Thank you for purchasing this Digital Video Recorder.
Before using the Digital Video Recorder, please ensure that you have read and understood the User Guide.
Please store the User Guide at an easily accessible location.
Before connecting and installing any third party cameras, monitors, alarms and computers, please refer to the appropriate instruction manual for proper operation.
SAFETY PRECAUTIONS

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.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:
TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.
CONTENT VERIFICATION

Please check the package and contents for visible damage. If any components are damaged or missing, do not attempt to use the unit, contact the vendor immediately.

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>QUANTITY</th>
<th>REMARK</th>
</tr>
</thead>
<tbody>
<tr>
<td>DIGITAL VIDEO RECORDER</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>CLIENT SOFTWARE CD</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>REMOTE CONTROLLER</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>BATTERY (AAA size)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>POWER CORD</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>USER GUIDE</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>VIDEO IN PIGTAIL CABLE</td>
<td>1</td>
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DISCLAIMER

- The information in this manual is believed to be accurate and reliable as of the date of publication. The information contained herein is subject to change without notice. Revisions or New editions to this publication may be issued to incorporate such change.
- We makes no warranties for damages resulting from corrupted or lost data due to a mistaken operation or malfunction of the Digital Video Recorder, the software, the hard drives, personal computers, peripheral devices, or unapproved/unsupported devices.

WARNING

- Do not cover the ventilation opening or slots on the outer casing. To prevent the appliance from overheating, provide at least two inches of air space around the vent and the slots.
- Do not drop metallic parts through slots. This could permanently damage the Digital Video Recorder. Immediately turn the DVR’s power off or unplug the power cord from the power outlet. Contact a qualified service personnel authorized by your equipment distributor.
- Do not attempt to disassemble or alter any part of the equipment that is not expressly described in this guide. Disassembly or alteration may result in high voltage electrical shock. Qualified service personnel authorized by your equipment distributor should conduct internal inspections, alterations and repairs.
- Stop operating the equipment immediately if it emits smoke or noxious fumes. Failure to do so may result in fire or electrical shock. Immediately turn the DVR’s power off, remove the power cable from the power outlet. Confirm that smoke and fume emissions have ceased. Please consult your DVR distributor.
- Stop operating the equipment if a heavy object is dropped or the casing is damaged. Do not strike or shake. Failure to do so may result in fire or electrical shock. Immediately turn the DVR’s power off or unplug the power cord from the power outlet. Please consult your DVR distributor.
- Do not allow the equipment come into contact with, or become immersed in, water or other liquids. Do not allow liquids to enter the interior. The DVR has not been waterproofed. If the exterior comes into contact with liquids or salt air, wipe it dry with a soft, absorbent cloth. In the event that the water or other foreign substances enter the interior, immediately turn the DVR’s Power off or unplug the power cord from the power outlet. Continued use of the equipment may result in fire or electrical shock. Please consult your DVR distributor.
- Do not use substances containing alcohol, benzene, thinners or other flammable substances to clean or maintain the equipment. The use of these substances may lead to fire. Use a dry cloth on a regular periodic basis and wipe away the dust and dirt that collects on the device. In dusty, humid or greasy environments, the dust that collects around the ventilation or the slots on the outer casing over long periods of time may become saturated with humidity and short-circuit, leading to fire.
- Do not cut, damage, alter or place heavy items on the power cord. Any of these actions may cause an electrical short circuit, which may lead to fire or electrical shock.
- Do not handle the device or power cord if your hands are wet. Handling it with
wet hands may lead to electrical shock. When unplugging the cord, ensure that
you hold the solid portion of the plug. Pulling on the flexible portion of the cord
may damage or expose the wire and insulation, creating the potential for fires or
electrical shocks.

- Use only the recommended power accessories. Use of power sources not
expressly recommended for this equipment may lead to overheating, distortion of
the equipment, fire, electrical shock or other hazards.

- Do not place the batteries near a heat source or expose them to direct flame or
heat. Neither should you immerse them in water. Such exposure may damage
the batteries and lead to the leakage of corrosive liquids, fire, electrical shock,
extlosion or serious injury.

- Do not attempt to disassemble, alter or apply heat to the batteries. There is
serious risk of injury due to an explosion. Immediately flush with water any area
of the body, including the eyes and mouth, or clothing that comes into contact
with the inner contents of the battery. If the eyes or mouth contact these
substances, immediately flush with water and seek medical assistance from a
medical professional.

- Avoid dropping or subjecting the batteries to severe impacts that could damage
the casings. It could lead to leakage and injury.

- Do not short-circuit the battery terminals with metallic objects, such as key
holders. It could lead to overheating, burns and other injuries.

- The supplied power supply and power cord are designed for exclusive use with
the Digital Video Recorder. Do not use it with other products or batteries. There
is a risk of fire and other hazards.
The Factory Default password for the unit is “000000”

SECURITY WARNING

Please be sure to change the administrator and user’s password from the unit. Please refer to page 74.
1. **FRONT PANEL**

1. **Power Status LED**

2. **CLR/II**  Clear / Still / Playback
   **Live Mode:** This button is used to hide the on screen display information such as time & date or channel icons. It is also used to remove the alert icons or turn off the alarm buzzer.
   **Playback Mode:** This button is used to pause the frame or resume 1x speed playback during the playback mode.

3. **Menu or Cancel**

4. **Enter or Display**

5. **IR Remote Control Receiver**
6. **REC Status LED**

7. **REC** Record / Fast Reverse / Step Reverse

*Live Mode*: This button is to start or stop the normal recording

*Playback Mode*: This button is used to fast rewind during the playback mode. It is also used to reverse the frame during the still mode.

8. **Q/ ■** Time Search / Stop

*Live Mode*: This button is to in into the time search screen.

*Playback Mode*: This button stops and exits the playback.

9. **Directional Keys**

10. **Schedule Record / Fast Forward / Step Forward**

*Live Mode*: This button is used to activate or deactivate the schedule recording or have schedule recording on stand-by.

*Playback Mode*: This button is used to fast forward during the playback mode. It is also used to advance the frame during the still mode.

11. **CH**

These buttons have variety of functions such as enter options or to make selections. They are used to enter numbers when prompted for password, to make camera/channel selection, to choose the day in schedule option.

12. **This button is used to turn the power on or off**

13. **USB port used to connect mouse or to upgrade the firmware of the unit using thumbdrive.**
2. IR REMOTE CONTROLLER

Note: “EXT. SEARCH” is not supported by this model
3. MOUSE CONTROL

After connecting the mouse, mouse cursor will appear as you move the mouse around the screen.

### MOUSE CURSOR

Right Click on the mouse to bring up the interface box. Please note that the interface box functions just like the physical remote control.
DIGITAL VIDEO RECORDER CONNECTIONS

4. REAR PANEL

4-Channel

8-Channel

16-Channel
1. **CAMERA INPUTS**
   BNC input connections for cameras.

2. **SPOT OUT**
   BNC output connection for auxiliary viewing output.

3. **MAIN OUT**
   BNC output connection for Main Monitor.

4. **AUDIO INPUT & OUTPUT**
   1 RCA Audio Input and Output.

5. **VGA OUTPUT**
   VGA output to PC Monitors to be used as Main Monitor.

6. **NETWORK PORT**
   10/100 Base-t RJ45 Ethernet Port for Network Connection.

7. **RS232C PORT**
   For System Debugging purposes only.

8. **ALARM INPUT & OUTPUT & RS422/485 PTZ CONNECTION**
   4 Alarm Input and 1 Alarm Output for Dry Contact Alarms. TX+ TX-, RX+ RX- for PTZ connection.

