16 CH MPEG4 DVR
U S E R   M A N U A L

ALARM (( ))
PLAY ►
HDD
REC ●

1 2 3 4 5 6 7 8
9 10 11 12 13 14 15 16
●REC ■STOP ►PLAY IIPAUSE SPLIT □SEQ SEARCH MENU EXIT/INFO ENTER/DISP

◄◄/I◄ I►/►►
▲
▼

Digital Video Recorder

C E FC

Contents

1. SAFETY PRECAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK. DO NOT OPEN!
CAUTION :
TO REDUCE THE RISK OF ELECTRICAL SHOCK, DO NOT OPEN COVERS (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

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. 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.

The power cord is the main power connection. Therefore, constantly plug and unplug of the power cord might result in malfunction of the product.

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 expose to extreme temperatures.
Use the product at temperatures within 5 ~ 40 .
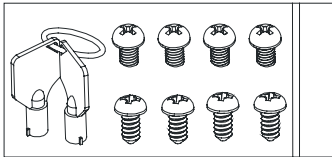
2. FEATURES

- 16-Channel video recording and 1-Channel audio recording.
- 1-Video outputs to monitor, 1-video output to SPOT, and 2-audio outputs.
- Auto NTSC/ PAL video format detection.
- Auto video loss detection and alarm alert.
- 16-Alarm signal input and 1-Relay output (auto alarm recording).
- High-capacity removable hard disk (up to 500 GB capacity), digital image storage replaces tape-based mechanical systems.
- Auto overwrite or alarm notification when hard disk is full, reduces manpower management.
- Power-loss memory function, designed to reboot and continue recording.
- MPEG4 videos and G.726 audio compression format.
- Maximum recording rate is 60fps@352x240 (NTSC) or 50pfs@352x288 (PAL).
- Maximum recording rate is 30fps@704x240 (NTSC) or 25pfs@704x288 (PAL).
- Adjustable recording quality and frame rates for recording.
- 4 Types of record mode: Manual, Schedule Alarm, Schedule Motion Detection and Schedule Continue.
- Monitoring or recording can be shown by full or split screen display, and auto sequential switching.
- Quick efficient playback search by Date & Time.
- Recorded images backup is applicable by Compact Flash card (PC supports ASF file playback).
- Includes RJ-45 interface for network connection (optional).
- Firmware update by Compact Flash card.

3. PACKING LIST

Check and make sure all the items shown below are included in your product package. If something is missing, contact your dealer as soon as possible.

No.	Item	Picture	Quantity
1	DVR (Digital Video Recorder)		1
2	Power Adaptor and Power Cord Input: AC 100~240V Output: DC 12V/4.2A		1
3	Manual		1
4	Hard Drive Cartridge Key Lock (optional) And Fixed Screws		1

4. NAME and FUNCTION of EACH PART

4.1 FRONT PANEL BUTTONS and CONTROLS
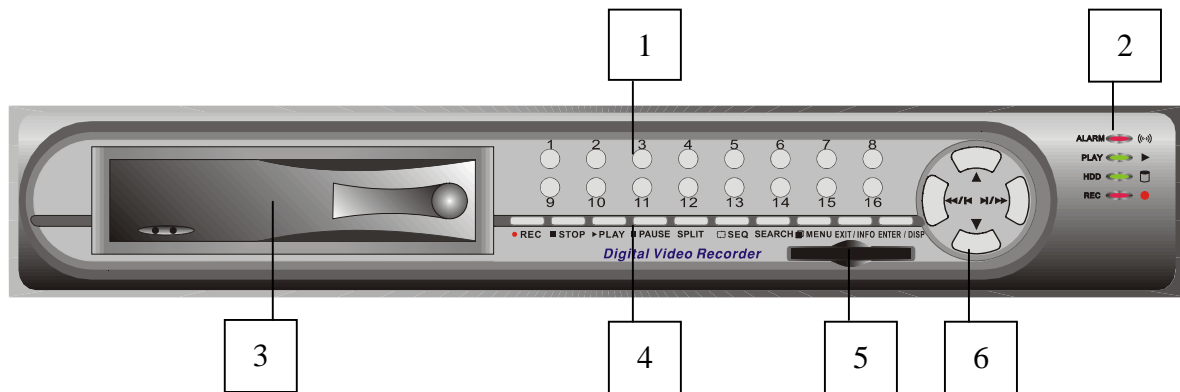
1. Camera Select (1-16 Video Channel Button)
2. LED Indicator (Alarm/ Playback/ HDD/ Record).
3. Removable Cartridge Casing: 3.5" IDE HDD, Max.: 500 GB (optional).
4. Function Button:
   - REC: Manual Record.
   - STOP: Stop Button (Manual Record/ Play).
   - PLAY: Play Button.
   - PAUSE: Pause Button.
   - SPLIT: Full Screen/ Quad Screen/ 9-Split Screen/ 16-Split Screen (switching channels).
   - SEQ: Auto Sequencing Button.
   - SEARCH: Quick Search on Data Recorded.
   - MENU: Menu Setup Button.
   - EXIT/ INFO: Return to Previous Menu/ System Information Display Switch.
   - ENTER/ DISP: Confirm Button/ Message Display Switch.
5. CF Card Slot: Insert the CF card to backup the recording material and to upgrade the system software etc.
6. Direction Button:
   - LEFT: Decreases the Setting Value under the Menu/ Step Rewind Playback/ Fast Rewind Playback (speed adjustable).
   - RIGHT: Increases the Setting Value under the Menu/ Step Forward Playback/ Fast Forward Playback (speed adjustable).
   - UP: Moves the Cursor Upward/ Forward Switching Channel Display.
   - DOWN: Moves the Cursor Downward/ Rewind Switching Channel Display.

4.2 REAR PANEL BUTTONS and CONTROLS
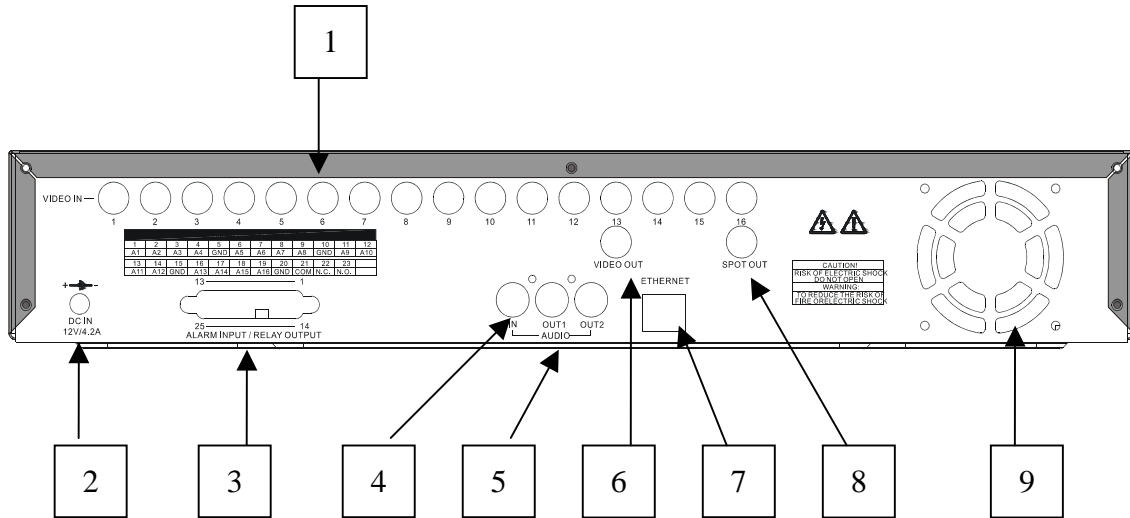
    1. Video Input: 16-Channel BNC Input Terminal

    2. DC Power Input: 12V/4.2A

    3. Alarm Input/ Relay Output: DB25 Female Terminal (Please refer to appendix)

    4. Audio Input: 1-Channel RCA Input Terminal

    5. Speaker Output: 2-Channel BNC Output Terminal

    6. Main Monitor Output: 1-Channel BNC Output Terminal

    7. Network Connection: 1-Ethernet Connection Terminal (optional)

    8. SPOT Monitor Output: 1-Channel BNC Output Terminal

    9. Fan

5. INSTALLATION
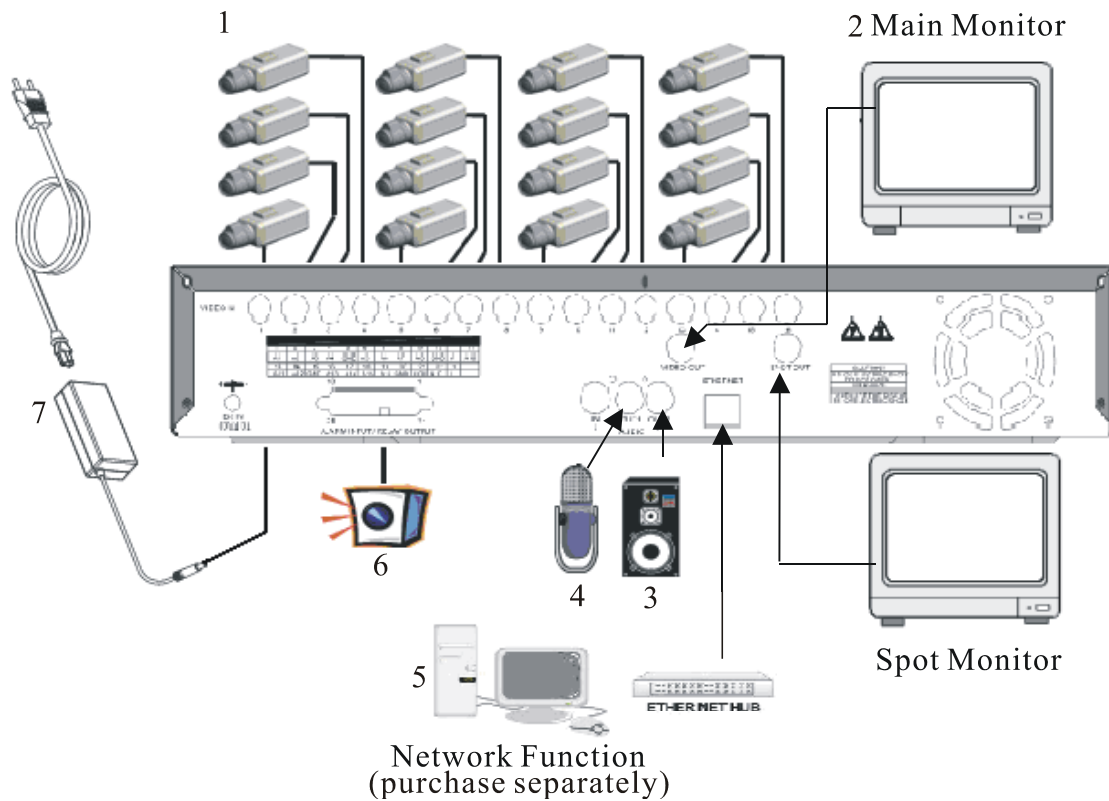
1. Connect the camera output (1 - 16) to video input (VIDEO IN) of the DVR.
2. Connect the monitor to the main monitor output (VIDEO OUT) of the DVR.
3. Connect the speaker to the speaker output (AUDIO OUT) of the DVR.
4. Connect the microphone output (1) to audio input (AUDIO IN) of the DVR.
5. Network function (purchase separately) connection.
6. Alarm Input/ Relay output:
   16-Channel alarm input to DVR (ALARM1~16 and GND), or use relay output signal from the DVR (N.C./ COM or N.O./ COM).
7. Use the supplied power adapter to connect this DVR to the power outlet.

⚠ Note before operation

1. The DVR does not support HDD hot swap function. To prevent damage, please enter main menu to stop all HDD activities, then power-off the device before replacing the hard disk.
2. When the hard disk information icon turns to red, the device is notifying the user to replace a new hard disk.
3. After power-on, system auto detects the video system (NTSC/ PAL) of the first camera connected. When no camera has been connected, the video system will be the same as previous setup.
4. After power-on the system auto enters 16-split screen mode, and previously setup schedule recording mode.

