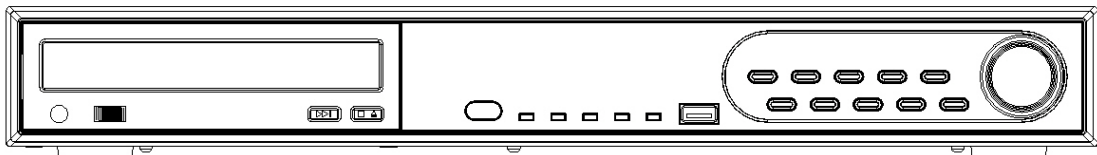






— 8/16CH DVR —



 <div style="border: 1px solid black; padding: 2px; text-align: center;"> CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN </div> 	<p>WARNING</p> <p>TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.</p> <p>NOTE: This equipment has been tested and found to comply with the limits for a class digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.</p>
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>	
 <p>This symbol is intended to alert the user to the presence of unprotected "Dangerous voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.</p>	
 <p>This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.</p>	



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,

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CHAPTER 1 FEATURES

Operation

Playback, recording and network transmission simultaneously
Real time full screen or quad screen display
2X digital zoom and Picture-in-picture display
Easy operations by shuttle and IR remote control
User-friendly setup menu and operations

Playback

Multi-screen playback (Full Screen, Quad Screen)
Search by date, time and event

Recording

Multiple recording quality levels
Recording frame rates can be set by user
Manual, scheduled and event-driven recording
Maximum recording speed of 120 frames per second (NTSC)
Pre-alarm recording
Multiple recording resolutions
4-channel audio recording
Multiple event types for each channel

Network

MPEG-4 over internet
Live and playback viewing
Remote login from a networked PC with the exclusive client viewer by IE browser
(The viewer software is supplied for free.)
Flexible connections - 10/100 Mbps Ethernet/ADSL (PPPoE)
Up to 5 network users access simultaneously
Rich network functions
Dynamic IP is available
Dynamic DNS is available.
SMTP is available.

External storage

Support external storage device (HDD Bay) to extend the HDD capacity
Installation of 4 HDDs in 2 external HDD Bay is available and connectivity
is up to 10 HDD Bay's to DVR
(250GB X 40HDDs = 10TB, 500GB X 40HDD = 20TB, 1TB X 40HDD = 40TB)

Audio

4-channels audio recording in real time

Backup

PC Viewer - direct viewing of DVR's HDD on PC
IEEE-1394A external HDD Bay
USB 2.0 external HDD
USB 2.0 memory stick
CD-RW/ DVD±RW (optional)

PTZ

Support pelco-P and pelco-D protocol

General

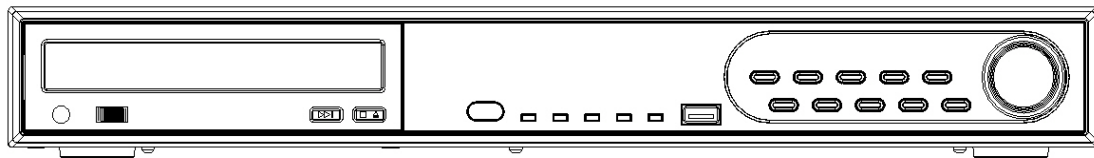
Software downloading facility via network and USB memory stick
Auto detection of PAL / NTSC
Built-in hardware Watchdog
Automatic time adjustment through Network
Multiple languages support

Optional

Remote Control Matrix - remote control for multiple DVRs
CD-RW/ DVD±RW
VGA output for PC monitor
DVI output for PC monitor

CHAPTER 2 PACKING DETAIL AND INSTALLATION

2-1 PACKING



1. DVR



2. User's Manual



3. IR Remote control



4. SATA Cord



5. Dsub 25p to 16 BNC cable



6. External I/O board



7. Hard Disk Mount



8. Power adapter



9. Power Cord



10. Battery

2-2 INSTALLATION

2-2.1 HARD DISK INSTALLATION

1) Fix the HDD to rack mount with the screws as indicated.



2) Place the HDD on the HDD plate and screw as indicated.



3) Connect the power and the flat cables as indicated.



2-2.2 CD-RW INSTALATION

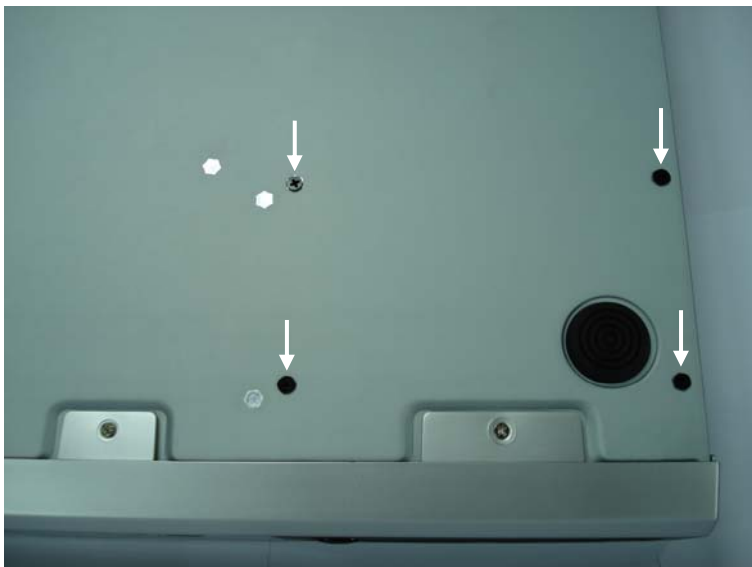
1) Remove the front cover from DVR.



2) Put the CD-RW into the unit as indicated.



3) Screw to fix the CD-RW as indicated.

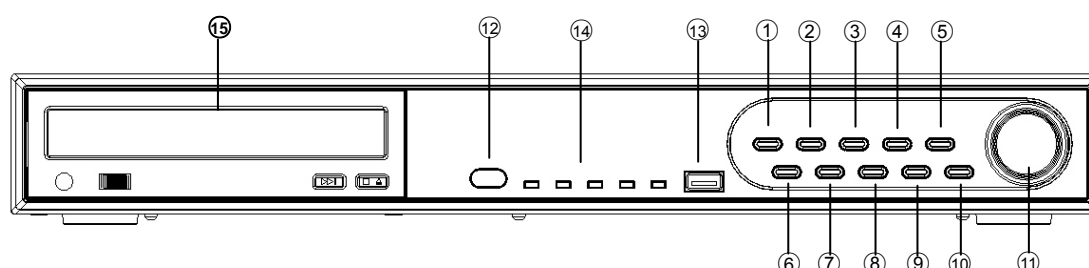


4) Connect the power and the flat cables as indicated.



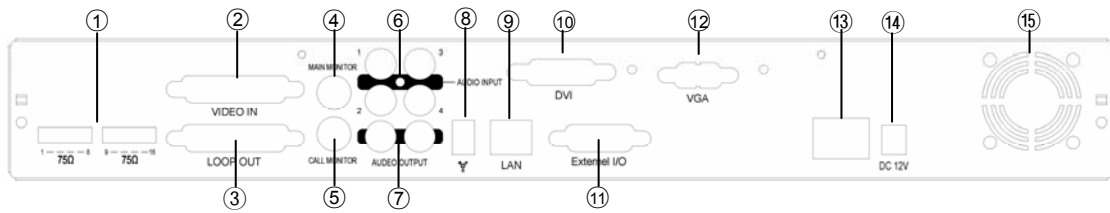
CHAPTER 3 LOCATION AND CONTROL

3-1 FRONT PANEL CONTROLS



Control Keys	Description
① REC	Begin and stop recording.
② PLAY	Play back in normal speed.
③ T-SRH	Display the search menu.
④ BACKUP/ESC	In LIVE mode, press to copy recorded data from HDD to USB device or built-in CD-RW. In SETUP mode, press to return to last page.
⑤ MENU/	Display menu. In PLAYBACK mode, press to pause playback.
⑥ ◀/◀◀	In SETUP mode, press to reduce value. In PLAYBACK mode, press to play backwards.
⑦ ▶/▶▶	In SETUP mode, press to increase value. In PLAYBACK mode, press to play forwards.
⑧ ▲/SLOW	In SETUP mode, press to move cursor up. In PLAYBACK mode, press to slow down.
⑨ ▼/■	In SETUP mode, press to move cursor down. In PLAYBACK mode, press to stop playing back.
⑩ ENTER/MODE	In SETUP mode, press to enter values. In LIVE mode, press to switch between full screen and quad display.
⑪ SHUTTLE	Change the playback speed.
⑫ IR Sensor	Input sensor for the remote control.
⑬ USB 2.0 Port	Port for a USB memory stick, or USB external devices.
⑭ LED Display	Status of power (STANDBY), hard disk (HDD), LAN (RX/TX/LOGIN), recording, or PLAYBACK.
⑮ CD Writer	Optional CD-RW backup device.

3-2 REAR PANEL CONNECTORS



① 75Ω	75 ohm terminal switch
② VIDEO IN	BNC input ports for cameras.
③ LOOP OUT	BNC connectors positioned in the rear panel for loop out the video input.
④ VIDEO OUT	BNC output port for the main monitor.
⑤ CALL MONITOR	The call monitor is used to display full screen video of all installed cameras in sequence.
⑥ AUDIO IN	RCA input port for audio signal.
⑦ AUDIO OUT	RCA output port for audio signal.
⑧ IEEE-1394	IEEE-1394 port for the external HDD bay.
⑨ LAN	Port for 10/100Mbps Ethernet/ ADSL.
⑩ DVI	Set to ON position when DVI monitor is used.
⑪ EXTERNAL I/O	EXTERNAL I/O port.
⑫ VGA	Set to ON position when VGA monitor is used.
⑬ POWER	Power switch
⑭ DC 12V	Socket for a DC 12V input.
⑮ Fan	DC 12V 40mm X 40mm fan.

CHAPTER 4 SETTING UP THE DVR

The MENU button on the front panel or IR remote control can be used to start setting up the DVR. The system will ask for a password. The default password is '00000' which must be entered the first time the DVR is set up. The default password can be entered by pressing ▲ ▼ ◀ ▶ , or by pressing the '0' key 5 times on the remote control. After the initial setup, the administrator's password is required to set up the DVR.

4-1 SETUP MAIN SCREENS



After the password is entered, press ENTER key and a list of setup options will be shown. Move the cursor up and down by pressing ▲ ▼ buttons; then press ENTER key to enter a specific setup option.



4-2 RECORD SETUP

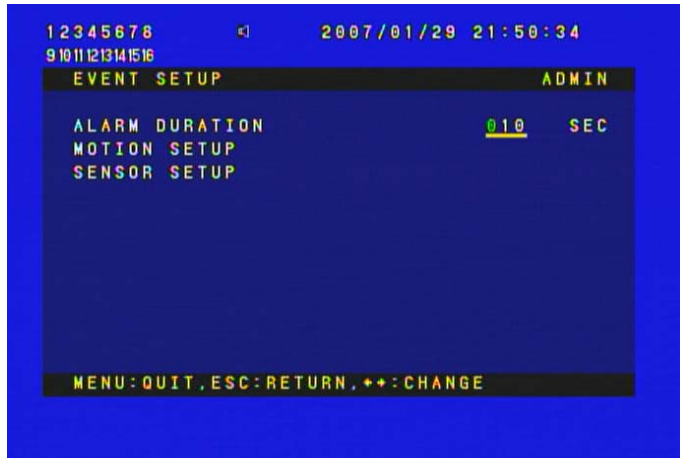
Set the value for recording functions by pressing ◀ ▶ buttons. Move the cursor up and down by pressing ▲ ▼ buttons. Settings on this screen are system-wide, affecting every channel.



