

# H.264 Standalone DVR

16 CH

# User Manual



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DVR User Manual

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## 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. Warranty Restrictions

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 losses 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 by Zmodo.

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

6. Zmodo reserves the right to update and change product software at any time without notice. This manual may not directly reflect all aspects of your DVR or your DVR version. Software updates (when available) can be found on [kb.zmodo.com](http://kb.zmodo.com).

Best regards,  
Zmodo Customer Care

# Chapter 1: Overview

## 1.1 Introduction

This SFN Series DVR is 16-channel standalone digital video record that uses H.264 video compression for playback main profile with multiplex functions: 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 use at home, office, small business and most common security and surveillance applications.

## 1.2 Packaging and Accessories

Following parts are included in the package:

- (1)ZMD-DR-SFN6 CCTV Safety DVR
- (2) AA Batteries
- (1)IR Remote Control & Mouse
- (1)DVR Manual
- (1) DC12V3A power adapter(12V5A is required if two HDDs are installed in DVR)

All relevant software can be downloaded at <http://files.zmodo.com>

## 1.3 Main Features

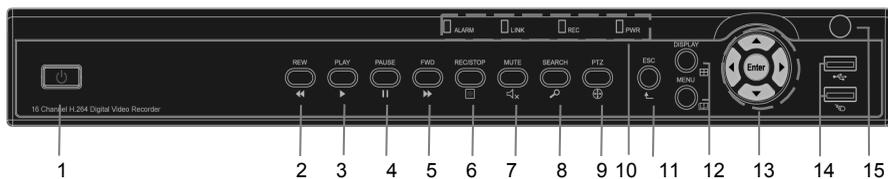
- ◎ Standard H.264 video compression format
- ◎ 16-bit true-color semi-transparent graphical menu interface, menu option tips
- ◎ Variety of recording modes including manual, timed, motion detected, and alarm recording
- ◎ Optimized 4-channel simultaneous playback
- ◎ Multiple Backup Options (USB flash drive and network)
- ◎ One USB 2.0 for data backup and one USB1.1 for the mouse operation
- ◎ Multi-function operation, recording, playback, monitor, backup, and network transmission can be realized at the same time
- ◎ Dual stream technology
- ◎ Supports network multi-screen, real-time viewing, parameter settings, backup, or playback
- ◎ Supports mobile phone monitoring
- ◎ Supports event classification and precise time search and playback
- ◎ Default settings recovery

## 1.4 Technical Parameters

Features	Description
Operating System	Embedded LINUX
Video Compression	H.264
Video Input / Output	16channel BNC      1 VGA
Audio Input / Output	2/1 channel BNC
Alarm Input / Output	8 channel input   1 channel output (switch)
Display Split	1/4/9/16 channels
Multiplex Operation	Live, recording, network, mobile phone, surveillance simultaneously
Recording Mode	Timer/Manual/Motion Detection/Alarm
Recording Frame Rate	PAL : 25fps    NTSC : 30fps adjustable
Recording Quality	Best, Fine, Normal
Recording Resolution	CIF(352*288)
Recording Playback	4 channels playback simultaneously (The playback channel is optional. Supports remote playback)
Recording Backup	Supports USB drive backup, network backup, backup files by time
HDD	Supports 2 SATA HDD , max capacity 2TB(ea.)
Network Transmission	16 channels with CIF resolution
Email Alarm	Send notification to the designated Email
PTZ Control	Supported
PTZ Protocol	PELCO-D, PELCO-P
PIP	Supported
Zoom	Supported
Network and Protocol	1 RJ-45 10/100M via Ethernet , support TCP/IP,DHCP,DNS,DDNS,SMTP,NTP, etc.
Capture Function	Supported
IE Browser	Supported, max 5 users on line
Client Software	Supported, max 5 users on line
Dual stream	Supported ( main and secondary interchange )
Multi-language	Supported
Mobile Phone Surveillance	Supports iPhone and Android; max 3 users on line
SDK Package	Optional
Mouse Interface	USB1.1
Backup Interface	USB2.0
Remote Controller	Support
User Authority	Support multi-level user authority distribution
Power Adapter	DC12V/5A(2 HDD) or 12V/3A(one HDD)
Working Temperature	
Working Humidity	10% - 90%
SIZE(mm)	354(W) * 230(D) * 45(H)

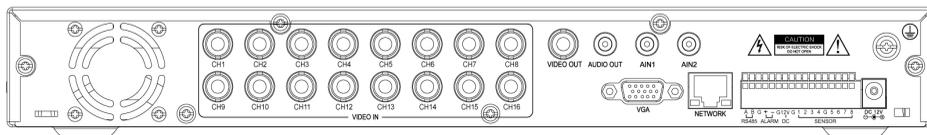
## 1.5 Product Appearance and Interface Definitions

### 1.5.1 Front Panel



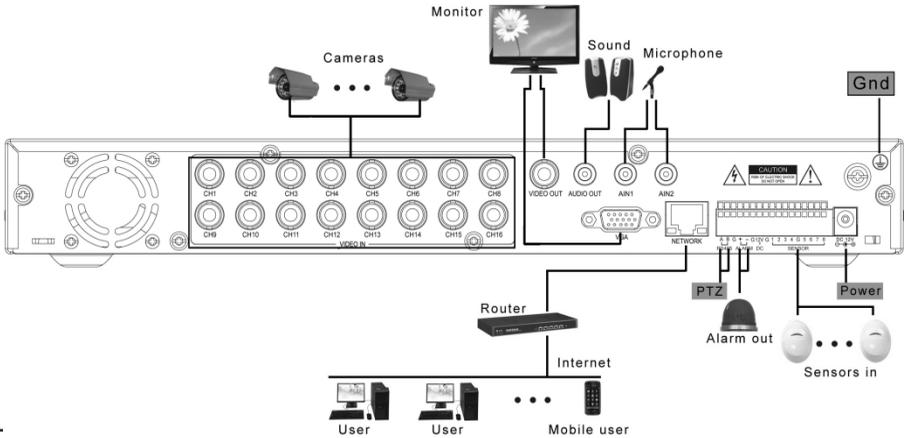
No.	Definition	No.	Definition	No.	Definition
1	Power Switch	7	Mute	9	PTZ Control
2	Rewind	8	Video Search	11	Exit/Return
3	Play	10 (Refers to LED Lights)	ALARM: Alarm Indicator	12	Display: Display Mode Menu: Main Menu
4	Pause		ALARM: Network Connection Indicator	13	Up, Down, Left, Right, and Enter
5	Forward		REC: Video Recording	14	USB Port
6	Manual Start/Stop Recording		PWR: Power	15	Remote Control Infrared Receiver