6. OPERATION DESCRIPTIONS

6.1 LIVE MODE
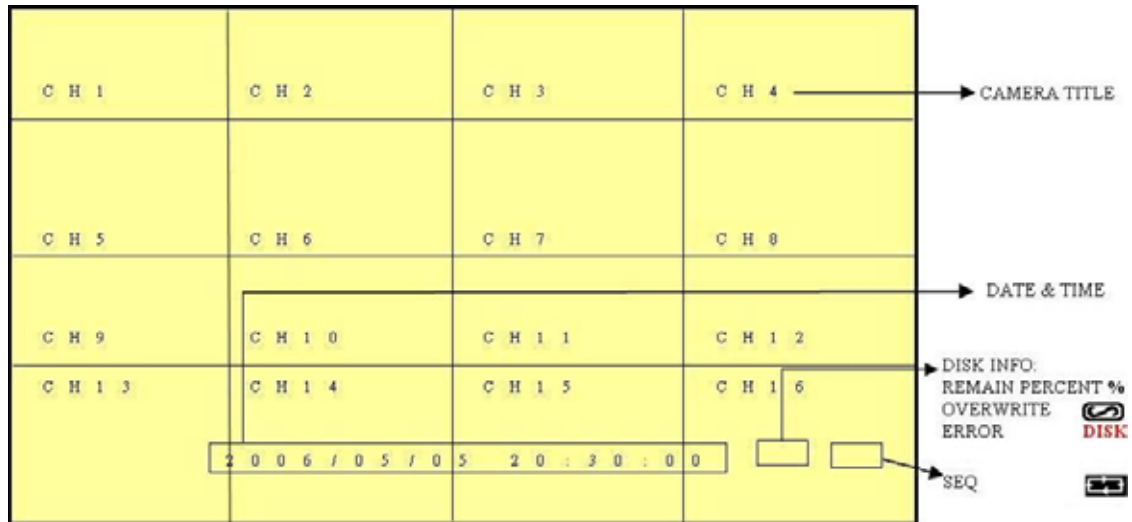
1. Press "DISP" button to switch "ON/ OFF" channel, date, and time message display.
2. Press "INFO" to switch "ON/ OFF" system information display.
3. When the hard disk information icon turns to red, the device is notifying the user to replace a new hard disk.
4. Press "CH" button to monitor full screen images (CH1 – CH16).
5. Press "SPLIT" button to switch to "Full Screen/ Quad Screen/ 9-Split Screen/ 16-Split Screen" display. Under Full Screen/ Quad Screen/ 9-Split Screen, press "UP/ DOWN" button to switch rewind/ forward in the form of the current split screen display.
6. Press "SEQ" button to switch "ON/ OFF" sequencing order display. Full screen channel auto sequence will skip the channel with video loss event.
7. When video loss occurs, video loss message will be shown on the screen.
8. During alarm triggered event the corresponding channel name will be changed to color red (same result happens under Playback or Record mode).
9. Letter "M" is shown on the display of the channel with the motion triggered event.
10. Connect the audio output to speaker input to enable live audio.
11. Live monitoring operations has not affect on recording functions.
12. When an alarm event occurs, SPOT monitor will immediately switch to the video image of the channel that has been triggered, and until the duration time's up, it will return to the previous channel switching status.
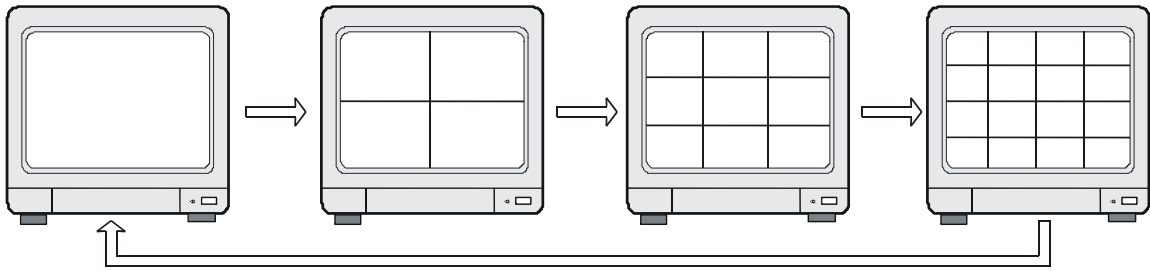
Full Display and Quad Display Switching Order
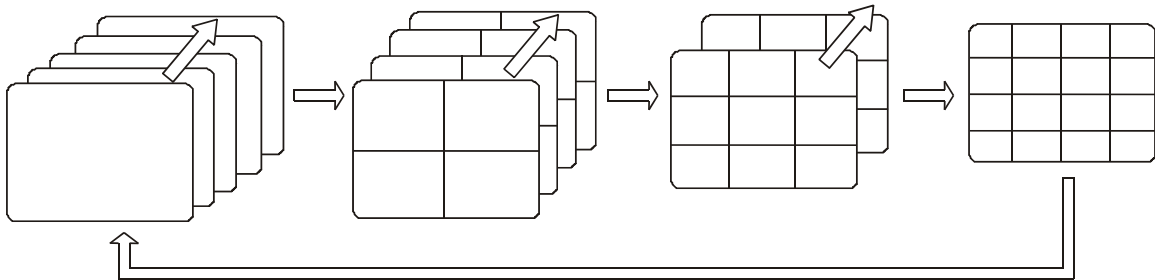
Full Display and Quad Display Sequencing Order


```
    SYSTEM  INFORMATION
SYSTEM  VERSION              : 1 . 0 0 B 4 3 2 5 2 9
IMAGE  QUALITY               : M E D I U N
MANUAL                IPS    : 6 0
CONTINUE              IPS    : 6 0
MOTION  DETECTION  IPS       : 6 0
ALARM                IPS    : 6 0
VIDEO  SIZE                  : 3 5 2   X   2 4 0
AUDIO                        : O N
DISK  FULL                   : O V E R W R I T E
HDD  TOTAL   CAPACITY        :          0 M B
HDD  REMAIN  CAPACITY        :          0 M B
S . M . A . R . T .  STATUS  : N O R M A L
```

System Information

6.2 RECORD MODE

1. Live monitoring is operable during recording.
2. When the hard disk information icon turns to red, the device is notifying the user to replace a new hard disk.
3. Manual Record: Under monitoring mode, press "REC" button to enable all camera recordings, and "STOP" button to stop manual recording.
4. When schedule recording (ALARM/ MOTION DETECTION/ CONTINUE RECORD) has been activated. Recording can not be stopped by pressing "STOP" button, it is ineffective during schedule record time.
5. When the main password or the playback password is switched off, or the password has been copied onto the CF card, and the CF card has been inserted. Press PLAY or SEARCH button, system auto enters the playback or search mode, and the will not request a password to be entered.
6. When the main password is switched off, or the password has been copied onto the CF card, and the CF card has been inserted. Press MENU button, system auto enters main menu, and will not request a password to be entered.
7. After entering playback mode or menu setup, when correct password has been entered, all recording activities will stop. When exiting playback mode or menu setup, once the schedule recording has been switched on, schedule recording will auto start-up.
8. Power-on after power-loss, the system auto returns to the recording mode before power-loss.

6.3 PLAYBACK MODE
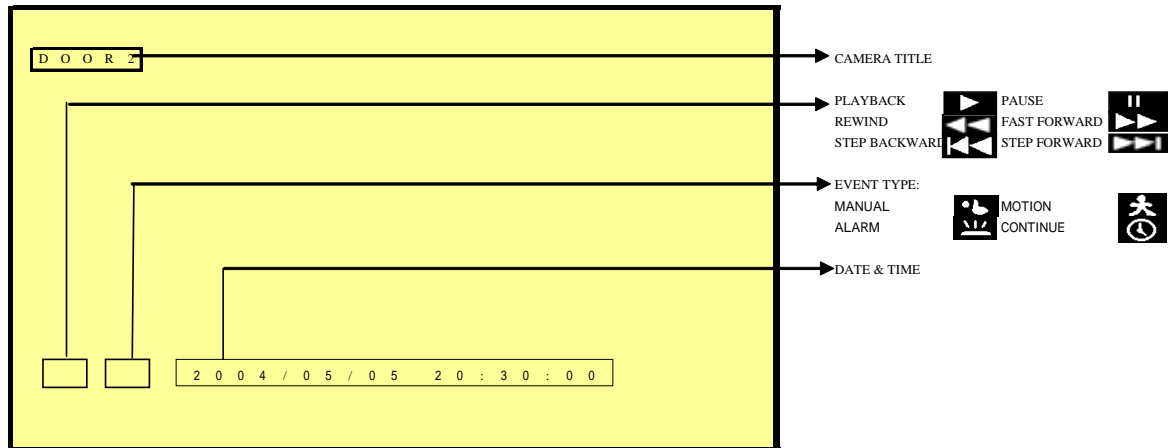
1. Press PLAY button, when playback password is setup to "ON", system will request to enter a password, when correct password has been entered, all recording activities will stop.
2. When the main password or the playback password is switched off, or the password has been copied onto the CF card, and the CF card has been inserted. Press PLAY button, system auto enters the playback mode, and the password will not be requested again by the system.
3. Press "DISP" button to switch "ON/ OFF" channel, date, and time message display.
4. Press "INFO" to switch "ON/ OFF" system information display.
5. Press "CH" button to playback full screen images (CH1 – CH16).
6. Press "SPLIT" button to switch to "Full Screen/ Quad Screen/ 9-Split Screen/ 16-Split Screen" display. Under Full Screen/ Quad Screen/ 9-Split Screen, press "UP/ DOWN" button to switch rewind/ forward in the form of the current split screen display.
7. SEQ function is inapplicable during playback.
8. Press "PAUSE" button under normal playback to pause.
9. During pause status, press "LEFT" button to step rewind playback, and "RIGHT" button to step forward playback.
10. During normal playback, press "LEFT" button to adjust the rewind playback speed (x32/ x64), and "RIGHT" button to adjust forward playback speed (x2/ x4/ x8/ x16/ x32/ x64). Press "PLAY" button to return to normal speed and "PAUSE" button to pause.
11. Connect the audio output to the speaker input to simultaneously enable video and audio playback.
12. Press "STOP" button to stop playback, and return to live monitoring mode or schedule record mode.

6.4 SEARCH

1. Press SEARCH button, when playback password is setup to"ON", system will request to enter a password, when correct password has been entered, all recording activities will stop.

2. When the main password or the playback password is switched off, or the password has been copied onto the CF card, and the CF card has been inserted. Press SEARCH button, system auto enters the search mode, and will not request a password to be entered.

3. Press SEARCH button for quick search function by date and time, press ENTER or PLAY button to enter 16-split screen display.
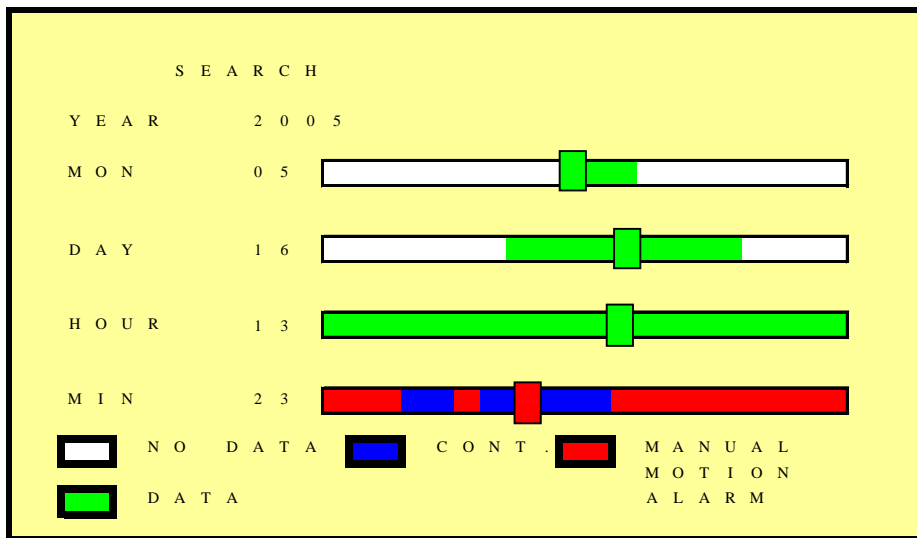
4. YEAR/ MONTH/ DAY/ HOUR:
   - White Index Bar: No recorded data available under this date period.
   - Green Index Bar: Recorded data available under this date period.