9. **POWER INPUT**
   12VDC Power Input.
5. INSTALLATION DIAGRAM

Camera, Monitor, Microphone, Alarm Sensor and Power Cord

<Example of 4-Channel Model>

Note: RS422/485 Connection  
TX + & - : Connect to PTZ camera  
RX + & - : Connect to the Junction Box (Optional Device Required)
6. HDD INSTALLATION
Please ensure that the HDD is firmly connected with the HDD Rack Bay.

1) The jumper pin setting of the HDD must be set to Master. For HDD’s pin settings, please refer to your HDD’s manual. Firmly connect the HDD into the HDD Rack Bay.

2) Turn over the HDD Rack bay and connect IDE first, then connect Power. Check though the hole if the connection is correct.

3) Secure the hard drive by fastening the screws included with the package. Tighten the screws from the bottom onto the hard drive. Make sure you use all two screws to mount the hard drive.

4) Secure the Rack by fastening the screws included with the package. Make sure you use all two screws to mount Set.

Note: Do not replace the HDD while the unit is in Recording.
OPERATION
This section will cover basic features of the DVR such as setting up the Time & Date, Simple recording and playback. Also, it will cover the main screen explaining many alert, operational, channel, DVR status, the time and hard drive space counter. Moreover, it will also address live view mode that the DVR has to offer. Which include automatic sequence mode and digital zoom feature.

1. TIME & DATE SETTING
When the DVR is powered on for the very first time, the time and date are set as default to January 1, 2006 Sunday 00:00:00. Before any other operation of the Digital Video Recorder, it is important to setup the time and the date as shown below. Please refer to page 74 for setting the time and the date on the DVR.
2. MAIN SCREEN

Explanations are listed in order from left to right.

1. Yellow Highlighted Channel # indicates that the corresponding channel is recording.
2. Alarm Trigger, Motion Trigger and Video Loss Icon. 
   **Note:** (Press the Cancel Button to clear the icons from the screen.)
3. Recording Mode Indicator.
4. Camera Number and its Title.
5. CD/DVD Backup Progress, USB Status, Recording Mode, Audio and Number of Remote Users Connected Icon.
6. Date and Time
7. Displays available HDD Capacity and estimated recording days left based on the current recording setting.
   **Note:** Indicates that the HDD is in overwrite/recycle mode. 
   Indicates that the HDD is not detected in the system.
3. LIVE VIEW
The live view displays each channel at 30 frames per second.

Digital Video Recorder has numerous display modes, from single, quad, 6, 7, 8, 9, 13 and 16 channel display modes. The single channel display mode can be accessed directly by pressing the appropriate channel number. The rest of the display modes can be accessed sequentially by pressing the display button which has been configured under Split Mode under Display Setup. (Please refer to Page 46) The following illustrations display the order of live view mode sequences.
4. AUTOMATIC SEQUENCE

There are several different sequence modes that can be selected and activated. Please refer to page 47 for selecting and activating the different display sequence modes. Press the display button and hold onto it for 1 second to activate the sequence mode. Pressing the display mode will change the display mode to the single channel display initially, and continue to sequence through all the channels in full screen mode if single channel sequencing is selected. If any other display sequencing modes are selected, then the sequence will move onto the next set of display sequences automatically. All display modes can be included and combined into the automatic sequence mode. The following illustrations demonstrate sample display sequences and their combinations.

![Single Channel view mode automatic sequence](image)

![Quad view mode automatic sequence](image)

![Six channel view mode automatic sequence](image)

![Single channel and six channel view mode automatic sequence combined](image)
5. DIGITAL ZOOM
During live view mode or during the playback, it is possible to zoom into a section of the screen to get a close-up view of the section.

Press the zoom button to bring up the zoom window.

Press the directional buttons to move the zoom window to the desired location.

Press the Enter button once more to zoom into the selected area on the screen. Use the directional buttons to move the zoomed window around the screen. Pressing + again will zoom in into 4x the mode, and once again to zoom in into the 8x mode. Press Enter button and Press – button to zoom out to 4x mode and again to 2x mode.
Press the Cancel button to return to the normal view.

6. SPOT OUT
In addition to the Main Monitor, attaching a Spot Monitor enables user to monitor specific channels independently from the main monitor.

- By pressing onto [SPOT] from the Remote Control, and entering the channel number will bring that specific channel into Full Screen.
- By pressing [SPOT] button twice, all the channels will start to sequence in Full Screen mode. Sequence Interval can be set from Sequential Setup.
- When Alarm has been triggered, that specific channel will go into Full Screen Mode.
7. LOG
The log chart keeps record of all the events and alerts, 8 logs per page. The DVR keeps log from the initial power up of the DVR. The record of items are compiled and listed in five categories.

7.1 ALL
All events related to the operation and alerts of the DVR are listed and sorted under ALL, in chronological order, starting with the most recent.

7.2 SYSTEM
Any event related to the operation of the system is listed and sorted under SYSTEM in the same chronological order. SYSTEM logs consist of, but not limited to the following logs:
- SYSTEM STARTUP
- SYSTEM STOP
- RECORDING
- LOGIN
- UPGRADE
- SYSTEM POWER FAIL
- WARNING
- ERROR
- SYSTEM CHECK
- HDD FAIL
- PLAYBACK

7.3 NETWORK
Any network activity is listed and sorted under NETWORK in the same chronological order.
7.4 ALARM

Any alarm activity is listed and sorted under ALARM in the same chronological order.

7.5 MOTION

Any motion activity is listed and sorted under MOTION in the same chronological order.

7.6 VIDEO LOSS

Any video signal losses or interruptions are listed and sorted under VIDEO LOSS in the same chronological order.
8. **BASIC RECORDING**

The DVR comes with a certain preset settings from the factory. Therefore, once the DVR is installed, immediate recording is possible after pressing the record button. The DVR differentiates normal recording, alarm recording and schedule recording. Normal recording settings are used when the record button is pressed.

The factory default normal record setting is as follow:

<table>
<thead>
<tr>
<th>Channels</th>
<th>Resolution</th>
<th>Use</th>
<th>Quality</th>
<th>Rate</th>
<th>Audio</th>
<th>Motion</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-Channel</td>
<td>360 x 240</td>
<td>ON</td>
<td>ULTRA</td>
<td>7 F/S</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>8-Channel</td>
<td>360 x 240</td>
<td>ON</td>
<td>ULTRA</td>
<td>7 F/S</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>16-Channel</td>
<td>360 x 240</td>
<td>ON</td>
<td>ULTRA</td>
<td>4 F/S</td>
<td>OFF</td>
<td>OFF</td>
</tr>
</tbody>
</table>

Please note that the default recording resolution is 360 x 240. The recording rate will change automatically and will change accordingly if the recording resolution is changed to 720 x 240 or 720 x 480.

Press the RECORD button to start recording. The ● REC icon will appear on the upper left corner.
9. PLAYBACK

9.1 TIME SEARCH

Press the TIME SEARCH button to access the time search calendar.

Use the directional buttons to navigate to the desired date, and then press the Enter button to access selected date.

Use the directional buttons to navigate to the desired hour and minute slot. To review all 4 channels, select a slot from the MINUTE bar and press the Enter button to start the playback.

The DVR will start the playback mode, displaying all 4 channels. Any channel number or the DISPLAY button may be pressed to change the display mode.
To select a specific camera to review, select a slot from the numbered bars. The illustration to the left has selected channel 16 at 00:20 in the morning on January 4, 2006.

Channel 1 will be displayed in full screen mode starting playback of the data exactly at 16:00:00 in the afternoon on October 12, 2007. Any channel number or the DISPLAY button may be pressed to change the display mode.
9.2 LOG SEARCH

The logs can be used to search and review directly to a point in time of the recorded data. Alarm, motion, video loss and system related logs can be searched and played back directly from the time of the incident.

Press the LOG button to access the log submenu. Use the directional buttons to navigate to the desired log. UP and DOWN buttons are used to navigate through the list of the logs, and LEFT and RIGHT buttons to navigate through different pages. Pressing the Enter button at the desired log will start the playback.

