JESMAY

MODEL: 2036T/R

2.4GHz Wireless Multiway Monitor with DVR

Transmit-Receive System

OWNER'S MANUAL

(PLEASE READ BEFORE USE)

JESMAY ELECTRONICS CO., LTD

JESMAY ELECTRONICS CO., LTD
ROOM 1004, STANHOPE HOUSE
738 KING'S ROAD,
QUARRY BAY, HONG KONG
TEL: (852)2563 4292, 2562 6212
FAX: (852)2565 7026, 2516 9417
E-mail:info@jesmay.com.hk
Web Site:http://www.jesmay.com.hk

CHAPTER TABLE OF CONTENTS **PAGE**

1. READ THIS FIRST!

1-1 Safety precautions

1) To reduce risk of electric shock, do not disassemble this device.
2) Use only the supplied power supplies.
3) Defective parts must be replaced by original spare parts only.
4) If you spill liquid on it, unplug the device from the AC outlet to prevent possible fire or shock hazard and consult authorized service personnel.
5) When cleaning the device, turn it off first, use a clean soft cloth moistened with a little bit of water to clean it.
6) Do not apply pressure to it or drop it.
7) If does not work correctly, return it to the dealer where it was purchased. Do not dismantle it by yourself.
8) Do not use the device close to heater, refrigerator or stove.
9) When device is in use, do not direct the lens toward any bright light.

Power line operated equipment or accessories connected to the device should bear the CE certification mark and should not be modified in any way that might defeat the safety features, the device meets all European standards for EMC, safety and radio Frequency, however interference form other RF Transmitters may occur .the range of the device is at least 100meters in an open air situation, however indoor the range is highly influenced by construction materials applied within the house.

NO guarantee or liability will be accepted for any damage caused due to incorrect use of the device supplied, other than indicated in this owner's manual.

2. Technical specifications

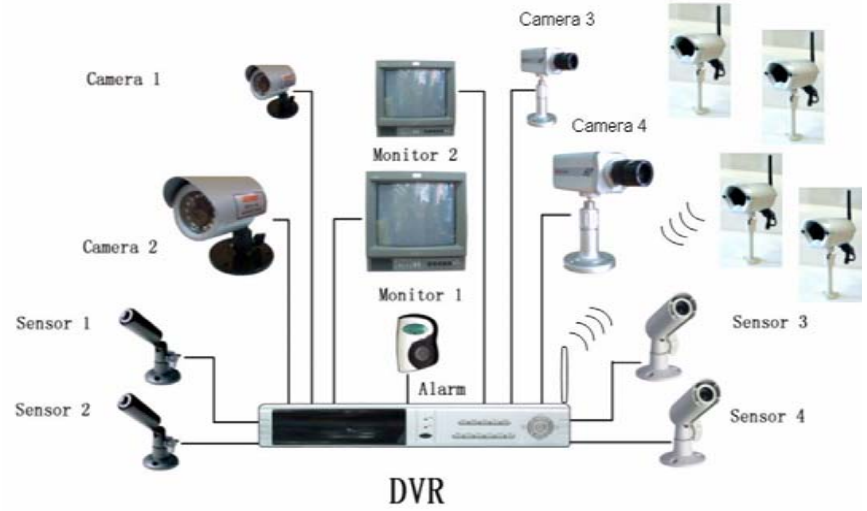
ITEM		DESCRIPTION
Receiver Frequency		2.4GHz~2.483GHz(4 channels)
Receiver sensitivity		-80dBm
Channel design		PLL frequency synthesizes
Modulation		FM
Antenna		Omni-directional
Image sensor		1/4?Color CCD
Picture element		512*582 (PAL), 512*492 (NTSC)
IR on illuminance		10LUX
Transmit Frequency		2.4GHz~2.483GHz(4 channels)
Output power (max)		10dBm(CE), 0dBm(FCC)
Operational range		15-Up to 100 meters (open air situation)
Video Format		NTSC / PAL
Operation System		AV/RF
Camera Input Channel		4 channel Composite BNC
Monitor Output Channel		2 channel Composite BNC
Display Frame Rate	NTSC	120 fps (4x30 fps)
	PAL	100 fps (4 x 25 fps)
Recording Frame Rate	NTSC	Max 30 fps (Quad)
(Quad)	PAL	Max.25 fps (Quad)