### 1.5.2 Back Panel



No.	Physical Interface	Interface Description
1	1-16CH Video-in ports	Connect analog video(camera) signal input, standard BNC
2	Video out	Connect to BNC video output
3	AIN1,AIN2	Connect active audio signals, such as pickup
4	Audio out	Connect the audio output
5	VGA	Connect VGA monitor, such as computer monitor
6	NETWORK	Connect the Ethernet
7	RS485 / ALARM / DC	PTZ control, alarm switch output, DC 12V output for assistance
8	SENSOR 1-8	Connect alarm switch input
9	ALARM	Connect alarm switch output
10	DC12V	Power input: DC 12V/5A or 12V/3A(one HDD)
11	G	Grounding

## 1.5.3 Setup Diagram



## 1.6 Remote controller

For reference only



Key	Functional definition
	Not Used
	Mute
0~10	Channel Selection; Number Keys
PTZ	PTZ Control
	Single and Multi-Split Screen
	Quit Shortcut Menu
	Shortcut Menu
	Direction Buttons
	OK or 10+x Channel(x=1-6)
ESC	Exit / Return
MENU	Enter the Main Menu
STARTREC	Start Recording
STOPREC	Stop Recording
	Video Search
	Stop Playing
	Fast Backward
	Fast Forward
	Step Forward
F1, F2	Not Used

## 1.7 Mouse

This equipment supports a wired USB mouse that is used to navigate the DVR's menus. Insert the USB plug directly into the USB port. Mouse operation is similar to WINDOWS operations.

Mouse Action	Function
Right Button:	Enter System Main Menu. From the Main Menu, pressing the Right Mouse Button will return to the previous page.
Double Left-Click	Double-clicking will apply to both live preview and playback. Double-click on a desired channel to zoom the selected channel to full screen. Double click the zoomed-in screen again to return the viewing method to multi-channel viewing.
Left-Click	<p><b>Channel Selection:</b> Left clicking on a desired active video channel will move the highlight to that channel and cause any commands from the PTZ menu to affect that channel</p> <p><b>Menu Use:</b> Left clicking on any icon on the menu will cause the DVR to act upon that selection. Drop down boxes can be opened by clicking the downward facing arrow on the box.</p> <p><b>Functions as Enter/Select button in all purposes</b> Left clicking in a blank field in the menu will bring up the virtual keyboard allowing. Left-click to select letters, numbers, and symbols to insert in to the field.</p>
Click and Drag	Click and drag in certain screens to select an area. In motion detection, this will block off an area that will not be used. In playback this will create a digital zoom in to the selected area.

## Chapter 2: Quick Installation

### 2.1 HDD Installation

The manufacturer recommends that the hard disk be installed by a technician to avoid damage to the equipment and hard disk. The DVR must be powered off before installation. This equipment supports a hard disk with a SATA interface. Please see <http://kb.zmodo.com> for recommended hard drives and hard drive requirements.

Installation procedures are as follows:

- A. Unscrew the screws that secure the DVR cover and remove the cover. There will be a bracket or an empty space where the hard drive will sit.
- B. Connect the red data cable and multicolored power cable firmly.
- C. Put the HDD into the bracket or open area above directly over the four screw holes.
- D. Affix the HDD onto the bracket or DVR base with screws and replace the DVR housing.

**Note:** The new hard disk drive must be formatted to function with the DVR.

### 2.2 Boot

Connect the power adapter to the power cord socket in back panel, and press the power button on front panel. The DVR will turn on, the power indicator POWER will light up, and the monitor will display a 16-channel split image. If a non-formatted hard disk exists in the DVR, it is required to format the HDD before recording video footage. By default the DVR is set to begin immediately recording when turned on with a working and formatted hard drive installed. The red REC LED light will confirm that the DVR is recording.

#### Notes:

1. If hard disk is not installed when the DVR is powered on, or the newly installed hard disk is not formatted on the DVR, the red H logo will be shown in video preview picture.
2. The newly installed hard disk cannot be used until formatted in the DVR as follows: Main Menu → HDD → HDD Format. The system will be restarted after completion of formatting.

### 2.3 System Login

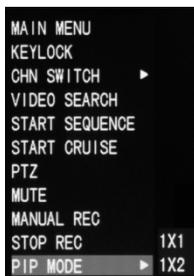
The DVR Device ID is 000000 without any password. The user can log in to the main menu directly. The administrator can change the DEVICE ID and PASSWORD in the Basic Settings – User Password menu. The user can set an ordinary user password and administrator password. The administrator has all the operating privileges, and an ordinary user can only monitor video, search, and playback.

**Note:** Admin and User are differentiated solely by the password. Do NOT set them to the same password as the system will default to the user and the DVR will be locked.



## 2.4 Shortcut Menu

Click the right button on the DVR interface or right-click on the mouse after system startup to open the Quick Operations popup menu. This menu has the following setting options: MAIN MENU, KEYLOCK, CHANNEL SWITCH, VIDEO SEARCH, START SEQUENCE, START CRUISE, PTZ CONTROL, MUTE, MANUAL RECORD, STOP RECORD and PIP MODE.



### 2.4.1 Main Menu

Click MAIN MENU to enter the main menu interface. See 3.1 for more information about the main menu.

### 2.4.2 Key Lock

When the password function is enabled (please see 2.3), click the right button in live preview and select KEYLOCK in the pop-up menu. The system interface will be locked immediately, and the password is required to log in to access the menus.

### 2.4.3 Channel Switch

Allows the user to select a specific channel.

### 2.4.4 Video Search

Please see Chapter 3.

### 2.4.5 Start Sequence

Start video channel automatic sequence function. Right-click to exit this feature.

### 2.4.6 Start Cruise

Begin the PTZ cruise set by the user. This will be replaced with Stop Cruise when this function is enabled.

**Note:** This feature can only be used after the user sets up PTZ control parameters and preset points.

### 2.4.7 PTZ Control

Click right button in main interface and select PTZ Control. The following interface will appear:



PTZ speed (fast or slow) can be controlled in this interface. Zoom, focus, and aperture are also adjustable in this menu.



#### Cruise Setting:

1. select the PTZ channel. S
2. set the pause time(s). S
3. adjust the arrow keys to the position which needs to be monitored. A
4. select SET POINT. Repeat steps 2–4 to set additional presets. S
5. select the APPLY button to save the settings. S
6. exit to live screen and select START CRUISE. E

#### Notes:

1. To set up more points, repeat steps 2-5.
2. To view the current points already set position press JUMP.
3. To delete the point has been set, enter the point number and select CLEAR.

#### 2.4.8 Mute

Turn on / off sound.

#### 2.4.9 Manual Recording / Stop Recording

If timed recording is on (please see Chapter 3), and manual record is enabled manual record will override any timed recording schedule. If “Record When powered On Mode” is enabled, then this function is not available.

#### 2.4.10 Zoom

In single-channel full-screen mode, this function can be done by dragging the mouse to marquee area to enlarge



### 2.4.11 PIP

In the single-channel full-screen mode, PIP enables floating images of other channels.