System related logs and video loss logs will be played back in multi channel view mode.

The playback view may be changed to any configuration after the playback has started.
Video Loss related logs will start the playback in single channel view mode. The illustration to the left has selected a log from the VIDEO LOSS tab.

Alarm or motion related playback will display according icons during the playback. The illustration to the left is playing back channel 2, and is displaying the motion icon, showing that channel 2 was recorded based on the motion trigger.
9.3 PLAY / STILL / STOP / FAST FORWARD / FAST REWIND / FRAME BY FRAME

During the playback, the DVR may be played back in reverse, paused, speed search up to 16 times the normal speed, or move picture by picture using the jog shuttle. Please refer to the following illustrations for a detailed description.

Press the PLAY button and the play icon will be displayed. The DVR will start the playback from the latest data if playing back for the first time.

Press the PLAY button once more and it will change its playback direction to reverse.

Press the STILL button to pause the playback (STEP button on the remote controller).

Press the STOP button once to return to the previous screen. If the DVR is not recording, it will return to the live screen.
If the DVR is recording, then the DVR will return to the live screen, but it will display the REC icon on the upper left corner.

During the playback, the playback control button is used to view the recorded data picture by picture or to fast forward or to fast rewind to the desired location.

During the playback mode, pause the playback by pressing the RIGHT STEP button. Keep pressing the RIGHT STEP button to enter the picture-by-picture mode and to advance and view recorded data one picture at a time.

Press the LEFT STEP button to play in reverse and view recorded data one picture at a time.

During the playback or still mode, press the FAST FORWARD button to fast forward to the desired location. Starting with normal playback speed (1X speed), each increment represent twice the previous speed, with the maximum playback speed of 16X.
Press the FAST REVERSE button to rewind to the desired location. The same speed increment and icon concept is applied as it is for the fast reverse.

9.4 AUDIO PLAYBACK

The DVR offers 1 channel of audio. The audio data is always recorded in real time unlike the video data that can be recorded at various recording speeds. The audio, if recorded, is played back automatically when in single channel view mode.

10. LOCK

The buttons on the DVR can be locked by pressing the LOCK button and then entering the administrator’s password. Once locked, the lock LED will be lit and all buttons except the lock button will be disabled. Pressing the buttons on the DVR or the remote controller will have no effect. To unlock the buttons, press the lock button once more, and then enter the administrator’s password to clear the lock status.
11. CD/DVD BACKUP

Note: Please “STOP” the Recording before performing BACKUP Function.

For convenience, the DVR has a built-in DVD-RW where the backup can be made easily.

Insert a blank DVD into the DVD-RW, and then press the BACKUP button. Enter the password when the password prompt appears.

Select the recorded data type to be included on the backup DVD. The illustration to the left has selected NORMAL, ALARM and MOTION data. Use – or + button to check or uncheck the options.

Enter the time and date range of the desired backup. It is also possible to input Start Time and End Time from Time Search Screen by using - & + buttons.
Highlight START button, then press the ENTER button to start the backup process. Please note that the internal DVD-RW icon’s color is gray.

The progress of the backup will be displayed at the bottom of the window in percentages of the entire backup process. Please note that the internal DVD-RW icon’s color will change to blue to signify that backup is in progress.
12. MINI PLAYER

Upon Backup, Mini Player gets copied into the DVD automatically. There is no need to install separate software to view the clips. For advanced playback options, please use the CMS Software.
13. PAN / TILT / ZOOM CONTROL

The DVR comes with an extensive list of PTZ cameras. Please read the PTZ manufacturer’s instruction manual and understand its settings fully prior to proceeding to any attempts to connect and control the PTZ camera through the DVR. Please refer to the PTZ Channel and PTZ Model Select under DISPLAY setup.

When the P/T/Z/FOCUS button is pressed, the display automatically changes to the single channel view mode. Press the appropriate channel number to control the PTZ camera. Some PTZ control functions can only be accessed using the remote controller, so please have the remote controller handy when using the PTZ control interface.

The layout of the PTZ interface conforms to the layout of the front of the DVR or the remote controller. Menu button is the guide anchor position for all other buttons. When in PTZ interface mode, all buttons used for the PTZ related operation.

13.1 FOCUS CONTROL

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image" alt="Focus Out; F1 on remote controller" /></td>
<td>Focus Out; F1 on remote controller</td>
</tr>
<tr>
<td><img src="image" alt="Focus In; F2 on remote controller" /></td>
<td>Focus In; F2 on remote controller</td>
</tr>
<tr>
<td><img src="image" alt="Auto Focus; F3 on remote controller" /></td>
<td>Auto Focus; F3 on remote controller</td>
</tr>
</tbody>
</table>
13.2 IRIS CONTROL

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>☀️</td>
<td>Iris Open; TIME SEARCH on remote controller</td>
</tr>
<tr>
<td>☠️</td>
<td>Iris Close; EXT. SEARCH on remote controller</td>
</tr>
<tr>
<td>🏟️</td>
<td>Auto Iris; LOG on remote controller</td>
</tr>
</tbody>
</table>

13.3 PRESET & TOUR

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>🌑</td>
<td>Set preset position; SPOT OUT on remote controller</td>
</tr>
<tr>
<td>🌑</td>
<td>1. Move the PTZ into desired location.</td>
</tr>
<tr>
<td>🌑</td>
<td>2. Press the Preset button.</td>
</tr>
<tr>
<td>🌑</td>
<td>3. User 1 will illuminate.</td>
</tr>
<tr>
<td>🌑</td>
<td>4. Set the # for the Preset location.</td>
</tr>
<tr>
<td>🌑</td>
<td>5. Press Enter to save and exit.</td>
</tr>
<tr>
<td>🌑</td>
<td>Go to preset position; INFO on remote controller</td>
</tr>
<tr>
<td>🌑</td>
<td>1. Press Go to button.</td>
</tr>
<tr>
<td>🌑</td>
<td>2. Enter the desired Preset # and press Enter.</td>
</tr>
<tr>
<td>🌑</td>
<td>Start Auto Tour; BACKUP on remote controller</td>
</tr>
<tr>
<td>🌑</td>
<td>1. Press Auto Tour Button.</td>
</tr>
<tr>
<td>🌑</td>
<td>2. Press the + button and enter the range of Preset and press Enter.</td>
</tr>
<tr>
<td>🌑</td>
<td>3. For Example, Auto Tour Button, +5 will start the tour of 1 ~ 5 presets of the PTZ Camera</td>
</tr>
</tbody>
</table>

13.4 CUSTOM FUNCTIONS

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>🐸</td>
<td>PTZ custom function 1; DISPLAY on remote controller</td>
</tr>
<tr>
<td>🐸</td>
<td>PTZ custom function 2; ZOOM on remote controller</td>
</tr>
<tr>
<td>🐸</td>
<td>PTZ custom function 3; P/T/Z on remote controller</td>
</tr>
</tbody>
</table>

3.5 AUTO PAN / AUTO TILT / PATTERN / POWER

<table>
<thead>
<tr>
<th>Button</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚂</td>
<td>Auto Pan; STOP on remote controller</td>
</tr>
<tr>
<td>🚂</td>
<td>(Supported on certain European PTZ Camera)</td>
</tr>
<tr>
<td>🚂</td>
<td>Auto Tilt; REW on remote controller</td>
</tr>
<tr>
<td>🚂</td>
<td>(Supported on certain European PTZ Camera)</td>
</tr>
<tr>
<td>🚂</td>
<td>Run Pattern</td>
</tr>
<tr>
<td>🚂</td>
<td>Power On/Off; FF on remote controller</td>
</tr>
<tr>
<td>🚂</td>
<td>(Supported on certain European PTZ Camera)</td>
</tr>
</tbody>
</table>
### 13.6 MENU / EXIT / MOVEMENT SPEED SLOW & FAST

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>Enter Menu; REC on remote controller</td>
</tr>
<tr>
<td>E</td>
<td>Exit Menu; SCHEDULE on remote controller</td>
</tr>
<tr>
<td></td>
<td>Sets left pan speed; LEFT step button on remote controller</td>
</tr>
<tr>
<td></td>
<td>Sets right pan speed; RIGHT step button on remote controller</td>
</tr>
</tbody>
</table>

### 13.7 MOVEMENT SPEED

<table>
<thead>
<tr>
<th></th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Configures the PTZ movement speed for the Remote Control and CMS.</td>
</tr>
</tbody>
</table>
14. ADVANCED RECORDING

Advanced recording comprises of alarm, motion and schedule recording. Unlike the continuous recording mode which records 24 hours a day and seven days a week based on the same settings, these three recording options provides the user the flexibility of customizing the record settings, thus making the most of the hard disk drive usage. Moreover, using these features would shorten search time when the needs arise, as the recorded can be directly accessed from the system logs.