ITEM		DESCRIPTION
Recording Frame Rate (Each Mode)	NTSC	Each Channel =30/Number of Source Max. 30 fps (Each Channel)
	PAL	Each Channel =25 fps/Number of Source. Max. 25 fps (Each Channel)
Record Mode		Continuous, Schedule, Sensor Triggered
Resolution	Display	NTSC: 720 x 480; PAL: 720 x 576
	Record	NTSC: 320 x 112, 640 x 224 Quad: 640 x 224 (total)
		PAL: 320 x 136, 640 x 272 Each:640 x 224
Video Compression Format (Each Channel)		Modified MJPEG (12-20K bytes/frame)
		Low :12KB; Normal :15KB; High : 20KB
HDD Support		Over 200G Byte, ATA -100 Interface
Estimated Record Length		120G Hard disk @ 7 fame per second @ Normal Quality
		(120*1024*1024 KB) / (7*15*60*60) = 332h
Search	Method	Time, Date, Event
	Full Screen	YES
Sensor, Alarm		4 Input (Open/Close),1 Input (Relay 2A 28VDC/2A 125VAC)
Power supply		12VDC/2A, 5V/2.5A (DVR Receiver)
		12VDC/500mA (Transmitter)
Dimension (mm)		Length 315 * Width 224 * High 52 (Receiver)
		Length 155 * Width 70 * High 60 (Transmitter)

3 Wireless Multiway Monitor with DVR Feature

- Video 4 Channel BNC Camera Input & RF 4 Channel Receive
- 2 Channel BNC Monitor Output
- NTSC / PAL
- 4 Sets NO/NC Sensor Input
- 1 Alarm Output (2A 28VDC / 0.5A 125 VAC)
- One ATA-100 Hard Disk Interface, Support Over 200G Byte
- Time Schedule record, Sensor Triggered Record
- IR Remote Control (Optional)
- Select Video & RF Received Program via AV/RF operating
- 1/4?Color CCD
- Up to 100 meters operational range
- Auto on & off IR led with CDs

4 System Connect sketch map



5 Packaging and Accessories

Multiway Receiver with DVR

DVR X1

Power Adapter X1

User's Manual X1

Remote Controller X1

2.4GHz ANT X1

BNC to RCA Connector X1

BNC to BNC wire X1

Transmitter

2.4GHz Camera X4

2.4GHz ANT X4

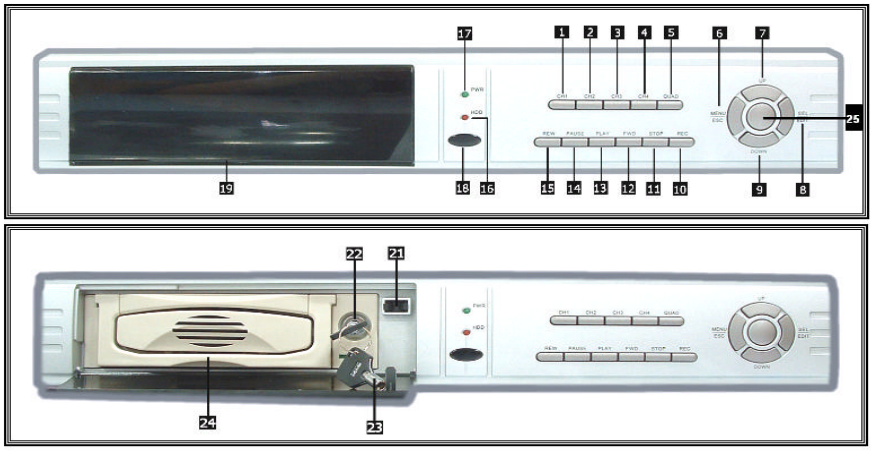
Power Adapter X4

Mounting Bracket X4

6 Control Elements

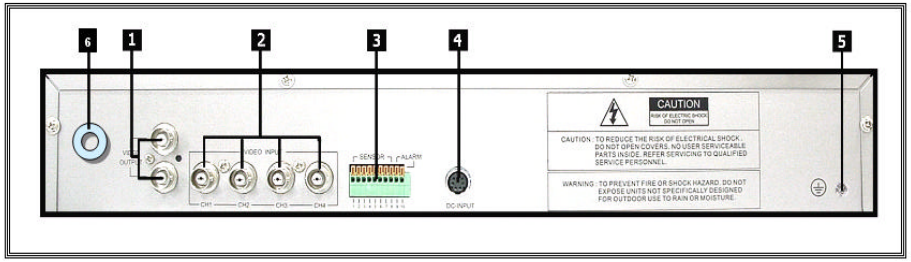
Multiway Receiver with DVR control elements