5. MINUTE:
   - White Color Bar: No recorded available under this time period.
   - Red Color Bar: Manual recorded data, motion detection recorded data, and alarm recorded data is available under this time period.
   - Blue Color Bar: Schedule recorded data is available under this time period.

6. Use "UP/ DOWN" buttons to move the cursor to the desired item (YEAR/ MONTH/ DAY/ HOUR/ MINUTE), use "LEFT/ RIGHT" buttons or drag the index bar to make changes on the setup.

7. After setup has been completed, press "ENTER" or "PLAY" button to enter play mode, or "EXIT" button to return to live monitoring mode.

7. MENU SETUP DESCRIPTION

Password is requested after "MENU" button is pressed.

```
        E N T E R     P A S S W O R D
        X X X X X X X X
```
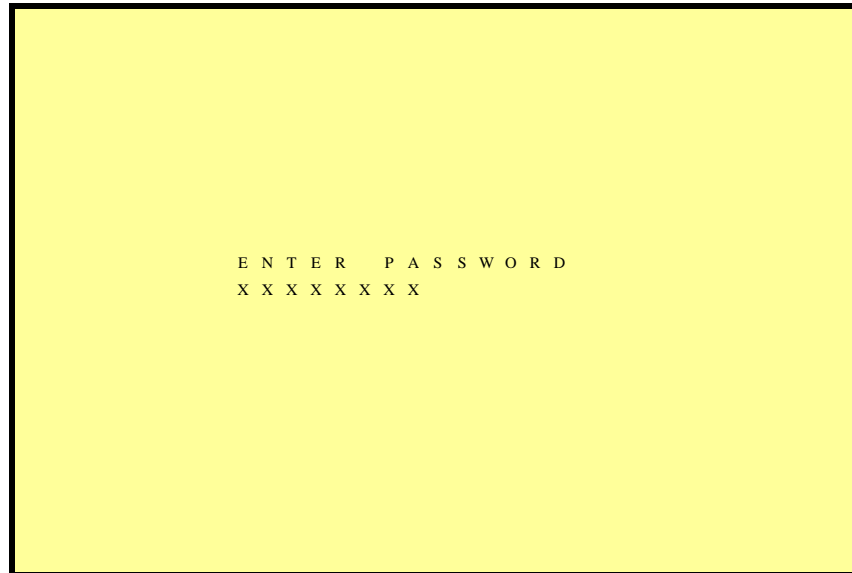
1. In order to enter the main menu, password entered must be correct. After entering the main menu all recording activities will stop.
2. Default Password: 12345678 (CH1~CH8 represents number 1~8).
3. When the main password is switched off, or the password has been copied onto the CF card, and the CF card has been inserted. Press MENU button, system auto enters main menu, and will not request a password to be entered.

```
            S E T U P

    [ 8 / 1 6   C A M E R A   M O D E   R E S C A N ]
    D A T E / T I M E                 >
    C A M E R A                       >
    R E C O R D                       >
    S C H E D U L E                   >
    H A R D   D I S K                 >
    C F   C A R D                     >
    O T H E R S                       >
    F A C T O R Y   D E F A U L T     >
```
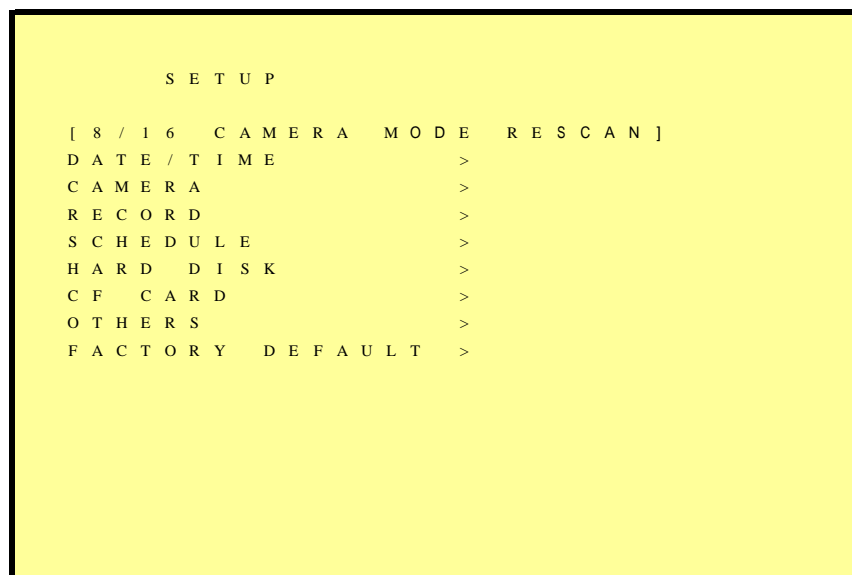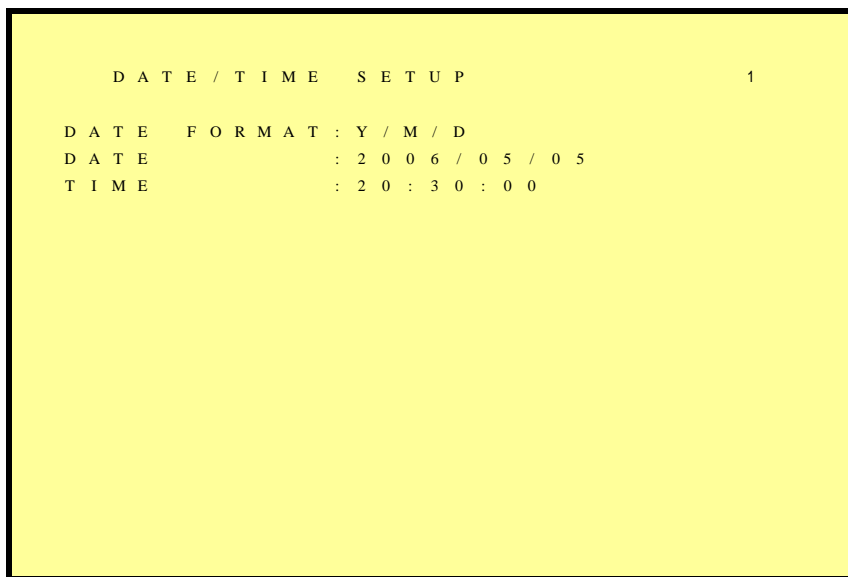
Main Menu

7.1 EIGHT/ SIXTEEN CAMERA MODE RESCAN

1.   When only 8 cameras has been connected (whether it is the first 8 or last 8 cameras), the system will enter 8-ch monitoring display mode. For all cameras to be displayed the system will have to reboot or enter the menu to re-detect 16-ch monitoring display mode.
2.   When more than 8 cameras are connected, the system will enter 16-ch monitoring display mode, and when disconnecting the cameras leaving only 8 cameras connected, the system will have to reboot or enter menu to re-detect 8-ch monitoring display mode.
3.   Under 16-ch display mode, please avoid mix application on corresponding channels (corresponding channels: 1-9, 2-10, 3-11,…, 8-16) of b/w and color cameras; otherwise color cameras may be auto changed to b/w mode. Therefore, connecting or disconnecting the cameras, the system will have to reboot or enter menu to re-detect the monitoring display mode.

7.2 DATE/ TIME SETUP

```
      D A T E / T I M E   S E T U P                     1

D A T E   F O R M A T : Y / M / D
D A T E                 : 2 0 0 6 / 0 5 / 0 5
T I M E                 : 2 0 : 3 0 : 0 0
```
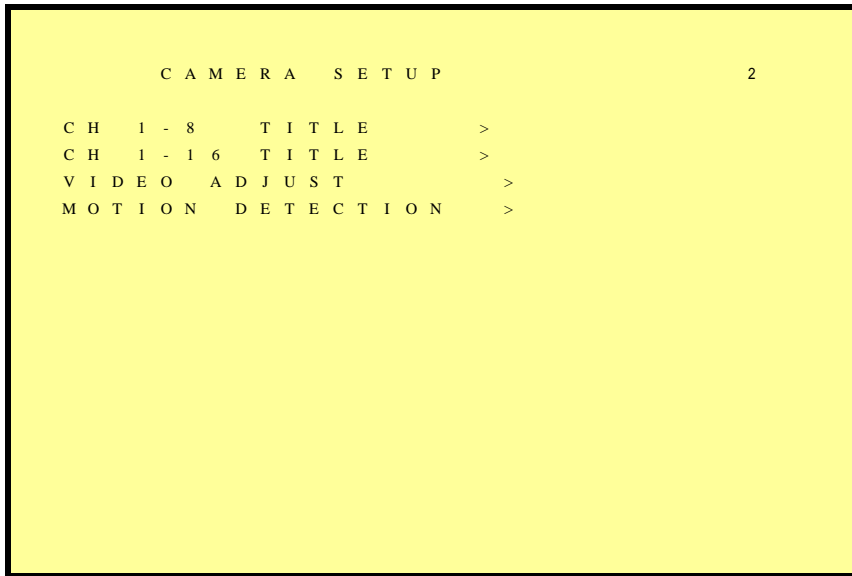
DATE FORMAT (Three Types of Date Format Setup) :

1. Y/M/D: Year/ Month/ Day
2. M/D/Y: Month/ Day/ Year
3. D/M/Y: Day/ Month/ Year

7.3 CAMERA SETUP

```
        C A M E R A    S E T U P                    2

C H   1 - 8     T I T L E         >
C H   1 - 16    T I T L E         >
V I D E O   A D J U S T              >
M O T I O N   D E T E C T I O N      >
```

7.3.1 EDIT CAMERA TITLE 1-8

```
        E D I T   C A M E R A   T I T L E   1 - 8      2 - 1

C H    T I T L E
  1    C H 1 * * * * *
  2    C H 2 * * * * *
  3    C H 3 * * * * *
  4    C H 4 * * * * *
  5    C H 5 * * * * *
  6    C H 6 * * * * *
  7    C H 7 * * * * *
  8    C H 8 * * * * *

[ D E F A U L T ]
```
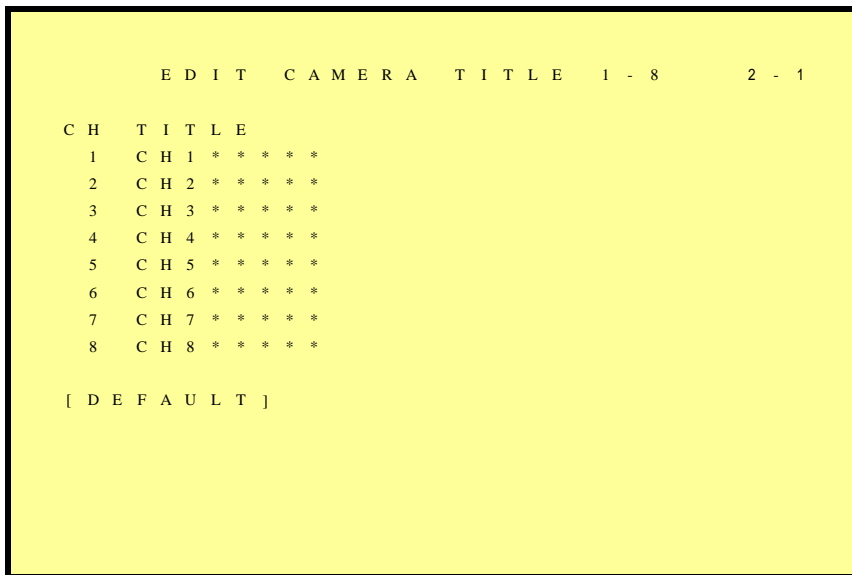
1. Maximum 8 character title setups.
2. Move the cursor to the desired camera number by using "UP/ DOWN" button
3. Move between the characters (camera title) by using "LEFT/ RIGHT" button and use "UP/ DOWN" button to edit the camera title (letters A-Z, numbers 0-9 or blank spaces).

