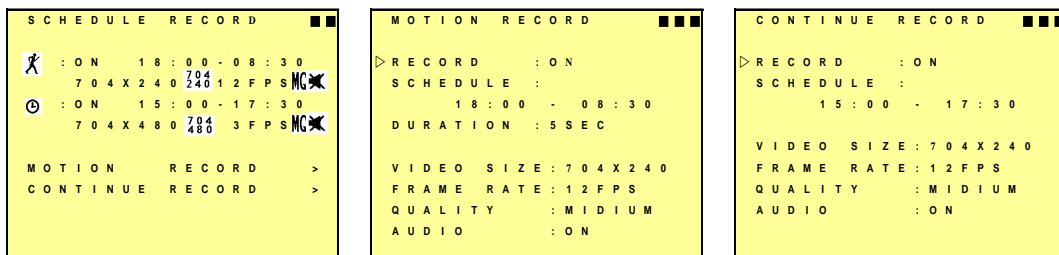
NTSC	<u>352x240</u>	704x240	704x480
FRAME RATE (MAX)	30 fps	24 fps	12 fps
PAL	<u>352x280</u>	704x280	704x560
FRAME RATE (MAX)	25 fps	20 fps	10 fps

② Image Quality:

HIGH QUALITY	HQ	Using high recording quality (More CF card storage capacity will be required)
MEDIUM QUALITY	<u>MQ</u>	Using medium recording quality.
LOW QUALITY	LQ	Using low recording quality (Less CF card storage capacity will be required)

③ Audio Record: **Enable** or disable audio recording.

2. SCHEDULE RECORD (Continuous/ Motion Detection): Schedule Record: Records only within the setup time range.



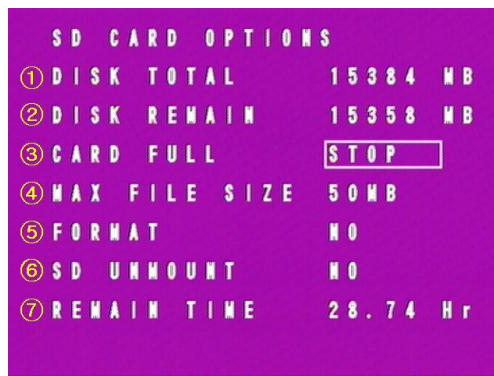
RECORD : Enable or disable schedule recording (ON/ *OFF*).

SCHEDULE : ab:cd – ab:cd = 24 hour recording and 00:00 – 00:01 = Record of one minute image from 00:00 to 00:01.

Motion Detection Recording DURATION TIME Setup:

DURATION : Duration time when motion detection has been triggered (5SEC / 10SEC / 15SEC/ 20SEC/ 30SEC).

7.5 SD Card Options



MENU Content: Basic Menu Operations.

Press $\langle \blacktriangle \rangle$ or $\langle \blacktriangledown \rangle$ button, to select the item.

Press $\langle \text{Stop/Exit} \blacksquare \rangle$ button to return to previous page.

Press $\langle \blacktriangleleft \rangle$ or $\langle \blacktriangleright \rangle$ button to increase or decrease setup value.

- ① **DISK TOTAL** : SD card total capacity.
- ② **DISK REMAIN** : SD card remaining capacity.
- ③ **CARD FULL** : LOOP \square (Continuous Record)/ STOP (Stop Record)

Stop Record – SD card stops recording when the total capacity of the SD-Card is reached (Default).

Continuous Record -- SD card continues recording and overwrites recording data from the beginning when the total capacity of the SD-Card is reached (NOTE 1 & NOTE 2).

- ④ **MAX FILE SIZE** : The maximum storage capacity of Manual Recording and Continuous Recording of each file, file size that is larger than the setting file is automatically stored. Setup Value: 3/ 10/ 20/ 50/ 100 MB (NOTE 1).