14.1 ALARM RECORDING

Please verify the alarm record settings prior to starting alarm recording. The settings can be adjusted from the ALARM setup. Please note that alarm recording is independent of any recording modes.

Press the RECORD button and the record icon will appear as shown on the left. The DVR will be in standby mode until an alarm is triggered.

Alarm record icon will appear on the channel alarm was triggered. The channel number will turn yellow as it starts to record. The illustration on the left shows channel 3 in alarm recording mode. The duration of the recording will be based on the RECORD TIME setting under ALARM SETUP.

If the alarm buzzer is set to ON and if the alarm inputs are selected, then the alarm buzzer will sound for the duration of the RECORD TIME. Pressing the – button will turn off the buzzer, and pressing + button after will turn the buzzer back on. Press CANCEL button will turn off the alarm circuit.
14.2 MOTION RECORDING
Please verify that the motion option has been enabled under RECORD SETUP menu. Also, verify that the settings for motion grids, motion sensitivity level and record time have been configured under the MOTION SETUP menu. The motion grids are all activated by default, thus, unless it has been deactivated, the motion grid setting may be ignored.

Press the record button and the record icon will appear as shown on the left. The DVR will be on record standby mode until motion is triggered. The DVR does not record as long as there is no motion.

Motion recording icon will appear on the channel motion was detected. The channel number will turn yellow as it starts to record. The illustration to the left shows channel 1 in motion recording mode. The duration of the recording will be based on the RECORD TIME setting under MOTION setup.
14.3 SCHEDULE RECORDING
Schedule recording processes the recording schedule configured from the SCHEDULE menu. Please note that if there are no schedules configured, then the DVR will not record. Please refer to page 71 for setting up schedule recording.

Press the SCHEDULE button to start recording based on the preconfigured schedule. If there is nothing to be run at the time when SCHEDULE button is pressed, the DVR will not record until the designated time.

At the scheduled time, the DVR will execute the schedule recording. Instead of the normal ● REC icon, the DVR will display ● SCHEDULE icon.
14.4 COMBINATION RECORDING
If a need arises to record a combination of motion, alarm and scheduled recording, then the DVR can be configured so that all three features are used in conjunction with one another. *Please make sure that the Normal Record is set to ON from the RECORD ENABLE tab.*

14.4.1 CONTINUOUS RECORDING & ALARM RECORDING
For instances where a location needs to be recorded 24 hours a day seven days a week at a minimal recording speed, but the requirement is to record at higher recording speed in case of an alarm triggers. Both normal recording and alarm recording can be used together to satisfy the needs.

Normal recording settings has been configured to 1 picture per second. Please verify that USE for the camera necessary has been set to ON.

ALARM recording has been configured to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON.

The combination of both settings will meet the requirement of recording 24 hours a day and seven days a week at one picture per second for all channels until an alarm trigger occurs. When an alarm triggers, then the DVR will record 30 pictures per second for the duration of RECORD TIME, then resume the normal recording of 1 picture per second.
14.4.2 MOTION RECORDING & ALARM RECORDING
For instances where a location needs to be recorded whenever motion detection occurs and also needs to be recorded in case of an alarm triggers. Both motion and alarm recording can be used to satisfy the requirement.

Motion recording has been activated under RECORD menu. The recording rate for motion is at 30 pictures per second.

ALARM recording has been configured to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON.

The combination of both settings will allow the DVR to record only when there is a motion detection or alarm trigger. At both instances, the DVR will record at 30 pictures per second for all channels.
14.4.3 SCHEDULE & ALARM RECORDING
For instances where a location needs to be recorded at a predetermined schedule, but also needs to record in case of alarm triggers. Both schedule and alarm recording can be used in conjunction to meet the requirement.

Any of the MODES within the schedule can be configured to be run during the scheduled recording time period. The illustration to the left has modified MODE1 to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON.

ALARM recording has been configured to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON.

The combination of both settings will allow the DVR to record continuously during the scheduled time period, but will record whenever in case of an alarm trigger. At both instances, the DVR will record at 30 pictures per second for all channels.
14.4.4 SCHEDULE MOTION RECORDING & ALARM RECORDING

For instances where a location needs to be recorded using only motion recording at a predetermined schedule, but also needs to record in case of alarm triggers. Both schedule motion recording and alarm recording can be used in conjunction to meet the requirement.

Any of the MODES within the schedule can be configured to be run during the scheduled recording time period. The illustration to the left has modified MODE1 to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON, and that MOTION has been set to ON.

ALARM recording has been configured to record at 30 pictures per second. Please verify that the USE for the camera necessary has been set to ON.

The combination of both settings will allow the DVR to record whenever there is a motion detection during the scheduled time period, but will record any time in case of an alarm trigger. At both instances, the DVR will record at 30 pictures per second for all channels.

14.4.5 SUMMARY OF COMBINATION

The following is the summary of possible combinations of recording modes.

<table>
<thead>
<tr>
<th>RECORD MODE</th>
<th>MENU</th>
<th>RECORD CAMERA USE</th>
<th>ALARM CAMERA USE</th>
<th>SCHEDULE CAMERA USE</th>
<th>MOTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>RECORD</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Motion</td>
<td>RECORD</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
</tr>
<tr>
<td>Alarm</td>
<td>ALARM</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Schedule</td>
<td>SCHEDULE</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>OFF</td>
</tr>
<tr>
<td>Schedule Motion</td>
<td>SCHEDULE</td>
<td>OFF</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Normal and Alarm</td>
<td>RECORD &amp; ALARM</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Motion and Alarm</td>
<td>RECORD &amp; ALARM</td>
<td>ON</td>
<td>ON</td>
<td>OFF</td>
<td>OFF</td>
</tr>
<tr>
<td>Schedule and Alarm</td>
<td>ALARM &amp; SCHEDULE</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
<tr>
<td>Schedule Motion and Alarm</td>
<td>ALARM &amp; SCHEDULE</td>
<td>OFF</td>
<td>ON</td>
<td>ON</td>
<td>ON</td>
</tr>
</tbody>
</table>
SETUP
Press the menu button to access the main menu for the advanced settings of the DVR.

The menu will display the following categories:

Directional buttons are used to navigate through all the main categories and their submenus. ENTER button is used to access and save the settings and exit out of the submenus. The – and + buttons are used to select available options. CANCEL button is used to revert back to previous settings and exiting the submenus without saving any changes.
1. **DISPLAY**

DISPLAY menu allows the user to customize a variety of options related to the main display of the DVR. It allows the display of the STATUS BAR, the channel number and the camera title, selection of border line and background colors, output device, and the sequential display of display modes.