7.3.2 EDIT CAMERA TITLE 9-16

```
        E D I T   C A M E R A   T I T L E   9 - 1 6     2 - 2

C H   T I T L E
    9     C H 9 * * * * *
1 0     C H 1 0 * * * *
1 1     C H 1 1 * * * *
1 2     C H 1 2 * * * *
1 3     C H 1 3 * * * *
1 4     C H 1 4 * * * *
1 5     C H 1 5 * * * *
1 6     C H 1 6 * * * *


[ D E F A U L T ]
```

7.3.3 VIDEO ADJUST

```
        V I D E O   A D J U S T                          2 - 3

C H A N N E L   : 0 1

B R I G H T N E S S   ( 1 - 1 0 )   : 0 5
C O N T R A S T       ( 1 - 1 0 )   : 0 5
S A T U R A T I O N   ( 1 - 1 0 )   : 0 5
H U E                 ( 1 - 1 0 )   : 0 5


[ D E F A U L T ]
```
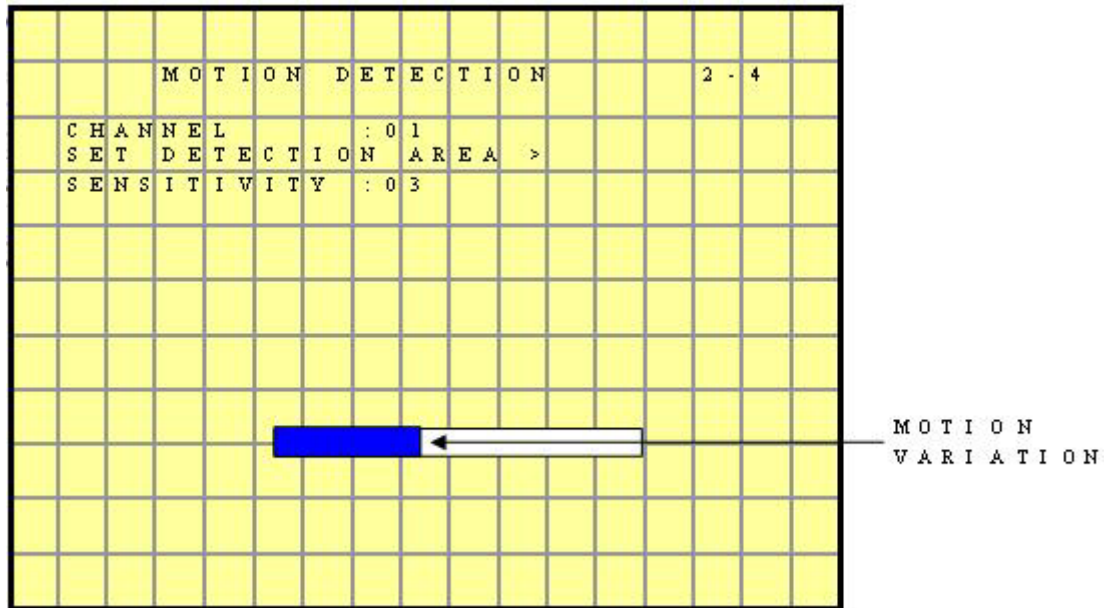
Adjustable brightness, contrast, saturation, and hue for 1 –16 CH videos.

7.3.4 MOTION DETECTION

1. Select Camera Channel: 01 ~ 16
2. Select Motion Detection Sensitivity Rate: 01 ~ 05
3. Select "SET DETECTION AREA" to show the display below.
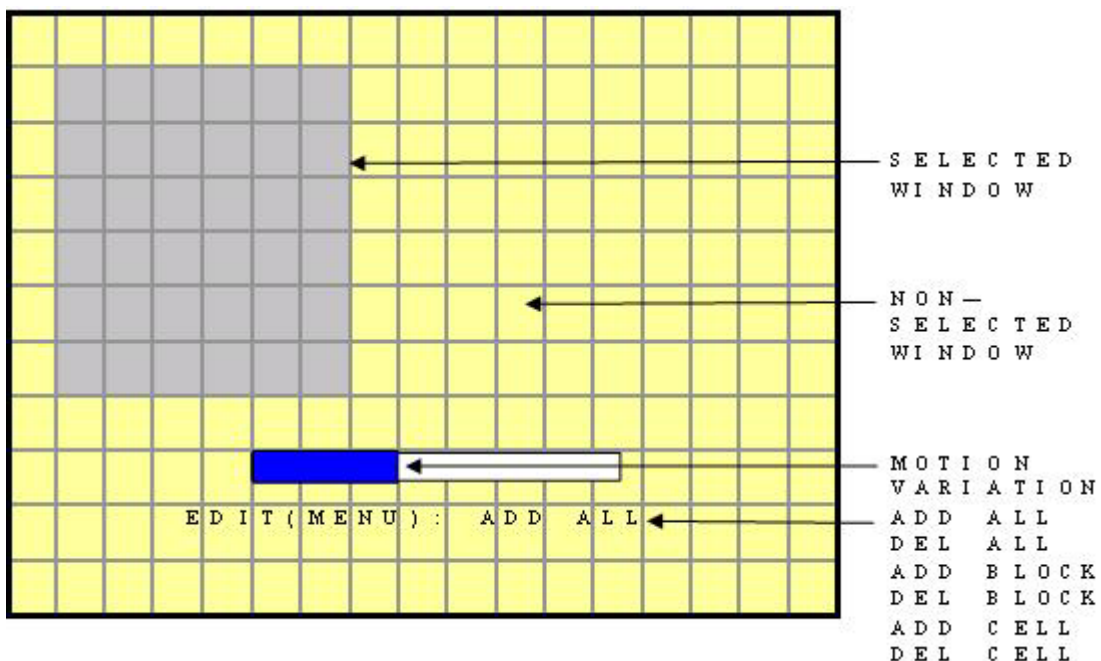
1. Blue bar shown above indicates the motion variation of the detection window, when motion event exceeds the sensitivity setup, it triggers motion detection recording.
2. Full Screen Display: NTSC and PAL are divided into16 x 12 detection blocks.

3. Area Block Color:
   - Yellow: Detection Block.
   - Transparent: Non-Detection Block.
4. Press "MENU" button to select motion detection function.
   A. Cursor Movement: Press / /◀◀/▶▶ button to randomly move the cursor.
   B. Setup Motion Detection Area:
      (1) Press "MENU" button, select motion detection edit function:

Function	Description
Add Cell	Enable single detection cell
Del Cell	Disable single detection cell
Add Block	Enable partial detection block.
Del Block	Disable partial detection block.
Add All	Enable all detection cells.
Del All	Disable all detection cells.

      (2) Press ENTER/ DISP button, switch the cursor to edit mode, or to confirm detection block, and press < / / ◀◀/ ▶▶> button and use the above setup guide to change the detection area (big or small).

7.4 RECORD SETUP

```
    R E C O R D    S E T U P                      3

Q U A L I T Y                        : M E D I U M
A U D I O                            : O N
D I S K    F U L L                   : O V E R W R I T E
P O S T    A L A R M      S E C    : 1 0
M A N U A L               I P S    : 6 0
C O N T I N U E           I P S    : 6 0
M O T I O N    D E T E C T I O N   I P S    : 6 0
A L A R M                 I P S    : 6 0
V I D E O    S I Z E               : 3 5 2    X    2 4 0
[ D E F A U L T ]
```

1. QUALITY: LOW/ MEDIUM/ HIGH.
2. AUDIO:
   - ON: Audio recording enabled.
   - OFF: Audio recording disabled.

3. DISK FULL:
   - Overwrite: When the disk is full the system overwrites the old data (overwriting from the oldest data)
   - Stop: When the HDD is full the system stops recording (message will be displayed).
4. POST ALARM: Recording time after an event (Alarm/ Motion Detection) has been triggered.
5. MANUAL: IPS by manual recording.
6. CONTINUE: IPS by schedule continuous recording.
7. MOTION DETECT: IPS by schedule motion detection recording.
8. ALARM: IPS by schedule alarm recording.
9. VIDEO SIZE:
   NTSC: 704x240/ 352x240
   PAL: 704x288/ 352x288
10. DEFAULT: Reload the factory default setting.

7.5 SCHEDULE SETUP

```
           S C H E D U L E    S E T U P                4

  S C H E D U L E : O N

                          1  1
  0  1  2  3  4  5  6  7  8  9  0  1
  A  A  A  A  M  M  C  C  A  A  A

  1  1  1  1  1  1  1  1  2  2  2  2
  2  3  4  5  6  7  8  9  0  1  2  3
  -  -  -  A  M  M  C  C  *  *  *

  [ D E F A U L T ]


  *  :  A L L           -  :  N O N E
  A  :  A L A R M    M  :  M O T I O N    C  :  C O N T .
```

Three Types of Schedule Recording Setup:
1. Continue Record: Continuous recording according to the setup of the schedule time.
2. Motion Detect Record: Motion detection recording according to the setup of the schedule time.

3. Alarm Recording: Alarm trigger recording according to the setup of the schedule time.
    ● Optional Settings: Each hour individually setup to different recording modes, combined settings or even no settings are acceptable.
    ● During schedule recording when manual recording is applied, the system auto switches to manual recording (manual recording is the first priority recording).
    Record Mode Priority:
    Manual Record　　Alarm Record　　Motion Detection Record　　Continuous Record

7.6 HARD DISK SETUP

```
          HARD   DISK   SETUP              5

HDD   TOTAL     CAPACITY :      120000MB
HDD   REMAIN   CAPACITY :        2500MB

BEGIN   DATE   : 2005 / 01 / 05
END        DATE   : 2005 / 01 / 13

FORMAT   >
```

1. Displays the hard disk total capacity and the remaining capacity.
2. Displays the begin and end date of the recorded material and when no recorded materials are available, current date is displayed.
3. FORMAT: Format the HDD.

7.7 CF CARD SETUP

```
     C F   D I S K   S E T U P                    6

C F   T O T A L     C A P A C I T Y   :      2 5 0 M B
C F   R E M A I N   C A P A C I T Y   :      1 2 0 M B

C F   C A R D   C O P Y   >
[ B A C K U P   L O G   F I L E ]
F O R M A T              >
```

1. CF TOTAL CAPACITY: Total Capacity

2. CF REMAIN CAPACITY: Remaining Capacity

3. CF CARD COPY: Copy the selected file to the CF card.

4. FORMAT: Delete all data stored in the CF card.

7.7.1 CF CARD COPY

```
        C F   C A R D   C O P Y                   6 - 1

C H A N N E L : 0 1
A U D I O   :   O N
B E G I N   :
2 0 0 4 / 0 5 / 0 3   1 2 : 2 0 : 3 0
E N D   :
2 0 0 4 / 0 5 / 0 3   1 2 : 2 5 : 4 5
[ C O P Y ]
```
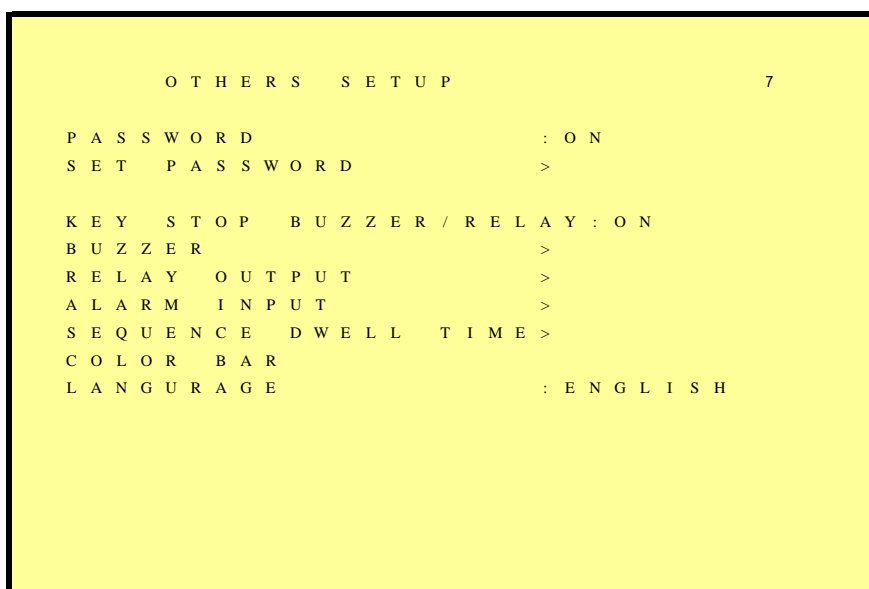   ← PROGRESS BAR

1. CH: Selectable 1 -16 camera option.

2. AUDIO: Whether audio will be copied or not.

3. BEGIN/ END: The system will start coping according to the setup (begin and end time).

4. COPY: Select "COPY" to start copy.

*When the data size selected exceeds the storage capacity of the CF card, it will start coping from the beginning and stop when CF card is full. Different channels and different events setup generates different ASF files (audio data follows its corresponding video file). PC supports ASF file playback.