## Chapter 3: Menu Settings

### 3.1 Main menu

The main menu has PLAYBACK, RECORD, HDD, BASIC, ADVANCED, and EXIT options as shown below:

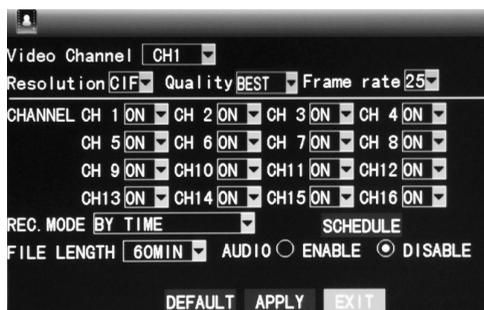


#### Notes:

1. The setup of all the submenus below will not take effect until ENTER is pressed..
2. When the cursor is moved to any option, a description message of this option will be displayed in the lower part of the screen.

### 3.2 Recording Mode

Enter the “Recording Mode” screen from MAIN MENU—RECORD, as shown below:



**Video Channel:** Select either a specific channel or all channels.

**Resolution:** CIF (352 x 288).

**Quality:** Available in BEST, FINE, and Normal.

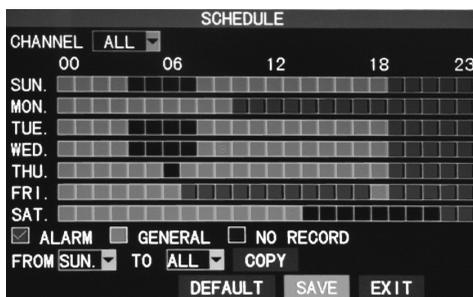
**Frame rate:** Adjust frames per second.

**Audio:** Enables or disables audio recording. Audio uses more storage space on the hard disk drive.

**REC.MODE:** Available in WHEN POWERED UP and BY TIME.

**WHEN POWERED UP:** Will automatically begin recording as soon as the DVR is turned on and will continue until this is changed to BY TIME. Individual channels can still be turned off in this menu for this purpose.

**BY TIME:** Records based on a schedule determined by the user. When BY TIME is selected, the SCHEDULE button will appear on the right. Move the cursor here and press ENTER to enter the recording schedule, as shown below:



**CHANNEL:** Choose either ALL or a single channel.

**Time configuration:** First select one of the three modes of recording: TIMED, ALARM RECORDING, and NO RECORD. After clicking on the desired record type, the user may fill in the grid blocks that correspond to an hour of the day. Each block can be configured into different recording modes by marking them into different colors representing the respective record modes.

**FILE LENGTH:** Left-click or press Enter to select the recorded file length, with the 4 options of 15 min, 30 min, 45 min, and 60 min.

### 3.3 Video search

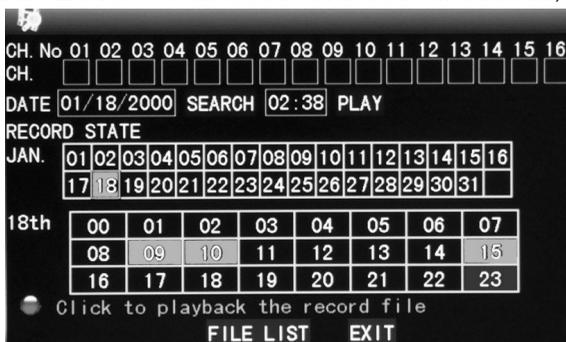
Enter the “Video Search” screen from SUB MENU →VIDEO SEARCH or MAIN MENU→PLAYBACK as shown below: This unit supports 3 video search modes:

#### A. Time Based Playback

Time input: First, select the corresponding channel and then adjust the date and time to be searched. Left-click or press Enter and the directional keys or enter digits directly for year, month, date, hour, and minute, and then click Play to play back the recording that covers this point in time. Up to four channels can play back simultaneously.

#### B. Playback Based on Record Calendar

Mark the channel and enter the year, month, and date to be searched in the DATE box and click SEARCH to load recorded videos in the calendar, as shown below:



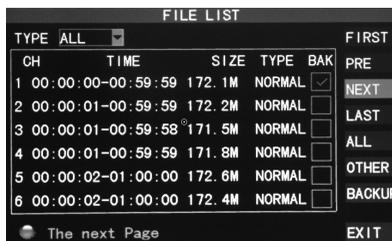
**Month:** Displays recorded videos by month (Shown above as January). A green block indicates normal recording, a red block indicates alarm recording, and the background color indicates no recordings are on that day. Clicking or selecting a day in the calendar will load that specific day’s recordings in the section below.

**Date:** Displays the recordings for a specified date (shown above as the 18<sup>th</sup>). Color distinctions are the same as the month. Each hour is broken in to 2 segments and clicking one will take the user directly in to the playback for that time.

#### C. Playback Based on File list

Enter the year, month, and date to be searched in the DATE box, and click SEARCH. Select the desired day of the MONTH bar and then FILE LIST and the “File List” screen will pop up, as shown below:

**Type:** The user may narrow down the files shown by recording type (alarm, timed, or all):



## Notes:

1. In file list the user will be given information pertaining to the channel, time frame of the recording, size of the individual file, and the recording type. The operation of backing up files to the USB port can be performed by checking the BACKUP checkbox at the far right side of the file. Only files from one page may be backed up at a time. To back up files from another page, the user must select them separately.
2. When you have selected a certain recorded file from the record list by moving the cursor up and down, press Enter to enter the "Playback" screen.
3. If Record Time has already been enabled in the Setup section, the playback screen will display the timestamp. If Record Time is set as "Off" in the "Setup" screen, there will be no timestamp displayed on the playback "Playback."
4. During playback the user may use the playback features bar located at the bottom of the screen to slow, rewind, fast forward, or exit the current recordings playback.

## 3.4 Backup

Enter the "File List" (see 3.3 Video Search) screen for the backup operation.

The recorded file may be backed up by a USB storage device. Before the record file is backed up, the user must insert the peripheral storage device into the USB2.0 slot of this unit. This product supports the plug-and-play operation of USB devices (The DVR does not support devices that require a driver installation).

Move the cursor up and down in the "Detailed File List" screen to select a certain recorded file. After Enter is pressed in the Backup check box, a ✓ will appear in this box, indicating that this record file has been selected. At this point the user may move to the backup option in the bottom right of the window and press select. A pop-up notification will show the progress of the file backup:



## Notes:

1. When the available space of the backup device is less than the capacity of the recorded file, the system will prompt the user with Not Enough Space.
2. After the recorded file has been backed up, unplug the backup device directly. See Chapter 4: DVR Network for network backup.

### 3.5 Hard Disk Management

Enter the “HDD Management” screen from MAIN MENU →HDD, as shown below:



**STATUS:** After connecting the hard disk, the system will automatically detect if the hard disk is formatted. If the hard disk needs formatting, UNFORMATTED will be displayed in the hard disk state. Check the format box and select FORMAT HDD to have the DVR format the disk. If the system detects any available hard disk, the hard disk state will be ONLINE.