Item	Description
RESOLUTION	Set recording resolution to either 720X240 or 360X240.
EVENT RECORD	For event-driven recording, select MOTION, SENSOR or both to trigger recording; or OFF to disable recording.
HDD FULL	When HDD is full select STOP to stop recording or OVERWRITE to reuse the HDD.
PRE-ALARM RECORD	Enable/Disable pre-event recording. Pre-event recording time is 3 seconds.
AUDIO RECORD	Enable/Disable audio recording.
WATERMARK	Enable/Disable WATERMARK.
QUALITY	For normal and event-driven recording, select the recording quality from LOW, NORMAL, MIDDLE, HIGH, and HIGHEST.
FRAME RATE	Select maximum recording frame rate shared by all channels. Typical value of the maximum frame rate for NTSC video is 120 fps for 360X240 resolution and 60 fps for 720X240 resolution.

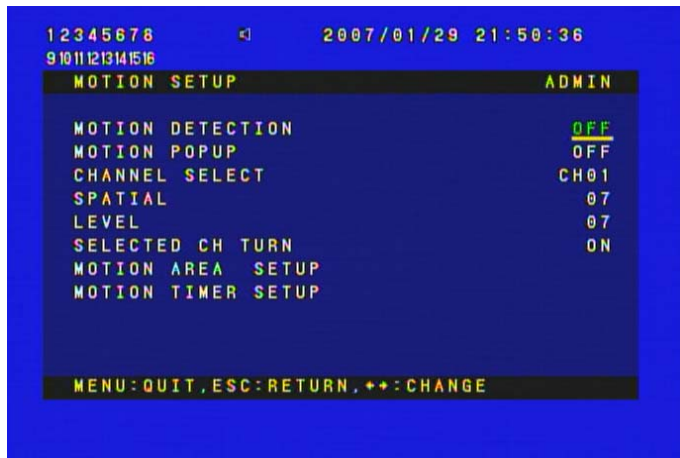
4-3 EVENT SETUP

Set the value for event functions by pressing ◀ ▶ buttons. Move the cursor up and down by pressing ▲ ▼ buttons. Press ENTER to enter a further setup option.



Item	Description
ALARM DURATION	Set alarm duration in seconds. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.

4-3.1 MOTION SETUP



Item	Description
MOTION DETECTION	Enable/Disable motion detection for all channels.
MOTION POPUP	Enable/Disable popup screen for all channels. When motion is detected in live mode a full screen may pop up to display that channel.
CHANNEL SELECT	Select a channel for applying the following settings.
SPATIAL	Set the SPATIAL for the specified channel from 1 to 15. The lower the number the more sensitive it is; i.e., a slight motion will trigger the alarm.
LEVEL	Set the LEVEL for the specified channel from 1 to 15. The lower the number the more sensitive it is.

SELECTED CH TURN	Enable/Disable above selected channel for motion detection.
MOTIONAREA SETUP	Press ENTER to set up motion detection areas on the screen.
MOTION TIMER SETUP	Press ENTER to set up time periods for motion detection.

4-3.1.1 MOTION AREA SETUP

Select areas on the screen for motion detection. Initially, the entire screen is set for motion detection. User can select parts of the screen or the entire screen to turn on motion detection. Areas for motion detection will show tangerine color.



Item	Description
LOCK KEY	Select the entire screen for motion detection.
MUTE KEY	Clean up all selected areas.
PLAY KEY	Activate/Remove areas covered by cursor.
CH1 – CH16	Press keys 1 to 16 to switch to a channel for motion area setup.
U,D,R,L	Press ◀ ▶ ▲ ▼ to move the cursor around.
ENTER KEY	Press ENTER key to mask/unmask. When UNMASK is set, cursor movement has no effect on areas. When MASK is set, cursor movement will activate/remove areas.
ESC KEY	Quit.

4-3.1.2 MOTION TIMER SETUP

Set up time periods when the motion detection function is turned on/off. Initially, continuous motion detection is turned on. User can select periods of time to turn off motion detection.

Steps of operations:

Step 1: Press ▲ and ▼ to select day of week, press ◀ and ▶ to select time.

Step 2: Press ENTER key.

Step 3: Press ▲ to enter activate mode and press ▼ to enter remove mode. In activate mode, press ◀ and ▶ to activate a period of time for motion detection. In remove mode, press ◀ and ▶ to remove a period of time.

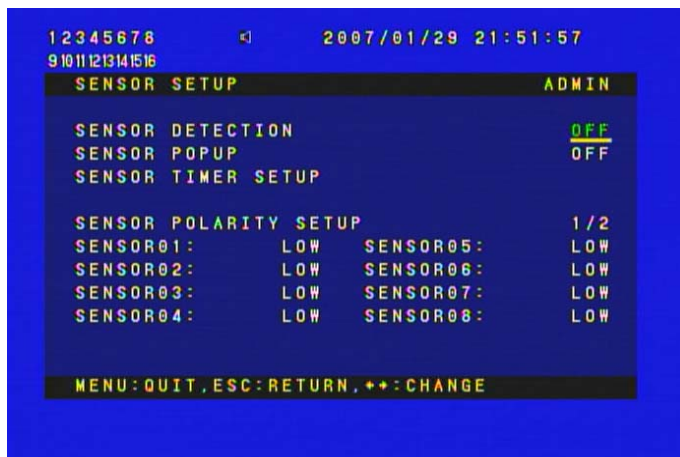
Step 4: When finished, press ENTER to return to Step 1.

Step 5: Set up next time period by repeating Steps 1 through 4.



Item	Description
FUNCTION	Enable/Disable Motion Timer function.
CURSOR RANGE	Select duration of time represented by the cursor. Selections are 10 minutes, 30 minutes, and 60 minutes.

4-3.2 SENSOR SETUP



Item	Description
SENSOR DETECTION	Enable/Disable sensor detection.
SENSOR POPUP	Enable/Disable popup screen. When sensor is triggered in live mode a full screen may pop up to display that channel.
SENSOR POLARITY SETUP	Select groups of sensors to apply voltage settings. Sensors are displayed in two groups with 8 sensors in each group. Press ► to display the second group (2/2), ◀ to go back to the first group (1/2).
SENSOR 01- 16(08)	For the sensor to trigger, set the type of voltage, low or high, expected at the SENSOR IN connectors.

4-3.2.1 SENSOR TIMER SETUP

Set up time periods when the sensor function is turned on/off. For operations, please refer to 4-3.1.2 MOTION TIMER SETUP.



4-4 TIMER SETUP

Set up time periods when the recording function is turned on/off. For operations, please refer to 4-3.1.2 MOTION TIMER SETUP.

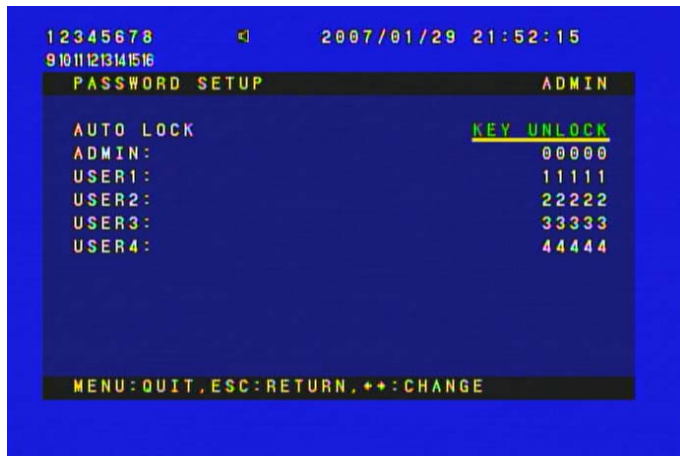


4-5 CAMERA SETUP



Item	Description
CHANNEL SELECT	Select the channel for applying the following settings.
BRIGHTNESS	Change the BRIGHTNESS value for the specified channel.
CONTRAST	Change the CONTRAST value for the specified channel.
SATURATION	Change the SATURATION value for the specified channel.
HUE	Change the HUE value for the specified channel.
RECORD	Enable/Disable recording for the specified channel.
NAME	Enter a new name for the specified channel. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
MASK	Specific channels can be blocked from viewing. To block a channel, turn MASK on for the specific channel. The blocked channels will show a blue screen.

4-6 PASSWORD SETUP



Item	Description
AUTO KEYLOCK	DVR's data entry can be done through front panel or remote control. This input capability can be turned on or off. If DISABLE or KEYUNLOCK is set, data entry is enabled. Setting KEYLOCK will disable data entry until the LOCK button on remote control is pressed. Another aspect is periodical user authentication. If the system is left idle for more than 1 minute, it will return to normal display and may or may not erase the user's password depending on how this field is set. If DISABLE is set password is only required once when the setup session started, without periodical authentication. If KEYLOCK or KEYUNLOCK is set user needs to re-enter password every time setup resumes after the 1-minute idle. In addition, if KEYLOCK is set data entry is disabled even after the idle but it can be enabled by pressing the LOCK button on remote control.
ADMIN USER1, USER2, USER3, USER4.	Enter passwords. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.

4-7 NETWORKING SETUP

The DVR can be browsed/managed by remote clients over the network. A set of parameters should be entered to set up this function. If the settings are subsequently changed, the PLAY button should be pressed to re-connect the DVR using the new settings. If a router is used to connect the DVR to the network then it should be updated to reflect the change.

DHCP

If the DHCP option is used to connect the DVR to a network, an IP address is assigned by the DHCP server automatically.



Item	Description
NETWORK FUNCTION	Enable/Disable network function.
ACCOUNT	Press ENTER to enter ACCOUNT setup.
APPLITIONS	Press ENTER to enter APPLICATIONS setup.
PORT	The port number used by the DVR for network connections from remote clients; including PC's through IE browser, cell phones, PDA's, etc. Press ENTER to enter values one digit at a time. Press ▲ and ▼ to change values, ◀ and ▶ to move along digits. A valid port number ranges from 1 to 65535. Initially, system has a default port number, 00080, which can be changed for system administration purposes. If a router is used to connect the DVR to the network then it should be updated to reflect the change. If the port number is no longer the default, all remote connections must specify the new port number by appending it to the DVR's IP address. Ex., "http://192.168.1.156:#####".
TYPE	Select a type of network connection (DHCP, LAN, or ADSL).

LAN

If the LAN option is used to connect the DVR to a network the following information is required.



Item	Description
IP	The fixed IP address of the DVR. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
MASK	The mask for the LAN. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
GATE WAY	The IP address of the gateway. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
DNS	Set the DNS server IP. This ip address is required for DDNS setup (please refer to 4-7.2.1). Press ENTER to enter values one digit at a time.

ADSL

If the ADSL option is used to connect the DVR to a network, the following information is required.

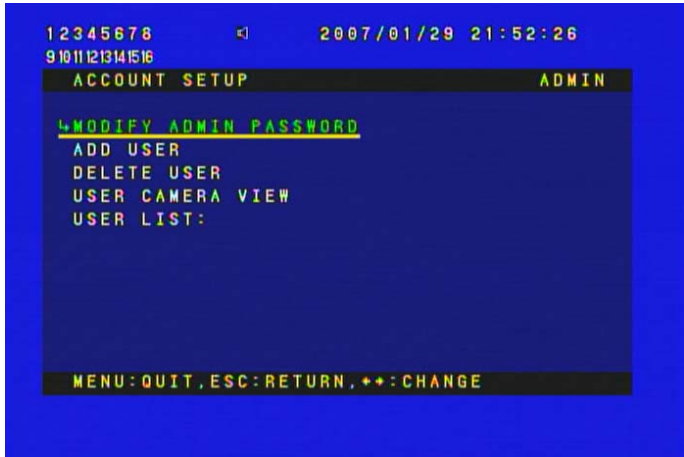


Item	Description
USER NAME	The user name for the ADSL connection. Press ENTER to enter values one character at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along characters.