1)Front panel



1 Channel 1	9 Move Down	17 Power Indicator
2 Channel 2	10 Record	18 IR Window
3 Channel 3	11 Stop	19 Swap HDD
4 Channel 4	12 Forward	20 Radiator
5 Quad View	13 Play	21 Press-button
6 Menu /Exit	14 Pause	22 Key Locker
7 Move up	15 Reward	23 Key
8 Select /Edit	16 HDD Access Indicator	24 Active-handle
25 AV/RF		

2) Rear Panel:

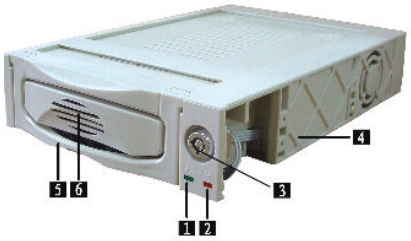


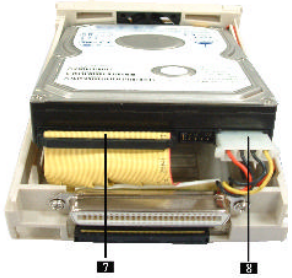
1. Video Output
2. Video Input
3. Sensor Input/Alarm Output
4. DC POWER
5. Grounding
6. 2.4GHz ANT Input

3) Remote Controller

1. CH1	2.CH2
3.QUAD	4.CH3
5.CH4	6.AV/RF
7.STOP	8.RECORD
9.PAUSE	10.REWARD
11.FORWARD	12.PLAY
13.UP	14.MENU
15.DOWN	16.ENTER
17.PROG-CH1	18.PROG-CH2
19.PROG: AV/RF (single) select state	
20.PROG-CH1	21.PROG-CH2

4) Removable HDD Box Introduction

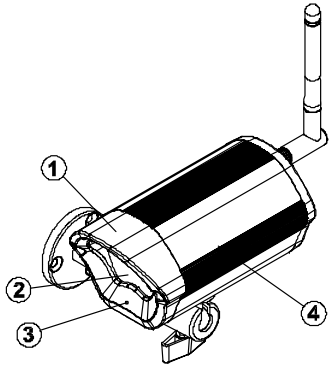




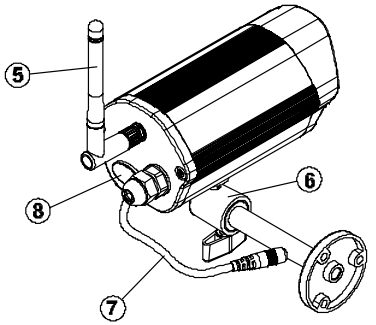
1. Power Indicator	5. Active-handle
2. HDD Access Indicator	6. Radiator
3. Key Locker	7. HDD date cable
4. PVC Frame	8. HDD power cable

Camera control elements

Front View of Camera



Rear View of Camera



1. Rainproof solid aluminum housing
2. 1/4″ CCD Color image sensor
3. IR led with CDs control
4. Aluminum body
5. 2.4GHz Antenna
6. Camera Mounting Bracket
7. 12VDC power connector
8. Channel selection SW(switch) (See Fig4)

? Select the channel by sliding the slide switch to the channel number you want

? Note1: Open the rubber cover to slide channel selection SW, then replace and tighten the cover

?Note2: You must be set different channel each Camera

7 Installation of the system

Multiway Receiver with DVR Installation

1) Install Hard Disk

Fig1

Slide the carrier body out of the cartridge frame (Fig1)

CAUTION

DON'T take out HDD when DVR running!