**ALL/FREE:** Refers to the total storage capacity and current remaining storage capacity of the hard disk;

**TIME LEFT:** Refers to the time remaining for recording based on the currently set picture resolution and quality.

**FORMAT:** Click the check box and a ✓ will appear in this box, indicating that this HDD has been selected.

**OVERWRITE:** ENABLE: The hard disk will overwrite the earliest recordings when its memory is full; DISABLE: Recording will stop when the memory of the hard disk is full.

**HDD FORMAT:** If the hard disk is used for the first time, it is necessary to format the hard disk. Check the FORMAT box, then click the FORMAT HDD button, and then click ENTER for formatting in the pop-up prompt message dialog box, otherwise click CANCEL. After clicking FORMAT HDD, the system will prompt, “You will lose all data by formatting the hard disk. Will you continue?” Press Enter, and the system will state: “Formatting...” then “Format Successful.” The system will restart automatically.

**USB FORMAT:** Allows the user to format a USB device that is not currently capable of backup. The DVR must still be able to detect the device in order to do this.

The DEFAULT button is used to restore the factory default values.

**Note:** It is recommended that the hard drive be formatted before beginning recording for the first time, even if it does not require it.

### 3.6 Basic Setup

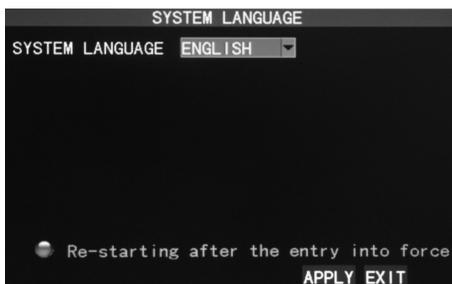
Enter the “Basic Setup” screen from MAIN MENU →BASIC, as shown below:



The “Basic Setup” includes the 6 options of LANGUAGE, DATE/TIME, PASSWORD, CAMERAS, VIDEO/AUDIO SETUP, and EXIT.

### 3.6.1 System Language

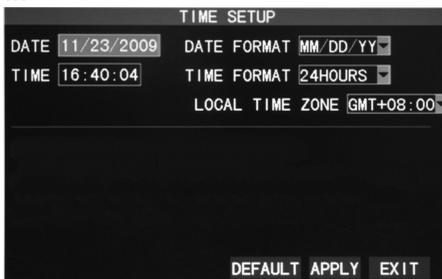
Move the cursor to the LANGUAGE option (The icon is enlarged and highlighted to indicate selection.), and press ENTER to enter the “Setup” screen of this option, as shown below:



The system supports 15 languages. After choosing the desired language, click APPLY button to save, and it will go into effect after a system restart.

### 3.6.2 Time Setup

Move the cursor to the DATE/TIME option (The icon is surrounded by a yellow frame to indicate selection.) and press Enter to enter the “Time Setup” screen of this option, as shown below:



The system time, date format, time format, time zone and summer time can be set up in this screen. If the DVR is networked it will automatically update to the set time zone.

### 3.6.3 User Password

SECURITY

DEVICE ID 000000

PASSWORD ENABLE

USER PASSWORD \*\*\*\*\* RE-ENTER \*\*\*\*\*

ADMIN PASSWORD \*\*\*\*\* RE-ENTER \*\*\*\*\*

● Password must be 6 digits long

CLEAR IE PASSWORD APPLY EXIT

**DEVICE ID:** Enter digits to set a desired Device ID. This number will act the same as a username.

**PASSWORD:** Press Enter to select ENABLE or DISABLE for the user password. If this option is enabled, the user has to enter his/her password when logging in to gain access to menu functions. If it is disabled, the main menu of the system can be logged in directly.

**USER PASSWORD:** Set the User password. This password will only allow basic functions and access to the DVR.

**ADMIN PASSWORD:** Set the Admin password. This password will allow access to all functions of the DVR.

**IMPORTANT: DO NOT SET BOTH PASSWORDS TO BE THE SAME.**

**Notes:**

1. This unit has no initial password. When the user sets passwords, it is recommended that the two passwords are set up at the same time. If any set password is forgotten (or both are set to the same), please, contact Zmodo. Zmodo will not reset a password without proof of ownership.
2. Only the locking, channel changeover, video search, log search, backup, PTZ control, mute, manual recording, and stopping recording functions are available to normal users.

### 3.6.4 Cameras

Move the cursor to the CAMERAS option (The icon is surrounded by a yellow frame to indicate selections), and press Enter to enter the “Setup” screen of this option, as shown below:

	NAME	POSITION	COLOR	PREVIEW
CH1	CH1	TOPLEFT	SETUP	ON
CH2	CH2	TOPLEFT	SETUP	ON
CH3	CH3	TOPLEFT	SETUP	ON
CH4	CH4	TOPLEFT	SETUP	ON

PREVIEW TIME ON RECORD TIME ON

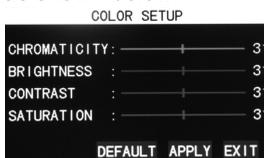
CHANNEL SEQ. NEXT PAGE DEFAULT APPLY EXIT

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**Name:** Move the cursor to the input box of this option, and press Enter to enter the “Input” screen of this option. Numerical, English and Chinese pinyin input methods are supported.

**Position:** Move the cursor to this option, and press Enter to change over between name positions; there are 5 setup options: top left, bottom left, top right, bottom right and off.

**Color:** Move the cursor to Setup on the corresponding channel, and press Enter to enter the “Color Setup” screen as shown below:



Press Enter or drag the cursor to adjust the picture color, including the four options of chromaticity, brightness, contrast, and saturation. Press Enter to exit and save the parameters.

### **Preview:**

On: The picture of this channel can be seen in the “Video Preview” screen;

Off: The Video Preview screen of this channel has been blocked, but the recording settings do not change.

**Preview Time:** On: The system date and time are displayed in the “Live Preview” screen.

**Record Time:** On: A timestamp can be displayed in the playback of a record file.

**Channel SEQ:** Adjust the channel sequence times and split view options.

### **3.6.5 Video / Audio**

Move the cursor to the VIDEO/AUDIO option, (The icon is surrounded by a yellow frame to indicate selection.) and press Enter to enter the “Setup” screen of this option, as shown below:



**CAMERA SYSTEM:** Left-click or press Enter to change over between PAL and NTSC. (All Zmodo Cameras sold in the US are NTSC).

**Volume setup:** Move the cursor to Volume Setup, left-click or press Enter to enter the Volume “Setup” screen, and press Left, Right or drag the cursor with the mouse directly to adjust the volume.



**Note:** *The system will restart when the VGA resolution or the camera resolution is modified.*

## **3.7 Advanced**

## 16-channel H.264 DVR User Manual

Enter the following screen from MAIN MENU →ADVANCED:



The advanced functions include the seven options of ALARM, SYSTEM INFORMATION, MOTION DETECTION, MOBILE PHONE SETTINGS, SYSTEM MAINTENANCE, PTZ SETUP, and NETWORK SETUP.