PASSWORD	The password for the ADSL connection. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
DNS	Set the DNS server IP. This ip address is required for DDNS setup (please refer to 4-7.2.1).

4-7.1 ACCOUNT SETUP

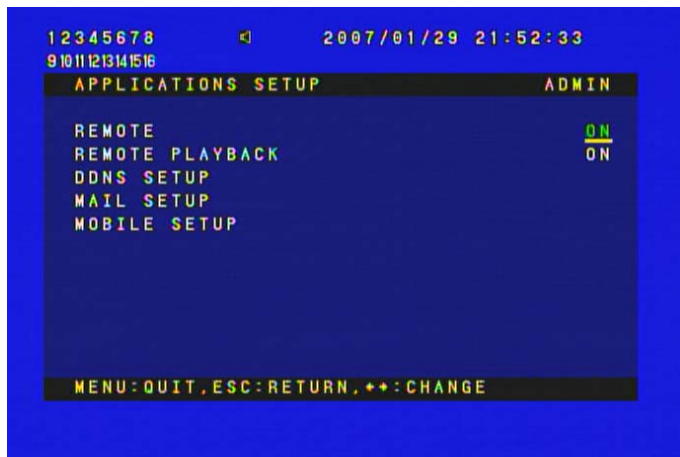
The account name and password information is required for accessing the DVR over network.



Item	Description
MODIFY ADMIN PASSWORD	Press ENTER to modify administrator's password.
ADD USER	Press ENTER to add a user. Key in account name and password. Select YES to add, NO to cancel.
DELETE USER	Press ENTER to delete users. Select users to delete by pressing ENTER while in USER LIST. Select YES to delete, NO to cancel.
USER CAMERA VIEW	A user may be disallowed from viewing specific channels. To do so, move the cursor to USER CAMERA VIEW and press ENTER. The cursor will be moved to USER LIST. Select a user by moving the cursor over his/her name and pressing ENTER. A new screen will show all the channels and ON/OFF buttons beside them. Move the cursor to desired channels and select ON to disallow viewing and OFF to allow viewing. The blocked channels will show the background image.
USER LIST	All users added to system are displayed in USER LIST.

*Note: System defaults to a maximum of 4 users.

4-7.2 APPLICATION SETUP



Item	Description
REMOTE	When REMOTE is set to OFF system will not allow changes to DVR setup over network.
DDNS SETUP	Press ENTER to enter DDNS setup.
MAIL SETUP	Press ENTER to enter MAIL setup.
MOBILE SETUP	Press ENTER to enter MOBILE setup.

4-7.2.1 DDNS SETUP

Please use one of the following websites to register DDNS:

DYNDNS.COM, NO-IP.ORG, I-DVR.NET

After registration, DDNS SETUP information such as user name, password and host name will be provided. Please enter the information on this screen.



Item	Description
FUNCTION	Enable/Disable DDNS function.
SERVER	Select registration SERVER. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.

HOST	Key in the HOST NAME. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
USER NAME	Key in the USER NAME. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
PASSWORD	Key in a PASSWORD. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.

4-7.2.1.1 DDNS Service Activation

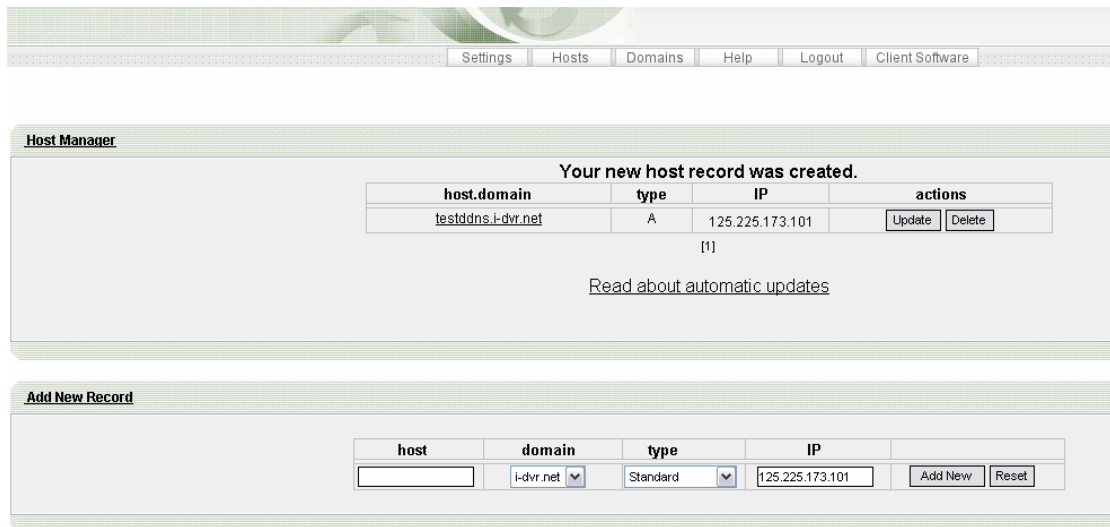
In the package of every DVR, there is a sticker that shows a web address where the DDNS Service can be activated and a pair of username and password that can be used during activation. This website has the same function as the other sites mentioned in the previous section but it's maintained by the DVR manufacturer.

Step 1. Upon entering the website, a “Control Panel Logon” screen is shown. Enter the Username and password provided on the sticker in the “Email” and “Password” fields. Press “Logon” when done.

Step 2. In the “Add New Record” dialog, enter a host name which is selected by the DVR system administrator as the name of the DVR to be known on the network. Then, enter the IP address of the DVR. Note that the IP field has a default value which is the IP of the PC used to perform the activation. This default IP can be used here without entering the DVR’s actual IP. When the DVR connects to the network in the future it will log onto this website and update its own record with its current IP. Ignore the “domain” and “type” fields for now.

host	domain	type	IP	Add New	Reset
testddns	i-dvr.net	Standard	125.225.173.101		

Step 3. If activation was successful a screen will return and show “Your new host record was created.”



4-7.2.2 MAIL SETUP

E-mail can be used as a form of notification when an alarm occurs. When a motion or sensor alarm occurs an image will be sent along with the email message. The image is taken at the time the alarm occurred, which is in AVI format. The receiver of the email should have an AVI codec installed on their computer in order to view the image correctly. There are free AVI codec's such as Klicodec which can be downloaded from the Internet for free.

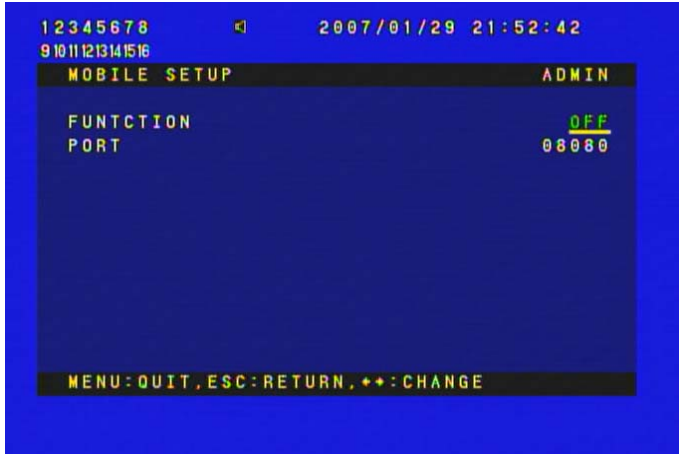


Item	Description
FUNCTION	Enable/Disable MAIL function.
MAIL SERVER	Set MAIL server. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
USER NAME	Set log in MAIL Server's user name. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
PASSWORD	Set log in MAIL Server's password. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.

EMAIL ADDRESS	Set receiver's email address. Press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits.
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4-7.2.3 MOBILE SETUP

Wireless mobile devices, such as cellular phones or PDA's, can log on to the DVR and view live video through 3G or GPRS network.



Item	Description
FUNCTION	Enable/Disable MOBILE function.
PORT	Port number used by the DVR for mobile connections. To change it, press ENTER to enter values one digit at a time. Press ◀ and ▶ to change values, ▲ and ▼ to move along digits. For more details, please refer to 4-7 NETWORKING SETUP. The same port is used as the receptor for all network connections from remote devices; including mobile devices and remote PC's.

4-8 PTZ & RS-485 SETUP

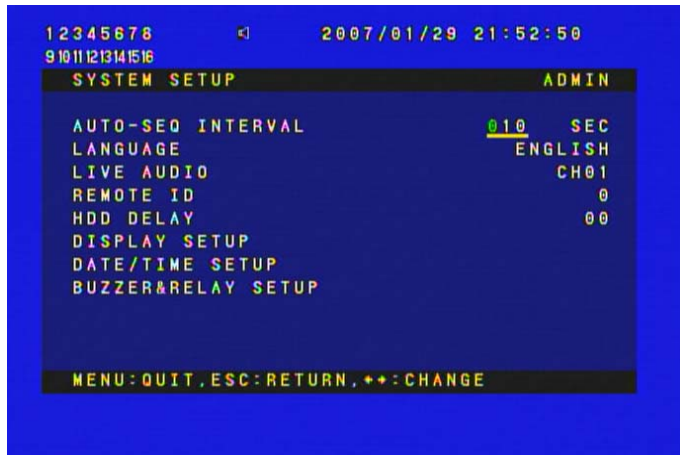
Connect to the RS-485 port to control the PTZ functions of the camera.



Item	Description
PROTOCOL	Select the protocol type of camera. .

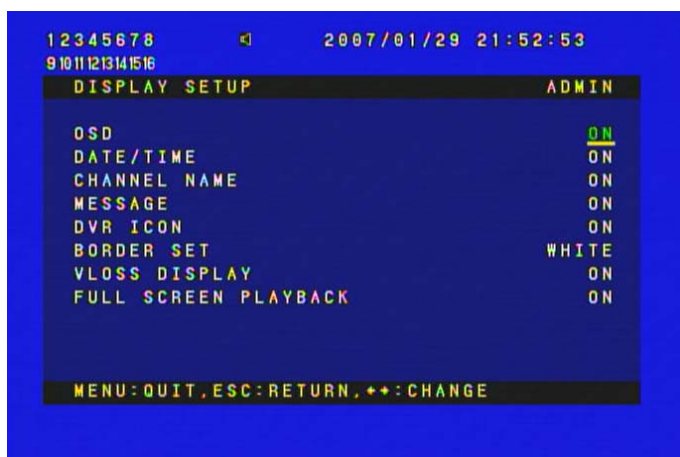
BAUDRATE	Select transmission speed.
CHANNEL SELECT.	Select the channel for applying the settings.
PTZ ID.	Select the PTZ ID.


4-9 SYSTEM SETUP



Item	Description
AUTO-SEQ DURATION	Dwell time for each channel display in AUTO-SEQ display mode.
LANGUAGE	Select language for setup and OSD.
LIVE AUDIO	Enable/Disable live audio function.
REMOTE ID	Select DVR to control.
HDD DELAY	Delay detection of HDD. Some large HDDs have slow startup time which may cause the system to fail to detect them. In this case, set a longer delay time. Maximum delay is 10 seconds.
DISPLAY SETUP	Press ENTER to enter DISPLAY setup.
TIME/DATE SETUP	Press ENTER to enter DATE/TIME setup.
BUZZER & RELAY SETUP	Press ENTER to enter BUZZER&RELAY setup.

