Thank you for buying our DVR

Dear customer, thank you for choosing to purchase and use our product! If while using this product you encounter any technical problems or problems with quality, please contact us. We are ready to serve you. Before using this product, please carefully review the warranty information.

1. Service Contract
This device may be returned for a refund from the seller within 30 days. Outside the return policy and within 90 days of the purchase a defective device will qualify for a replacement at the discretion of Zmodo. This device otherwise comes with a 1 year limited parts and labor warranty.

2. Requirements for return or replacement
The products outward appearance should have no scratches, dirt, dents, blemishes, or alterations of any kind. A copy of the purchase invoice and warranty certificate will be required.

3. In the event of the following situations, regardless of expiration Date, location, repair or part replacement, our company must receive payment, and is not liable for any payment to the consumer. All resulting loses will be the consumer’s responsibility:
   - In cases of use causing the product’s malfunction or damage, or if the environment is not suitable for the product’s usage and causes malfunction or damage;
   - In cases of natural disasters, as defined by law, or unavoidable circumstances that are not related to the product’s quality that cause the product’s malfunction or damage;
   - In cases that the consumer’s purchase receipt and the product ID number/model number written on the warranty card are inconsistent;
   - In cases that the consumer’s use, care, or protection inadvertently cause the machine’s malfunction or damage;
   - In cases that the product’s up-to-standard certificate is damaged;
   - In cases that there is no purchase receipt or warranty card;
   - In cases that the repair warranty has already expired.

4. No other warranties, other than Zmodo’s repair warranty rules are acknowledged.

5. In order to ensure consumer’s rights, please carefully read the repair warranty content.
Contents

Chapter One: Introduction .................................................................................................................. 4
  1 Brief Introduction.......................................................................................................................... 4
  2 Main Features ............................................................................................................................... 4

Chapter Two: Installation ................................................................................................................... 5
  1 Package Contents .......................................................................................................................... 5
  2 Front Panel Operation ................................................................................................................... 5
  3 Rear Panel Operation ..................................................................................................................... 6
  4 Remote Control ............................................................................................................................. 6
  5 Hard Disk Installation .................................................................................................................... 7
     1) Installation procedure ................................................................................................... 7
  6 Rear Panel Connections ................................................................................................................. 7

Chapter Three: Menu Description .................................................................................................... 8
  1 Menu Structure ............................................................................................................................. 8
  2 Menu Operations ......................................................................................................................... 9

Chapter Four: Operations .................................................................................................................. 9
  1 Power On ...................................................................................................................................... 10
     Preview ...................................................................................................................................... 10
     1) Channel Status Display Area .......................................................................................... 10
     2) System Status Bar .............................................................................................................. 10
     3) Tool Bar .............................................................................................................................. 11
  3 Record ....................................................................................................................................... 11
     1) Manual Record .................................................................................................................... 12
     2) Record Schedule ................................................................................................................. 12
  4 Camera Control ............................................................................................................................. 12
     1) PTZ Control ....................................................................................................................... 12
     2) Motion Detection Settings ............................................................................................... 12
     3) Mask Setting ...................................................................................................................... 13
  5 Playback ..................................................................................................................................... 13
  6 Backup ....................................................................................................................................... 14
  7 Alarm Settings .............................................................................................................................. 15
     1) Alarm Input ......................................................................................................................... 15
     2) Alarm linkage ....................................................................................................................... 15
     3) Alarm Detection and Schedule ......................................................................................... 15
     4) Device Exception Status ....................................................................................................... 15
  8 Network operation ......................................................................................................................... 15
     1) Network settings ................................................................................................................ 15
     2) Web Client Operation ......................................................................................................... 16
     3) Web Screen Description ....................................................................................................... 16
     4) Device Parameters Settings ............................................................................................... 17
     5) Playback .............................................................................................................................. 18
     6) Bidirectional Talk ............................................................................................................... 18
     7) Log ....................................................................................................................................... 18
     8) Remote Upgrade .................................................................................................................... 19
  9 Maintenance ................................................................................................................................ 19
     1) Log view ............................................................................................................................ 19
     2) Upgrade ............................................................................................................................. 19
     3) Device Information ............................................................................................................. 19
4) Format HDD ........................................................................................................ 19
5) Lock out ............................................................................................................. 19
6) Restore to factory defaults ............................................................................. 19
7) Input/output parameter ................................................................................ 19
8) Auto-maintenance .......................................................................................... 19

10) Advanced Settings ............................................................................................ 19
1) Settings of System ............................................................................................ 19
2) User management .............................................................................................. 20
3) Advanced Setting of Record ............................................................................ 20
4) Advanced Setting of Video ............................................................................. 20

Chapter Five: Appendix .......................................................................................... 21
1) Specifications .................................................................................................... 21
2) Methods of Calculating HDD Capacity .......................................................... 22
   1) Calculate the maximum capacity of the build-in hard disk. ..................... 22
   2) Calculate the compression bit rate for recording T hours. ....................... 22
3) Default Values .................................................................................................. 23
4) Introduction of Mobile phone Monitor .............................................................. 24
   1) Configuration of server (DVR) ..................................................................... 24
   2) Installation and running of client (mobile phone) procedure ................... 25
Chapter One: Introduction

1 Brief Introduction
This SBN Series DVR is 4-channel playback H.264 main profile stand alone DVR with Pentaplex function: record, playback, live preview, remote preview and backup supported. It is a professional, high performance intelligent audio & video solution with a user-friendly GUI and practical industrial design. This series DVR is suitable for civil applications such as a home, office, and small business beside the common security and surveillance applications.

2 Main Features
* 4/8/16 channel PAL/NTSC/SECAM video input and H.264 compression standard with each channel being compressed independently in real-time CIF resolution or non-real time D1 or HD1 resolution
* 4 channel audio input and G.726/ADPCM-IMA compression standard with each channel being compressed independently in 24Kbps.
* Compressed video & audio are synchronous. You can select either mixed stream or individual video stream.
* Four-level selection of record quality and self-defined bit rate and frame rate supported.
* Adjustable video parameters.
* Multi-area motion detection.
* OSD (On Screen Display) of channel name and time supported.

Recording
* Manual record and schedule record supported. The schedule record types include: timed, motion detection, and alarm.
* SATA hard disk supported.
* Backup and clip record files through USB flash disk, portable USB HDD, and USB CD/DVD RW supported.

Preview and Playback
* Simultaneous output of VGA and VOUT to TV
* Up to 4 channels playback in fast play mode, slow play mode, rewind and single frame forward supported.
* OSD of channel name and time supported.
* Status displaying of local record, alarm and motion detection supported.

Control
* Controlling of PTZ and dome supported.
* Controlling multiple DVRs with one RS485 keyboard.
* Setting and calling preset, sequence and track supported.

Alarm
* Local alarm (includes exception and motion detection, video loss, and hard disk full) triggered handling supported.
* Alarm linkage: triggered record, linkage alarm output and linkage PTZ preset, sound alarm, report to alarm center, linkage channel single screen display and E-mail .

Network
* TCP/IP supported.
* PPPoE supported.
* Dynamic access to IP address, Dynamic Host Configuration Protocol (DHCP) supported.
* DDNS supported
* Real-time preview, downloading and playback remotely through network supported.
* Controlling of PTZ, configuring device parameters, acquiring device status and logs, and upgrade remotely through network supported.
* Local recording through network supported.
Chapter Two: Installation
This chapter provides a general description of the device’s interfaces and connections. It will describe how to install a hard disk drive, the buttons on the front panel, and the connections on the back panel.

1 Package Content
After removing the DVR from its shipping box, unpack the contents on a flat surface or immediately place it where it will be located. Please refer to the “Package Contents” to ensure you have the entire contents.