1.1 **DISPLAY SETUP**

**STATUS BAR**
Select the display of the status bar containing various USB, client connection, date & time, remaining hard disk drive size and remaining recording time. If set to HIDE, then the bar at the bottom of the screen will be hidden from the main display. The default is SHOW.

**CAMERA**
Select the display of channel numbers and the title of each camera. The default is ON for both settings.

**BORDER LINE**
Select the border line color from the following available colors:
- Black
- Dark Gray
- Gray
- White
The default border line color is White.
BACKGROUND
Select the background color from the following available colors:
- Black
- Dark Gray
- Gray
- Blue
- White
The default background color is Gray.

DISPLAY DEVICE
Select the main video output.
- CCTV Monitor: Optimized for CRT Monitors.
- VGA: Optimized for LCD Monitors.

1.2 SEQUENTIAL SETUP

DWELL TIME
Select the sequence delay time. Available delay time is from 1 second to 30 seconds per display. The default is five seconds.

SEQ. MODE
Select what display modes to include in sequenced display. Single, quad, 6, 7, 8, 9, 10, 13 and 16 channel view modes can be included in the sequential display mode.

Selected view modes will be displayed in sequence, from the smallest number of windows to the largest number of windows.

All modes are set to OFF by default.

FULL SCREEN
Select which channel to include when in sequential display mode.

All channels are set to ON by default.
1.3 SCREEN SAVER

**USE**
Turns off the signal to the monitor after designated time. Default is OFF.

**TIME**
Configure the time so that the unit goes into screen saver feature on a designated time.

**WAIT**
Dwell time before the unit goes into Screen Save Mode.
2. CAMERA

CAMERA menu allows the user to customize the display parameters of each channel, such as the covert mode, brightness, contrast, color, channel title and the PTZ camera associated.

CAMERA SELECTION
Select the camera that needs to be modified or adjusted.

COVERT
Select between covert mode (YES) and normal mode (NO). If covert mode is activated, the activated camera’s display will be hidden on the monitor. However, the video is still being recorded. When Admin is connected using the CMS software, Admin will be able to view the images but not the User.

BRIGHTNESS
Adjust the brightness using – or + button. The default value is 50%.

CONTRAST
Adjust the contrast using – or + button. The default value is 50%.

COLOR
Adjust the color using – or + button. The default value is 50%.
**TITLE**

Customize the channel title with up to a combination of 12 alphanumeric digits. As entering the alphanumeric values on cellular phones or keypad driven input systems, press the appropriate numeric buttons on the remote controller or on the DVR to enter the desired letters and numbers. Refer to the following illustration for the sequence of values.

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>9</th>
<th>Q</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>C</td>
<td>D</td>
<td>10</td>
<td>S</td>
<td>T</td>
</tr>
<tr>
<td>3</td>
<td>E</td>
<td>F</td>
<td>11</td>
<td>U</td>
<td>V</td>
</tr>
<tr>
<td>4</td>
<td>G</td>
<td>H</td>
<td>12</td>
<td>W</td>
<td>X</td>
</tr>
<tr>
<td>5</td>
<td>I</td>
<td>J</td>
<td>13</td>
<td>Y</td>
<td>Z</td>
</tr>
<tr>
<td>6</td>
<td>K</td>
<td>L</td>
<td>14</td>
<td>.</td>
<td>@</td>
</tr>
<tr>
<td>7</td>
<td>M</td>
<td>N</td>
<td>15</td>
<td>-</td>
<td>_</td>
</tr>
<tr>
<td>8</td>
<td>O</td>
<td>P</td>
<td>16</td>
<td>SPACE</td>
<td>-</td>
</tr>
</tbody>
</table>
P/T/Z MODEL
Select the PTZ camera to be controlled from the DVR.

List of compatible PTZ cameras, in the order of appearance

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>Model Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 NUVICO</td>
<td>NV PROTOCOL 9600bps</td>
</tr>
<tr>
<td>2 Merit Lilin Ent</td>
<td>PIH-7000/7600: 9600bps</td>
</tr>
<tr>
<td>3 VCL</td>
<td>Orbiter Microsphere : 9600bps</td>
</tr>
<tr>
<td>4 SAMSUNG</td>
<td>SCC641: 9600bps</td>
</tr>
<tr>
<td>5 NEC</td>
<td>NC-21D: 9600bps</td>
</tr>
<tr>
<td>6 SUNKWANG</td>
<td>SK2107: 9600bps</td>
</tr>
<tr>
<td>7 Reserved</td>
<td></td>
</tr>
<tr>
<td>8 D-MAX</td>
<td>PTZ Protocol: 9600bps</td>
</tr>
<tr>
<td>9 LG</td>
<td>LPT-A100L P/T/Z: 9600bps</td>
</tr>
<tr>
<td>10 HONEYWELL</td>
<td>GC-655N: 9600bps</td>
</tr>
<tr>
<td>11 WonWoo</td>
<td>PT-101: 9600bps</td>
</tr>
<tr>
<td>12 PELCO</td>
<td>D-PROTOCAL: 2400 bps</td>
</tr>
<tr>
<td>13 PELCO</td>
<td>D-PROTOCAL: 4800 bps</td>
</tr>
<tr>
<td>14 PELCO</td>
<td>D-PROTOCAL: 9600 bps</td>
</tr>
<tr>
<td>15 CNB</td>
<td>AN200 : : 9600bps</td>
</tr>
<tr>
<td>16 CANON</td>
<td>VC-C4: 9600bps</td>
</tr>
<tr>
<td>17 PELCO</td>
<td>P-PROTOCAL :2400bps</td>
</tr>
<tr>
<td>18 PELCO</td>
<td>P-PROTOCAL :4800bps</td>
</tr>
<tr>
<td>19 PELCO</td>
<td>P-PROTOCAL :9600bps</td>
</tr>
<tr>
<td>20 PELCO</td>
<td>Expanded:2400bps</td>
</tr>
<tr>
<td>21 PELCO</td>
<td>Expanded:4800bps</td>
</tr>
<tr>
<td>22 PELCO</td>
<td>Expanded :9600bps</td>
</tr>
<tr>
<td>23 Panasonic</td>
<td>WV-CS/W85x, WV-CS86x: 9600bps</td>
</tr>
<tr>
<td>24 HONEYWELL</td>
<td>HSDN-251N/P: 9600bps</td>
</tr>
<tr>
<td>25 GE/ Kalatel</td>
<td>Cyber Dome Series: 9600bps</td>
</tr>
<tr>
<td>26 Dong-yang Elec</td>
<td>Smart Dome</td>
</tr>
<tr>
<td>27 Bosch/Phillips</td>
<td>TC8560/TC700 Series</td>
</tr>
<tr>
<td>28 Sysmania</td>
<td>ORX1000 : 2400bps</td>
</tr>
<tr>
<td>29 AD</td>
<td>Delta Dome : 4800 bps</td>
</tr>
<tr>
<td>30 HUNT</td>
<td>HTZ-2300:9600bps</td>
</tr>
<tr>
<td>31 HAZEM</td>
<td>Resivered</td>
</tr>
<tr>
<td>32 RVT</td>
<td>EZ PROTOCOL</td>
</tr>
<tr>
<td>33 LG</td>
<td>Dome Protocol:9600 bps</td>
</tr>
<tr>
<td>34 ELMO</td>
<td>PTC-200C/400C:9600 bps</td>
</tr>
<tr>
<td>35 NICECAM</td>
<td>MP-1xxx: 9600 bps</td>
</tr>
<tr>
<td>36 C&amp;B TECH</td>
<td>CNB-PTZ102</td>
</tr>
</tbody>
</table>

P/T/Z ID
Select the P/T/Z Camera ID to be controlled from the DVR.
3. MOTION

MOTION menu allows customization of motion related options. It includes post motion recording time settings, motion sensitivity level per camera, and motion grid selection.