4-9.1 DISPLAY SETUP



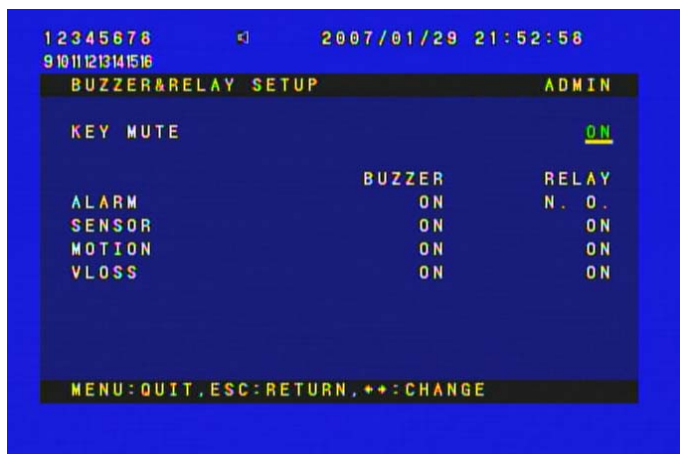
Item	Description
OSD	Enable/Disable OSD function.
DATE/TIME	Enable/Disable DATE/TIME display.
CHANNEL NAME	Enable/Disable CHANNEL NAME display
MESSAGE	Enable/Disable MESSAGE display.
DVR ICON	Enable/Disable DVR ICON display.
BOARDER SET	Set boarder color.
VLOSS DISPLAY	Enable/Disable  icon display when video loss occurs.
FULL SCREEN PLAYBACK	Enable/Disable full screen playback.

4-9.2 DATE/TIME SETUP



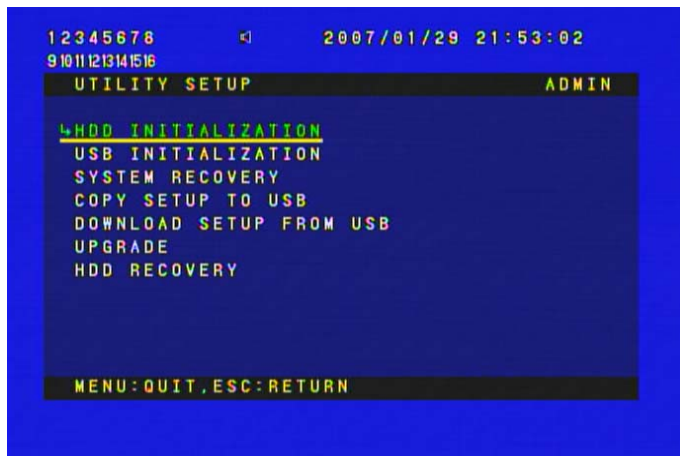
Item	Description
HOUR FORMAT	Select 12 hours or 24 hours format.
DATE FORMAT	Select preferred date format.
DATE/TIME POSITION	Select display position for DATE/TIME. TOP means upper right hand corner BOTTOM means lower right hand corner.
DATE/TIME	Set current date and time.

4-10 BUZZER & RELAY SETUP



Item	Description
KEY MUTE	Enable/Disable silent key strokes.
ALARM BUZZER	Enable/Disable alarm buzzer when motion is detected, sensor is triggered or video loss occurs.
SENSOR BUZZER	If ALARM BUZZER is turned on the buzzer will sound when a sensor is triggered.
MOTION BUZZER	If ALARM BUZZER is turned on the buzzer will sound when motion is detected.
VLOSS BUZZER	If ALARM BUZZER is turned on the buzzer will sound when video loss occurs.
ALARM RELAY	Set relay signal to be Normal Close (N.C.) or Normal Open (N.O.). If an alarm occurred a signal will be sent to the RELAY OUT blocks.
SENSOR RELAY	When a sensor is triggered a relay signal will be sent.
MOTION RELAY	When motion is detected a relay signal will be sent.
VLOSS RELAY	When video loss occurs a relay signal will be sent.

4-11 UTILITY SETUP



Item	Description
HDD INITIALIZATION	Press ENTER to initialize hard disks.
USB INITIALIZATION	Press ENTER to initialize usb storage device.
SYSTEM RECOVERY	Press ENTER to restore default setup values.
COPY SETUP TO A USB	Press ENTER to copy setup values to a USB device.
DOWNLOAD SETUP FROM A USB	Press ENTER to download setup values from a USB device.
UPGRADE	Press ENTER to upgrade firmware.

4-11.1 HDD INITIALIZATION

Press ENTER to clean up all data on hard disks. Press ESC to cancel.



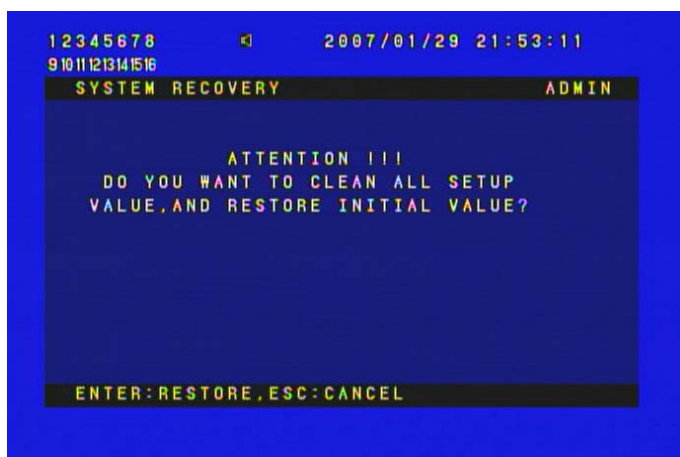
4-11.2 USB INITIALIZATION

Press ENTER to clean up all data on USB storage device. Press ESC to cancel.



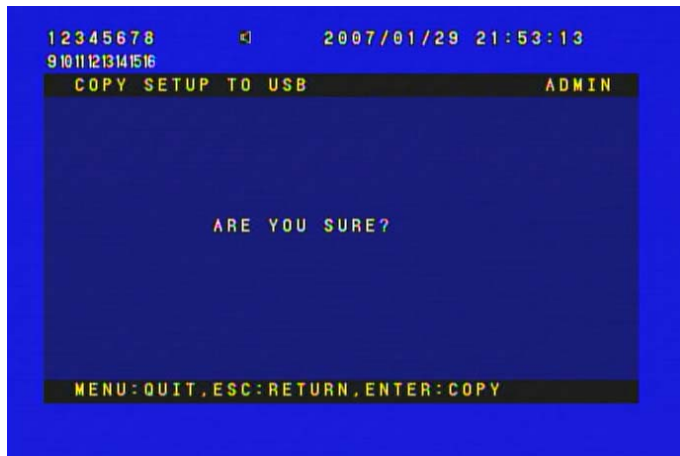
4-11.3 SYSTEM RECOVERY

Press ENTER to restore system default setup values. Press ESC to cancel.



4-11.4 COPY CONFIG TO USB

Press ENTER to copy setup values to a USB device. Press ESC to cancel.



4-11.5 DOWNLOAD CONFIG FROM USB

Press ENTER to download setup values from a USB device. Press ESC to cancel.



4-11.6 UPGRADE

The DVR can be upgraded through USB or NETWORK. To upgrade, the new firmware must first be copied to the USB device. Please make sure the new firmware is the latest version.



4-12 DIAGNOSTIC

```

12345678      2006/10/19 23:04:48
910111213141516      USB
DIAGNOSTIC      ADMIN

VER: 0.0.1
IP : NETWORK DISCONNECT
MAC: 00:17:4F:00:00:01
**HDD STATUS**
NO. VOLUME USED PLACE STATUS FORMAT
01  20GB  0% INT  GOOD  70/01/01
02  40GB  4% INT  GOOD  69/12/31
03  60GB  8% INT  GOOD  69/12/31
04  80GB  12% INT  USING 69/12/31
05  100GB 16% INT  GOOD  69/12/31

MENU:QUIT,ESC:RETURN      01/03
  
```

Item	Description
VERSION	The DVR's current firmware version.
MAC	The DVR's MAC address.
IP	The DVR's connected IP address. If disconnected from network, the screen will display NETWORK DISCONNECT.
NO.	HDD number. All detected HDDs will be listed here.
VOLUME	HDD capacity.
USED	Percentage of space used on HDD.
PLACE	HDD is internal or external.
STATUS	Shows HDD status. USING means the HDD is being used for recording. GOOD/BAD means the HDD has a known/unknown format to the DVR. A newly added HDD should be formatted by the DVR before being put to use.
FORMAT	The latest format time of HDD.

CHAPTER 5 BACKUP & SEARCH

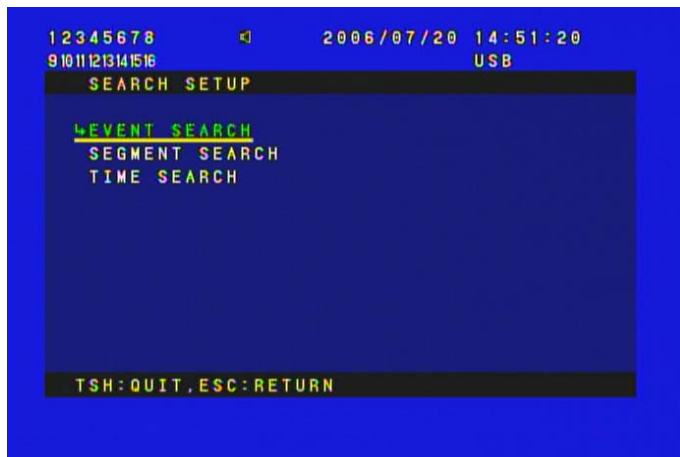
5-1 BACKUP SETUP

User can create a backup of the data recorded in a specified time frame. To do so, either a built-in CD R/W must exist or some storage device must be connected to the USB port. The format of the backup can be either AVI or PES, which is determined by how the user foresees it to be played back in the future. If it is to be played back on a normal PC with Microsoft Media Player then AVI format should be selected and an AVI codec like Klicodec should be installed on the PC. Otherwise, the PES format should be selected. In this case, the IE browser should be used to connect to the DVR to play back the data. For more detail, please refer to 7-3 PLAYBACK MODE.



Item	Description
BACKUP DEVICE	Select CD R/W or USB as the backup device. The default size for CD R/W is 640 MB. Press the PLAY button to select a larger size.
BACKUP CHANNEL	Select backup channels or ALL to backup all channels.
TRANSFER TO AVI	Select AVI or PES format.
START	Select backup start time which should be after RECORD START.
END	Select backup end time which should be before RECORD END.
BACKUP SIZE	Backup file size / Backup device size, displayed by the DVR.
START BACKUP	Press ENTER to start backing up.
RECORD START	The start time of recorded data on HDD.
RECORD END	The end time of recorded data on HDD.

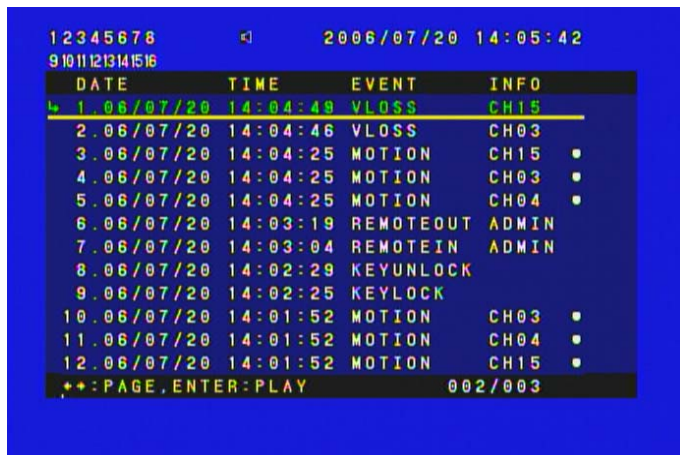
5-2 SEARCH SETUP




Item	Description
EVENT SEARCH	Press ENTER to start EVENT SEARCH.
SEGMENT SEARCH	Press ENTER to start SEGMENT SEARCH.
TIME SEARCH	Press ENTER to start TIME SEARCH.

5-2.1 EVENT SEARCH

The DVR automatically records events with the time and channel information. If there is recording for an event it will be indicated in the INFO field after channel number. Events are defined as follows, VLOSS = video loss, MOTION = motion detected, SENSOR = sensor triggered, REMOTEIN = user log-in over the network, REMOTEOUT = user log-out over the network. KEYLOCK = keys are locked, KEYUNLOCK = keys are unlocked.