2 Front Panel Operation

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LED</td>
<td>Power</td>
<td>Red Power indicator. It will glow red when the DVR is on</td>
</tr>
<tr>
<td></td>
<td>HDD</td>
<td>Hard disk indicator. Glows red or blinks when HDD is active. Off if the HDD is inactive.</td>
</tr>
<tr>
<td></td>
<td>IR</td>
<td>Remote Control operation indicator. Green blinks when being used. Black when not being used.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Buttons</td>
<td>Numbers:0-9</td>
<td>1) Input numbers. 2) One key channel selection in preview mode. 3) One key channel selection in play mode.</td>
</tr>
<tr>
<td></td>
<td>Numbers:10+ /0</td>
<td>Used in combination with 0-9 to select channels 10-16.</td>
</tr>
<tr>
<td>LED</td>
<td>PWR</td>
<td>Red LED indicating DVR is powered on.</td>
</tr>
<tr>
<td></td>
<td>HDD</td>
<td>Red LED indicating that the hard disk drive is being accessed. May be solid or intermittent.</td>
</tr>
<tr>
<td></td>
<td>IR</td>
<td>Green LED. Will blink to indicate the use of the remote control in conjunction with the DVR</td>
</tr>
<tr>
<td>Arrow Buttons:</td>
<td>✈️</td>
<td>1) When in menu mode press ✈️ , ✅ to move the selection boxes. 2) press ✈️ , ✅ to select submenu parameters.</td>
</tr>
<tr>
<td></td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✅</td>
<td></td>
</tr>
<tr>
<td>OK</td>
<td></td>
<td>1. Press it to confirm operations in menu mode. 2. Press it to select record type in setting schedule. 3. Press it to change status of the current motion detection block.</td>
</tr>
<tr>
<td>POWER</td>
<td></td>
<td>Press it to power off device.</td>
</tr>
<tr>
<td>REC</td>
<td></td>
<td>Press it to start/stop manual recording.</td>
</tr>
<tr>
<td>FN</td>
<td></td>
<td>1) Press it to switch from single camera to multi camera view and back in preview and playback mode. 2) Press it to enter/exit continuous selection when setting motion detection area and schedule record. 3) Press it to set start time and end time in file search.</td>
</tr>
</tbody>
</table>
3 Rear Panel Operation

Table 1-3 16 Channel DVR Rear Panel Description

<table>
<thead>
<tr>
<th>NO.</th>
<th>Interface</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Video In</td>
<td>16 channels video input: BNC (1Vp-p.75Ω)</td>
</tr>
<tr>
<td>2</td>
<td>TV Out</td>
<td>1 channel TV output: BNC(1Vp-p. 75Ω)</td>
</tr>
<tr>
<td>3</td>
<td>Audio Out</td>
<td>1 channel audio output: BNC( 2Vp-p.600Ω)</td>
</tr>
<tr>
<td>4</td>
<td>Audio In</td>
<td>4 channels audio input: RCA(2Vp-p. 600Ω)</td>
</tr>
<tr>
<td>5</td>
<td>VGA output</td>
<td>1 DIN-15</td>
</tr>
<tr>
<td>6</td>
<td>Network</td>
<td>1 RJ45  10/100M self-adaptive</td>
</tr>
<tr>
<td></td>
<td>USB interface</td>
<td>2 USB 2.0</td>
</tr>
<tr>
<td>7</td>
<td>RS485</td>
<td>1 Half duplex (+ -)</td>
</tr>
<tr>
<td>8</td>
<td>Alarm in</td>
<td>4 Channel switch-level input, N/O or N/C</td>
</tr>
<tr>
<td>9</td>
<td>Alarm out</td>
<td>1 Channel switch-level alarm output</td>
</tr>
<tr>
<td>10</td>
<td>Power</td>
<td>DC 12V</td>
</tr>
</tbody>
</table>

4 Remote Control

Table 1-4 Remote Control Description

<table>
<thead>
<tr>
<th>NO.</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rec</td>
<td>Record</td>
</tr>
<tr>
<td>2</td>
<td>Power</td>
<td>Press it to power off device.</td>
</tr>
<tr>
<td>3</td>
<td>Numbers</td>
<td>Input numbers or select to switch among relevant channels.</td>
</tr>
<tr>
<td>4</td>
<td>Function Buttons</td>
<td>DEL: Delete</td>
</tr>
<tr>
<td>5</td>
<td>Arrow Buttons</td>
<td>1) When in menu mode, press 【►】【◄】to move selection boxes. 2) Press 【▲】,【▼】to select submenu parameters.</td>
</tr>
<tr>
<td>6</td>
<td>OK</td>
<td>1) Press it to confirm operations in menu mode. 2) Press it to select record type in setting schedule. 3) Press it to change status of the current motion detection block.</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td>Switch from single camera and multi-camera viewing modes.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>
| 8 | FN | 1) Press it to switch from single split to multi split view mode, or reverse in preview and playback mode.  
2) Press it to enter/exit continuous selection when setting motion detection area and schedule record.  
3) Press it to set start time and end time in file search. |
| 9 | MENU | Opens DVR main menu. |
| 10 | ESC | Return to upper menu. |
| 11 | PTZ | One key PTZ control |
| 12 | Backup | Backup record |
| 13 | TV/VGA | Switches the default output between TV and VGA. |
| 14 | CLEAR | Alarm off. |
| 15 | SEQ | Start sequence, |
| 16 | Play Control Buttons |  ■: Stop  
►/II: 1) Play/Pause  
2) One key file search.  
←: play in slow mode/fast rewind  
→: go to previous section |
5 Hard Disk Installation
The hard disk is not included in factory configurations. Users can mount a suitable hard disk by calculating its capacity referring to “Appendix 5.2 Methods of Calculating HDD Capacity”.

1) Installation procedure
*Open the DVR case. Mount the 4 shock absorption washers into the clamping slots in the case. (If included, they are not necessary for operation)
*Connect the HDD data cable and HDD power cable to HDD.
*Attach the hard disk to the shock absorption washers by aligning installation holes to the case, hold and fix them by 4 M3*12 Head Screws plus plain washers.
*Connect the HDD data cable and HDD power cable to the correct interfaces on the main board.
*Replace the DVR top cover, and attach it with the included screws.

**Note1:** Please use a HDD that is rated for security camera systems and purchase from a reputable retailer to ensure quality. See http://kb.zmodo.com/article.php?id=176 for assistance choosing a hard drive.

**Note2:** Please format HDD after installation, or the system will show an error notification of “Hard disk error” accompanied by an audible alarm. Please see 4.9 Maintenance for details.

6 Rear Panel Connection
*Power Input
Connect power adapter to Power Input interface of DVR. Confirm that the DVR power supply input switch is positioned correctly for the local voltage before connecting and powering on the unit. Turn on the unit by flipping the switch on the power supply. The power LED will light if the power cable is connected correctly.

**Note:** Please use the power adapter contained in the package(Output will read 12v/5a).

*Video Input
The video input interface is a standard BNC socket, 1Vp-p, 75Ω.

**Note:** The video signal cable should be kept away from any interference such as electromagnetism.

*Audio Input
The audio input interface is standard RCA socket, 2Vp-p, 600Ω.

**Note:** The audio input resistance is a little bit high; please use active sound collection device or active microphone. The audio signal cable should be kept away from any interference such as electromagnetism.

*Network Input
The network input interface is RJ45 10/100M self-adaptive.

**Note:** Confirm that the network band width is enough for transmitting high definition image smoothly. A 4 or 8 channel DVR will require 512kbps upload and a 16 channel DVR will require 1mbps upload speed from your ISP.

*Alarm Input and Output
The alarm input device should be the type of GND connected alarm or voltage input alarm, which can be set as N/O. or N/C.

The requirements for the signal input level for voltage input alarm type is: low level: 0~2V; high level: 5~15V. The green angle pins of the signal cable are supplied for access of PTZ and alarm devices. Please follow these steps to connect:
1. Pull out the angle pins that inserted in the alarm input and output interfaces.
2. Screw out the screws by micro Philips screwdriver, insert the signal cable into interface under spring, and then tighten the screws.
3. Plug in the connected pins into green angle pin socket.

*PTZ Input
Connect the PTZ control interface to RS485 interface on rear panel. The connection method is similar as above.

**Note:** Please refer to PTZ manual for setting specific parameters, for some PTZ devices contain multiple telecommunication protocols, baud rates and IDs.

*Video output interface: TV(BNC) and VGA.