### 3.7.1 Alarm

Move the cursor to the ALARM option, (The icon is surrounded by a yellow frame to indicate selection.) and press Enter to enter the “Setup” screen of this option, as shown below:



**I/O CHANNEL/ALARM:** Each channel corresponds to an I/O alarm state. When the alarm input of a channel is triggered, the alarm record of the corresponding channel will be started.

**NO:** Normally open.

**NC:** Normally closed.

**OFF:** Disable alarm circuit of this channel.

**Note:** When an alarm is produced, a red letter I will be displayed above the corresponding channel in Live Preview.

**HDD LOSS:** On: When the system cannot identify the hard disk, an alarm will be generated, and a red H will be displayed at the bottom left corner of Channel 1 in the lower part of the “Video Preview” screen.

**HDD SPACE:** On: When the remaining space of the hard disk is less than 500M, the lower part of the “Video Preview” screen will display. The space of the hard disk is not enough. Please change the disk after shutdown.

**VIDEO LOSS:** On: When the video of a certain channel is lost, this channel will display in the lower part of the “Video Preview” screen: Video Loss.

## 16-channel H.264 DVR User Manual

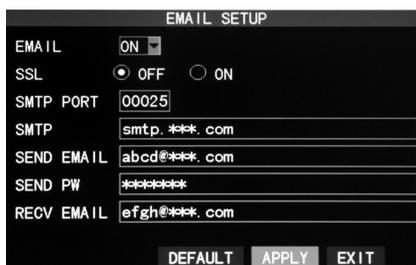
**ALARM MANAGE OUTPUT:** The length of time of the DVR will output the alarm signal when an alarm is generated, with the options of 0 sec, 10 sec, 20 sec, 40 sec, and 60 sec

**BUZZER:** The length of time of the buzzer will sound when an alarm is generated, with the options of 0 sec, 10 sec, 20 sec, 40 sec and 60 sec.

**Post Alarm Recording:** The time the DVR will continue to record after the motion detection alarm is triggered, with the options of 30 sec, 1 min, 2 min, and 5 min,

**Email SETUP:** This unit supports motion detection and e-mail alarm.

**Note:** *To receive e-mail notifications, the user must connect the DVR to a router with internet access. See Chapter 4 DVR Network for the setup process. When motion detection is triggered, the system will extract a picture at the time of triggering and send it to the corresponding mailbox.*



**SSL:** A secure link transmission protocol, where the Off or On state is determined by the mailbox server.

**SMTP PORT:** The port used by the SMTP server that some e-mail services employ.

**SMTP:** The server address of the mailbox used. All information must be obtained from the e-mail service provider. Zmodo is not responsible for the performance and upkeep of mail servers.

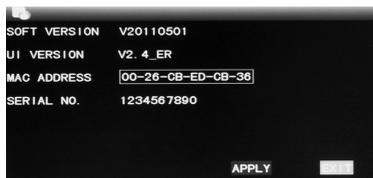
**SEND EMAIL:** The mailbox address used to send mails.

**SEND PW:** The password of the mailbox used to send mails.

**RECV EMAIL:** The address used to receive the picture transmitted after the DVR alarm is triggered. Please mind the space limitations of the e-mail inbox.

### 3.7.2 System Info

Enter the “System Info” screen from MAIN MENU → ADVANCED FUNCTIONS, as shown below:

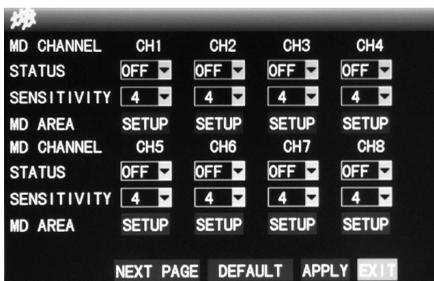


The software version number, whole unit version number, MAC address and serial number are listed in this screen.

### 3.7.3 Motion Detection

## 16-channel H.264 DVR User Manual

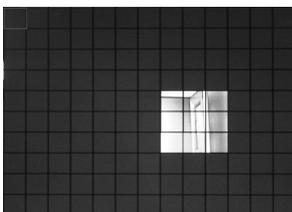
Enter the “Motion Detection” screen from MAIN MENU →ADVANCED, as shown below:



**MD CHANNEL and STATUS:** Each channel has an independent status. Press Enter to select motion detection On or Off.

**SENSITIVITY:** Each channel has a corresponding sensitivity setting, with the four levels of 1, 2, 3 and 4, where 4 is the most sensitive.

**MD AREA:** Each channel has a corresponding motion detection area setting. Move the cursor to Setup of the corresponding channel, and press Enter to enter the motion area setup screen of this channel. A red block indicates motion detection is activated for this area and a transparent block indicates motion detection is not activated, as shown below:



### Operating Prompt:

Remote controller operation: Use  (display mode) to select full screen or blank.

Mouse operation: Left-click the mouse and drag the motion box to set the area of dynamic detection. Right-click when finished to return to the previous screen.

### Motion Detection Setup Procedures:

- Turn On the corresponding channel in the Channel Switch option;
- Set the sensitivity level as necessary, usually set at 3 or 4;
- Set the motion area of the corresponding channel in the Area Setup option;
- In the “Recording Mode” screen, set the corresponding channel to On in the Channel option;
- In the “Recording Mode” screen, select BY TIME in the Record Mode option, and click SCHEDULE to enter the “Record Schedule Configuration” and set the corresponding time to alarm recording (See timed recording in Recording Mode for the setup method).

After the setup has been completed and motion is detection triggered, a red letter M will appear in the screen of this channel. See Alarm Processes in Section 3.6.1 for alarm setup.

## 3.7.4 Mobile Phone Monitoring

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The mobile phone monitoring function of this series DVR is supported by mobile phones of the Android and iOS operating system.

### Mobile Phone Settings:

Enter the following screen from MAIN MENU →ADVANCED FUNCTIONS →MOBILE:



MOBILE USERNAME admin  
MOBILE PASSWORD  
SERVER PORT 15064  
DEFAULT APPLY

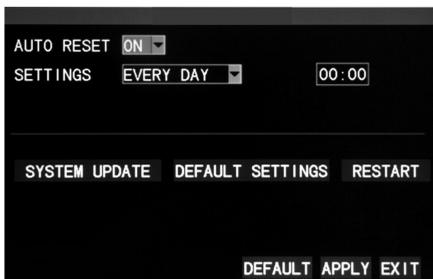
**Mobile Username:** The username that will be entered on the smart-phone when connecting to the DVR. The default user name is admin. The username is case sensitive.

**Mobile Password:** The password that will be entered in the smartphone when attempting to connect to the DVR. The default is no password.