7.8 OTHERS

```
            O T H E R S    S E T U P                         7

P A S S W O R D                          : O N
S E T    P A S S W O R D                 >

K E Y    S T O P    B U Z Z E R / R E L A Y : O N
B U Z Z E R                              >
R E L A Y    O U T P U T                 >
A L A R M    I N P U T                   >
S E Q U E N C E    D W E L L    T I M E >
C O L O R    B A R
L A N G U R A G E                        : E N G L I S H
```

1. PASSWORD:
   ON: Enable password protection, password is required before entering the main menu.
   OFF: Disable password protection, password will not be required before entering the main menu.
2. KEY STOP BUZZER/ RELAY: When buzzer or relay device is triggered by an event, press on any key to deactivate.
3. COLOR BAR: By using the color bar, the user may adjust the color of the monitor.
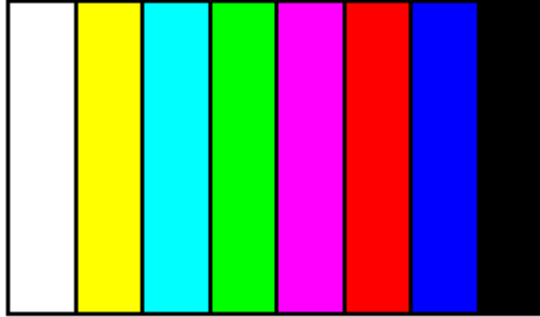
4.   LANGUAGE: Supports English and Chinese on-screen menus and displays.

7.8.1 PASSWORD
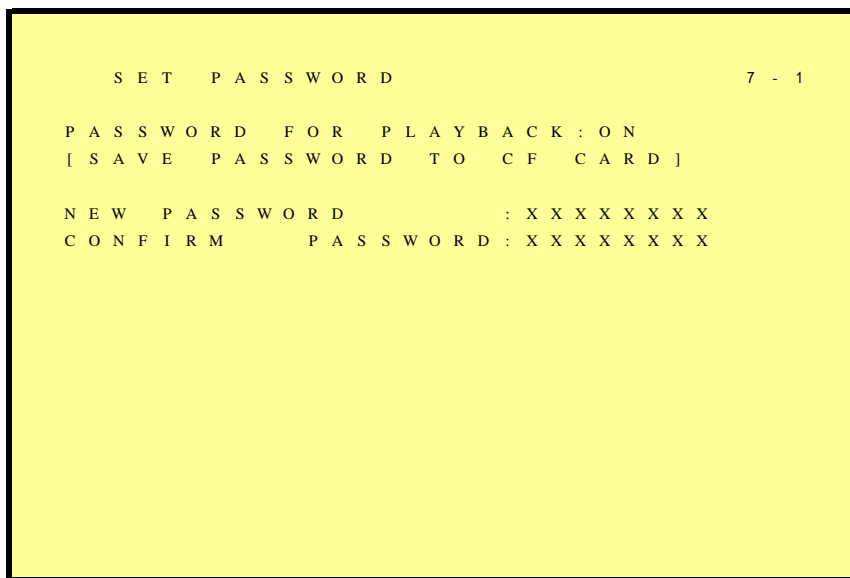
1.   Search/ Playback Password: Whether to enter the password during search or playback.
2.   When password is stored on the CF card, after inserting the CF card the password will not be requested by the system.
3.   Default Password: 12345678 (CH1~CH8 represents number 1~8).
4.   Press "ENTER" button to enter new password, confirm settings, and press "EXIT" button to exit.
5.   For long- hour searching, one may disable the playback password and enable it after searching has been completed.

7.8.2 BUZZER

```
        B U Z Z E R    S E T U P                    7 - 2

B U Z Z E R                      : O N
                                             P E R I O D
K E Y   B E E P                  : O F F
V I D E O   L O S S              : O N        0 6    S E C
A L A R M                        : O N        0 6    S E C
M O T I O N   D E T E C T I O N : O F F       0 6    S E C
D I S K   F U L L                : O F F      0 6    S E C


[ D E F A U L T ]
```

BUZZER: Embedded buzzer sounding.
  ON: Buzzer is enabled.
  OFF: Buzzer is disabled.

Period: Duration time of the buzzer output.

Buzzer event includes the following:
1. KEY PRESSED: Key press beeping.
2. MOTION DETECTION: Triggered by motion detection.
3. ALARM: Triggered by external alarm.
4. VIDEO LOSS: Triggered by video loss.
5. DISK FULL: Triggered when disk full, system stops recording.

7.8.3 RELAY OUTPUT

```
        R E L A Y   O U T P U T   S E T U P        7 - 3

R E L A Y   O U T P U T          : O N

                                             P E R I O D
V I D E O   L O S S              : O N        0 6    S E C
A L A R M                        : O N        0 6    S E C
M O T I O N   D E T E C T I O N : O F F       0 6    S E C


[ D E F A U L T ]
```

RELAY OUTPUT: Relay output can be connected to external sounding device or warning device.

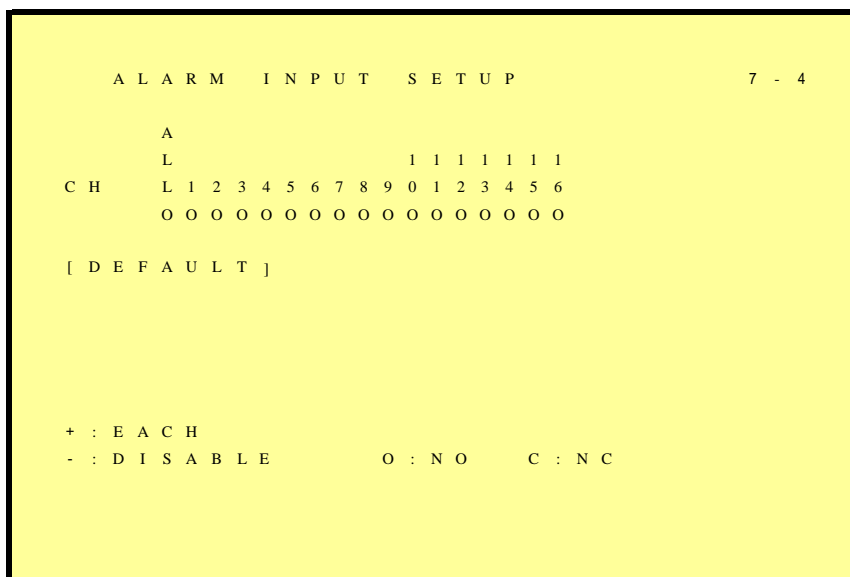Two Types (NO/ NC) of Relay Output Setup:

ON: Relay output enabled.

OFF: Relay output disabled.

PERIOD: Duration time of the relay output.

Relay output event includes the following:

1. VIDEO LOSS: Triggered by video loss.
2. MOTION DETECTION: Triggered by motion detection.
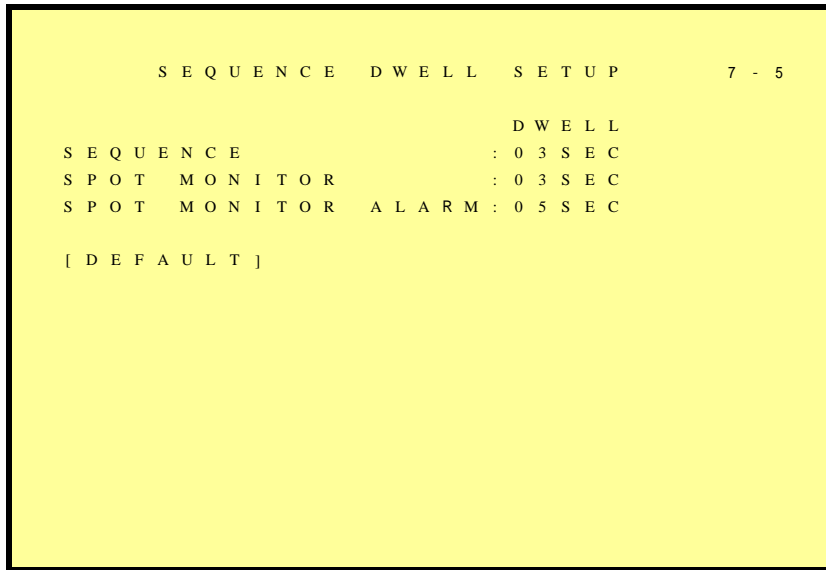3. ALARM: Triggered by external alarm.

7.8.4 ALARM INPUT

```
     A L A R M   I N P U T   S E T U P            7 - 4

        A
        L                     1 1 1 1 1 1
C H     L 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6
        O O O O O O O O O O O O O O O O

[ D E F A U L T ]




    : E A C H
    : D I S A B L E        O : N O    C : N C
```

Sensor Type

      NC   Normal Close Alarm (TTL level input)
             Setup NC (Normal Close), the alarm will be triggered during NC status.
      NO   Normal Open Alarm (TTL level input)
   Setup NO (Normal Open), the alarm will be triggered during NO status.

ALL

    + (EACH): Alarm input can be individually setup to NC or NO.
    - (DISABLE): Disable all alarm input function.
    C: All alarm input is setup to NC.
    O: All alarm input is setup to NO.

7.8.5 SQUENCE DWELL TIME

```
          S E Q U E N C E   D W E L L   S E T U P        7 - 5

                                    D W E L L
  S E Q U E N C E                 : 0 3 S E C
  S P O T   M O N I T O R         : 0 3 S E C
  S P O T   M O N I T O R   A L A R M : 0 5 S E C

  [ D E F A U L T ]
```

1. SEQUENCE: Main display sequence dwell time setup.
2. SPOT MONITOR: SPOT monitor dwell time setup.
3. SPOT MONITOR ALARM: SPOT monitor alarm dwell time setup.

7.9 FACTORY DEFAULT

```
          F A C T O R Y   D E F A U L T   S E T U P     8




  R E C A L L   D E F A U L T   N O W ?



   [ Y E S ]              [ N O ]
```
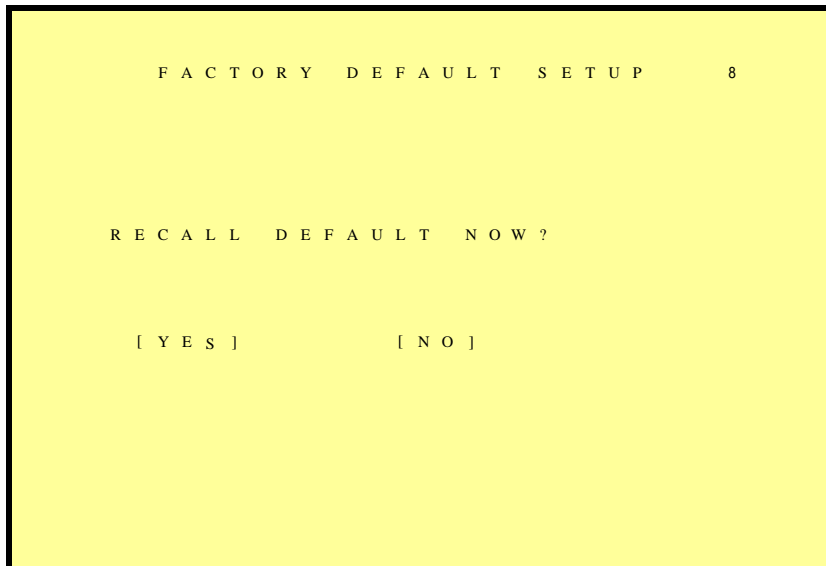
To return to factory default setting, select "YES" option and then press "ENTER" button to reload the factory default setting. Press "EXIT" to exit.