RECORD TIME
RECORD TIME determines the amount of the time the DVR records after the initial motion detection. The user may choose from 10 to 300 seconds in 10 second intervals. If additional motion is detected during the post record duration, then the counter is reset, and will record for an additional set time of the RECORD TIME.

The default value is 40 seconds.

CAMERA SELECTION
Select the camera that needs to be modified or adjusted.

MOTION LEVEL
Use – or + button to adjust the motion sensitivity level. The necessary sensitivity can be immediately determined by looking into the grids and observing the green tracking of the movement. Sensitivity level 1 is the lowest setting and level 20 is the highest setting. The default sensitivity level is 10.
MOTION GRID
Activate or deactivate each grid by pressing the appropriate numeric button. All the grids are active by default, and are highlighted in blue tint. If deactivated, then the tint will be removed.

Press the – or + button after highlighting the PENCIL icon to activate all grids at once.

Press – or + button after highlighting the ERASER icon to deactivate all grids at once.
4. RECORD

RECORD menu allows customization of continuous record settings. The usage of camera, record quality as well as record rate, audio record and motion record options are available.

USE
Select the usage of the camera. If the camera is set to ON, then that specific camera will be used to record. If set to OFF, then that specific camera will not be used to record. The default value is ON.

QUALITY
Select from five available record qualities, Low, Middle, High, Super and Ultra. The default value is HIGH.

RATE
Adjust the record rate for each camera. Note that the maximum global record rate is 120 pictures per second at the resolution of 320 x 240, 60 pictures per second at the resolution of 720 x 240, and 30 pictures per second at the resolution of 720 x 480.

AUDIO
Select audio record ON or OFF for each camera. The default value is OFF.

MOTION
Select motion record ON or OFF for each camera. The default value is OFF.
5. ALARM

ALARM menu allows customization of alarm related options. It includes alarm record settings, post alarm recording time setting, alarm response record option, alarm buzzer, and alarm output related options.

5.1 RECORD SETUP

USE
Select the usage of the camera. If the camera is set to ON, then that specific camera will be used to record. If set to OFF, then the particular camera will not be used to record. The default value is ON.

QUALITY
Select from five available record qualities, Low, Middle, High, Super and Ultra. The default value is HIGH.

RATE
Adjust the record rate for each camera. The maximum record rate is 30 pictures per second for CIF resolution. If the global record resolution is set to 720 x 240, then the maximum record rate is 15 pictures per second. Finally, if the global record resolution is set to 720 x 480, then the maximum record rate is 7 pictures per second.

AUDIO
Select audio record ON or OFF for each camera. The default value is OFF.
INPUT
Select the alarm input circuit type. Choose from the two options:

N.O: Normally Open Circuit
N.C: Normally Closed Circuit

The default circuit is N.O.

5.2 ALARM SETUP

RECORD TIME
RECORD TIME determines the amount of the time the DVR records after the initial alarm trigger. The user may choose from 10 to 300 seconds in 10 second intervals. If additional alarm is triggered during the post record duration, then the counter is reset, and will record for an additional set time of the RECORD TIME.

RECORD CAMERA
Record camera provides the option of two distinct recording modes when an alarm trigger occurs:
ALL: Any alarm trigger will force all channels to record.
1:1: The channel from which an alarm trigger occurred will record.

MOTION TO ALARM
The DVR will treat a motion trigger as an Alarm Trigger. From the LOG, it will be listed as Motion
The unit will not send E-mail

ALARM BUZZER
The DVR emits a high pitched, continuous buzzer when the alarm is triggered and starts to record. The buzzer will sound for the duration of the RECORD TIME. The default setting is off.
ALARM OUT
Configure relay to trigger in conjunction with any of the alarm inputs. If SYSTEM is selected, the relays will be triggered in case of system abnormalities, such as HDD FAIL, FAN LOCK and so on.

ALARM OUT ON/OFF
Enable or disable the alarm relays. The default value is OFF.

5.3 RECORD ENABLE
Normal: Turn Alarm Recording On/OFF.
Mode 1~4: Enable or disable the Mode 1~4 at the Schedule Setup.
6. SCHEDULE

Schedule setup configures a variety of timed recording settings to provide a fully automated recording option. Four additional recording groups are available in addition to NORMAL and ALARM recording.

Note: Remember to activate the schedule by pressing the Schedule button on the front panel after all the values have been entered. If no schedule is entered, the unit will prompt the user to set the schedule function.

6.1 CHART

The CHART displays the recording schedules configured on the DVR. It breaks down the days of the week in eight different categories: ALL, SUN, MON, TUE, WED, THU, FRI and SAT.

Sunday through Saturday is the daily schedule of the schedule whereas ALL is for everyday of the week.
6.2 MODE 1 ~ 4
Schedule recording allows up to four different recording settings to be configured and be used in combination. The options are the same as RECORD menu.

In order to facilitate the concept of the SCHEDULE recording, the following example is provided as references to schedule recording in real-life situations.

EXAMPLE
A store owner needs to record from 10am through 8pm every day of the week using continuous recording. Additionally, the owner needs to record during his non-business hours using motion detection to conserve the space on his hard disk drive. The owner wants to record at 30 pictures per second during his business hours and 10 pictures per second during his non-business hours.

Select ALL from the chart, then press the ENTER button to access ALL time entry menu.
Enter the time for the regular business hours, 10am through 8pm, and then select MODE 1.

Please note that the END time is entered as 19:59. The time must be entered in 24 hour format and must end one minute before the actual end time as the DVR will record for one full minute starting at 19:59.

Enter the first part of the non-business hours, 8pm through 11:59pm, and then select MODE 2.

The DVR does not recognize beyond the actual 24 hour (00:00 ~ 23:59) cycle. Hence the overnight schedule must be divided into two parts.

Enter the second part of the non-business hours, midnight through 9:59am, and then select the same mode. Press the ENTER button to save and exit to the CHART screen.

Please note that pressing numerical button 16 deletes the entries from BEGIN, END and MODE section.

The CHART will display the schedule for all days of the week, MODE 1 recording from 10am through 8pm and MODE 2 recording from 8pm through 10am.
Select MODE 1 and adjust the settings accordingly.

Select MODE 2 and adjust the settings accordingly. Press ENTER button to save and exit to main menu.
7. NETWORK

The DVR utilizes widely available broadband internet connections such as T1, Cable, and DSL to allow remote access, monitoring and control of the DVR in a relatively reliable manner.

7.1 IP SETUP

7.1.1 CONFIG
Select from the two types of available IP address types:
STATIC IP: an IP address that remains constant for the duration of the contract of the Internet service.
DHCP: Dynamic Host Configuration Protocol, a service where the IP address is issued automatically.

IP ADDRESS
If STATIC IP is selected, this is where the IP address information is entered as provided by the Internet Service Provider or the in-house network administrator.

NETMASK
If STATIC IP is selected, this is where the SUBNET MASK information is entered as provided by the Internet Service Provider or the in-house network administrator.

GATEWAY
If STATIC IP is selected, this is where the GATEWAY information is entered as provided by the Internet Service Provider or the in-house network administrator.
DNS SERVER
If STATIC IP is selected, this is where the DNS SERVER information is entered as provided by the Internet Service Provider or the in-house network administrator.

PORT
Enter the connection port for the client such as Internet Explorer or CMS Lite. The default value is 7000.

7.2 E-MAIL

7.2.1 USE
Select between Off, Default or SMTP for your e-mail notification option. Off: DVR does not send e-mail notification. Default: DVR sends e-mail notification through dvrhost.com. SMTP: DVR sends e-mail notification through private or user’s e-mail server.