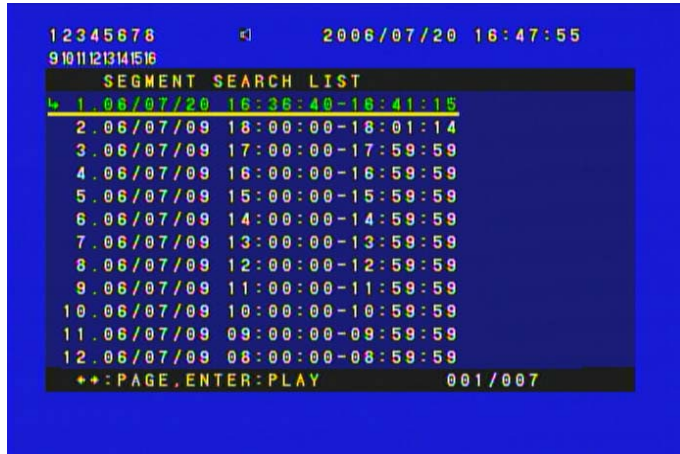


Item	Description
DATE/TIME	Date and time of the event.
EVENT	Type of event.
INFO	Channel the event occurred. If there is recorded data, an icon,  , will be displayed.
ENTER	Press ENTER to play back an event if there is recording for it.

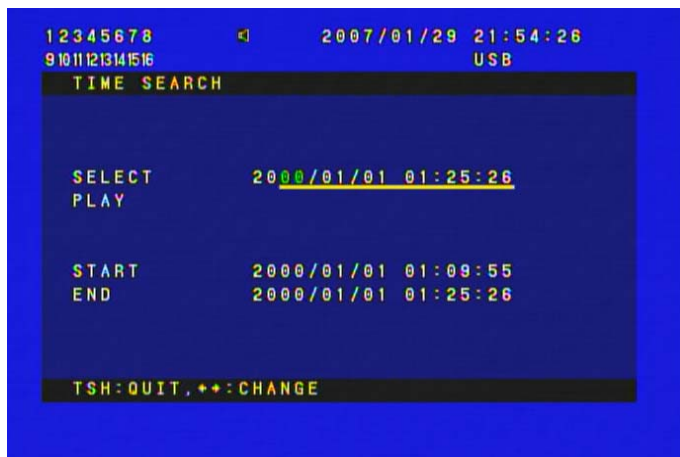
5-2.2 SEGMENT SEARCH

A list of recorded data segments will be displayed. If a segment is longer than one hour it will be broken down to hour-long segments. User can select a segment to play back by pressing

▲ and ▼ to move cursor up and down, ◀ and ▶ to change page. Press ENTER to start playing back the desired segment.



5-2.3 TIME SEARCH



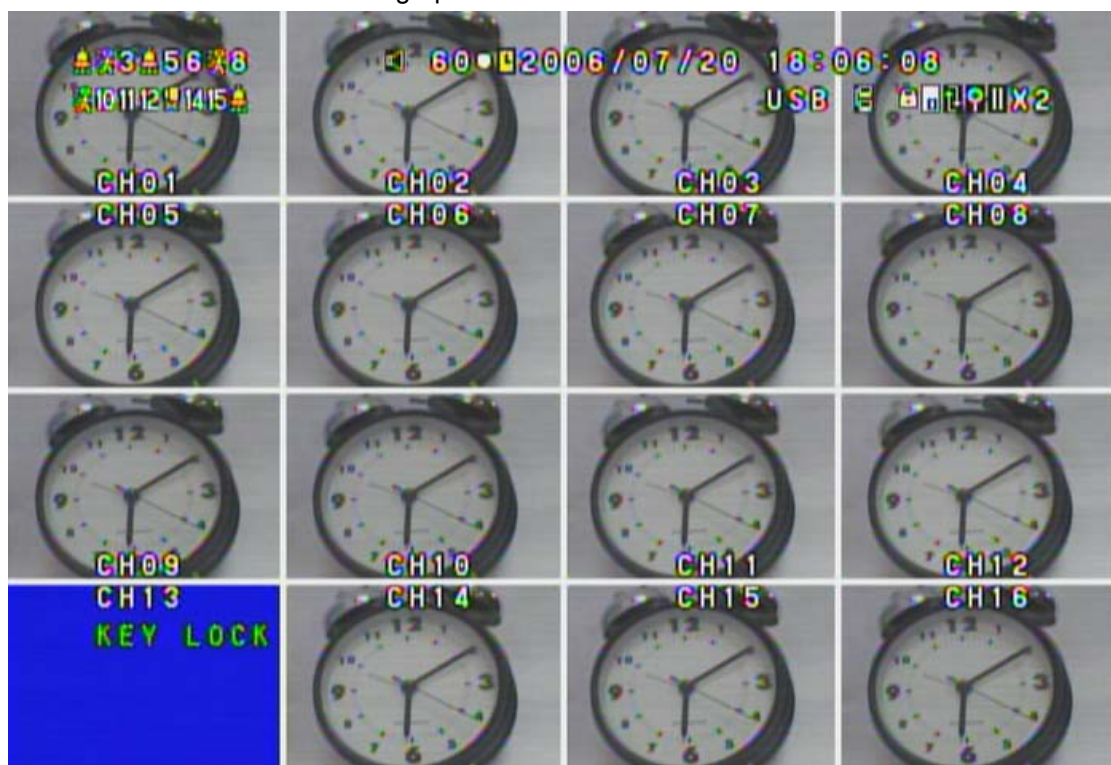
On the SELECT field, press ENTER to enter a time value digit-by-digit. Press ◀ and ▶ to change value ▲ and ▼ to move along digits. Press ENTER on the PLAY field to start playing back the segment. The DVR will search for a recorded segment whose start time is the closet to the set time. The START and END times are the starting and ending recording time for the data on HDD. The SELECT time should be within the time period of START and END times.

CHAPTER 6 LIVE, PLAYBACK AND PTZ OPERATIONS

Both the front panel and the remote control can be used to control the DVR's operations. The remote control is a full function control unit; i.e. it can control all the functions of the DVR. The front panel, on the other hand, is only a subset of the remote control. This chapter describes the rich functions of the DVR in different operational modes and the corresponding buttons to control them.





6-1 LIVE MODE OPERATIONS

Figure 6-1.1 shows a live mode 16CH screen. Table 6-1.1 describes live mode operations. Table 6-1.2 describes on-screen graphical icons.


















* Figure 6-1.1

Button	Description
LOCK	Enable/Disable keying on both front panel and remote control.
MUTE	Disable audio and buzzer.
REC	Start and stop recording.
PLAY	Start to play back.
T-SRH	Enter search menu.
1, 2....7,8,9	Select channel to be displayed in full screen mode.
+10	To select channels 10 to 16, press the '+10' button, then press button 0 to 6 to complete. Ex. to select channel 10, press '+10' followed by '0' button. To select channel 12, press '+10' then '2'.
ENTER	Switch between full screen and quad mode.

MENU	Display setup menu.
BK-UP/ESC	Start backing up to backup device.
	Switch to QUAD mode.
	Switch to 9CH display mode.
	Switch to 13-channel display mode. The channel displayed in the center will have a larger area than others. Press ▲ ▼ to move the cursor to a sub-screen, then press ◀ ▶ to switch channel. The title of the channel will be displayed in each sub-screen.
	Switch to 16Ch display mode.
STATUS	DVR status.
FREEZE	Freeze/Unfreeze live image.
ZOOM	Digital 2X, 4X, 8X zoom-in/out. In LIVE mode, press ZOOM button for 2X zoom-in, then each press of the PIP button will continue to the next level of zoom-in. Press ZOOM button to zoom out in reverse order. Use ◀ ▶▲▼ to select an object to zoom in on.
PIP	Display a picture in picture.
AUTO	Start auto sequencing of the channels in full screen mode.
PTZ	Control PTZ camera.

* Table 6-1.1

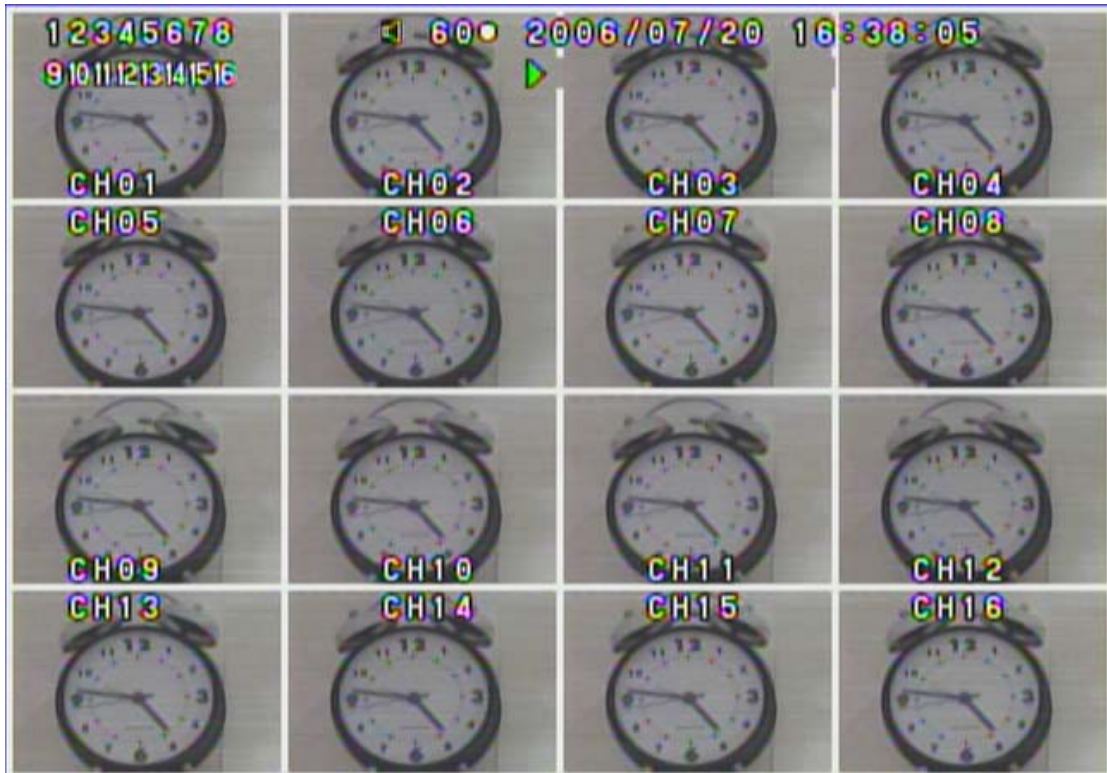
Item	Description
	Recording frame rate.
	Recording is on.
	Live audio enabled.
	Motion alarm detected on the channel.
	Sensor alarm detected on the channel.
	Video loss detected on the channel.
	USB device detected.
	User log-in over network.
	Timer recording info. Yellow means timer recording is on. Green means timer has been set but recording has not yet started. Gray means timer recording was stopped manually.
	Auto-sequencing in full screen is enabled.
	Zooming is enabled.
	Screen is frozen.
	Picture-in-picture is enabled. ▲ and ▼ can be used to change display on the background. ◀ and ▶ can be used to change display in PIP.

	Keys are locked.
	The channel is under PTZ control mode.

*Table 6-1.2

6-2 PLAYBACK MODE OPERATIONS

The Figure 6-2.1 shows a playback mode quad screen. Table 6-2.1 describes playback mode operations.