8. NETWORK DVR SETUP

Before installing the Network DVR, you need to first setup an IP Address, connect it to the ADSL Modem or LAN Hub, and use IPEdit.exe to test the DVR.

Note: Before using PPPoE and DDNS connection method, one must first setup an IP Address (using IPEDIT.exe).

8.1 Connecting Network DVR
3 methods for connecting Network DVR:
1. Online using Intranet or Fixed IP
2. Online using ADSL (PPPoE) Router
3. Online using DDNS Server

8.1.1 Online using Intranet or Fixed IP
Setup similar to "8.2 Online with DHCP Server" .

8.1.2 Online using ADSL (PPPoE) Router
Setup similar to "9.2.1 Network Setting".

8.1.3 Online using DDNS Server
The DDNS service provides the dynamic IP to users to gain access to resources connected to the Internet via a cable or DSL connection. Once you've decided to apply this function, please register your domain name at http://www.dyndns.org (this website supports register free service). Paid DDNS service is applied to long-term users. For more information, please refer to "9.2.3 DDNS Setup".

8.2 Online with DHCP Server

Use IPEDIT.exe to find the installed Network DVR. Select this Network DVR in the Camera List Window. The default configuration will be shown on the right window. Update the IP status.
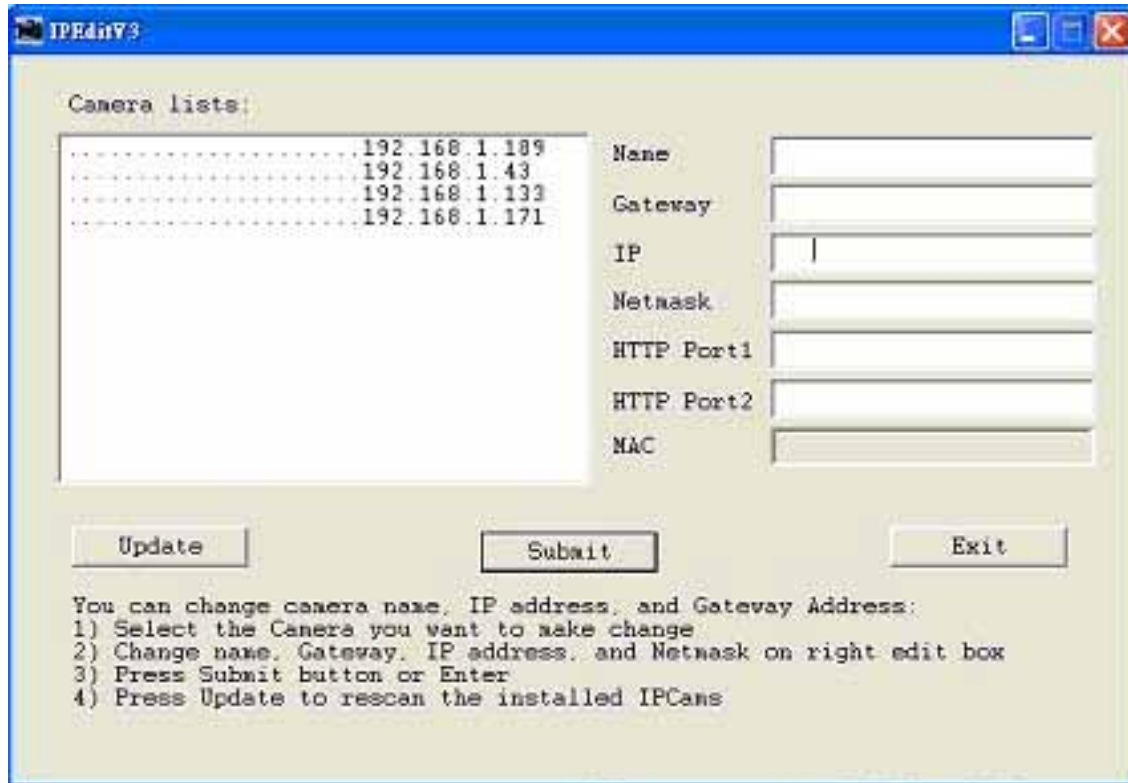
Online with DHCP Server

8.3 Online without DHCP Server

1. Use IPEdit.exe to find the installed Network DVR.
2. The Internet DVR without IP allocated by DHCP will have a default IP Address of 169.254.1.13.
3. Select this Internet DVR on Camera List Window.
4. The default configuration will be shown on the right window.
5. Under DOS mode enter "IPCONFIG" to access Geteway, IP, and Netmask setting values.
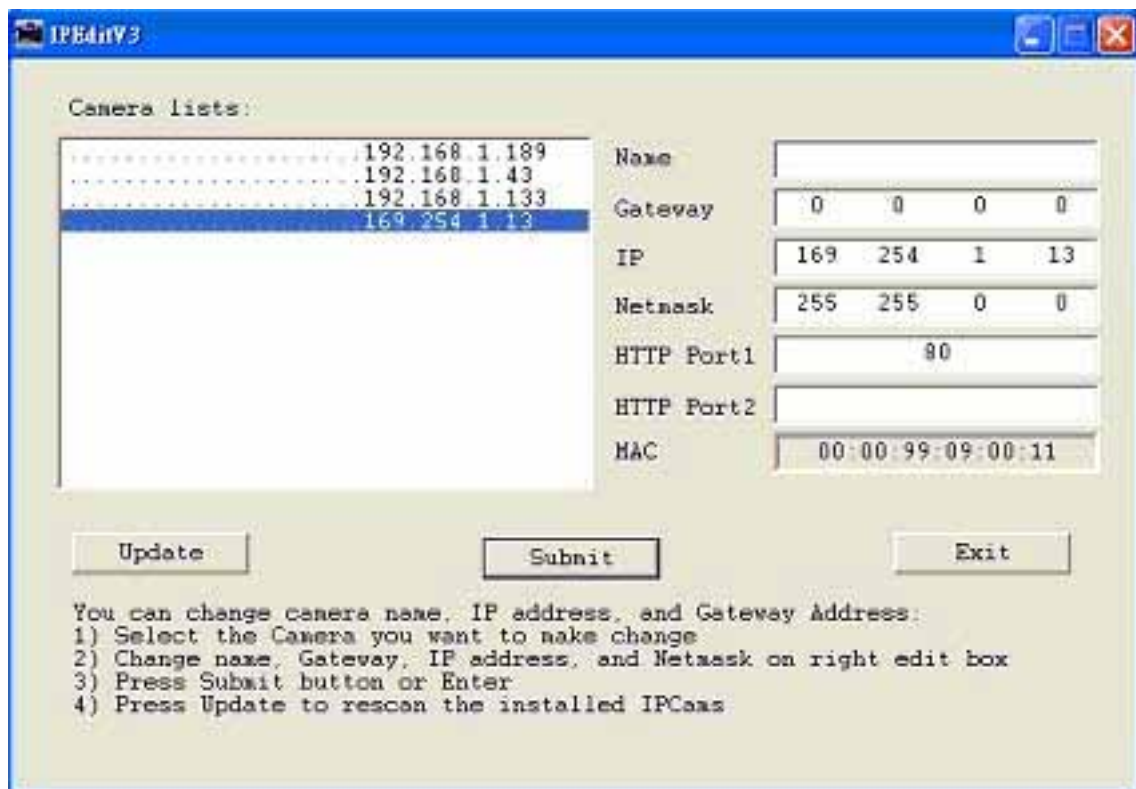
Online without DHCP Server

After the "Submit" button is clicked, the IP information of this Network DVR will be updated.

8.4 Online Connection

Start the Internet Explorer, enter the IP Address of the Network DVR into the Address field, such as 192.168.1.31 or click twice on IPEdit.

Before connection, "User name" and "Password" will be requested:

Default User Name: **admin** (characters capitalize/un-capitalize)

Default Password: **1234**

8.4.1 Install ActiveX

Before entering remote connection, please install ActiveX and check your browser setup by following the procedures below:

a. Open Internet Explorer under "Tools", select "Internet Options".

Tools → Internet Options
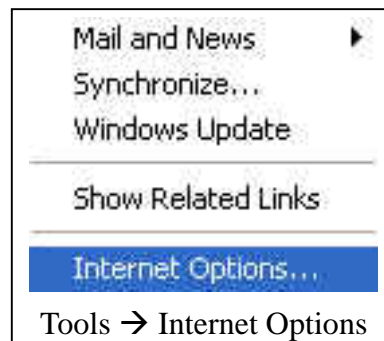
b. Select "Security", and then press "Custom Level".

Safety->Internet Explorer->Setup level
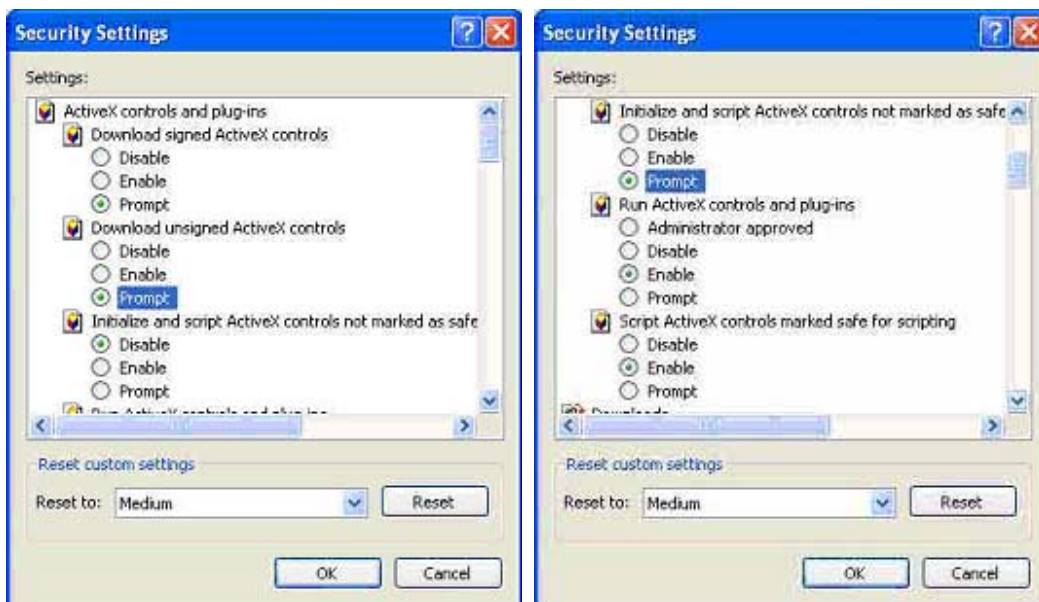
Start ActiveX Control

When ActiveX control installation has been completed, live images will be shown on the display.
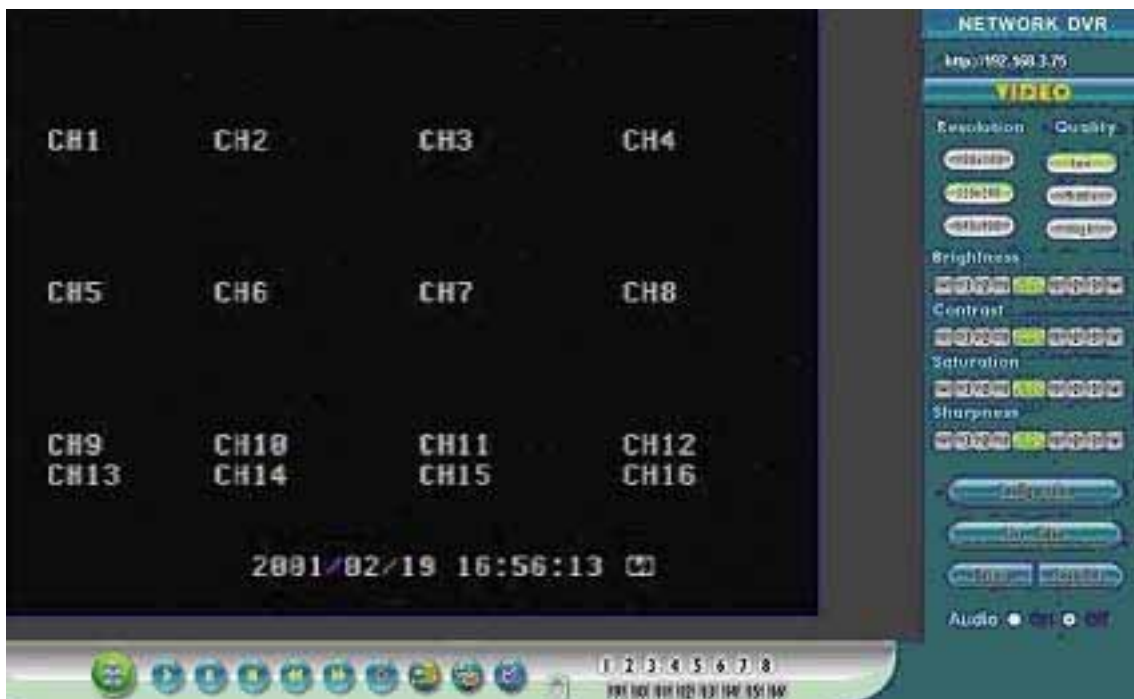
Connect to Network DVR through browser.