**Service Port:** This has a setting range of 1,024–65,535. This port has to be mapped on the router, and its setup method is the same as the mapping method of the web and media ports in the network section.

### 3.7.5 System Maintenance

Enter the “Maintain” screen from MAIN MENU →ADVANCED, as shown below:



AUTO RESET ON  
SETTINGS EVERY DAY 00:00  
SYSTEM UPDATE DEFAULT SETTINGS RESTART  
DEFAULT APPLY EXIT

**AUTO RESET:** When this option is set to On the user can set the restart frequency and time of this device. On the new version this is called DVR Restart.

**SYSTEM UPDATE:** Copy the update file to the root directory of a USB flash drive, then insert the USB drive into the USB slot of the DVR, and press SYSTEM UPDATE to update the system. The screen will display the progress box of system update until update is complete.

**DO NOT** unplug or turn off the DVR during updating. This can permanently disable the DVR.

**DEFAULT SETTING:** Restore the system parameters to the default settings.

**RESTART:** Restart this DVR.

### 3.7.6 PTZ

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Enter the “PTZ” screen from MAIN MENU →ADVANCED, as shown below:



**CHANNEL:** Displays the channel for the PTZ settings that will be adjusted.

**PROTOCOL:** Select the protocol of the corresponding brand and model. Pelco-D and Pelco-P are supported with Pelco-D being the default.

**BAUD RATE:** Select the baud rate used by the PTZ Camera, with the 4 options of 1200, 2400, 4800, and 9600

**DATA BIT:** 5, 6, 7 and 8 are available with 8 being the default.

**STOP BIT:** 1 and 2 are available with 1 being the default.

**VERIFY:** 5 options of None/Odd/Even/Mark/Space. None is the default setting.

**ADDRESS:** Set the address used by the PTZ camera connected to this channel.

**AUTO CRUISE:** Turn ON / OFF the channel PTZ cruise function. When Auto Cruise is enabled, the user must activated is by selecting START CRUISE in the right-click menu.

**The PROTOCOL, BAUD RATE and ADDRESS must be set correctly in order for the PTZ to function.**

### 3.7.7 Network Setup

Enter the “Network” screen from MAIN MENU →ADVANCED, as shown below:



**TYPE:** Supports STATIC, DHCP, and PPPOE addressing.

**STATIC:** Configure the network parameters manually

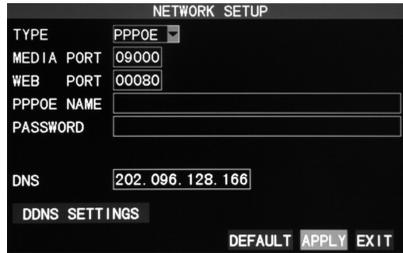
**DHCP:** This will allow the DVR to auto-configure the network information.

**Note:** It is recommended to get an IP address by using DHCP: After selecting the DHCP mode, select Apply then restart the DVR. After restarting, the system will establish a connection with the DHCP server automatically. When this is successful, this unit will be allocated an IP address, which will be displayed on the screen. Set the TYPE to STATIC after the DVR has successfully allocated an IP address to

## 16-channel H.264 DVR User Manual

the DVR, then select Apply and restart the DVR again. The DVR will keep the IP address that was just allocated to the DVR.

**PPPOE:** Broadband dial-up network access, as shown below:



The screenshot shows the NETWORK SETUP menu with the following fields and values:

Field	Value
TYPE	PPPOE
MEDIA PORT	09000
WEB PORT	00080
PPPOE NAME	
PASSWORD	
DNS	202.096.128.166

Buttons at the bottom: DDNS SETTINGS, DEFAULT, APPLY, EXIT

**PPPOE User Name and Password:** Fill in the PPPOE user name and password provided by the Internet service provider.

**MEDIA PORT:** The port number used in the private protocol communication between the DVR and the PC end; 9000 by default. If this port is occupied by any other service, please modify it to an unused port.

**WEB PORT:** Set to 80 by default. If the administrator modifies the WEB port to any port other than 80, such as 88, this port number must be included with the IP address, for example: <http://192.168.1.197:88> will be entered in the address bar when accessing the DVR via the IE.

**IP ADDRESS:** The address in which the DVR will communicate on the network that it is connected to. This address may not be in use by another device on the same network.

**SUBNET MASK:** The subnet is dependent upon the network it is plugged in to. It will have to use the same subnet as the router. Most home networks will have a subnet of 255.255.255.0

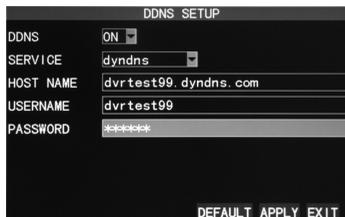
**GATEWAY:** The gateway should be set as the IP address of the router.

**DNS:** Domain Name Server; this is not essential for a basic hookup, but is required for other functions like e-mail alerts and DDNS setup.

**UPNP:** Universal Plug n' Play when connected to a compatible router this will allow the router to automatically access the needed port forwarding rules with no extra setup.

### DDNS Setup

Click DDNS SETUP to enter the following screen:



The screenshot shows the DDNS SETUP menu with the following fields and values:

Field	Value
DDNS	ON
SERVICE	dyndns
HOST NAME	dvrtest99.dyndns.com
USERNAME	dvrtest99
PASSWORD	*****

Buttons at the bottom: DEFAULT, APPLY, EXIT

**DDNS:** When a domain name resolution server is available, please select DDNS ON

**SERVICE:** The user may select their desired DNS service. Zmodo's hosted DNS service is available free for use with all Zmodo DVRs. Please visit <http://www.zmododns.com/> for our free DNS service.

**Host name:** Enter the host name registered with the selected DNS service.

**User name:** Enter the user name registered with the DNS account created with the

specified DNS service.

**Password:** Enter the password registered with the DNS account created with the specified DNS service.

## Chapter 4: DVR Network

### 4.1 Functional Characteristics

Web access for the DVR software installation is run through the IE browser of Windows itself. The DVR supports LAN and WAN access, as well as IP and domain name access.

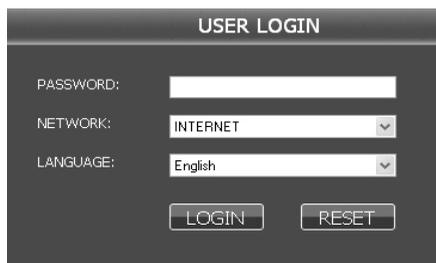
### 4.2 Installation and Download of Controls

#### Automatic Installation of Plug-ins Unit:

1. In order for IE to install the necessary plug-ins required by the DVR, the IE security settings must be changed to allow the software to be installed. In order to do this you will need to open an IE browser and go to TOOLS → INTERNET OPTIONS → SECURITY tab → CUSTOM LEVEL button. From this window, set “Download and install unsigned ActiveX controls” and “Initialize and Script ActiveX controls not marked as safe for scripting” both to **Prompt**. If you are on IE version 9 or newer you will also need to disable “Allow ActiveX Filtering.”
2. After adjusting the ActiveX controls, enter the IP address of the DVR in the IE address bar and press enter. Upon reaching the IP address of the DVR, Internet Explorer will prompt the user with the installation of an ActiveX add-on. Proceed with the installation as it directs. Once this is complete, the “User Login” screen will display.