7.2.2 SMTP SERVER
Enter the SMTP address.

7.2.3 SMTP PORT
Enter the SMTP Port.

7.2.4 SMTP AUTH
Turn the SMTP Authorization On or Off.

7.2.5 SMTP USER ID
Enter the SMTP User ID information.

7.2.6 SMTP PASSWORD
Enter the SMTP Password information.

7.2.7 E-MAIL ADDRESS
The DVR can send e-mail notification to 5 different e-mail addresses.
7.3 DDNS

7.3.1 USE
OFF: The unit disables the DDNS feature.
DEFAULT: Default, free of charge service where the unit communicates to the default DDNS server named “dvrhost.com” so that Dynamic IP Address can always connect to fixed address.
DYNDNS: The unit communicates with “dyndns.org” for the DDNS service.

7.3.2 DOMAIN NAME
If DYNDNS is chosen, enter the domain name provided by the DYNDNS.

7.3.3 USER ID
If DYNDNS is chosen, enter the user name provided by the DYNDNS.

7.3.4 PASSWORD
If DYNDNS is chosen, enter the password provided by the DYNDNS.

7.3.5 UPDATE TEST
Test utility where the unit tests the communication of chosen service.
### 7.4 MISC.

#### 7.4.1 BANDWIDTH
Select the amount of network bandwidth that the DVR can utilize.

#### 7.4.2 PING BLOCK
Select On or Off to have the DVR block the ping request.

#### 7.4.3 SCAN BLOCK
Select On or Off to have the DVR block the Auto Scan request from the CMS Software.
7.5 CONFIGURING THE DVR WITH A ROUTER INTO A LAN

The majority of any network will often consist of a single IP address which shares the internet access through a router. This IP address may be any external (public) static IP address or any dynamic IP address issued by the Internet Service Provider.

The purpose of a router is to enable multiple personal computers and any other devices that require internet connection to access the internet simultaneously. Most routers by default enable (open) commonly used ports so that mainstream applications such as Hypertext Transfer Protocol (HTTP, Port 80), File Transfer Protocol (FTP, Port 21), Telnet (Port 23) and Post Office Protocol 3 (POP3, Port 110) are used.

Over the next pages, Linksys WRT54G was used to illustrate a sample procedure.
Open Internet Explorer then type in http://192.168.1.1 to access the router. Enter the User Name and Password to access the router. You will then be taken to the main menu. The factory user name is **blank** and password is **admin**.
Click on Application & Gaming tab to access port forwarding configuration page.
Enter the three designated port: 7000 for the DVR. Point each port to the DVR. Illustration shows that the DVR’s IP address being 192.168.1.251.

In the following examples, DVR7000 was used. Make sure you enable the port forwarding.

Port 7000 is added as shown.
7.6 CONFIGURING THE DVR TO COMMUNICATE WITH A LINKSYS ROUTER

Go to Network in Main Menu.

Set the CONFIG as STATIC IP.

Make sure to change the information to:

IP ADDRESS: 192.168.001.251
NETMASK: 255.255.255.000
GATEWAY: 192.168.001.001
PORT: 7000
7.7 IDENTIFYING THE NETWORK ADDRESS OF THE DVR

Under the SYSTEM and its INFO Tab, locate the HOSTNAME.

For this DVR, it is: **L51337F**

Therefore, the Network Address of this DVR is as follows:

**L51337F.DVRHOST.COM:7000**

L51337F: Unique permanent ID of this DVR.
DVRHOST.COM: Free DDNS Service
:7000: Port that was set under the Network Section.

You can use the L50C298.DVRHOST.COM:7000 Network Address in two ways:
1. Internet Explorer: Please refer to Page 91.
2. CMS Lite Software: Please refer to Page 77.
8. SYSTEM

System Setup allows modification of various system features such as System ID, Automatic Key Lock, Key Tone, HDD rewrite policy, overall system record resolution, Time and date related settings, Password for different levels of users, formatting various hard disk drives and the system information.

8.1 GENERAL

8.1.1 SYSTEM ID
Select the DVR's SYSTEM ID. Up to 99 DVRs can be controlled using one remote controller. To select the DVR to be controlled with the remote controller, press and hold the DVR ID button. While holding the DVR ID button, press the appropriate DVR ID number. For example, enter 05 for DVR ID 05, enter 43 for DVR ID 43, and such. The default value is 0.

8.1.2 AUTO LOCK
The DVR locks all the buttons after three minutes of inactivity. The buttons can be unlocked with the user password. The default is OFF.

8.1.3 KEY TONE
The DVR emits a beep every time a button is pressed. The default is ON.

8.1.4 KEYPAD MODEL
Select the type of keyboard controller to be used for the DVR.
8.1.5 RESOLUTION
Select between 360x240, 720x240 and 720x480. To change the setting, the recording must be stopped.

8.1.6 RECORD LIMIT
When the setting is specified, the unit erases the playback data automatically accordingly.

8.1.7 PB DEINTERLACE
Playback Deinterlace.

8.1.8 RUN ON BOOT
Specify which recording mode the unit starts after boot-up.

8.1.9 PASSWORD
Specify if unit should prompt for password when required such as entering Menu or stopping record.

8.2 TIME

8.2.1 TIME SYNC
If the DVR is connected to the network, and if there are more than one DVR connected, then a DVR can be configured as the master DVR from which all other DVRs synchronize their time and date. The default is OFF.
ON: The DVR is set to Slave DVR and synchronizes with the master DVR.
OFF: The DVR is set to Master DVR and does not synchronize with any DVRs.

8.2.2 TIME SERVER
Enter the IP address of the Master DVR. This is applicable only to Slave DVRs.

8.2.3 DATE
Enter the current date in MM/DD/YYYY format.
8.2.4 TIME
Enter the time in 24 hour format.

8.3 ACCOUNT

8.3.1 USER
The DVR can differentiate and recognize different rights to different users. Highlight the appropriate user and configure their privilege.

8.3.2 ACTIVATE
Activate the User 1~5.

8.3.3 PRIVILEGE
Check or uncheck the privilege for the user.

8.3.4 PASSWORD
Set the password for the users.
8.4 DISK

8.4.1 FORMAT
Select devices Format.

**Note:** After selecting which device to format, highlight START and then press + to begin formatting.

8.4.2 INTERNAL HDD
Select the record policy of the internal hard disk drive. By default, the hard disk drive will overwrite from the beginning when it becomes full.

8.4.3 DISK MONITOR
By factory default, the DVR is consistently monitoring the HDD for any malfunction and failures. You can manually turn this function off.
8.5 UPDATE

8.5.1 UPDATE
Starts the Firmware Upgrade of the unit.

Note: You will need USB Thumbdrive and upgrade file present on the USB Thumbdrive.

8.5.2 BOARD VERSION
Displays the unit’s Board Version.

8.5.3 FPGA VERSION
Displays the unit’s FPGA Version.

8.5.4 BIOS VERSION
Displays the unit’s BIOS Version.

8.5.5 LINUX VERSION
Displays the unit’s LINUX Version.

8.5.6 APP VERSION
Displays the unit’s APPVersion.
8.6 INFO

8.6.1 MODEL
Displays the unit’s model number.

8.6.2 HOSTNAME
Displays the unit’s HOSTNAME.

8.6.3 LANGUAGE
Displays the unit’s operating language.

8.6.4 NETWORK
Displays the unit’s IP Address.

8.6.5 INTERNAL HDD
Displays the total HDD and its total capacity.

8.6.6 RACK DEVICE
Displays the connected Rack Device.

8.6.7 USB (FRONT)
Displays the connected USB Device.

8.6.8 IDE BUS 0
Displays the status of the IDE Channel A & B.

8.6.9 IDE BUS 1
Displays the status of the IDE Channel C & D.
CMS LITE
The CMS Lite is a dedicated client program that connects and manages in real time.

1. SYSTEM REQUIREMENT
The CMS Lite utilizes much resource from the computer as it draws video data from the DVR. Therefore, the PC must be equipped with a higher minimum requirement for its components and operating system.