Fig2

Connect the HDD date cable and the power cable to the HDD(Fig2)

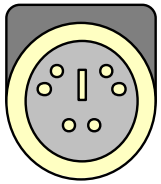
Fig3

Push carrier body further into Cartridge frame until fully inserted (Fig3)

2) Connect Camera and Monitor

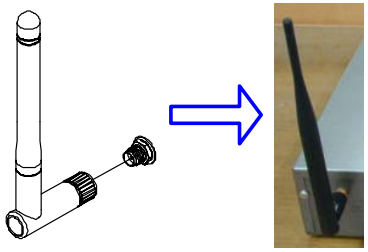
There are 4 camera input and 2 monitor output with BNC connector.

3) Connect Power Cord



Please use power adapter come along with DVR.

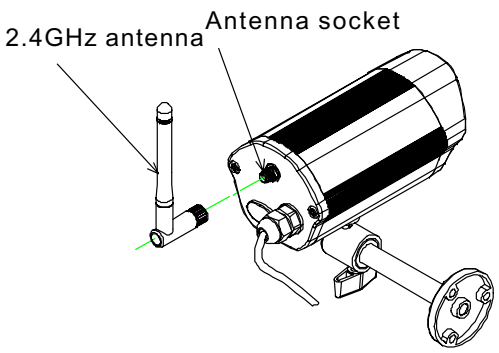
4) 2.4GHz ANT Installation



Please follow left figure installation antenna and adjust its orientation make received the best image.

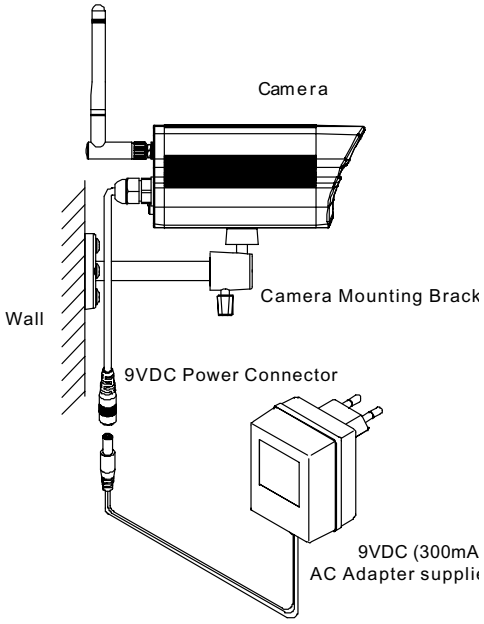
Note: If the transmitter and the receiver is horizontal position then antenna must vertical install; if the transmitter and receiver is vertical position then antenna must horizontal install.

Camera installation



Transmitter

Note: Attach 2.4GHz antenna to the antenna socket at the real of the camera then keep a tight fix on the socket of the device.

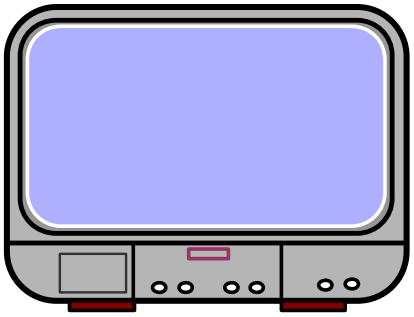


8 Operating Instruction

Multiway Receiver with DVR Operating

1)DVR System Boot

? **Detect Installed Hard Disk**



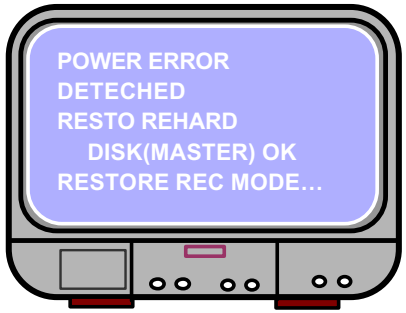
After connect the power, system will boot-up and detect installed hard disk. Monitor will show Master and Slave hard-disk information.

Please reference hard disk manual to configure hard disk sequence. (Master or Slave)

? **Recover Lost Date**

Power-Error will cause data lost and system will ask for recover data at next boot-up process, please press ? ↵ Select? to proceed.

? **Restore Recording Process**



When power-error happened during recording process, system will automatically restore recording process after power reconnected.

? **Main Screen**

At first time DVR boot-up, all cameras are OFF, please follow chapter 5-2 to switch on all cameras.