**Note:** VGA and TV cannot be selected in the operation interface simultaneously, but may be switched by the mouse, front panel, or remote control in the menu.
Chapter Three: Menu Description

1 Menu Structure

FigIII 1 Menu Structure

<table>
<thead>
<tr>
<th>Setting</th>
<th>Language</th>
<th>System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manual Record</td>
<td>Video Standard</td>
<td>HDD Overwrite</td>
</tr>
<tr>
<td>Record Search</td>
<td>VGA Setting</td>
<td>Add User</td>
</tr>
<tr>
<td>PTZ</td>
<td>Time Format</td>
<td>Del User</td>
</tr>
<tr>
<td>Clear Alarm</td>
<td>Time Setting</td>
<td>Authority Manage</td>
</tr>
<tr>
<td>Quick Playback</td>
<td>Password Setting</td>
<td>Preview Cruise</td>
</tr>
<tr>
<td>Shut down</td>
<td>DVR ID Number</td>
<td>Video CH</td>
</tr>
<tr>
<td>Single Channel</td>
<td>Camera CH</td>
<td>Record Schedule</td>
</tr>
<tr>
<td>Four Channels</td>
<td>PTZ Protocol</td>
<td>Record Quality</td>
</tr>
<tr>
<td>Nine Channels</td>
<td>PTZ Baudrate</td>
<td>Record Frame Rate</td>
</tr>
<tr>
<td>Sixteen Channels</td>
<td>Motion Detection</td>
<td>Record Source</td>
</tr>
<tr>
<td>Position</td>
<td>PTZ ID</td>
<td>OSD Setting</td>
</tr>
<tr>
<td></td>
<td>Color Setting</td>
<td>Record Resolution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sub Code</td>
</tr>
<tr>
<td>Tool Bar</td>
<td></td>
<td>Network</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IP Address</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Subnet Mask</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Gateway</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Http Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Command Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Media Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPPoE Setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PPPoE IP</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DNS Address</td>
</tr>
<tr>
<td></td>
<td></td>
<td>DDNS</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Auto Register</td>
</tr>
<tr>
<td></td>
<td></td>
<td>File Sharing</td>
</tr>
<tr>
<td>Maintenance</td>
<td></td>
<td>Email Setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mobile Port</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Log View</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Upgrade</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HDD Manage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HDD Capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hardware Version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software Version</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software Release Date</td>
</tr>
<tr>
<td>Save</td>
<td></td>
<td>HDD Full Actions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm Input CH</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm Input Type</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Event Handling</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm Setting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alarm Zoom Out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Save &amp; Exit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restore Defaults</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Logout</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Save &amp; Exit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Exit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Restore Defaults</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Logout</td>
</tr>
</tbody>
</table>
2 Menu Operations

Press [SET] button to enter into system setting screen. Press [●] button to start/stop recording manually. Press [►] button to play record file. Press [PTZ] button to enter into PTZ control screen.

Note: This manual shows the Menu selection icons and selection boxes in [XX]; the buttons in the menu screen (except menu selection icons) in<XX>; the buttons on front panel and remote controller in【XX】.

The highlighted menu is the active menu. Users can change the highlighted icon to the menu needed using 【▲】、【▼】、【←】、【►】，button, and pressing【OK】button to confirm selection, or pressing【ESC】button to return to previous menu.

Selection box: Users can change the highlighted icon to the selection box needed using the【▲】、【▼】 buttons, and press the【OK】button to confirm selection. Multiple items are allowed to be selected together at once by left clicking on the mouse.

Sub menu list: Users can change the highlighted icon to the sub menu needed using【◄】 【►】 buttons, or by using the scroll wheel on the mouse to select directly. Only one item can be selected here.

Edition box: when in edition box, user can type in numbers directly by pressing number buttons. Press【DEL】to delete the character before cursor and press【OK】or【ESC】button to exit.

Sub screen button: Press it to pop up sub screen. When in sub screen, select【Confirm】 to save configuration and return to the upper menu. Press【ESC】or select【Cancel】 to return to the upper menu without being saved.

Use【◄】 【►】 to move highlight icon to any of the selection boxes. Press【OK】button to switch to another selection status. Use【▲】、【▼】 to specify the sub menu value, where a sub menu selection exists. Exit: User can click X button on the right upper corner, or single right click mouse, or press【ESC】button to enter into the Save & Exit screen. From here you may choose to save your changes and then exit or just exit.

Chapter Four: Operations

This chapter mainly describes the main system operations of DVR. Please see the following contents for details.

1 Power on the DVR

•Start-up
The Power LED will light after powering on correctly. Please refer to 2.6 Rear Panel Connection for details of the connection method. Press【Power on/off】button to start up device. The preview screen will appear. After pressing the【ESC】button on the front panel or remote, or right clicking mouse, the login box appears. Here you will select your user ID and enter the appropriate password.

Note1: Start up may take anywhere from 1-2 minutes. Please be patient.

Note2: You may modify passwords by selecting<Tool Bar>→<System>→<System Setting>→<Password Setting>. Enter the current password, then you may enter your new password, confirm it, and click ok. The new password will take effect immediately.

Note3: Default password for Admin is 111111. Default password for User is 111111; Admin password can be restored to factory defaults by short-circuit “JP 1” on the motherboard. After logging in to the DVR as Admin, the default user can change other user’s passwords. The system supports 8 users, and the Admin is the account manager with all permissions, whose name cannot be deleted or changed. The Admin user can add and delete other users and permissions with those corresponding users.

Note4: The DVR can identify display devices automatically. When connected either to VGA or TV, the menu will be on the specified screen automatically after start-up; when connecting VGA and TV simultaneously, two images will be displayed on the screen, but the menu system will display only on the currently selected video output. The user may switch the output by clicking the ✎ icon in the tool bar.

•System settings
Language: Please enter<Tool Bar>→<System>→<System Setting>→<Language> to set language.
VGA Resolution: Please enter<Tool Bar>→<System>→<System Setting>→<VGA Resolution> to set VGA resolution and refresh rate. It supports 800×600@60Hz、1024×768@60Hz、1280×1024@60Hz、1440×900@60Hz currently. WARNING: Setting an inappropriate resolution will give you a blank screen.
Date/Time: Please enter <Tool Bar>→<System>→<System Setting>→<Time Format> to set time format. 12 and 24 hour clocks are supported. Please enter <Tool Bar>→<System>→<System Setting>→<Time Setting> to set the date and time.

Video Standard: Please enter <Tool Bar>→<System>→<System Setting>→<Video Standard> to set video standard. PAL, SECA.ME, and NTSC are supported. Please set according to the parameters of camera.

**Note1:** In order to avoid record files' time confusion, you'd better stop recording before modifying system time.

**Note2:** “Language” and “Time” will take effect instantly. “Record Resolution” and “Video Standard” will take effect after being saved.

**Note3:** when the resolution setting exceeds the range of the display, please click 【ESC】→【2】→【ESC】 on the Front Panel or remote control (within 3 seconds) to reduce the resolution to 800X600@60HZ

**Note4:** All Zmodo cameras are NTSC cameras. If your image is in black and white and rolling please check this setting to verify it is not on PAL or SECA.ME.

2 Preview

After starting up the system, the screen has a live view area and a tool bar. Right click on the mouse in preview mode or press 【OK】 on the front panel to make the System Status/Tool Bar appear. System status bar can be dragged to anywhere on the screen by the mouse. It will go back to the original position after a device reboot. The system status bar will switch to the Tool Bar by right-clicking on the mouse and hidden by right clicking again.

The Camera Images, channel name, record time, and alarm notifications will be displayed on the main screen.

1) Channel Status Display Area

Under preview mode, channel shows current input image and channel status information (video status, mode, and motion detection)

‘View Mode Switching

When in 1/4/6/8/9/16 split view mode, the tile with a light green border is the current selected channel.

User can use the mouse or press 【Direction】 buttons to switch to another tile. If the audio output device is connected, the audio can also be heard together with the video when the matching channel is selected.

The audio will also be heard on its corresponding channel in playback mode.

User can select to display a single particular channel by pressing the Numbers buttons.

When in preview mode, user can enter into 1/4/6/8/9/16 split view mode by pressing 【FN】 button directly, or by the toolbar.