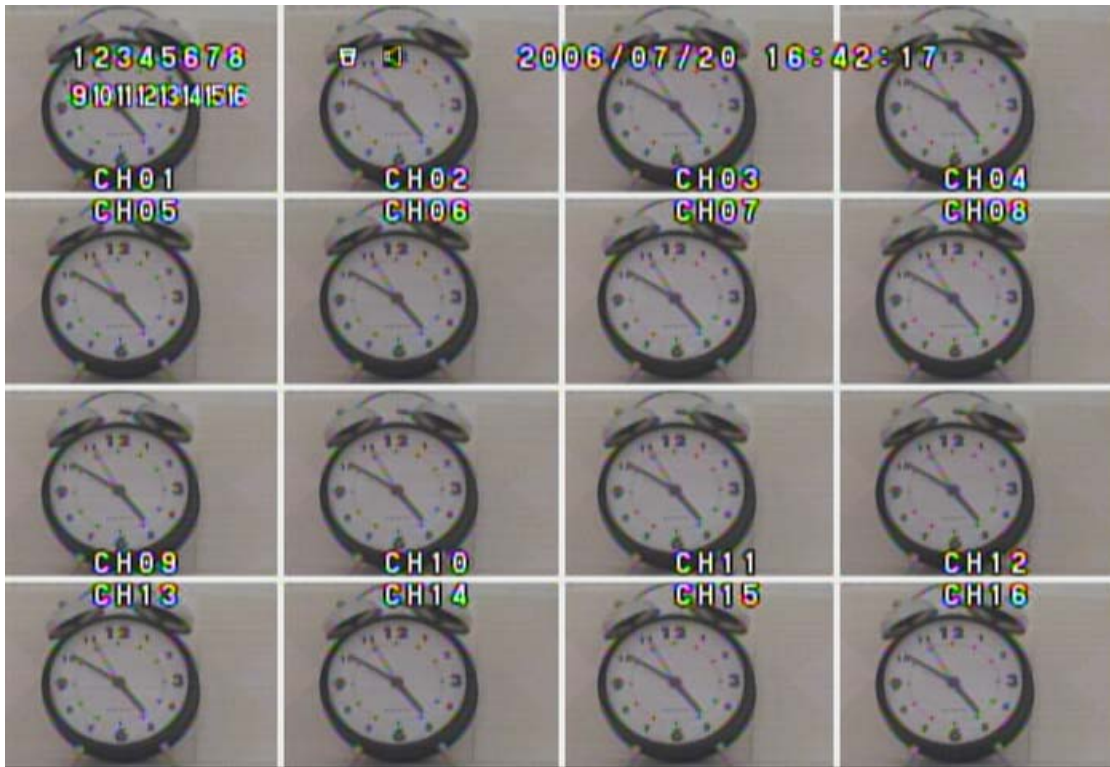
* Figure 6-2.1

Button	Description
ENTER/ MODE	Cycle Through single, quad, 9-channel and 16-channel display mode.
MENU / ■■	Pause playback
PLAY	Play at normal speed.
▲ / SLOW	Slow down playback speed. Each press slows the speed to half the previous until the slowest speed, 1/16X, is reached. Current playback speed is shown in the top right hand corner.
◀◀ / ◀	Rewind the footage at 4X, 8X, 32X and 128X speed. Current rewind speed is shown in the top right hand corner. When playback is paused, pressing ◀ will play back frame by frame.
▶▶ / ▶	Fast forward the footage at 4X, 8X, 32X and 128X speed.
▼ / ■	Stop playback.
SHUTTLE	Change playback speed. Rotate the shuttle to the left to advance the video or rotate the shuttle to the right to reverse the video.

*Table 6-2.1

6-3 PTZ MODE OPERATIONS

When the PTZ button is pressed, the DVR enters the PTZ mode. Figure 6-3.1 shows a PTZ mode quad screen with an icon on the upper left. Table 6-3.1 describes PTZ mode operation.



* Figure 6-3.1

Button	Description
▲ / SLOW	Rotate PTZ up.
▼ / ■	Rotate PTZ down.
◀◀ / ◀	Rotate PTZ left.
▶▶ / ▶	Rotate PTZ right.
ZOOM +	Zoom in.
ZOOM -	Zoom out.
FOCUS +	Focus near.
FOCUS -	Focus far.
IRIS +	Iris opens more.
IRIS -	Iris closes more.
TOUR	Cycle through preset positions.
AUTO	Line scan.
PRESET	<p>The PRESET button provides a quick and easy way to move the PTZ camera to a pre-determined viewing position. A total of 10 pre-determined positions can be entered.</p> <p>To move the PTZ to a preset position, press PRESET followed by a number key (1, 2, 3..., 9, 0). Ex. To move to the 5th preset position, press PRESET and '5'; to move to the 10th preset position press PRESET and '0'. A number will show in the upper left corner to indicate the position being worked on.</p>

	To modify a preset position, move the PTZ to the preset position first. Rotate the PTZ to the desired position, then press PRESET twice to save the new position.
--	---

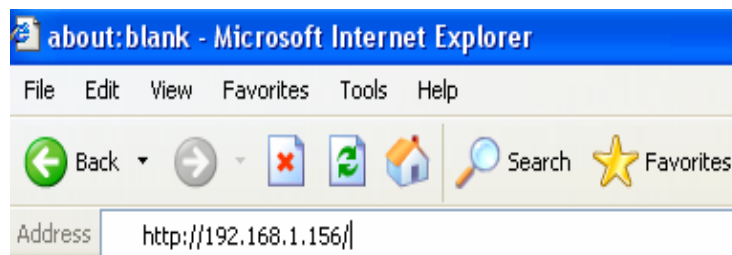
* **Table 6-3.1**

CHAPTER 7 NETWORK

The DVR can be accessed over the network through a connected PC running IE browser. The system administrator can manage and browse the DVR remotely while an ordinary user can only browse the DVR.

7-1 NETWORK SETUP

Please follow the steps below to set up the IE browser.



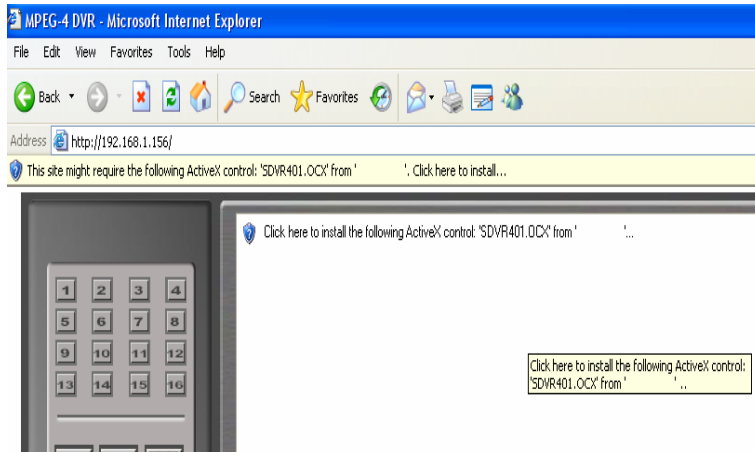
Step 1:
Enter DVR's IP number in IE address bar. (See Figure 7-1.1) If the remote connection port has been changed using DHCP SETUP (please refer to 4-7 NETWORKING SETUP) then the port number should be appended. For example, "http://192.168.1.156:### ##".

* Figure 7-1.1



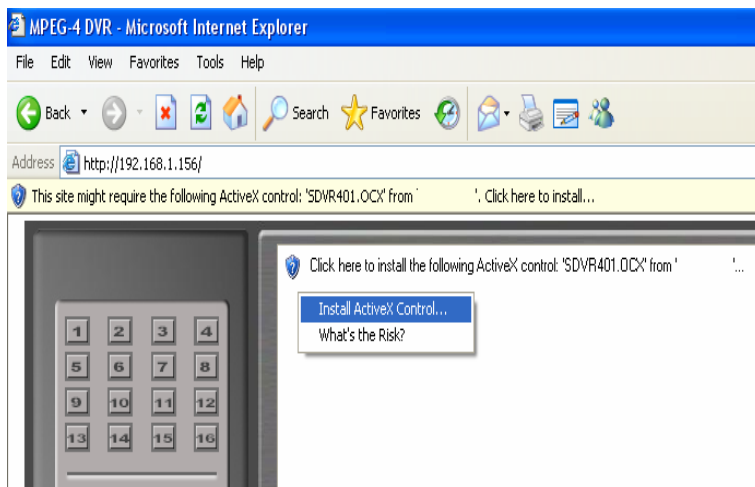
Step 2:
A dialogue box(**Figure 7-1.2**) will appear. Enter Administrator's Name "admin" and Password "123456". For the setup of other user accounts and password, please refer to **4-7.1(Account Setup)**.

* Figure 7-1.2



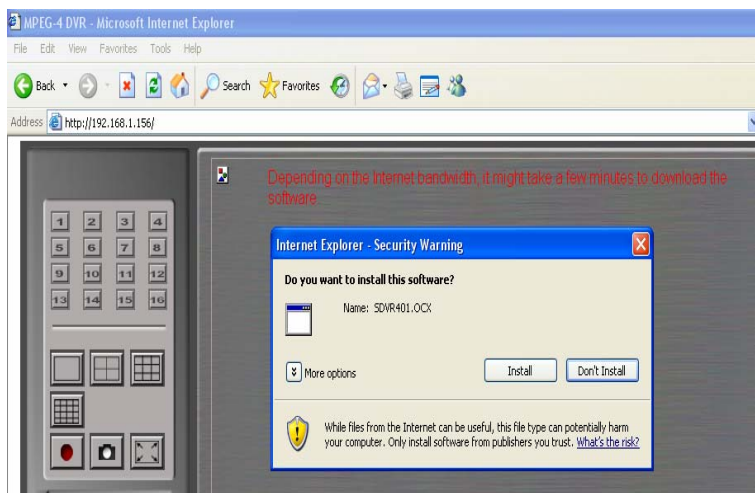
* Figure 7-1.3

Step 3:
 A primary screen will appear. The system will request for ActiveX Control installation. (See Figure 7-1.3)



* Figure 7-1.4

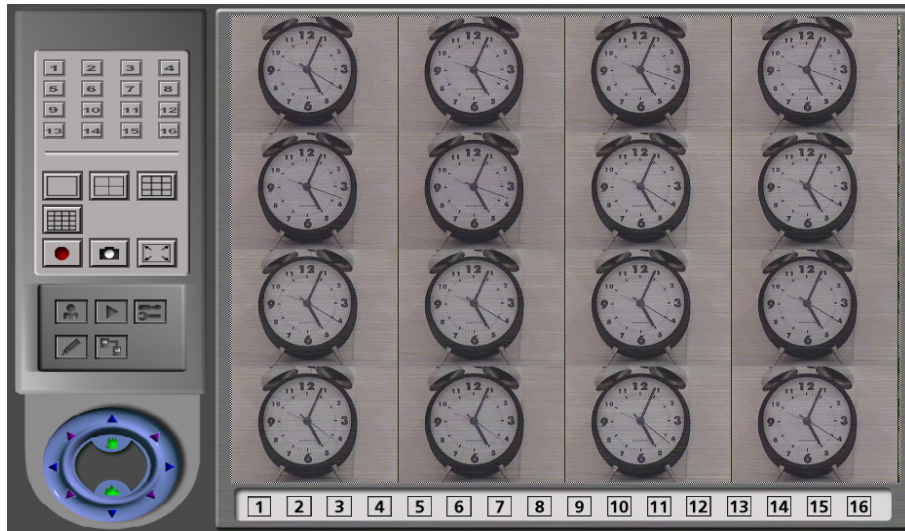
Step 4:
 Click ActiveX Control installation. (See Figure 7-1.4)



* Figure 7-1.5


Step 5:
 A dialogue box will appear and request for SDVR401.OCX software installation. Select "install" to start installation. The installation speed is according to the user's bandwidth. It might take a few minutes to finish.

After a successful login, user will see a screen with a display area on the right, a control panel on the left, and a status bar at the bottom, as shown in Figure 7-1.8.