λ Upper left →Ratio of Hard Disk Space Used

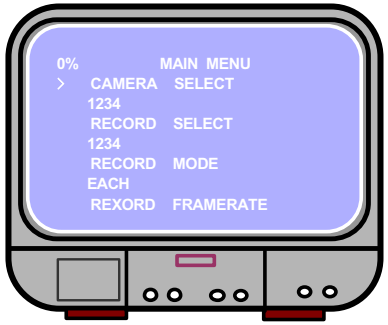
λ Middle→Channel Name(CH1 ~ CH4)

λ Bottom right→Date and Time

At the moment, DVR is waiting for command, press? Menu? into DVR setup process or ? Play? , Record? .

2) DVR Setup

? Setup Menu



Press? Menu? into setup menu, use? Up? and? Down? to select item, press ? Select? to modify setting and ? Menu? to cancel input and exit.

Menu Directory

- Main Menu
  - Camera Select
  - Record Select
  - Record Mode
  - Record Frame Rate
  - Video Quality
  - Record Schedule
  - Sub Menu
    - Password
    - Change
  - Hard Drive Setup
  - Sensor Setup

? Camera Select

System can display 4 camera video in one screen (Quad Mode). User can configure which cameras can display. For example, 1234 will display all 4 cameras.

Press? Select? to modify setting and press ? CH1? ,? CH2? ,? CH3? , ? CH4? to set each channel separately. If channel are not open, system will display as [OFF] on monitor.

? Record Select

Configure which channel is allowed to record.

? Record Mode

There are two modes for video recording,

? Each Mode? : Compress and record each channel video separately therefore user can enlarge single channel video to full screen display. For example, use can turn off record function of CH-1 and CH-2 and then system only record CH3 and CH4 video. Press? CH1? ,? CH2? ,? CH3? ,? CH4? to switch channel display when playback recorded video.

? Quad Mode? : Compress and record all 4 channel video into one file, therefore use can not enlarge single channel to full screen.

? Record Frame Rate

Record frame rate will affect the movement of object in recorded video. More frames means more smooth movement and cost more hard disk space. System default value is 30 fps, it means system will record 30 frame per second. User can set frame rate as 30, 15, 10,7,5,4,3,2,1 frames per second.

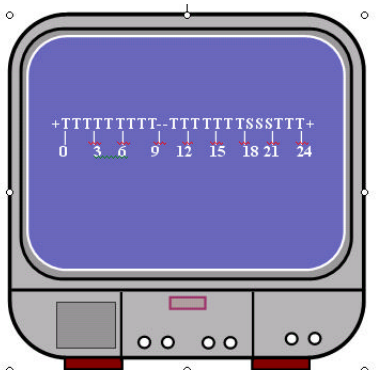
? Record Quality

There are there level of record quality, High, Normal, Low, higher quality cost more hard disk space.

Record frame rate, record quality and hard disk space will affect total record time of DVR system.

? Record Schedule

User can define video record method by hour.



λ ? - ? No Record

λ ? T? Continue, (System Default)

λ ? S? Sensor Triggered.

Cooperate with many kinds of external sensor equipment like PIR, Gas sensor. DVR will not record video until external sensor was triggered and output signal tc notify DVR during this specified period of time.

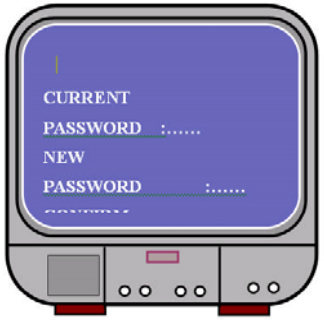
? T? → Continue? S? Sensor Triggered

? - ? No Record? ? Up

? ? Down, ? ? Select? Method

System default password : Press six times of ? CH1? key

? Sub Menu—Password

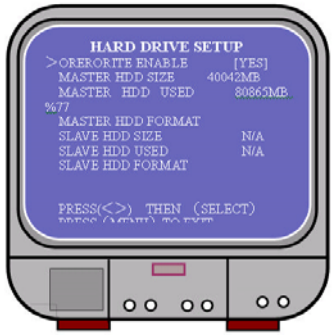


All keys can use as password key except? Menu? key is use for cancel input and exit.

? Sub Menu-Time

Configure DVR system time. Press? Move Up? and ? Move Down? to select digit and press? Select? to modify. Press ? Menu? to finish input and exit.