‘Image Parameters Setting

Please enter <Tool Bar>→<System>→<Video>→<Color Setting> to set brightness, contrast, hue and saturation. It will take effect instantly.

**Note1:** User can set image parameters of one channel one at a time or all channels at once by selecting 【All】 in <Camera Channel>.

**Note2:** In preview mode, brightness, contrast can be adjusted by remote controller directly.

‘OSD Settings

The OSD of channel name and system time is supported. Please enter<Tool Bar>→<System>→<Record Setting>→<OSD Setting> to set. The channel name will be displayed on upper left corner and the channel time will be displayed on the upper right corner of the camera window.

‘Channel Status Display Area

The channel statuses include: "motion detection triggered recording" / "common recording" / "motion recording" / "alarm triggered recording" / "external alarm input" / "alarm output".

Indication of “motion detection” / "common recording" / "alarm recording" will be displayed on the right upper corner of screen. The details are as follows:

- Green indicates “motion detected”. The settings of motion detection include sensitivity and area selection.

  Please see Motion Detection Settings for details.

- Blue indicates "common recording". Please see Record for details.

- Green indicates “motion detection triggered recording”.

- Red indicates “alarm triggered recording”.

- Grey indicates “manual recording”.

Indication of "external alarm input" / "alarm output" will be displayed on system status bar or Tool Bar. The details are as follows:

- The 4/8 icons indicate the alarm input status. If alarm record mode is set, the icon is , otherwise it is . When triggered, it changes into red . External alarm input can trigger multiple events handling rules. Please see Alarm Settings section for details.

- This icon indicates an alarm output. When the alarm output is in effect it will display this symbol.
1) System Status Bar
In preview mode, the system status bar will display current system status, including: "External alarm input" / "Alarm output" / "Hard disk capacity" / "Number of the client connection" / "System time."
- Indicates hard disk being ok. The number indicates the percentage of the total capacity of the hard disk.
- Indicates "Hard disk error" or "No hard disk".
- Indicates client connection. The number shows client linking number indicates "No client connection".

2) Tool Bar
Right click mouse or press [OK] button in preview mode, the Tool Bar shown as below will appear:

![System Toolbar](image)

- Hide the tool bar.
- System configuration. Please see IV.2 Menu Structure for details.
- Search, playback and backup record files, please see IV.6 Video Playback and IV.7 Video Backup for details.
- PTZ operation. Please see IV.5 PTZ Control for details.
- Click to cancel alarm notification. Click this button will pop a message to show the present alarm information.
- Fast play back. User can enter 10, 20, 30, or 60 seconds before position to start playback and can also jump to a specified time in the video.
- Power off. Click this button will pop a message of "confirm password". User has to enter Admin password to shut down.

- Switch between TV and VGA. Menu will not be available on the current screen, only a preview image.
- Adjusts the screen overall display location on the display, 8 pixels per unit.
- To reduce or increase screen in vertical direction.
- To reduce or increase screen in horizontal direction.
- To move the screen up, down, left, right.
- To zoom out the screen to largest and show in central.

**Note1**: When the mouse hovers over a toolbar icon it will display that buttons menu function in a floating text box next to the cursor.

**Note2**: When video source is PAL, screen display range max is 720*576; When NTSC, screen display max 720*480.

**Note3**: You may switch the display menu between VGA and TV by selecting 【ESC】 -> 【1】 -> 【ESC】 (sequence must be pressed within 3 seconds) on the remote control or Front panel.

### 3 Record
Record type contains manual record and schedule record. The priority of manual record is higher than schedule. If the record schedule is conflicting with manual record, the manual record will be processed first, until the manual record is disabled.

Record types include "common recording" / "alarm triggered recording" / "motion detection triggered recording" / "alarm | motion detection triggered recording". Each of them is indicated with a grid of different color, and each color indicates a particular record status. Please see Fig IV-2 record schedule for details.

Record resolution: The device support "CIF" / "HALF D1" / "D1" format.

Record quality: "Best 768Kbps" / "High 640Kbps" / "Better 512Kbps" / "Common 384Kbps". And "User setting" can help user to set one channels bit rate up to 2048Kbps.

Record frame rate: if the current selection is PAL, the frame rate options are "All" / "12" / "6" / "3" / "1" / "Customized". If the current selection is NTSC, the frame rate options are "All" / "15" / "7" / "3" / "1" / "Customized". Default is "All", 25 fps for PAL and 30 fps for NTSC.

Record Resource: "Video" for video only or "Video and Audio" for recording video and audio.
1) Manual Record
Please enter <Tool Bar>→<Manual Record> to enable or disable manual record on specific channels. Press the 【●】 button to start/stop recording manually.

**Note1:** The video type shown in the playback menu for “Manual Record” will appear as “Common Record”

**Note2:** When Manual Record is enabled it takes precedence over any Record Schedule settings.

2) Record Schedule
Please enter <Tool Bar>→<System>→<Record Setting> to set record schedule. The setting screen is shown as the figure below:

![Record Schedule](image)

① The current recording channel number
② The record schedule
③ Description of record type

The grid based recording schedule allows users to customize a schedule by inputting different record types for days of the week on horizontal columns and hours of the day on vertical columns as matches the users needs.

① Move highlight icon to a time grid using 【Direction】 buttons.
② Specify the recording type by repeat pressing 【OK】 button or double left clicking mouse,(the color of the grid will change relevantly). Alternatively with the mouse you may click on a record type selection at the bottom and then click and drag across the grid to change large grid portions at once.
③ Select 【OK】 to confirm settings. The settings will take effect after being saved.

**Note1:** User can copy the current Record type onto the neighboring grid by pressing 【Fn】 button first, 【Direction】 buttons secondly, and then the 【Fn】 button again to exit.

**Note2:** When motion detection recording is selected, the motion detection sensitivity and area should be set to match your needs. Please refer to 4.4.2 Motion Detection Settings for details. When alarm recording is selected, the alarm triggering settings should be set to match your needs. Please refer to 4.7.2 Event Handling for details.

4 Camera Control

1) PTZ Control

*PTZ Settings*
Enter <Tool Bar>→<System>→<Video> to set camera channel, protocol, baud rate and ID.

**Note:** The different PTZ controlled by one PCI should have the corresponding PTZ ID. There are 256PTZ ID supported currently: 0-255.

*PTZ Operations*
In preview mode, select a camera first (in 4/9/16 splits view mode, the selected tile is has a green highlighted border) using mouse or 【Numbers】 buttons, and then enter <Tool Bar>→<PTZ Control> to bring up the PTZ control menu as shown below:
Table IV 1 PTZ Operation Description

<table>
<thead>
<tr>
<th>NO.</th>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>①</td>
<td>Direction</td>
<td>Click the arrow icons to control the pan and tilt of PTZ. Click the center icon to call sequence or run scanning. Please refer to the PTZ manual for details of PTZ scanning mode.</td>
</tr>
<tr>
<td>②</td>
<td>Speed</td>
<td>Set the turning speed of PTZ camera.</td>
</tr>
<tr>
<td>③</td>
<td>Advanced</td>
<td>Click [ ] and [ ] to show/hide the advanced setting options.</td>
</tr>
<tr>
<td>④</td>
<td>Focus</td>
<td>Click to focus-in and focus-out (it is disabled for cameras with an automatic focus).</td>
</tr>
<tr>
<td>⑤</td>
<td>Iris</td>
<td>Click to make the image brighter or darker (it is disabled for cameras with automatic iris adjustment).</td>
</tr>
<tr>
<td>⑥</td>
<td>Auxiliary</td>
<td>Open/close auxiliaries. Click [ ] to open and click [ ] to close. Different functions respond to different protocols. The auxiliaries include light, rain, trash, power, etc. Please refer to PTZ Cameras manual for details. NOTE: Up to 2 auxiliaries are supported on DVR side. Up to 4 auxiliaries are supported on the Web Client.</td>
</tr>
<tr>
<td>⑦</td>
<td>Zoom</td>
<td>Click to zoom in/zoom out.</td>
</tr>
<tr>
<td>⑧</td>
<td>Preset</td>
<td>1. Select the preset number in the preset window. 2. Position the camera as desired position. Save the position by clicking [ ]. Repeat the step 1 and 2 to reset the desired position. Call preset: Select the preset number you want to call, and click on the go to button [ ]. Clear/reset preset: Select the preset number you want to clear/reset and click on the clear button [ ].</td>
</tr>
<tr>
<td>⑨</td>
<td>Sequence</td>
<td>Sequence is a running route of the camera that passes through multiple presets. Set sequence: 1. Select preset number you want to call. Click on set button [ ]. 2. Repeat step 1 and 2 to add the other presets till finishing. Click [ ] button to end setting. Click on [ ] button to clear sequence.</td>
</tr>
<tr>
<td>⑩</td>
<td>Track</td>
<td>Track is a continuous running route of camera. Set track: 1. Click on [ ] to start setting. 2. Move camera as the track and pattern you want it to run. 3. Click on [ ] again to finish setting. Click on [ ] to run track and click again to stop running.</td>
</tr>
</tbody>
</table>