9. FUNCTION SETUP

9.1 Main Display

Best browsing resolution is 1027x768.
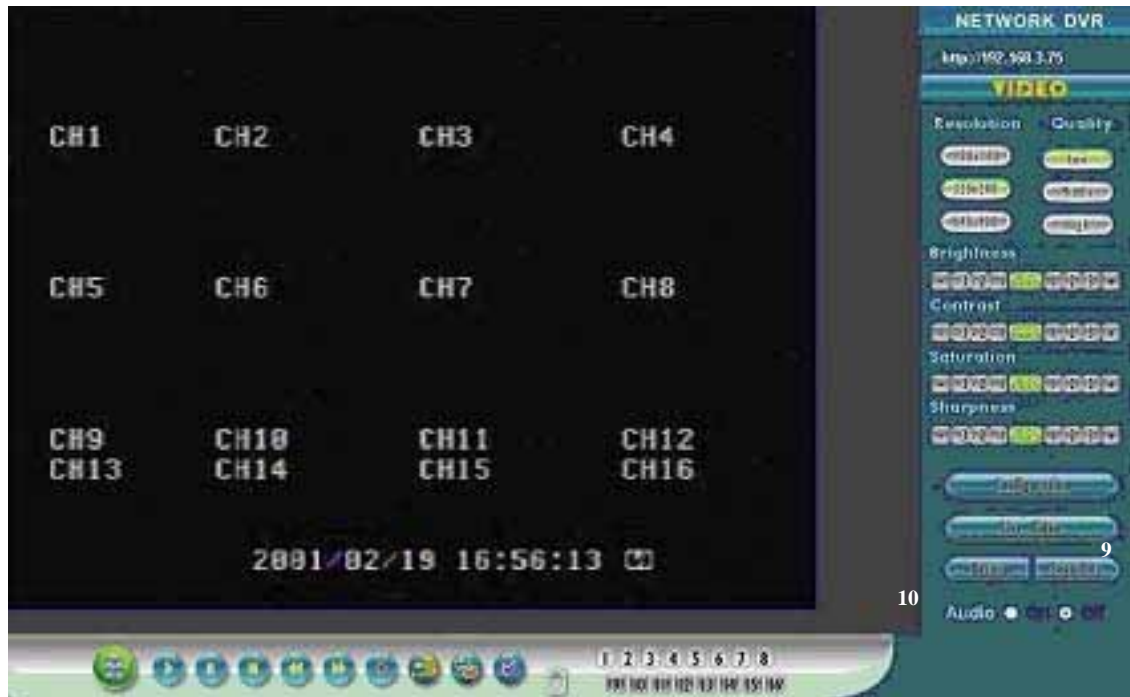
1 Live Display

Move the cursor inside the image range, right mouse click to display 5 function selections:

- View/ Make changes on image display
- Image Recording/ Record function setup
- Save Current Picture/ Save the current image
- Welcome! Administrator/ Display current user name
- About/ Version Description
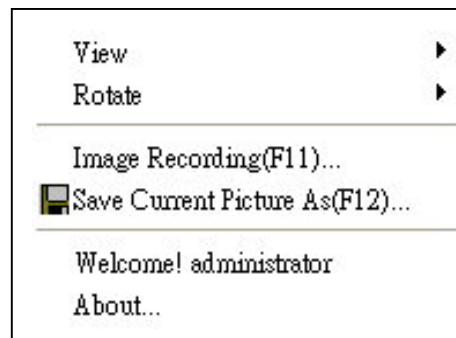
9.1.1 View

Two types of display method:

1.   Resizable: Adjustable image size.

2.   Actual size: The actual image size.

3.   Status Bar: Reveals current status.

9.1.2 Image Recording

Image Recording Setup Display:

1.   Save as JPEG: Save as picture file

2.   Save as AVI: Save as AVI animation file

Note: To prevent asynchronous AVI recording, both function may not be simultaneously selected
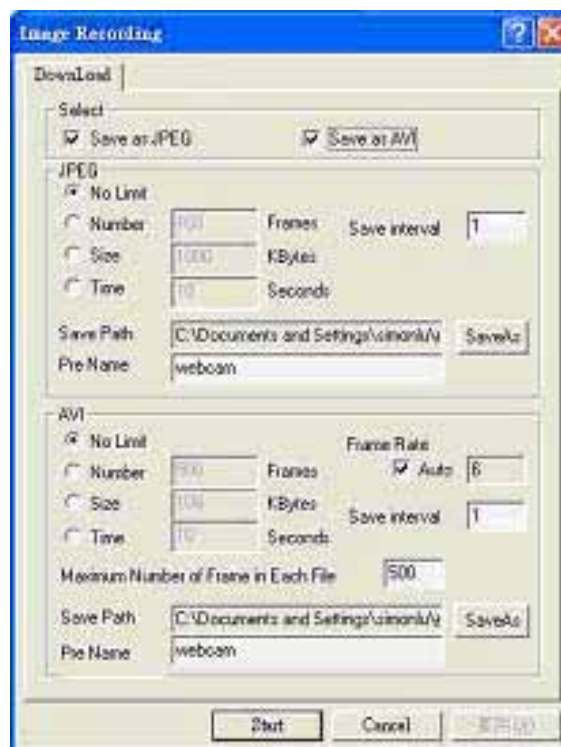
9.1.2.1 Save as JPEG:

- No Limit: Unrestricted image storage (continuous).
- Number: Image storage according to "number".
- Save interval: Image storage according to "1/10 second" (e.g.: Enter "10", then 1 frame is stored per second. Enter "50", then 1 frame is stored in 5 seconds).
- Size: Image storage according to "size".
- Time: Image storage according to "time".
- Save Path: Image storage according to "Save Path".
- Pre Name: Image storage according to "Prefix Name".

9.1.2.2 Save as AVI:

- No Limit: Unrestricted image storage (continuous).
- Number: Image storage according to "number".
- Save interval: Image storage according to "1/10 second" (e.g.: Enter "10", then 1 avi file is stored per second. Enter "50", then 5 avi files are stored in 5 seconds).
- Size: Image storage according to "size".
- Frame Rate: Image storage according to "frame rate".
- Time: Image storage according to "time".
- Maximum Number of Frame in Each File: Image storage according to "maximum frame".
- Pre Name: Image storage according to "Prefix Name".
- Save Path: Image storage according to "Save Path".

DVR Control

When the system is DVR, DVR control is shown by the diagram below:

SPLIT		Full Screen/ Quad Screen, 9-Split Screen, 10-Split Screen.
PLAY		Play button.
PAUSE		Pause button.
STOP		Stops manual recording and playback.
REW		Relate to direction button (left).
FF		Relate to direction button (right).
REC		Manual record button.
SEARCH		Supports quick search of recorded videos.
EXIT/INFO		Return to Previous Menu/ System Information Display Switch. Confirm Button/ Message Display Switch.
ENTER/DISP		Return to Previous Menu/ System Information Display Switch. Confirm Button/ Message Display Switch.
UP/DOWN		Move cursor upward/ switch one channel forward. Move the cursor downward/ switch one channel backward.
CH		Camera select button: CH1~16 (relate to DVR CH: 4CH/ 8CH/ 16CH display).

Resolution Setting
- 176x144
- 352x288
- 704x576
- 120x160
- 320x240 (Pre-set Value)
- 640x480

Note: Resolution may differs according to different camera types (ex.: NTSC = 120x160, 320x240, or 640x480).

Quality Setting
- High
- Middle
- Low (Pre-set Value)

Brightness/ Contrast/ Saturation/ Sharpness

- : Mini. Value

STD: Pre-set Value

+: Max. Value

The higher values are shown to the right and descend in value as you go to the left.

Configuration

Advance setup (this function is applicable only to Admin).

Live Video

Back to live video display.

Record

Please refer to 9.1.2 Image Recording.

9 **Snapshot:**

Press this button to capture one live image and press "RIGHT" button to store the image.

10 **Audio**

Live audio control "On/ Off" (IE Audio Pre-set: OFF).

9.2 Advanced Setup

Only "Admin" can select "configuration" (advanced setup).

9.2.1 Network Setting

Lan Setting: LAN IP address setting is the same as IPEdit.

DHCP: Select item "Automatically by DHCP" to gain an IP address.

DNS: Fixed IP users needs to setup an IP address, please contact your local ISP dealer.

PPPoE: Connecting using ADSL, please contact your local ISP dealer. Select item "Send mail (about new IP) after connected", mail will automatically be sent when connected to the ISP (as shown below).

Note: Please restart the Network DVR after setup has been completed
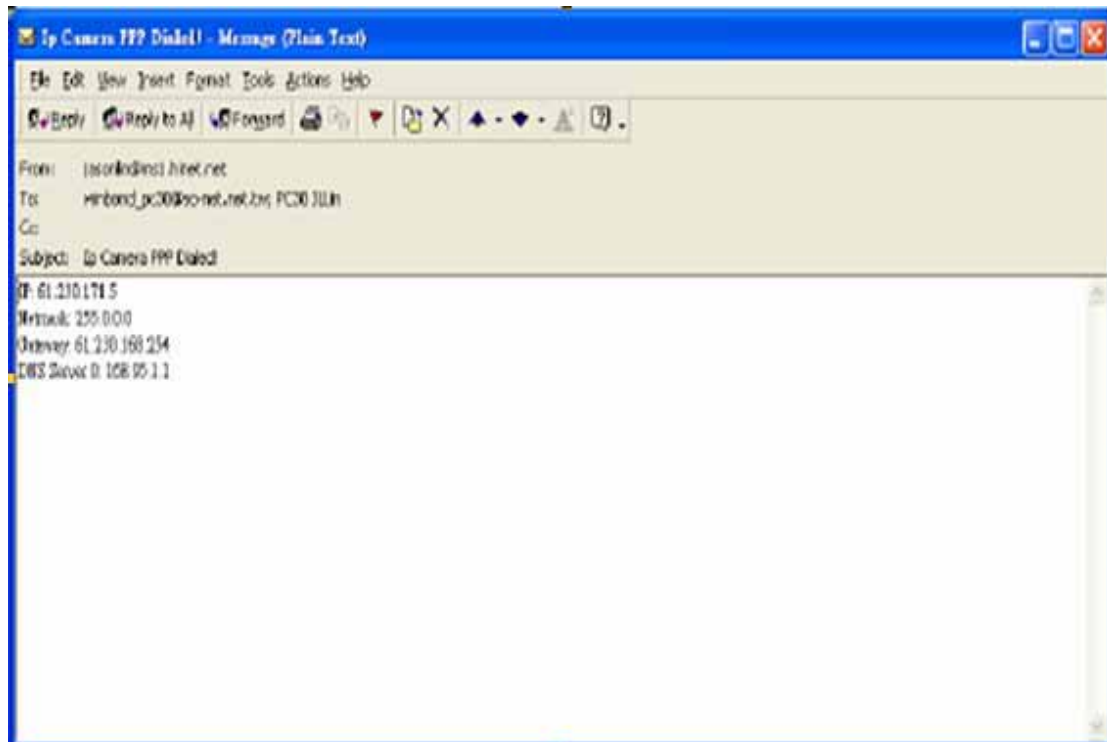
Port Select: IP sharing device enables switching port function, setup the port and enter http://XX.XXX.X.XX:8887 (as shown on the diagram above). Please restart the Video Server after the setup has been completed, Port1=80 (Pre-set Value).