?10 Hard Drive Setup



λ**OVERWRITE ENABLED**

If you choose YES, recording continues and overwrite previous recording when hard disk drive space is full.

If you choose NO, the recording session stops when all hard disk drive is full for recording.

λ**MASTER HDD SIZE**

It shows the size of the primary hard disk drive installed in the DVR.

λ MASTER HDD USED

It shows the space used on the first hard disk drive for recording.

λ MASTER HDD FORMAT

If you format the hard drive, it will erase all the data recorded on the first hard disk drive.

λ SLAVE HDD SIZE

It shows the space the secondary hard disk drive installed in the DVR.

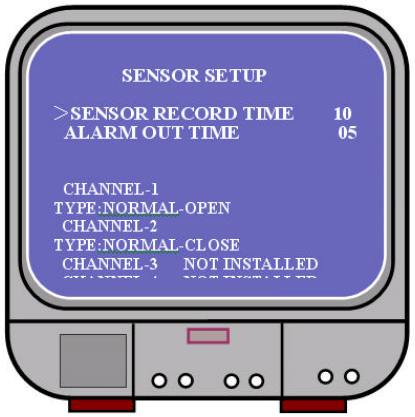
λ SLAVE HDD USED

It shows the space used on the primary hard disk drive for recording.

λ SLAVE HDD FORMAT

If you format the hard drive, it will erase all the data recorded on the secondary hard disk drive.

11 Sensor Setup



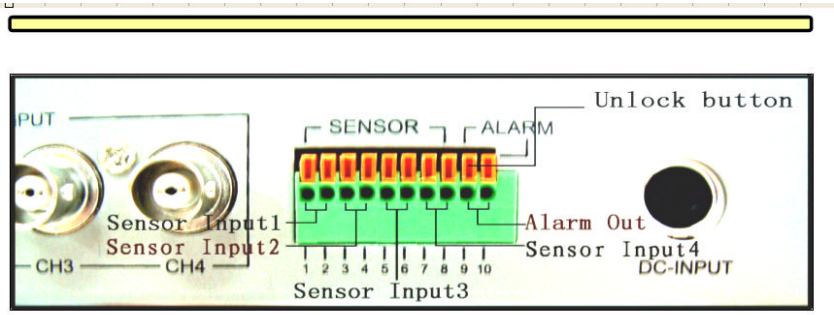
λ **SENSOR RECORD TIME**

The number indicates how long sensor recording lasts after when the sensor indicates the movements in front of the camera.

λ **ALARM OUT TIME**

It controls how long (in seconds) the alarm lasts after it sets off.

Value 0 will turn off alarm output. Select Cont will turn on alarm output until user press any key.



λ **Push the UNLOCK BUTTON to insert the wire**

λ **There are 3 different modes for sensor setting:**

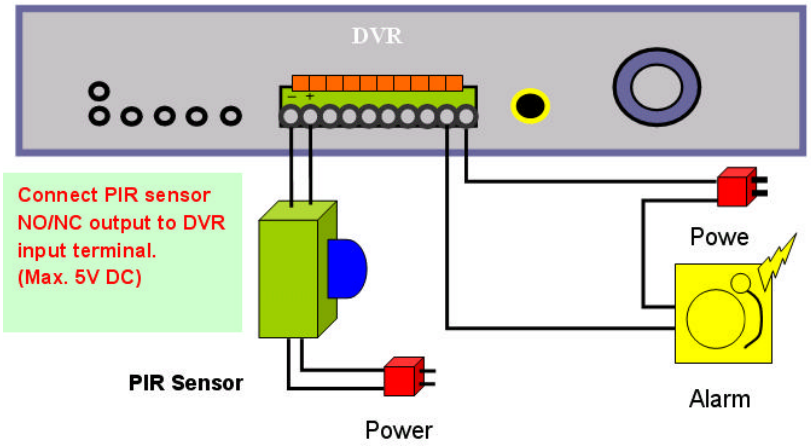
NOT INSTALLED, NORMAL-CLOSE and NORMAL-OPEN.

It depend on what type external sensor you use, if sensor's output is NORMAL-OPEN then select NORMAL-OPEN mode in DVR.