2) Motion Detection Settings

Motion detection settings include sensitivity and area. The sensitivity includes three levels: High, Med, and Low. Please select <Tool Bar>→<System>→<Video>→<Motion Detection> to set schedule and area settings. With the grid displayed for both schedule and area detection settings click and drag mouse to alter the schedule and area settings. Areas not covered by a blue box on area detection grid will be disabled for motion detection. Front Panel Operation: The area detection grid is displayed as 16 X 12 blocks on screen. Move highlight icon among the blocks by using [ ], [ ] buttons. Please follow these steps below to set:

1. Move highlight icon to one of the blocks you want to adjust by using [ ], [ ] buttons. Press [OK] button to adjust that blocks setting. An active motion detection block will be colored blue.
3. Repeat steps 1 and 2 until finished.

In the Motion Detection Schedule Settings users are free to schedule motion detection capabilities being on or off based on a grid which allows for hourly and daily customization throughout the week.

3) Mask Setting

The mask setting function can make some regions of the camera image invisible. These regions in both live preview and playback will be masked out in black. The method to set the mask is similar to the motion detection setting. You may click and drag to select an area to mask out. Right clicking on a masked area will remove the mask and right clicking in a non masked area will exit the masking screen. A total of 4 masking blocks can be added to each channel.

5 Playback

*File Search
Select <Tool Bar>→<Record Search>. Specify the date/time and channel number. Click 〖Search〗 in the pop-up screen to start searching. The search results will be listed on the screen in corresponding colors so as to distinguish different recording types. Please see Fig IV-2Record Schedule for details of colors description.

![Fig IV-3File Search](image)

You may click the mouse or use panel to specify time.
Panel operation: move highlight icon to relevant selection box using [◄], [►] buttons.
Move highlight icon to date/time selection box, modify time using [▲], [▼] buttons.
Move highlight icon to channel selection box, press [OK] button to select it or cancel selection.

Move highlight icon to 〖Search〗, press [OK] button to zoom in/zoom out the timeline (time ruler). If the desired time is not shown please move highlight icon to 〖Search〗 and press [OK] button to move the timeline to the desired time of day. After setting time, channel number and timeline, move highlight icon to [Search] using [◄], [►] buttons, and press [OK] button to display the recorded files on the timeline.

Once the video files are displayed press [Fn] button to enter the timeline and bring up your start point selection. Press [◄], [►] buttons to move your start point. Press [Fn] to confirm selection. Press [Fn] again to bring up the stop point, Press [◄], [►] buttons to move the stop point to desired location and press [Fn] to confirm selection.

After a start and stop point for viewing are selected move highlight icon to [Play] using [◄], [►] buttons and press [OK] button to start playing. Move the highlight icon to [Backup] using [◄], [►] buttons, and press [OK] button to bring up and begin file backup of the selected time frame.

*Playback Control

- [◄]: This will allow for rewind in playback. Available speeds are 8X and 16X.
- [●]: Allows you to pause or resume playing current playback video.
- [►]: Stop playback video.
- [◄]: Allows fast forwarding through playback video. Available speeds are 1X, 2X, 4X, 8x 16x, 1/2X and 1/4X.
- [P]: Go to the next frame.
- [◄]: Click to switch from single view mode to 4/9 split view mode, or back.

<table>
<thead>
<tr>
<th>Speed</th>
<th>16X</th>
<th>8X</th>
<th>1X</th>
<th>1/2X</th>
<th>1/4X</th>
<th>8X</th>
<th>16X</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16X</td>
<td>8X</td>
<td>1X</td>
<td>1/2X</td>
<td>1/4X</td>
<td>8X</td>
<td>16X</td>
</tr>
<tr>
<td>▲</td>
<td>fast forward</td>
<td>fast forward</td>
<td>Normal playing</td>
<td>fast forward</td>
<td>fast forward</td>
<td>fast backwards</td>
<td>fast backwards</td>
</tr>
</tbody>
</table>

6 Backup
Enter<Tool Bar>→<Playback> to search, backup or playback the desired video files. Click 〖Backup〗 to enter into the backup screen. The DVR will auto-detect all compatible devices available(such as a flash drive) and display them. Select the appropriate device and the preferred video format first, and then click 〖Backup〗 to start transferring the selected device.

**Note:** The video format types include H.264 Raw, MP4 and AVI. When MP4 is selected a special video codec will be transferred to the device with the video which must be installed in order for windows media player to be able to view the video. The AVI format is already compatible on windows vista or newer. If using an older version of windows an available, free, working media player is VLC Media player(available online).
7 Alarm Settings

Please make sure that the alarm input and output cables are connected correctly. Please refer to II.6 Rear Panel Connection for details.
Select <Tool Bar>→<System>→<Alarm> to configure alarm parameters.

**Note:** All the settings will take effect after being saved.

1) Alarm Input

The alarm input attribution includes N/O. and N/C. Please select a suitable attribution according to the types of alarm devices connected and methods of operation on the alarm device.
N/O.: Normally open. Alarm is triggered when the circuit is completed.
N/C.: Normally closed. Alarm is triggered when the circuit is disrupted.

2) Alarm linkage

The alarm triggered event handling includes: record/alarm output/PTZ activation/sound output/alarm zoom out/E-mail. The channel alarm input can zoom the display in intervals of 1-10s (optional). If the display interval time is set to off, the zoom display will be disabled.

- **Note1:** If user wants to set alarm triggered record, please set the record schedule first at “Record Schedule”.
- **Note2:** If user wants to set alarm triggered PTZ, please select the channel number first, and then to set (only preset 1 can be selected).
- **Note3:** After alarm, email will be sent immediately with the attachment of the caught snapshot.

3) Alarm Defence and Schedule

User can enable a customized alarm schedule in the advanced menu, which is similar to setting the recording schedule. In the alarm defense status, the icon of alarm input will appear as yellow.

4) Device exception action

Select < DEVICE EXCEPTION ACTION >→Enter Device exception handling screen. Choose among these three options: HDD full, network disconnect, and IP conflict. For the hard drive setting the user can select “alarm output”/“buzzer”/“upload”/“email”. Network disconnect and IP conflict can only be set to “alarm output”/“sound”. After these settings have been saved device exceptions will be handled the way user has selected.

8 Network operation

1) Network settings

Please enter <Tool Bar>→<System>→<Network Setting>→<Network Connection>. There are three connection types available: Static IP, DHCP and PPPoE.
- **Static IP:** If this type selected, please type in an IP address, subnet mask, and gateway. User can ping the IP address to check its connection status from a computer.
- **DHCP:** If this type is selected the DVR will attempt to automatically pull an IP address, subnet mask, and gateway from the network it is connected to. A result of all 0’s indicated either a bad connection or no connection.
  **Note:** It will not populate the information until DHCP has been saved and you have re-entered the menu.
- **PPPoE:** Click 【*】 , the PPPoE setup screen will appear. Type in user name and password and click 【OK】 to confirm. System will dial automatically. After accomplishing dialing, the IP address will be assigned and displayed automatically in the IP Address line. You can save the user name and password even if the dialing is not successful. **Note:** PPPoE addressing is very rarely used. Please consult your Internet Service Provider if you believe you should be using this setting.