### 4.3 IE Login

If a password has not yet been set on the DVR click LOGIN. If a password has been sent, enter it in the password field and then click LOGIN. This password is separate from the DVR’s Device ID password and can be changed from within the web client.



USER LOGIN

PASSWORD:

NETWORK:

LANGUAGE:

**Note:** If the DVR host is in a LAN, but the INTERNET option has been selected, the effect of the preview image will be non-real-time.

### 4.4 Real-Time Preview

After logging in to the web client successfully, the live preview will automatically open and all channels will be displayed as shown below.

#### Play control:

: Opens or closes the channel image

## 16-channel H.264 DVR User Manual



Captures a still frame image of the highlighted channel



Remote recording (See System Setup for the saving directory.)



Divides the screen into 1, 4 parts respectively;

**PTZ CONTROL:** controls the upward, downward, leftward and rightward motion of the PTZ remotely, and also the zoom, focus, aperture, and preset points of the lens.

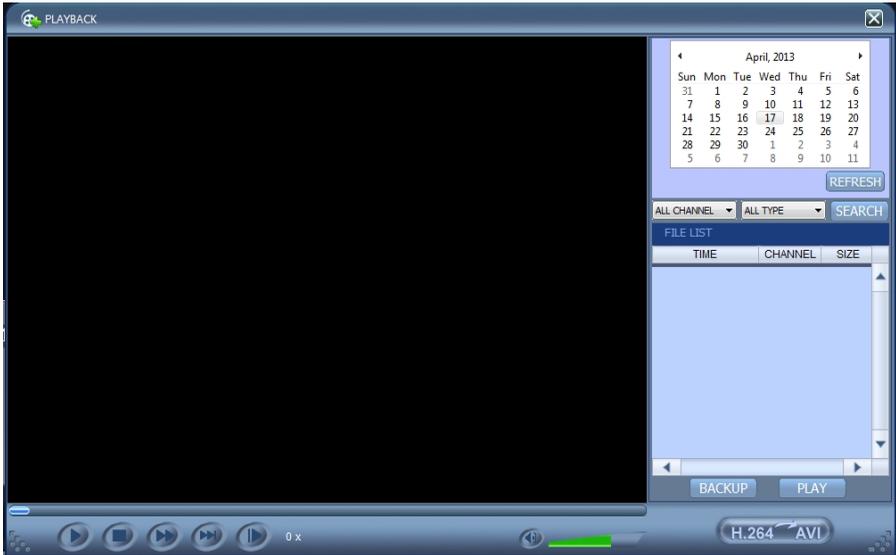


### 4.5 Record Playback

Click PLAYBACK to enter the “Record Playback” screen, as shown on next page. The user may select a date from the calendar from which you would like to review video. The days with recordings will be denoted with bold numbers.

Once the day is selected, click REFRESH and it will load the specified day's video in the window below. Select the file to be played and double-click this file or click PLAY to play it.

Click BACKUP and the file will begin downloading to the specified directory. The progress bar will display above the video control keys place of the playback timeline. (See section 4.10 for the Save Directory). After downloading a file, the user may use the h.264>AVI button to convert the downloaded file into something that can be played back in most standard media players.

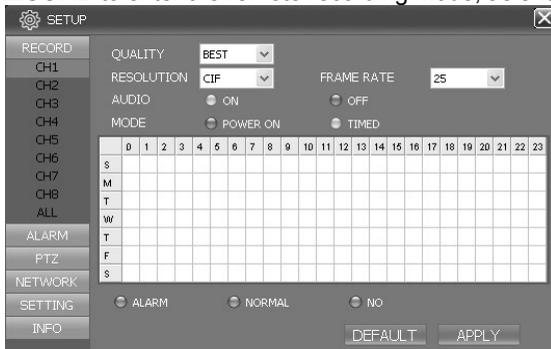


Shown to the right is the .264 to AVI conversion window. Click the ... on the Source File line to select the desired file to convert. Then select the ... on the Destination File line to select a location to save it. Finally, press the H.264 -> AVI button to convert the file.



## 4.6 Recording Mode

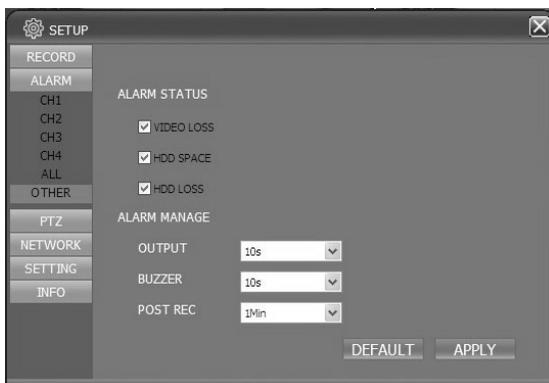
Click SETUP →RECORD to enter the remote recording mode, as shown below:



The setup method is the same as seen directly on the DVR’s monitor. See Recording Mode in Chapter 3 for details.

## 4.7 Alarm Setup

Click SETUP →ALARM to enter the “Alarm Setup” screen, as shown below:



The setup method is the same as seen directly on the DVR’s monitor. See Alarm Setup in Chapter 3 for details.

## 4.8 PTZ Control

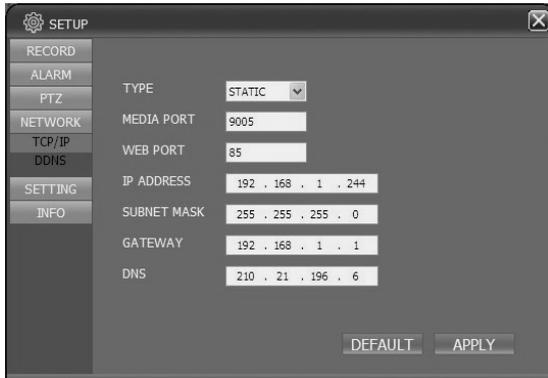
Click SETUP →PTZ to enter the PTZ Control mode. See Figure 5-6:



The setup method is the same as seen directly on the DVR's monitor. See Chapter 3 Network Setup in this manual for the setup method.

### 4.9 Network Setup

Click SETUP → NETWORK SETUP to enter the “Network Setup” screen, as shown below: See Chapter 3 Network Setup in this manual for the setup method and explanation of ports and addresses. It is not recommended to change settings from this menu because a DVR restart is required afterwards. The DVR will not function properly until it is restarted.