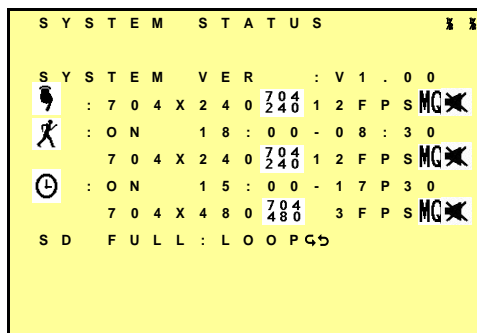
- ⑤ **FORMAT** : All recordings will be deleted and creates a dvr directory under root directory (NOTE 3).
- ⑥ **SD UNMOUNT** : Switch off the recording and perform the removal process before withdrawing the SD Card.

NOTE 1: Proceeding continuous recording, old videos can be deleted and overwritten. Please confirm before setup.

NOTE 2: To format, make sure the confirmation message appears, and then select "YES", to format.

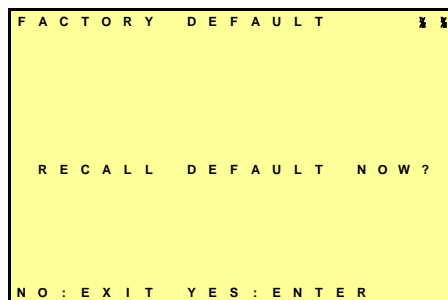
NOTE 3: Recording time depend on the SD card capacity, different recording modes, and degree of video variation.

7.6 System Status



Press any button to return to the Main Menu.

7.7 Factory Default



Press 《Enter》 button, returns all settings to the factory default value.

Press 《Stop/ Exit》 button, exit this screen display and returns to the Main Menu.

NOTE: Return to factory default will erase all configuration values and return to the Factory Default values (except Date and Time setup) . Therefore, confirm before you proceed.

8. TROUBLE SHOOTING

Q1. Does the product support SDHC 32G?

A1. Suggested tested brands are as shown below:

Brand	Capacity	Specification
A-DATA	32G	Class 6
Transcend	32G	Class6
Silicon-Power	32G	Class6
Apacer	32G	Class4
Kingston	32G	Class4

9. SPECIFICATION

Video	System	NTSC / PAL Video System and Video Loss Auto Detection				
	Codec	MPEG4-SP ASF File Format				
	Record Frame Rate	1, 2, ... , Maximum fps selectable Maximum: NTSC: 30 fps@352x240/ 24 fps@704x240/ 12 fps@704x480 PAL: 25 fps@352x280/ 20 fps@704x280/ 10 fps@704x560				
	Record Quality	Low / Medium / High				
	Record Time* *it may change for different video content (1 GB SD Card)	Quality	Frame Rate@ Resolution	30 fps@352x240	24 fps@704x240	12 fps@704x480
				25 fps@352x280	20 fps@704x280	10 fps@704x560
		Low	400 minutes	240 minutes	240 minutes	
		Medium	300 minutes	150 minutes	150 minutes	
	High	150 minutes	75 minutes	75 minutes		
	Recording Date/Time	Overlay with Video Images in ASF File				
Input	1 CH Composite Video Line In					
Output	1 CH Composite Video Line Out					
Audio	Sampling Rate	44.1 KHz				
	Codec	G.726/ 32 kbps				
	Input	1 CH Audio Line In				
	Output	1 CH Audio Line Out				
Storage Media	SD Card (FAT16/ 32)					
Recording Mode	Manual / Schedule Motion Detection / Schedule Continue					
Motion Detection Setting	Multiple Blocks and adjustable sensitivity					
Event Search Function	Property and first image of selected file is displayed					
Playback Function	Play/Fast Forward/Fast Rewind/Pause/Step Forward/Step Backward					
Playback Speed	x1/ x2/ x4/ x8/ x16/ x32					
Power Supply	DC 12V± 10% 410mA/ 2 x AA (Rechargeable Ni-MH/ Alkaline Battery)					
Battery Lasting Time	2 x AA Ni-MH: 180 min/ 2 x AA Alkaline: 100 min * It may change for different brand, charging, and temperature condition.					
Weight	89 g (without Battery/ SD card)					
Dimensions	65 mm (W) x 90 mm (H) x 29 mm (D)					
Operating Environment	30%~80% RH, 5°C ~ 45°C (41°F ~ 113°F)					
Storage Environment	30%~90% RH, 0°C ~ 50°C (32°F ~ 122°F)					

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