- **More Network settings**
  - **HTTP Port:** It is the port number used for browsing through Internet Explorer. The default is 80.
  - **Command Port:** It is the first entry port for communication between the web client and the device, which is mainly used for controlling log-in, log-out, real-time preview, remote playback, and remote download, etc.
  - **Media Port:** It is for media stream transmitting including real-time stream, voice stream and file stream etc.
  - **DDNS:** Click 【*】 , the DDNS setup screen will appear. Select a DDNS server and type in the DDNS address, user name and password. You can set these up with the company that runs the selected utility.
  - **Auto Registration:** Select activating Auto Register and click 【*】 , the register setup screen will appear. Type in the registration server IP, port and register interval time.
  - **File sharing:** As of 04/01/2013 File Sharing is currently unavailable. Please refer to http://kb.zmodo.com
the future for potential updates regarding this feature.

*Email Setting*: Click [ ], the EMAIL setup screen will appear. To take effect this function must be paired with an alarm email setting. Enter the smtp mail server address in the screen, the corresponding smtp port number (if the port uses SSL you must check the box indicating such) the desired email address to be used for sending the email, that emails corresponding password (please check the validating identity box), and the recipient email address. Pressing the [Test] button next to sender mail address will send a test email if the settings match up to the chosen email address.

*Mobile port*: This port controls all information transmitted for viewing and control via a mobile device such as a smart phone or tablet when used in conjunction with the Zviewer application on the device.

*FTP server*: Please refer to the previous section regarding file sharing.

*UPnP*: To start UPnP set the feature to on and select [ ]. UPnP, short for universal plug and play, when connected to a network with the same feature will automatically map out and open the necessary ports in order of the user to be able to view the system through the internet. Not all networks or routers in use today have this feature. Refer to your routers user manual for more information on compatibility.

*IP ACCESS*: When disabled any PC (IP address) can access the device. When set to “Allow Access” only devices using IP addresses entered in to this setting will be allowed access to the IE web client and all others will be restricted at the log in screen. When using the “Forbidden” setting any device will have access to the IE web client with the exception of devices using IP addresses entered in to this category. Only one of these 3 settings is in effect at any time.

*Time synchronization*: Click [ ] to start synchronization. The device can automatically update its time and date based on the server information entered in this option. If turned off the device when connected to the internet will pull a date and time from a default server and update accordingly.

**Note 1**: Any settings adjusted in the network will not take effect until saved from the save menu.

**Note 2**: Currently mail using PPPoE is only supported if using the SMTP protocol.

**Note 3**: Regarding the mobile port as of 04/01/2013 the only officially supported mobile platforms are Android and iOS. Please refer to our knowledgebase at http://kb.zmodo.com for future updates to this information.

2) Web Client Operation

BEFORE PROCEEDING: Set IE ActiveX Controls. Instructions at: http://kb.zmodo.com/article.php?id=96

Open IE browser, type in the IP address of the DVR and the corresponding web port if you are using anything other than 80. The log-in screen will appear.

**Note 1**: If PPPoE or DHCP is selected, the user should check the IP address again after restarting device.

**Note 2**: If it is the first time logging in through IE, after setting ActiveX as mentioned above you will have to install the IE Add-On associated with the DVR. The default user name and password are: Admin (case sensitive) and the password is either 111111 or 888888.

**Note 3**: Compared with the local side, the added settings on IE Web client side are as the table below:

<table>
<thead>
<tr>
<th>Menu</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;Server&gt;Tab</td>
<td>Name of server is configurable on Web client side.</td>
</tr>
<tr>
<td>&lt;Channel&gt;Tab</td>
<td>The channel OSD is User-defined.</td>
</tr>
<tr>
<td>&lt;Device&gt;Tab</td>
<td>User can adjust miniNVR time accordance with PC time.</td>
</tr>
<tr>
<td>&lt;State&gt;Tab</td>
<td>Device states can be viewed directly.</td>
</tr>
</tbody>
</table>

3) Web Screen Description
*Address*
Display the DVR IP address.

*Tool Bar*

The description of icons from left to right is:
Configure device parameters.
Search and playback record files.
View logs and export them.
Set the storage directory of record files.
Click to switch image view modes among full-screen, single view and 4/8/9 split view mode.

Log-out, restart device, Clear alarm

*Alarm Notification*
When network connection is broken or abnormal, the alarm notification of “No heartbeat of device, please check the network!” will be displayed in the right up side of the main screen. After recovery of network, the camera preview will be displayed automatically.
When alarms on remote notification occur, the alarm notification with alarm input number contained such as “Device alarm: IO alarm, IO input x” will be displayed in the right upper side of the main screen.
When alarms of motion detection with remote notification occur, the alarm notification with the alarm channel number contained such as “Device alarm: motion detection, channel 1” will be displayed in the upper right side of the main screen.
When alarms of video loss occur the alarm notification with the alarm channel number contained such as “Device alarm: video loss, channel x” will be displayed in the upper right side of the main screen.

*Preview*
- Adjust image contrast up/down.
- Adjust brightness up/down.
- Start/stop voice monitoring. The icon will turn to green when sound is on.
- Start/stop recording. The icon will turn to green when recording.
- Click to snapshot the image in the camera at that moment.
- Stop preview.

*Note:* Click Local Storage to set the storage directory of record files and pictures captured.

*PTZ Setting*
The PTZ setting of client web is similar as the PTZ operation of local device, please refer to IV.5.1 PTZ Control.

*Note:* IE side supports 3 auxiliaries setting.

4) **Device Parameters Settings**
Click the parameters configuration screen will appear. All of the configurations are divided into the following six selections:

*Server*
This includes the configuration of server, network, and version information. All of these configurations can be set in [Tool Bar]→[System].

*Note:* If the DHCP mode selected, the IP address is assigned automatically without being modified.

*Channel*
User can set motion detection, video loss, OSD, image bit rate and frame rate, image parameters and record schedule here.

*Note:* User is allowed to set a single channel first, and then to copy the settings to the other channels.

*Serial*
User can set PTZ protocol, baud rate, and address code here. All of these settings can also be done by selecting on the DVR [Tool Bar]→[System]→[Video].

*Alarm*
User can set IO alarm and event handling here. All of these settings can be done by selecting on the DVR [Tool Bar]→[System]→[Alarm].

*User Management*
Includes user authority and password settings. This will be found on the DVR at <Tool Bar>→<System>→<System Setting>→【Advanced Setting>>

"Image: Network connection icon"
“User” authority and password can only be changed by “Admin” account, 

**Device**
Upgrade: Click [Browse] to select the software package needed, and click [Start Upgrade] to progress. User can stop the progress of upgrade by clicking [Stop Upgrade].

*Note:* As of 4/01/2013 there have as of yet been no upgrades to this software version.

Adjust Time: Click [Adjust Time] to adjust time of device accordance with the PC time.

**WARNING:** Changing times on the DVR will make previously recorded files unsearchable

**State**
The information of HDD and channel state is contained here.

5) Playback
Click , the playback screen will appear. It includes file search, playback and download.

*Note:* In windows Vista or newer when opening IE you must right click and choose “Run as Administrator” in order to use the playback feature in the IE Web Client

**File Search**
The file search part is on the right upper side of the screen, please set target, type, start time and end time there. Then click [Query] to start searching. The result will list on the table. Specify the files in the table list and click on the play control button or download button to do the indicated operations.

![File Search Example](image)

**File Playback**
The play control screen is on the left side of the screen. It includes image display area, play control bar, and channel information.
Click [Play], the recorded files selected will be displayed in chronological order. The progress of playing is shown as the figure below:

The playing control bar is shown as the figure below. The descriptions of all these icons from left to right are as follows:

- Play;  
- Pause;  
- Stop;  
- Go to next frame;  
- Fast Forward (The speed of playing will be doubled by each clicking. It includes: 2X, 4X, 8X, and 16X);  
- Slow motion (The speed of playing will be half down by each clicking. It includes 1/2X, 1/4X, 1/8X, and 1/16X);  
- Enhance contrast;  
- Reduce contrast;  
- Enhance brightness;  
- Reduce brightness;  
- Open/close voice;  
- Go to previous file;  
- Go to next file ( and is enabled only when multiple record files being selected to play);  
- Snapshot (the storage directory can be set on the pop-up screen by clicking ).