## 4.10 System Setup

Click SETUP →SETTING to enter the “Settings” screen, as shown below:



**INTERNET:** Here you may set the bandwidth that the video stream will use. The higher you set the bandwidth, the clearer the image will be. Setting the bandwidth higher than the resources available for the DVR will still result in lower video quality in addition to video lag.

**File SAVE PATH:** This will allow you to set the location of files such as snapshots and recordings that will be saved to the computer. This must be set before any of those features will be available.

**IE PASSWORD:** Set a password for the IE login

**Note:** This password may be cleared in the main menu of the DVR.

## 4.11 Host Info

Click INFO to enter the “Host Info” screen. View the operating state of the hard disk, the time remaining, the software version, and MAC address of this system.

**EXPORT:** Export current configuration information.

**IMPORT:** Import a saved configuration.

# Appendix A: Android Setup

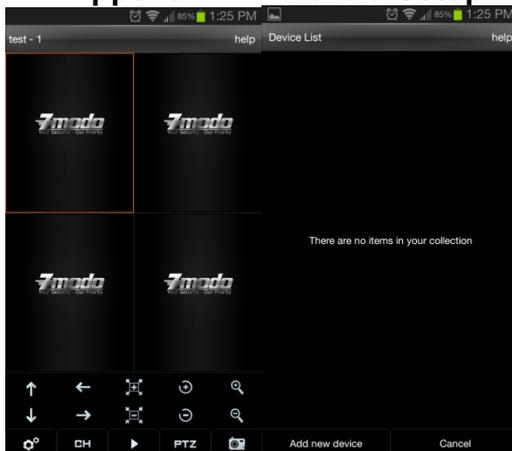


Figure 1

Figure 2



Figure 3

Figure 4

## Connecting to a Device

1. From the main interface, tap the settings gear in the bottom left corner to enter the device list. (Fig1)
2. If there are no devices added, you will be prompted with "No device, please add." Tap Add new device. (Fig2)
3. Enter a name for the DVR. Then 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. (Fig3/Fig4)
4. To delete or edit a device, press and hold on its name from the device list. (Fig2)

## Playing Video

1. From the main page, tap any blank window and you will see an orange highlight around the perimeter of the window. (Fig1)
2. Press the settings gear and select a device from the device list. Upon selecting a device its channel list will appear, then select a channel that 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 can be controlled independently.



## Appendix B: iOS Setup



Figure 1

Figure 2



Figure 3

Figure 4

### Device Management:

1. From the home screen (Fig1) press the settings arrow in the bottom left and select "Device Manage" (Fig2).
2. From the management screen (Fig3) select the "+" icon in the upper right hand corner to add a device.
3. From the Add Device page (Fig4) 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: Grayed out values must have something input before you will be able to save.

### Connecting to a Device

1. From the home screen (Fig1) 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 (Fig2).
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.

## Appendix C: Q&A

1. How do I recover a forgotten password??

A: Please contact Zmodo Tech Support if you have forgotten the password. Please set a password you will remember, or write the password down and keep it with the DVR.
  
2. Why does my monitor say no signal?

A: Please confirm that the video output port or VGA port is connected to the corresponding input on the desired monitor or television. If it says No Signal the monitor may not be capable of displaying the resolution of the signal the DVR is currently outputting. Try hooking up a different monitor or follow these steps:

  - A. Reboot the DVR.
  - B. Wait about 120 seconds until it's booted all the way up.
  - C. Press the following buttons on the front panel:
    - \*Menu button once.
    - \*Down arrow once.
    - \*Enter button once.
    - \*Down button once.
    - \*Right arrow once.
    - \*Enter button once.
    - \*\*\*Wait 5 seconds\*\*\*
    - \*Enter button once
    - \*Up arrow once
    - \*Enter button once
    - \*Down arrow 3 times.
    - \*Enter button once
    - \*\*\*Wait 10 seconds\*\*\*
    - \*Enter button once\
  - D The DVR should reboot itself. This will lower the resolution to the previous level. If resolution is still higher than what the monitor can handle when the DVR comes back up, repeat process and it will lower it down one more level.
  
3. My DVR won't recognize the hard drive

A: If the system cannot detect the hard drive, please confirm that hard disk data cable is connected securely along with the hard drives power cable. If the connections are secure, the DVR is powered with the proper power adapter, (12V3A) and the hard drive matches the requirements (3.5 low power SATA hard drive) then please call Zmodo's technical support.
  
4. Is it ok that my DVR is warm?

A: The DVR will produce a certain amount of heat as it runs. Please put DVR in a safe place with good ventilation to avoid to damage and increase stability and service life of the system.

5. Why won't my mouse or remote, or the buttons on the front of the DVR control anything??  
A: The DVR has 2 video outputs, but it can only output the menu system and control functions to one at a time. If you press and hold the rewind button on the front of the DVR it will alternate which output is actively showing the menu and should allow you to regain control of the DVR.
6. Is playback available while recording? Is multi-channel playback available?  
A: Yes, this system can support playback while recording. It can support 4 channel playback at any given moment while continuing to record.
7. Why are my E-mail alerts not working??  
A: Double check the spelling of your e-mail address in the DVR as well as deleting and re-entering the password. Any single error will cause the entire service to not function. If this is not the issue, and you applied the appropriate settings elsewhere in the DVR contact the e-mail provider to ensure your server settings are correct or your internet service provider to ensure that the required server ports are not being blocked.
8. It is recording but it says no files found when I try to play back video.  
A: You are required to press the search button before being able to select a video file under all circumstances, regardless of which method of playback you are attempting to use.
9. DVR will not control the PTZ after I plugged it in.  
A: Please check the following settings and cables:
- Ensure the RS485 cable is secured at both ends correctly.
  - Check to see that the PTZ address, baud rate, and protocol are set.
  - Verify the settings in the PTZ menu match the settings in the PTZ camera.
10. Why won't my motion detection record??  
A: Check the record schedule to ensure you are recording based on alarm. Also check the motion detection area setup. If you can see the entire camera image in the "Setup" screen you have applied the area setup backwards. Please refer to the motion detection section of this manual.
11. Why doesn't my alarm work?  
A: Ensure that the alarm settings in the DVR's menu area correct. Refer to the alarm's user manual to retrieve the needed settings and ensure its proper use.

## 16-channel H.264 DVR User Manual

12. Why does it continue to tell me Login Failed on the IE web interface?

A: Check to be sure you are using the right password. If you have forgotten it, you may clear it from the DVR's menu directly. If the password has been cleared, and it is still not working check the network connection. Your computer can still display the login page from memory when the DVR is disconnected.

13. After I log in its showing user is configuring.... ?

A: Please exit all menus on the DVR and close all connections from computers and mobile devices. Log back in on only 1 device. If the error persists restart the DVR.

Visit our online knowledge base at [kb.zmodo.com](http://kb.zmodo.com) for more answers to common questions.





**Zmodo encourages the customer to use a qualified installer for installation. The installer should take full responsibility of installing the equipment properly and safely.**