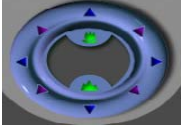



* Figure 7-1.8

7-2 LIVE MODE

While accessing the DVR remotely, use the control panel on the left hand side to control the DVR. Pressing  will display the live mode control panel as shown in figure 7-2.1. Clicking on the panel will issue commands to the remote DVR. Table 7-2.1 describes the live mode operations.



* Figure 7-2.1

Button	Description
	Selecting Channel 1, 2, 3, 4.
	Magnify selected channel display to the entire display area on the right hand side of the screen.
	Switch to quad mode.
	Start/Stop recording of live video to local storage.
	Take a flash image. A dialogue will pop up to confirm and solicit a file path to store the image in.
	Switch to full screen display.
	Press  to select a channel for operating PTZ. The DVR controls the PTZ camera to capture video image in 8 directions. If PTZ camera cannot be controlled as preferred, check ID setup of PTZ first.
	Zoom in on PTZ camera captured image.
	Zoom out of PTZ camera captured image.

*Table 7-2.1

Figure 7-2.2 shows the status bar of DVR in the IE browser. Initially, the channel numbers are displayed. If an event has been triggered an icon will be shown instead of the channel number, as shown in Figure 7-2.3. Table 7-2.2 describes the meaning of the icons.



* Figure 7-2.2



* Figure 7-2.3

Item	Description
	Sensor alarm
	Motion alarm
	Video loss alarm

* Table 7-2.2

7-3 PLAYBACK MODE

Pressing on the control panel will display the playback mode control panel as shown in figure 7-3.1. Clicking on the panel will issue commands to the remote DVR. Table 7-3.1 describes the playback mode operations.




*Figure 7-3.1

Button	Description
	Select a Channel to play back.
	Open a backed up file to play back. The data to be played back must already reside on local storage. A dialogue box will solicit a path to the file.
	Start to play back.
	Rewind in playback mode.
	Fast forward in playback mode.
	Pause the playback.
	Stop the playback.
	Take a flash image.





* Table 7-3.1

7-4 REMOTE SETUP MODE

Press  to display the Remote Setup control panel as shown in figure 7-4.1. Table 7-4.1 and 7-4.2 describe the operations.



*Figure 7-4.1


Button	Description
	Start remote DVR setup. Please see Chapter 4 for operations. When finished press APPLY button to save the changes.
	Start DVR record setup remotely. Refer to Chapter 4 for details. When finished press APPLY button to save the changes.
	Start DVR event setup remotely. Refer to Chapter 4 for details. When finished press APPLY button to save the changes.
	Start local setup. See Table 7-4.2 for details. When finished press APPLY button to save the changes.

* Table 7-4.1

Local Setup	Description
OSD DISPLAY	Enable/Disable OSD display.
OSD SIZE	Select OSD display size from 11 to 36.
OSD COLOR	Select OSD from Red, Green, Blue, Yellow, Purple and Gray.
SAVE PATH	Set a path to record downloaded files from DVR.

* Table 7-4.2


7-5 EVENT LOG

Press  to display the DVR event log on the right hand side of the screen as shown in figure 7-5.1. The "EVENT" field shows the type of event recorded. The "TIME" field is the date and time the event occurred. The "INFO" field shows event dependent information; see Chapter 5-2.1 for more details. The "NOTE" field shows an IP address for REMOTEIN and REMOTEOUT events, or "REC" if there is recorded data for an event on a channel. Clicking "REC" will start playing the recording for that event.

EVENT	TIME	INFO	NOTE
REMOTEIN	2006/02/23 22:31:03	ADMIN	192.168.1.151
REMOTEOUT	2006/02/23 22:29:02	ADMIN	192.168.1.151
REMOTEIN	2006/02/23 22:28:36	ADMIN	192.168.1.151
POWER ON	2006/02/23 22:27:52		
ALARM	2006/02/23 22:27:16	CH1	REC
MOTION	2006/02/23 22:27:08	CH2	REC
VLOSS	2006/02/23 22:27:00	CH1	
VLOSS	2006/02/23 22:26:57	CH1	
VLOSS	2006/02/23 22:26:53	CH1	
VLOSS	2006/02/23 22:26:51	CH1	
VLOSS	2006/02/23 22:26:45	CH1	
VLOSS	2006/02/23 22:26:41	CH1	
VLOSS	2006/02/23 22:26:39	CH1	
VLOSS	2006/02/23 22:26:32	CH1	
VLOSS	2006/02/23 22:26:27	CH1	
VLOSS	2006/02/23 22:26:20	CH1	
VLOSS	2006/02/23 22:26:16	CH1	
VLOSS	2006/02/23 22:26:12	CH1	
VLOSS	2006/02/23 22:26:08	CH1	
VLOSS	2006/02/23 22:26:01	CH1	
VLOSS	2006/02/23 22:25:57	CH1	
VLOSS	2006/02/23 22:25:51	CH1	
VLOSS	2006/02/23 22:25:42	CH1	
VLOSS	2006/02/23 22:25:37	CH1	
VLOSS	2006/02/23 22:25:30	CH1	
VLOSS	2006/02/23 22:25:27	CH1	

* Figure 7-5.1

7-6 DOWNLOADING

Pressing  displays the DOWNLOAD screen on the right side as shown in figure 7-6.1.

RANGE OF DVR RECORD DATA

DATA START TIME	2006/08/14 20:45:21
DATA END TIME	2006/08/15 21:47:13

DOWNLOAD DATA TIME

START	2006 / 08 / 15 21 : 37 : 13	GET FILE SIZE
END	2006 / 08 / 15 21 : 47 : 13	

DOWNLOAD CHANNEL

<input checked="" type="checkbox"/> CH1	
<input checked="" type="checkbox"/> CH2	
<input checked="" type="checkbox"/> CH3	
<input checked="" type="checkbox"/> CH4	
<input checked="" type="checkbox"/> CH5	
<input checked="" type="checkbox"/> CH6	
<input checked="" type="checkbox"/> CH7	

* Figure 7-6.1

Figure 7-6.2 shows the start and end time of recorded data on the DVR's HDD.

RANGE OF DVR RECORD DATA	
DATA START TIME	2006/02/22 18:09:51
DATA END TIME	2006/02/24 19:45:18

* Figure 7-6.2

Figure 7-6.3 shows a dialogue that can be used to enter a range of time for the recorded data to be downloaded. The download time range should to be within the DVR's "DATA START TIME" and "DATA END TIME"; otherwise, the user will not be able to download. Pressing the "GET FILE SIZE" button will show size of recorded data for each channel in the specified time range, as shown in figure 7-6.4.

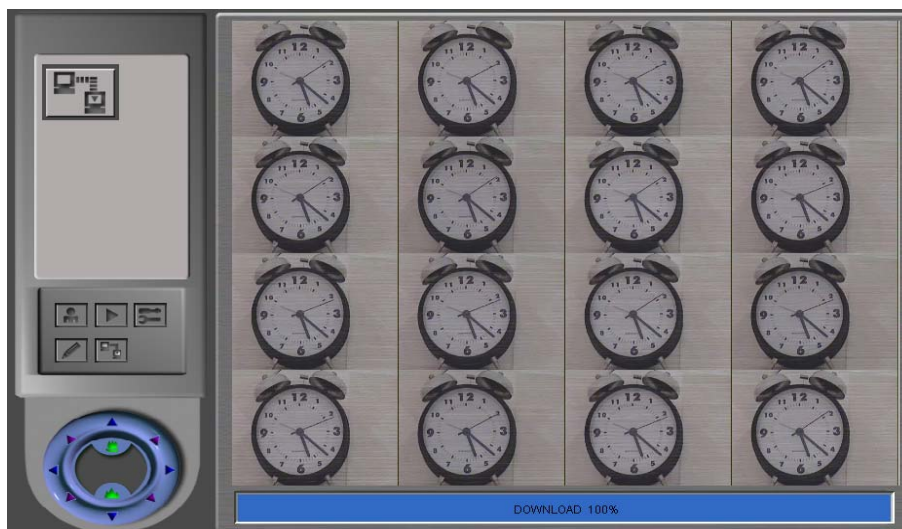
DOWNLOAD DATA TIME					
START	2006	/	02	/	24 19 : 35 : 18
END	2006	/	02	/	24 19 : 45 : 18

* Figure 7-6.3

A "DOWNLOAD" button will be displayed in the bottom right hand corner of the screen. On this dialogue, user can select which channels to download and press the "DOWNLOAD" button to start downloading. The screen will switch to download mode display as shown in figure 7-6.5.

<input checked="" type="checkbox"/> CH3	376 Kb
<input checked="" type="checkbox"/> CH4	369 Kb
<input checked="" type="checkbox"/> CH5	375 Kb
<input checked="" type="checkbox"/> CH6	369 Kb
<input checked="" type="checkbox"/> CH7	366 Kb
<input checked="" type="checkbox"/> CH8	362 Kb
<input checked="" type="checkbox"/> CH9	368 Kb
<input checked="" type="checkbox"/> CH10	374 Kb
<input checked="" type="checkbox"/> CH11	370 Kb
<input checked="" type="checkbox"/> CH12	374 Kb
<input checked="" type="checkbox"/> CH13	374 Kb
<input checked="" type="checkbox"/> CH14	372 Kb
<input checked="" type="checkbox"/> CH15	372 Kb
<input checked="" type="checkbox"/> CH16	378 Kb

* Figure 7-6.4



* Figure 7-6.5

CHAPTER 8 SPECIFICATIONS

1. VIDEO		
Input Level		1.0 Vp-p±10% Composite, 75Ω Balanced
Display Speed	NTSC	480 fps(16CH), 240fps(8CH)
	PAL	400 fps (16CH), 200fps(8CH)
Display Resolution	NTSC	720(H) X 480(V)
	PAL	720(H) X 576(V)
Monitor Output		1.0Vp-p Composite, 75Ω Balanced
2. RECORDING		
Compression Method		MPEG4
Recording speed		Refer to Table 8-1
Recording Resolution	NTSC	720X240, 360X240
	PAL	720X288, 360X288
Quality	User Define	Low/ Normal/ High/ Highest
Scheduling		Available per 10 minutes, 30 minutes, 60 minutes
Mode		Manual/ Event(Motion detection, Sensor)/ Schedule
Method		By resolution, fps & quality
Water Marking		Support
3. HDD		
Capacity	Internal Storage	2 HDDs
	External Storage	40 HDDs
Type		SATA compatible
External Bay Interface		IEEE 1394
4. ALARM		
Sensor Input		16CH
Alarm Output		1 Relay out
Motion Detection		Available per each camera/ Multi-detection level
5. CONNECTORS		
Video Input		BNC 16ports
Loop output		BNC 16ports
Monitor Output		BNC 1 port VGA 1 port DVI 1 port
Audio Input		RCA 4 CH
Audio Output		RCA 2 CH
USB 2.0		USB memory stick
Remote		Standard
External I/O		1 RS-485, 16CH Alarm input, 1 Relay output
Ethernet		1 RJ45 connector, 10/100 Mbps
6. ELECTRICAL		
Power Source		DC 12V / 5A
7. ENVIRONMENTAL		
Operating Temperature		5℃ ~ + 40℃
Humidity		Less than 90%

8. PHYSICAL		
Dimension		430(W) x 55(H) x 293(D) mm
Weight		2.5kg (3.5kg including 1 HDD and CD-RW)
9. BACKUP		
Backup	USB Stick	Video data
	CD-RW/DVD±RW	Video data
	Network	Video data
10. SEARCHING & PLAYBACK		
Searching Method		Event/ Segment/ Time
11. MULTI-REMOTE SURVEILLANCE		
Monitoring Environment		Web/ Client software
Max. client		Supporting multi-client (5 clients accessible)
12. Others		
OS		Embedded Linux
Multi Task	Triplex	Record, playback and transfer
Control Device		Front keys/ IR type remote controller/ Network viewer/ Remote control Matrix
PC Viewer		Direct viewing of DVR's HDD on PC
Number of event list/ Log file list		1024/ 1024

Recording Speed	NTSC	360 x 240	MAX. 120fps/ (8/16)CH
		720 x 240	MAX. 60fps/ (8/16)CH
	PAL	360 x 288	MAX. 100fps/(8/16)CH
		720 x 288	MAX. 50fps/ (8/16)CH
Compression Method		MPEG4	

* Table 8-1

APPENDIX I MOBILE APPLICATION INSTALLATION AND USAGE GUIDE

I-1 MOBILE APPLICATION INSTALLATION

To activate mobile service so that mobile devices such as cellular phones and PDA's can log onto the DVR and view live images, the following procedure should be followed.