The information of the record file selected will be displayed in the area shown as the figure below. It includes device’s IP address, current play speed, channel number and start/end time of the record file.

![Playback Example](image)
*File Download*
The download operation part is on the bottom right of the screen.
Click to set the storage directory of the file to be downloaded. Click [Download] to start downloading. Refer to pg.16 Backup information regarding playback of downloaded files.

6) Bidirectional Talk
Click in the Tool Bar to enable the bidirectional talk between IE Web Client and DVR side. A microphone should be connected to the computer through the Line-in interface and speakers and an audio capable camera or microphone are required at the DVR location. Click again to stop talking.

7) Log
Click on the screen of device logs will appear. There are four options for choosing: All, according to time, according to type, according to time and type.
To search logs, please select the search mode and channel number needed first and then click [Search] to progress.
Click [Export] to export logs in html format.

8) Remote Upgrade
Select <Servers>-<Manage>, click [Browse] to specify the file for upgrade, and click [Start] to upgrade. User can click [Stop] to stop upgrading in progress.

9) Maintenance
Select <Tool Bar>-<Settings>-<Maintenance> to enter maintenance setup.

1) Log view
   1. Select the type of log to be searched: All/ Operation/ Exception/ Alarm/ Front-end device.
   2. Select the time scope to be searched.
   3. Click [Search] to display the detail information of log.

   **Note1:** If the logs searched contains an alarm event log you can directly play the video recorded during the alarm event by clicking [ ] on the right side of screen.

   **Note2:** The maximum number of logs supported currently is 10000. The system will automatically overwrite the oldest logs with the list becomes full.

2) Upgrade
The upgrade modes supported now are USB and IE Web Client:
USB: Please be sure the USB device is connected correctly and that the firmware upgrade has already been properly copied into the drive. After accomplishing upgrade the Restart prompt screen will appear. Please restart the device, the latest software will be installed automatically then.
IE: Please refer to 5.2.2 Device Parameters Settings for details.

3) Device Information
   Hardware Version: display the hardware version on the DVR.
   Software version: display the current software version on the DVR.

4) Format HDD
Please make sure that any important video files have already been saved prior to formatting HDD. Please stop all of the recordings before the beginning of formatting HDD. This will erase all video files on the DVR.

5) Log out
Please enter <Tool Bar>-<Settings>-<Save>-<Log Out>, the preview screen will appear together with the log-in box. Please type in your password for further operation.

6) Restore to factory defaults
Please Enter <Tool Bar>-<Settings>-<Save>-<Restore Defaults>. The DVR Will prompt you on whether you would like to continue with removing all personalized settings. Click [Confirm] to proceed restoring.

   **Note1:** Please refer to Appendix VI for the default values.

   **Note2:** The system language, time, camera P/N system, and network settings (IP address, subnet mask, gateway, HTTP port) will not be recovered by restoring to factory defaults.

7) Input/output parameter
Please enter <tool bar>-<system>-<maintenance>, when USB is connected, the device setting parameters can be exported to the USB device. Parameters can import to the device from USB to restore settings after a reset to defaults. Reboot the device, and the imported parameters will take effect.

   **Note:** Parameters may only be imported to the same model and software device as was saved from.

8) Auto-maintenance
Please enter <tool bar>-<system>-<maintenance>. Auto-Maintenance allows for the DVR to
reboot itself periodically (This is recommended). There are three types of maintenance: per day, per week, per time. Turn this feature off to prevent the DVR from rebooting.

10 Advanced Settings

Note: Operations in this chapter require the operator to be logged in with Admin authority.

1) Settings of System
Please enter <Tool Bar> → <Settings> → <System> → 【 Advanced Setting > > 】

Preview Cruise:
Select <PREVIEW CRUISE> → 【 ＊ ］ to enter the setting screen. This feature will allow the DVRs display to cycle through the cameras 1 at a time or by groups instead of showing all at once. Set the preview cruise interval, 1/4/9 cruise way. It will take effect after saving the settings, the screen will be cruised in accordance with the setting intervals over the segmentation preview. To turn off Preview Cruise go in and select disabled and it will return to standard operation after saving.

DVR ID: Setting this ID in accordance with a DVR Controller allows for operation of the DVR through the device. Please refer to the controllers manual for operating instructions.

Daylight Savings Time:
Select <DST> → 【 ＊ ］ to enter DST settings. User can set beginning and ending dates and time of DST. Device will automatically adjust the time after being saved.

Menu Overtime:
After started <menu overtime>, when there is no mouse motion on the menu, will time out and automatically close the menu and lock the device. User will have to log in to the DVR with ID and password each time this happens.

Channel Lock:
Select <channel lock> → 【 ＊ ］ to enter channel lock setting screen. Select the desired channels to lock out and press 【 OK 】 . The User will be unable to see any locked channels when the DVR is logged out. This setting can only be adjusted under Admin authority.

User management:

* Add User:
Please enter <tool bar> → <setting> → <system setup> → <advanced setting>. Select <ADD USER> → 【 ＊ ］ to enter the setting screen, the password of any new user is 111111.

* Password Change:
User may enter < Tool Bar> → < Setting > → <System> → <Password Settings> to modify the password.

* Delete User:
Select <DEL USER> → 【 ＊ ］ to enter the setting screen and delete a user. Only the Admin is capable of deleting a user.

* Change Permissions:
Select < AUTHORITY MANAGE > → 【 ＊ ］ to enter the setting screen. Authority setting contains the authority options of both local and remote access.

Move highlight icon to desired option using 【 Direction 】 buttons. Press 【 OK 】 button or click mouse to select the option.
Chapter Five: Appendix

1 Specifications

<table>
<thead>
<tr>
<th>System</th>
<th>DVR Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Linux 2.6 O/S</td>
</tr>
<tr>
<td></td>
<td>Pentaplex operation: record, playback, preview and network browse, backup supported.</td>
</tr>
</tbody>
</table>

| Video Input           | 16 channel, BNC, 1Vp-p, 75Ω                  |
|                       | PAL (625 line, 50 f/s), NTSC (525 line, 60 f/s), SECAM (625 line, 50 f/s) |

| Audio Input           | 4 channel, RCA, 2Vp-p.  600Ω                 |

| VGA Output            | 1 channel, DIN-15(optional): 800×600@60Hz, 1024×768@60Hz, 1280×1024@60Hz, 1440×900@60Hz |

| CVBS Output           | 1 channel, BNC, 1Vp-p.  75Ω                  |

| Audio Output          | 1 channel, RCA, 2Vp-p. 600Ω                  |

| USB Interface         | Support USB storage device, USB mouse, USB burner. |
|                       |                                               |
| RS485                  | 1 port, receiving and transmitting duplex supported. |

| Network Interface     | 4RJ45 10/100M self-adaptive.                  |

| Alarm Input           | 4 channel NO/NC.                               |

| Alarm Output          | 1 channel NO/NC, relay: 30VDC/1A. 125VAC/1A    |

| SATA Interface        | 2 SATA port, 2 SATA HDD up to 2T supported.    |

| Video & Audio         |                                               |

| Video Compression     | H.264 Baseline                                |

| Video Standards       | PAL/NTSC/SECAM                                 |

| Video Compression Resolution | PAL:352×288 (CIF) NTSC: 352×240 (CIF)         |

| Frame Rate            | PAL:25F/S/CH 1, 3, 6, 12, 25 and user-defined optional; NTSC: 30F/S/CH 1, 3, 7, 15, 30 and user-defined optional. |

| Video Output Bit Rate | 32kbps-2048kbps (14M byte/hour - 922M byte/hour) |

| Preview Resolution    | PAL:720×576 (D1), horizontal line 550, vertical line 450 NTSC: 720×480 (D1), horizontal line 550, vertical line 400 |

| Playback Resolution   | PAL:352×288 (CIF), horizontal line 300, vertical line 250 NTSC: 352×240 (CIF), horizontal line 300, vertical line 220 |

| Audio Compression     | G.726 ADPCM                                   |

| Input/Output Sampling Rate | 8KHz                                          |
2 Methods of Calculating HDD Capacity

1) Calculate the maximum capacity of the build-in hard disk.