The following chart displays the minimum and the recommended system specification to operate the CMS properly.

<table>
<thead>
<tr>
<th></th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Windows XP</td>
</tr>
<tr>
<td>CPU</td>
<td>Pentium IV 2.8 GHz</td>
</tr>
<tr>
<td>RAM</td>
<td>512MB RAM</td>
</tr>
<tr>
<td>Video Card</td>
<td>16MB</td>
</tr>
<tr>
<td>Free Space</td>
<td>2 GB</td>
</tr>
<tr>
<td>Resolution</td>
<td>1024x768</td>
</tr>
<tr>
<td>DirectX</td>
<td>DirectX 9.0 or higher</td>
</tr>
<tr>
<td>Video Overlay</td>
<td>Overlay YUY2 Surface</td>
</tr>
<tr>
<td>Network</td>
<td>Ethernet 10/100B-TX</td>
</tr>
<tr>
<td>Port Forwarding</td>
<td>Port 7000 TCP</td>
</tr>
</tbody>
</table>

2. INSTALLING CMS LITE
Insert the program CD into the CD-ROM or DVD-ROM drive of the computer and locate the CMSLiteInstaller_X_X_X_XX.exe. The Xs represent the version number of the program. Double-click on the file, which opens the setup dialog.
The setup dialog displays the installation options: the CMS Lite, Start Menu Shortcuts and Desktop Shortcuts.

The Start Menu Shortcuts and Desktop Shortcuts may be unchecked if desired.

Click on **Next** to continue.

Select the folder in which the program will be installed. By default, it is installed in “C:\Program Files\CMS LITE.”

Click on **Install** and the installation will begin.

Click on **Close** to finish the installation.
3. EXECUTING CMS LITE

Double-click on the CMS Lite icon and the initial log-in screen will appear illustrated in below.

![CMS Lite Login Screen]

1. Enter the IP Address of the DVR or the hostname.
2. Enter the Port Number of the DVR. Port 7000 is the Default.
3. Enter either the Admin or User Password of the DVR.
4. Select the Video mode either NTSC or PAL. NTSC is the Default.
5. Click on the Connect button after all the information has been entered.
6. Click on the File Playback button to go directly into file playback.
4. CMS LITE
Locate the CMS Lite icon from the desktop and double-click on it, or locate the CMS Lite icon in Start – Programs – CMS Lite.

1. MAIN CAMERA DISPLAY WINDOW
Live or playback video is displayed up to 16 cameras in the main window. When the actual video is displayed, it will display the channel number and title as well as the frame rate.

2. CAMERA DISPLAY SELECTION
From the top: single, 4 channel, 6 channel, 7 channel, 8 channel, 9 channel, 10 channel, 16 channel, channel view modes. All display modes are accessible no matter how many DVRs are connected or how many cameras are being displayed.

3. MODE DISPLAY
Displays whether the program is in live or playback mode.
4. FILE OPEN

Open any downloaded or saved images from CD/DVD for playback.

5. CAPTURE AND PRINT

Takes a snapshot of the live or playback video. These images can be saved in JPEG or BMP file format. In addition, you can print the image from your local printer.

6. CAMERA SELECTOR

Select specific camera to go into full screen.

7. PAN / TILT / ZOOM CONTROL

If one or more Pan / Tilt / Zoom cameras are installed on the DVR, they can be individually selected and controlled using the PTZ control box. To control a channel-specific PTZ camera, simply click on the channel where the PTZ camera is connected.
1. Pan & Tilt
   - Pan & Tilt

2. Zoom In
   - Zoom In

3. Zoom Out
   - Zoom Out

4. Focus
   - Focus Near
   - Focus Far
   - Auto Focus

5. Iris
   - Iris Close
   - Iris Open
   - Auto Iris

6. Preset & Tour
   - Save Preset
   - Go to Preset
   - Run Presets Sequentially

7. Special Functions
   - Custom Functions depending on the PTZ Camera
   - Custom Functions depending on the PTZ Camera
   - Custom Functions depending on the PTZ Camera

8. Auto Pan
   - Run Auto Pan

9. Auto Tilt
   - Run Auto Tilt

10. Pattern
    - Run Pattern

11. Menu, Escape, and Pan Speed
    - Go into Menu
    - Escape Menu
    - Set Pan Speed

12. Power
    - Power
5. CMS LITE – LIVE MODE

1. Displays the Camera Title

2. Displays the Local Time of the DVR.

3. Displays DVR Status:
   - REC: Normal Recording
   - Wait: Initial Connection
   - Loss: Video Loss
   - Close: Disconnected from the DVR.
   - Alarm: Alarm Recording
   - Motion: Motion Recording
   - PB: Playback for selected channel.
   - Live: Live Viewing
   - Limit: Max Network Connection is limited to 3 users.

4. Displays Frames Per Second
6. CMS LITE – PLAYBACK MODE

Click on the Mode Selector button to switch to Playback Mode.

1. Select Channel
During the remote or local playback, any camera can be accessed and viewed in single channel view mode by clicking on any camera number. The same can be done by double-clicking on any channels.

2. Playback Speed
During playback, the images can be paused, fast forward, fast reverse. It can also be in a frame by framed mode.

3. Hour Slot
Click on the desired hour slot.

4. Minute Slot
Click on the desired minute slot

5. Slide
Slide can be dragged left or right so that the user can pin-point to exact time within the 5 minute slot.
6.1 SEARCH

1. Year and Month

2. Days

3. Hour

4. Minute

5. Recorded Video Category.
   Displays different types of recording for each hour and minute slot:
   - Yellow: Normal Recording
   - Green: Motion Recording
   - Red: Alarm Recording.

6. Play and Download
   - Play: Start live playback.
   - Download the videos into the HardDrive. By default, the files are saved in "C:\Program Files\CMS Lite\Download".
6.2 REMOTE SEARCH
Click on the Remote Search Icon.

6.3 REMOTE PLAYBACK
Select the date and the time.

Click on PLAY to begin the remote playback.
The Hour, Minute and the Clip can be clicked at any time to move backward or forward in time. You can also change the speed of the playback.

6.4 DOWNLOAD
The file selection process is just as selecting a slot for remote playback. To download the file, click on **Download** instead of **Play**.

The Download Dialog will appear displaying the Start time, End time and currently downloading section.
Once the download is complete, “Download Complete” will be displayed.

6.5 LOCAL SEARCH

Click on Local Search Icon.

6.6 LOCAL PLAYBACK

Select the date and the time.
The Hour, Minute and the Clip can be clicked at any time to move backward or forward in time. You can also change the speed of the playback.
The DVR Setup allows modification of all system settings through CMS Lite as it would be done accessing the DVR menu screen.

Please refer to Page 45 for explanation of the Setup.
INTERNET EXPLORER LIVE VIEW
Web CMS is a CMS software that run over Internet Explorer. It is extremely convenient since the user does not need to install dedicated CMS software in the PC. The function is exactly same as CMS except that WEB CMS does not support Download. It is to view live images and playback only.

CONNECT TO THE UNIT VIA INTERNET EXPLORER

1.1 ENTER THE ADDRESS

Enter the IP address of the unit in the address pane of the Internet Explorer.

For example, type in http://192.168.0.85:7000

Above illustrates example of a unit when it is utilizing port 7000.

1.2 LOG-IN PROCEDURE

You can either sign in with: admin or user. Next enter the password for the unit.

Click on View Live Image(Use overlay) to connect to the DVR.

Use Overlay: Uses Video Hardware Acceleration for better picture quality. Not use Overlay: Does not use Video Hardware Acceleration for older PCs.
If connecting to the unit for the first time, click on Install ActiveX Control so that the plug-in are loaded.

Click on Install.

When the Image Loading is done, the images should appear.