STEP 1: The mobile service function of the DVR must be turned on. Please refer to 4-7.2.3 MOBILE SETUP. If the port number needs to be changed make sure the router is updated accordingly and the mobile phone users must append the new port number when entering DVR's IP address. Please refer to 4-7 NETWORKING SETUP.

STEP 2: Your mobile service provider must have *GPRS service*, and the phone handset needs to support *GPRS or 3G protocol and Java CLDC1.0/MIDP 2.0 runtime environment*.

STEP 3: Each mobile device must install a software application called "DvrSuite." The software is usually downloaded from the vendor's website. Alternatively, it can be downloaded through Bluetooth connection from a PC where there is a copy of the software. Please ask your vendor for the website address or a copy of the software.



STEP 4: After "DvrSuite" is downloaded to the mobile device, its name will show on the Java application menu. On some devices, it will install automatically; otherwise, select it to install.



I-2 MOBILE APPLICATION COMMANDS

To run the mobile application, select DvrSuite from the Java application menu. Selecting the menu button in the lower right corner will bring up a list of commands. These commands enable you to either fine tune the image you are viewing or change how you view it. Following is a description of these commands.

I-2.1 ADDING A DVR

To view live images from a DVR, the login information for that DVR must be stored on the mobile device first. Use the "ADD" command to do this.

Edit Data

IP:
60.250.134.116

PORT:
80

ACCOUNT:
admin

PASSWORD:

Back ↓ OK

In "IP" field, enter the IP address of the DVR.

In "PORT" field, either use the default port number "80" or enter the port number consistent with the setup information on the DVR.

In "ACCOUNT" and "PASSWORD" fields, enter the mobile user's login information as previously set up on the DVR.

I-2.2 LOGGING ONTO THE DVR

Use the login command to log onto a known DVR and view live images. If multiple DVR's have been added to the mobile device they will all be listed, select one to log onto.

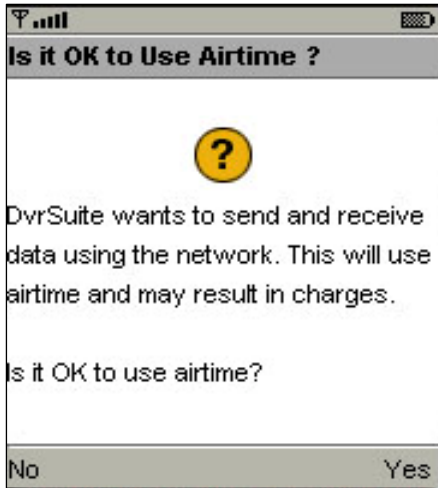
Existing Record

1: admin
SizeAvailable : 999869

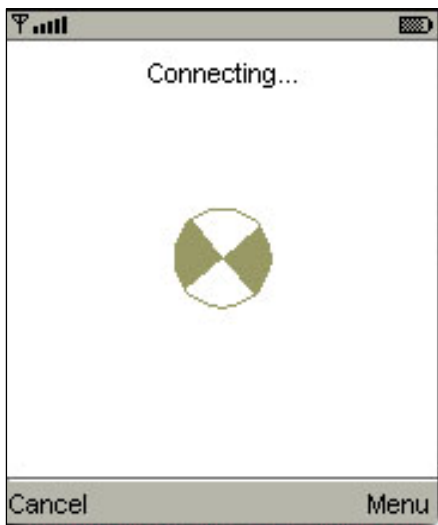
Menu

1 Login
2 Add
3 Modify
4 Delete

Exit Menu



Some mobile devices ask for permission before calling out. Select “Yes” to continue the connection process. Note that mobile device vendors have different requirements for their services and these messages may vary.



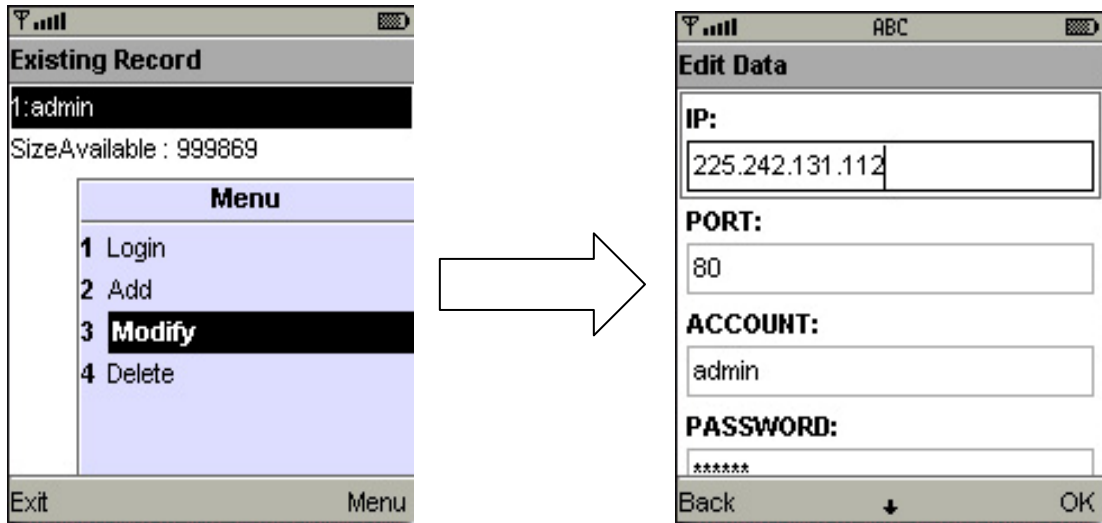
GPRS or 3G connection may take a few minutes to complete.



Live image will start showing after a successful connection.

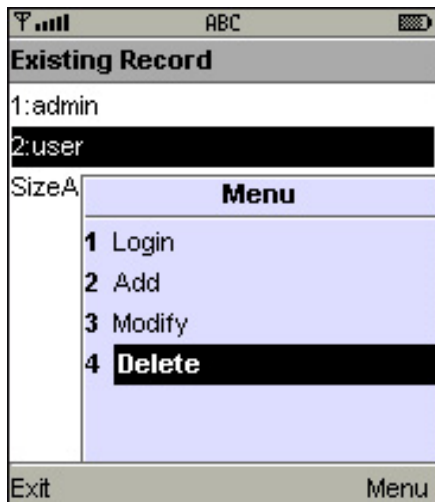
I-2.3 MODIFYING A DVR'S LOGIN INFORMATION

A DVR's login information may change over time. Use the "MODIFY" command to change it. The dialogue is identical to that of the ADD command; simply enter the new login information.



I-2.4 DELETING A DVR

When a DVR is no longer needed for viewing, use the "DELETE" command to remove it from the mobile device. Select a DVR from a list and it will be deleted.



I-3 LIVE VIEWING OPERATIONS

After a successful connection, live images will start to flow through to the mobile device. Selecting "Menu" in the lower right corner will bring up a set of commands/operations. These commands can be used to fine tune how you view the images. Following is a description of them.

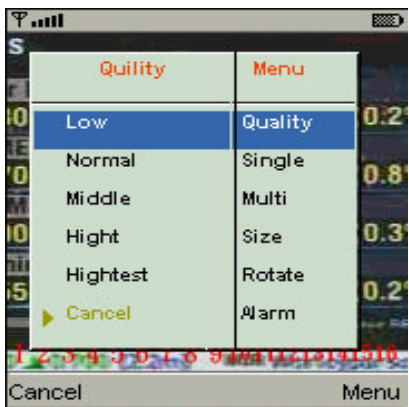
I-3.1 SCROLLING THE IMAGE

If the image is bigger than the screen of the mobile device use the arrow buttons to scroll it in different directions to view the entire image. Note that different devices may have different panel design; these buttons may not exist. Four number keys can be used in place of the arrow buttons. Key "2" can be used for "up" scrolling, "4" for left, "8" for down, and "6" for right.

I-3.2 QUALITY OF IMAGE



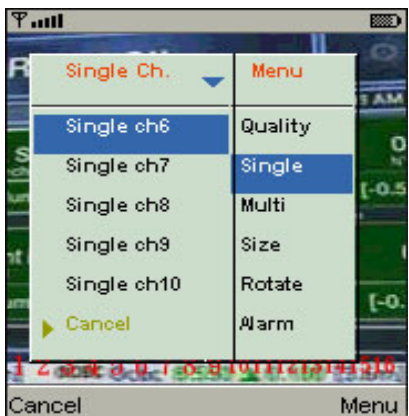
On the menu, select the “Quality” command will bring up a “Quality” menu next to it.



There are five levels of quality of image ranging from “Low” to “Highest.” Higher quality of image is coupled with lower frame rate and vice versa. Change of quality takes effect immediately after the selection.

I-3.3 SINGLE AND MULTI MODES OF VIEWING

Live images can be viewed one channel or four channels at a time.



Selecting “Single” command will bring up a “Single Channels” menu. All channels of the DVR are listed and can be cycled through. Selecting a channel will allow only the images from that channel to come through to the mobile device.

Selecting “Multi” command will bring up a “Multiple Channels” menu. Multi-Set viewing will show images in a quad-screen fashion, i.e., the screen is split into four parts, each showing a channel. Therefore, a 16-channel DVR will have four groups of channels, from 1 to 4, each containing four channels sequentially.



I-3.4 SIZE OF THE IMAGE

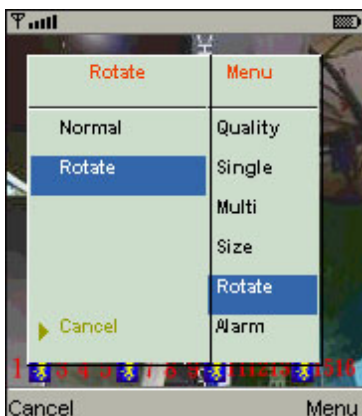
Mobile devices come with different screen sizes which may be too larger or too small for the images.



Selecting “Size” command will bring up a “Size” menu. Selecting “Original” will show the images in the original size that came through the network. “Fit Screen” will adjust the size of image to fit the screen so that the entire image can be viewed in the screen without having to scroll around.

I-3.5 ROTATING THE IMAGE




If the aspect ratio of the mobile device’s screen is long vertically there will be some wasted space above and under the image. Besides, the image would look less appealing. Rotating it 90 degrees will yield a better viewing experience.



Selecting “Rotate” will bring up a “Rotate” menu. The “Rotate” option will rotate the image 90 degrees clockwise. The “Normal” option will return the image to the normal/original angle.

I-3.6 VIEWING ALARM ON CHANNELS

It is useful to be alerted if an alarm has occurred on the DVR. There are three types of alarm a DVR can generate: Detected Motion, Sensor and Video Loss. For mobile users to see different types of alarms, three visual cues are defined as follows.

-  Motion Detected.
-  Sensor Triggered.
-  Video Lost.



Selecting “Alarm” will bring up an “Alarm” menu. On it, visual alarms option can be turned on or off. When Alarm is turned on a row of visual alarms will be displayed at the bottom of the screen, each one corresponding to one channel sequentially.