*Timing Recording:
Step 1: Calculate the maximum capacity of the hard disk needed in selected channel per hour, suppose as Si (MByte) (i is the channel number), and suppose the bit rate of the channel selected as D (Kbit/s). The formula of calculation is:
\[
Si = \left( \frac{D \times 3600}{8 \times 1024} \right) \times D \times 0.439453125 \text{ MB}
\]
Step 2: Confirm the storage time length, suppose as T hours. The total maximum capacity of the hard disk needed in selected channel for T hours, suppose as St is:
\[
St = T \times S1
\]
Step 3: Confirm the total numbers of the channels, suppose as n. The total maximum capacity of the hard disk needed, suppose as Sc is:
\[
Sc = S1 + S2 + \ldots + Sn
\]

Alarm Recording:
Suppose the rate of alarming as α%. The capacity of the hard disk needed in alarm recording supposed as Sa is:
\[
Sa = Sc \times \alpha\%\]
2) Calculate the compression bit rate for recording T hours.

*Timing Recording*
Step 1: Suppose the capacity of the hard disk as S, the total numbers of the channel as n. The capacity of hard disk needed per channel supposed as Di is:

\[ Di = \frac{S}{n} \]

Step 2: Suppose the total recording time as T hours. The capacity of the hard disk needed per hour per channel supposed as Dt is:

\[ Dt = \frac{Di}{T} \]

Step 3: The bit rate of all channels supposed as Dc is:

\[ Dc = Dt \times (8 \times 1024) / 3600 = Dt \times 2.2756 \text{ (Kbit/s)} \]

3) Default Values

<table>
<thead>
<tr>
<th>Table V 3 Default Values</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Menu</strong></td>
</tr>
<tr>
<td><strong>System Settings</strong></td>
</tr>
<tr>
<td>LANGUAGE</td>
</tr>
<tr>
<td>Video Standard</td>
</tr>
<tr>
<td>VGA Setting</td>
</tr>
<tr>
<td>Time Format</td>
</tr>
<tr>
<td>Time Setting</td>
</tr>
<tr>
<td>DST</td>
</tr>
<tr>
<td>Password setting</td>
</tr>
<tr>
<td>HDD Overwrite</td>
</tr>
<tr>
<td>Add user</td>
</tr>
<tr>
<td>Delete user</td>
</tr>
<tr>
<td>Authority manage</td>
</tr>
<tr>
<td>Preview Cruise</td>
</tr>
<tr>
<td>Device ID number</td>
</tr>
<tr>
<td>Menu time-out setting</td>
</tr>
<tr>
<td>Channel lock setting</td>
</tr>
<tr>
<td>Resource distribution mode</td>
</tr>
<tr>
<td>Record Schedule</td>
</tr>
<tr>
<td>Record Frame Rate</td>
</tr>
<tr>
<td>Record Resource</td>
</tr>
<tr>
<td>OSD Setting</td>
</tr>
<tr>
<td>Record Resolution</td>
</tr>
<tr>
<td>Sub-code</td>
</tr>
<tr>
<td>PTZ Baud Rate</td>
</tr>
<tr>
<td>PTZ address</td>
</tr>
<tr>
<td>Color settings</td>
</tr>
<tr>
<td>Motion Detection</td>
</tr>
<tr>
<td>Mosaic</td>
</tr>
<tr>
<td>Motion Detection</td>
</tr>
</tbody>
</table>
**Video loss handling**  
Alarm out, sound, report to the center, email

**Video Loss Handling**  
Alarm out, buzzer, upload, email Of

**Channel name settings**  
Click into the sub menu screen CH1/2/3……/16

<table>
<thead>
<tr>
<th>Network Settings</th>
<th>Video Loss Handling</th>
<th>Channel name settings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network</td>
<td>Static IP, Dynamic access of IP, PPPoE</td>
<td>Static IP</td>
</tr>
<tr>
<td>IP Address</td>
<td>Click into sub menu screen. 192.168.0.10</td>
<td></td>
</tr>
<tr>
<td>Subnet Mask</td>
<td>Click into sub menu screen. 255.255.255.0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Network Settings</th>
<th>Gateway</th>
<th>HTTP Port</th>
<th>Command Port</th>
<th>Media Port</th>
<th>PPPoE Setting</th>
<th>PPPoE address</th>
<th>DNS address</th>
<th>Dynamic Domain Name</th>
<th>Auto Register</th>
<th>File Sharing</th>
<th>Email Setting</th>
<th>Mobile Port</th>
<th>UPnP setting</th>
<th>Dedicated server</th>
<th>FTP setting</th>
<th>IP Access</th>
<th>Time synchronized</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Click into sub menu screen. 192.168.0.1</td>
<td>Click into sub menu screen. 80</td>
<td>Click into sub menu screen. 5050</td>
<td>Click into sub menu screen. 6050</td>
<td>ON, OFF, Click into sub menu screen.</td>
<td>Click into sub menu screen. 0.0.0.0</td>
<td>Click into sub menu screen. 0.0.0.0</td>
<td>ON, OFF</td>
<td>Click to select or disselect</td>
<td>ON, OFF</td>
<td>Click into sub menu screen</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7050</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td>Off</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Disabled, Allowed Access or Forbidden.</td>
<td>Disabled</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm settings</td>
<td>Alarm Input Type</td>
<td>Event Handling</td>
<td>Alarm Setting</td>
<td>Alarm Zoom Out</td>
<td>Abnormal device</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/O, N/C</td>
<td>record, PTZ preset, zoom out, alarm out, buzzer, upload, email</td>
<td>Off, 1-10</td>
<td>1-10 seconds, Off</td>
<td>click into sub menu screen :alarm out, buzzer, upload, email</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>N/O.</td>
<td>Trigger alarm output, buzzer and email</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Introduction of Mobile phone Monitor

1) Configuration of server (DVR)

In configuring your iOS or Android device you will use the mobile port shown on your DVR as seen below.

On your smart phone download the Zviewer App through the App Store(iOS) or the Play Store(Android).
Connecting to a Device:

1. From the main interface tap the settings gear in the bottom left corner and enter the device list. (Fig 1)
2. If there are no devices added you will be prompted with “No device, please add”. Tap “Add new device” (Fig 2)
3. Enter a name for the DVR. Now enter the corresponding IP address, Mobile port number, case sensitive username and password, and the number of channels your DVR has. Select OK to save your device. (Fig 3/Fig 4)
4. To delete or edit a device press and hold on its name from the device list (Fig 2)

Playing Video

1. From the main page tap any blank window and you will see an orange highlight around the perimeter of the window. (Fig 1)
2. Press the settings gear and from the device list select a device. Upon selecting a device its channel list will appear and you may select a channel which will then be played in the previously highlighted box.
3. Repeat step 1 and 2 up to four times. Each box may be connected to either the same or separate devices from the list and be controlled independently.
Device Management:

1. From the home screen (Fig 1) press the settings arrow in the bottom left and select “Device Manage” (Fig 2).
2. From the management screen (Fig 3) select the “+” icon in the upper right hand corner to add a device.
3. From the “Add Device” page (Fig 4) enter a name for the DVR. Now enter the corresponding IP address, Mobile port number, case sensitive username and password, and the number of channels your DVR has. Current channel is 0.
4. Select “save” to save your device. (Note: Greyed out values must have something input before you will be able to save.

Connecting to a Device

1. From the home screen (Fig 1) select 1 of the 4 windows so that an orange highlight is around the perimeter of the box.
2. Press the settings arrow in the bottom left and select “Connect to Device” (Fig 2).
3. From this device list step 1 will bring you to you may select your device from the list. After selecting your device you may choose a channel to play. This will play your camera in the box previously selected in step 1.
4. Repeat steps 1 through 3 up to four times. Each box may be connected to either the same or separate devices from the list and be controlled independently.
Lifetime Customer Support
Informative Knowledge Base at kb.zmodo.com
24/7 Live Support on www.zmodo.com

Mailing Address:
Champaign Office: 1401 Interstate Drive, Champaign, IL 61822
Los Angeles Office: 17870 Castleton Street, Suite 200, Industry, CA 91748