If sensor triggered by an intruder then the cable line connects to DVR input terminal will notify system to start recording.

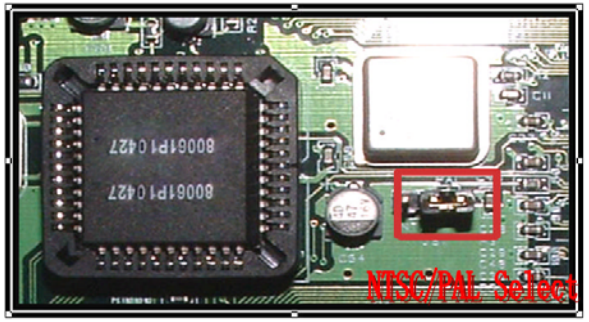
There are four pairs of input terminal support by DVR.

Install example diagram:



?2 NTSC/PAL Output Select

Change jump JS1 to select NTSC or PAL video output format.



3) DVR Record

? Start Recording

Press ? Record? to start record.

***Only EACH MODE can enlarge single channel to full screen display**

λ ? Hard Disk Usage Ration
λ ? Recording Symbol
λ ? Channel Names
λ ? Mode (QUAD or EACH)
λ ? Status (REC, Play, FF1, FF2, FF3, REW, PAUSE)

λ ? HD Info. ([M] Master disk [S] Slave disk)
λ ? Schedule((T) Continuous (S) Sensor (–) No Record
λ ? When ? * ? show up beside date & time , it indicate that system are overwrite.

? Stop Recording

Press? Stop? and system will prompt to input password. Only correct password can stop recording process.

Format	Quality	Frame Rate	30	15	7	1
NTSC	HIGH	20	58	117	251	1748
	NORMAL	15	78	155	333	2330
	LOW	12	97	194	416	2913

Format	Quality	Frame Rate	25	12	6	1
PAL	HIGH	20	70	146	291	1748
	NORMAL	15	93	194	388	2330
	LOW	12	117	243	485	2913

? Recording Length

User can calculate estimate record hours by below formula

120G Byte @ 7 frames per second @ Normal quality

120 (G byte) x 1024 (M byte) x 1024 (K byte)

---

15 (Kbyte/frame) x 7 (frame/sec) x 60 (sec) x 60 (min)

Estimate hours is 332 Hours

4) DVR Playback

Press ? Play? then system will list all recorded video clip from HD. Newest video will at top of the list, press? Move Up? and ? Move Down? to select start time and press ? Play? again to start play video to the end.

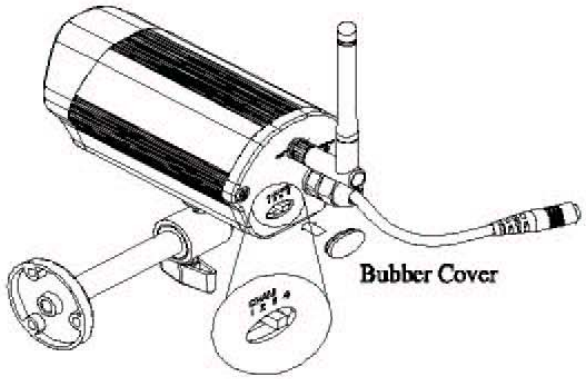
1. HD Information	2. Start Time
3. End Time	**4. TIME: Continue record**
5. SENSOR: Sensor triggered	

Another way to search video is directly input time period. Press? ▶▶ Forward? and then press? ▲ Move Up?and? ▼ Move Down?to select digit. Press? ↵ Select? to edit time value and press ? ▶ Play? to play video.

Camera Operating

Select Channels: Select the channel on the camera by sliding switches on the back of the camera.

Note: The four Cameras must be set at the different channel.



Channel Selection SW.

9 Trouble – shooting

1) No image

a. Check correct position of all the connectors and plugs.
b. Make sure the transmitter and the racier
c. Push AV/RF button

2) Interruptions in image

a. Make sure antenna of the transmitter and the receiver are in correct alignment.
b. Adjust the transmitter and the receiver to closer position.
c. If a microwave oven or electro-magnetic oven is in use, turn it off and try the product again.

3) No detected hard disk, no record or playback

a. Check correct connect all the all wire terminal and plugs

b. Replace other hard disk

Notice : The changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.