DDNS: To apply dynamic IP address, you may register at DDNS Server: http://www.dyndns.org

To setup follow the steps below:

1. Register at DDNS Server: http://www.dyndns.org
2. Apply domain name.
3. Dial-up using ADSL Router: Click "Enable" button, then input your UserName, Password, and DomainName (Similar to registering at DDNS Server).

Note: Please reboot after setup.

9.2.2 User Setup

Authorization: User Authorization Setting "Needed/ No Need".

New user/ Change Password: Add user or change password (Max. user = 30).

Note: Under the highest resolution, for optimum effect maximum of 20 users are suggested (English/ Chinese Characters= 11).

Delete User: Delete user account.

Current Users: Currently registered users.

Reboot: Restart the Network DVR.

Firmware update: Updates the firmware.

7 Restore factory default configuration: Click "Restore factory default configuration" the button to return to factory default settings (Please restart the Network DVR after setup has been completed).

Note: Standard user may only view live display, record, and capture images.

9.2.3 DDNS Setup

DDNS: To apply dynamic IP address, you may register at DDNS Server: http://www.dyndns.org

To setup follow the steps below:

4. Register at DDNS Server: http://www.dyndns.org

5. Apply domain name.

6. Dial-up using ADSL Router: Click "Enable" button, then input your UserName, Password, and DomainName (Similar to registering at DDNS Server).

Note: Please reboot after setup.

10. TROUBLESHOOTING

Question	Answer
Unable to detect the Network DVR	Reconnect the internet line and make sure that it properly connected and then restart the system.
No picture and sound	Check that everything is connected properly (camera or microphone). Reconnect everything, make sure that the signal line is properly connected and then restart the system.
No images is shown on the web page	Please follow "8.4.1 Install ActiveX", setup the IE, and install ActiveX.
IPEdit unable to detect the IP Address	Please check your software, some software (e.g.: firewall or anti-virus software) may block-out IPEdit software.

11. NETWORK INSTALLATION

11.1 System Configuration

Client-Server Definition

RJ-45 Connect   Ethernet   Client

Server Side:
   Hardware RJ-45 Connect

Client Side:
   Hardware: PC
   OS: Windows 2000/XP
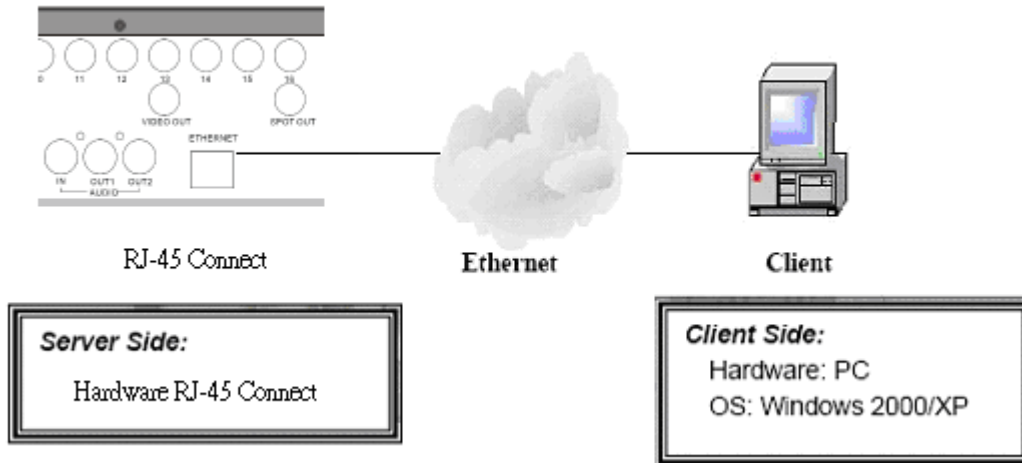
Note: Before installation, connect the video input first and then power-on.

11.2 Suggested PC Equipment

CPU	1G (Above)
RAM	256M (Above)
Sound Card	YES
Office System (OS)	Microsoft Windows 2000/ XP
Monitor Resolution	1024x768 (Above)

12. HARD DISK INFORMATION

1. Supports 3.5" ATA 2/ 3/ 4/ 5/ 6 format hard disk.

2. Enables installation of both built-in and removable hard disk.

3. Support high-capacity hard disk storage (up to 500 GB capacity).

4. Hot swap function is not applicable. To prevent damage, please enter the main menu to stop all HDD activities, then power-off the device before replacing the hard disk.

5. When the hard disk information icon turns to red, the device is notifying the user to replace a new hard disk.

500GB HDD - Possible Recording Time per Day (NTSC)												
Video Size	352 X 240							704 X 240					
Frame Rate (Field/Sec.) / Image Quality	60	30	15	8	4	2	1	30	15	8	4	2	1
High	14	24	40	71	121	220	387	16	30	45	82	148	269
Medium	18	29	48	83	140	250	427	19	36	53	96	172	303
Low	30	47	76	126	205	346	564	29	53	76	138	241	408

500 GB HDD - Possible Recording Time per Day (PAL)												
Video Size	352 X 288							704 X 288					
Frame Rate (Field/Sec.) / Image Quality	50	25	12	6	3	2	1	25	12	6	3	2	1
High	16	26	44	78	133	205	363	19	35	53	96	149	275
Medium	20	32	53	93	156	238	408	24	42	70	110	168	305
Low	33	52	83	141	228	335	546	34	62	91	160	240	408

Note: Tables above are for reference only. The recording time per day may differ depending on the actual recording environment, please take note!

13. APPENDIX

13.1 DB25 Alarm Input/Relay Output Definition

Pin	Definition	Pin	Definition	Pin	Definition	Pin	Definition
1	ALARM 1	2	ALARM 2	3	ALARM 3	4	ALARM 4
5	GND	6	ALARM 5	7	ALARM 6	8	ALARM 7
9	ALARM 8	10	GND	11	ALARM 9	12	ALARM 10
13	ALARM 11	14	ALARM 12	15	GND	16	ALARM 13
17	ALARM 14	18	ALARM 15	19	ALARM 16	20	GND
21	RELAY OUT-COM	22	RELAY OUT-N.C.	23	RELAY OUT-N.O.		

13.2 List of Tested Hard Disk Drive

Brand names listed below implies tested and suggested priority use. The product does not guarantee problems due to specification change, and other brands unlisted does not mean that it is incompatible.

Brand (according to alphabetical order)	Capacity	Part No.	Serial No.	Comment
HITACHI	500GB	HDS725050KL AT80	P/N:0A31613 S/N:ZAG327DC	ATA/IDE 7200RPM Made in Thailand
Maxtor	40GB	D740X-6L MX6L040L2	051Z04 B2211J	Made in Singapore
Maxtor	80GB	E-H011-02-312 2	R29F2HGE	DiamondMax 16 ATA/133 Made in Singapore
Maxtor	80GB	E-H011-02-388 0	Y28DVEWC	DiamondMax Plus 9 ATA/133 Made in Singapore
Maxtor	120GB	E-H011-02-388 0	Y35E89XE	DiamondMax Plus 9 ATA/133 Made in Singapore
Seagate	4GB	ST34321A	VTF07041	Made in Malaysia
Western Digital	40GB	WD400EB-00JE F0	WMAJA1636391	Made in Malaysia

13.3 List of Tested Compact Flash Card

Brand names listed below implies tested and suggested priority use. The product does not guarantee problems due to specification change, and other brands unlisted does not mean that it is incompatible.

Brand (according to alphabetical order)	Capacity	Serial No.	Comment
ADATA	128MB	0410077-128	
ADATA	256MB	0411073-256	
ADATA	1GB	0411081-1GB	
Apacer	64MB	P/N:86.20640.010 M/N:AP-CF06411	Made in Taiwan
Apacer	128MB	P/N:86.21280.150 M/N:AP-CF12811	Made in Taiwan
Apacer	256MB	P/N:86.22560.110 M/N:AP-CF25611	Made in Taiwan
SanDisk	64MB	AB0308VH	Made in China
SanDisk	256MB	N/A	
SanDisk	512MB	N/A	
Transcend	512MB	114231 0808 4050 63 512MCP 0515	45x
Transcend	1GB	109928 0595 4050 63 1BCP 0503	45x
Transcend	4GB	117152 0130 5690 VC 4BCP 0523	80x

14. SPECIFICATION

Video	**Format**	NTSC / PAL Auto Detection
	Video Loss	Auto Detection
	Codec	MPEG4
	Input	16 CH BNC (1.0 Vp-p. / 75 Ohms)
	Main Display Output	1 CH BNC (1.0 Vp-p. / 75 Ohms)
	Spot Display Output	1 CH BNC (1.0 Vp-p. / 75 Ohms)
Audio	**Input**	1 CH RCA
	Sampling Rate	8 KHz
	Codec	G.726
	Output Bit Rate	32 Kbps
	Output	2 CH RCA
Live	**Resolution**	720 x 480 (NTSC), 720 x 576 (PAL)
	Frame Rate	Max.: 240 fields/sec (8 CH mode) Max.: 120 fields/ sec (16 CH mode)
	Mode	Single / Quad / 9-Split / 16-Split/ Sequence
Record	**Resolution**	NTSC: 352x240 / 704x240 PAL:　352x288 / 704x288
	Frame Rate	NTSC: Max 60 IPS @352x240, Max 30 IPS @704x240 PAL:　Max 50 IPS @352x288, Max 25 IPS @704x288
	Quality	Low / Medium / High
	Mode	Manual / Alarm / Motion Detection / Continue
Play	**Speed**	Normal / Pause / Fast Rewind (x32, x64) / Fast Forward (x2,x4,x8,x16,x32,x64)
	Mode	Single / Quad / 9-Split
Alarm	**Input**	16 CH, N.C. / N.O.
	Output	1 CH, N.C. / N.O.
Storage	3.5"IDE HDD x 1 (Removable), Max. 500 GB, Fixed HDD (Optional)	
Backup	Type I CF Card x 1, ASF File Format	
LED Indicators	Alarm / Play / HDD / Record	
OSD Language	English / Traditional Chinese	
Power Supply	12V / 4.2A	
Power Adaptor	AC 100~240 V Input, DC 12V / 4.2A Output	
Dimension	430 (W) x 70 (H) x 316 (D) mm	
Weight	3570 g (without HDD)	
Storage Envir.	30 ~ 90% RH, 0　~ 50　(32　~ 122　)	
Operation Envir.	30 ~ 80% RH, 5　~ 40　(41　~ 104　)	

Network (optional)

Network	Ethernet	10/ 100 BaseT Ethernet (RJ45)
	Protocol	TCP/ IP HTTP PPPoE DNS DDNS DHCP SMTP
Video	Format	NTSC/ PAL Auto Detection
	Compression	M-JPEG
Audio	Compression	AC-97
Display	Resolution	Max. 640 x 480 (NTSC), 704 x 576 (PAL)
	Frame Rate	Max. 20 fps
Recording	Resolution	Max. 640 x 480 (NTSC), 704 x 576 (PAL)
	Frame Rate	Max. 20 fps
	Quality	Highest/ High/ Middle/ Low/ Lowest
	Mode	Manual

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

MEMO