XDVR2

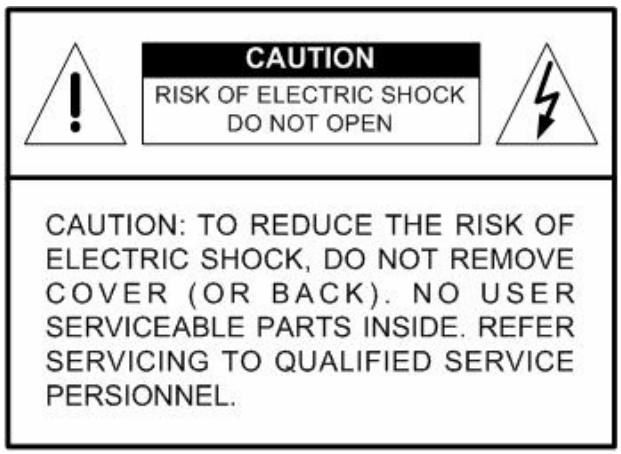
User's Manual

Ver. 1.3

Version 1.3
00-379216ZXEA3

Caution and Preventive Tips

- Take care not to drop the unit or subject the unit to major shocks or jolts.
- Do not place this unit on an unstable stand, bracket or mount.
- This unit is designed for indoor use only. Do not place the unit near water or in other extremely humid conditions.
- This unit should not be placed in a built-in installation unless proper ventilation is provided.
- Please check the used type of power source before you plug and operate the unit.
- If the clearing is necessary, note to plug the unit from the outlet before uncovering the top cover. Do not use liquid cleaners or aerosol cleaners. Use only a damp cloth for cleaning.
- Always power down the system prior to connecting and disconnecting accessories, with the exception of USB devices.
- Lithium battery: Danger of explosion if battery is incorrectly replaced. Replace with the same or equivalent type recommended by the battery manufacturer. Dispose of used batteries according to the battery manufacturer's instructions.
- Do not block the fan on the bottom of the unit for air ventilation.



This symbol intends to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

This symbol intends to alert the user to the presence of unprotected "Dangerous Voltage" within the product's enclosure that may be strong enough to cause a risk of electric shock.

Important Information

Before proceeding, please read and observe all instructions and warnings in this manual. Retain this manual with the original bill of sale for future reference and, if necessary, warranty service. When unpacking your unit, check for missing or damaged items. If any item is missing, or if damage is evident, DO NOT INSTALL OR OPERATE THIS PRODUCT. Contact your dealer for assistance.

Rack Mounting

Consult with the supplier or manufacturer of your equipment rack for the proper hardware and procedure of mounting this product in a safe fashion. Avoid uneven loading or mechanical instability when rack-mounting units. Make sure that units are installed to get enough airflow for safe operation. The maximum temperature for rack-mounted units is 40 °C. Check product label for power supply requirements to assure that no overloading of supply circuits or over current protection occurs. Mains grounding must be reliable and uncompromised by any connections.

Table of Content

1. Overview

The **XDVR2** unit is an integrated digital video recorder that combines the features of a time-lapse audio / video recorder, a multiplexer, and a video server to create a single security CCTV solution.

Its outstanding triplex operation enables users to view live or playback recorded video, and remote access through network simultaneously, while recording other video, and to view wanted recorded video instantly by entering the time and date or selecting recorded video from the event list.

XDVR2 includes DVR Remote**,** the remote viewing and configuration software that is a Web-browser plug-in, allows user to view live or recorded video images and enables remote configuration. The remote software is stored in **XDVR2** and deployed over a LAN, WAN or Internet connection to remote Windows-based computers. This simplifies the installation and maintenance of the software components so all remote users are kept up to date.

Below lists the front panels of **XDVR2** family, the difference between the three models is the total recording number of images per second.

XDVR2E Entry Level Model:
Recording with pictures up to 120 pps under NTSC system; and 100 pps under PAL system. The model will be mentioned as "XDVR2E" throughout the following sections.

XDVR2 Standard Model:
Recording with pictures up to 240 pps under NTSC; and 200 pps under PAL system. ThiXDVR2 will be mentioned as "XDVR2" throughout the following sections

XDVR2RT Real Time Model:
Recording with pictures up to 480 pps under NTSC; and 400 pps under PAL system. The model will be mentioned as "XDVR2RT" throughout the following sections. A version with 16 channel audio recording is also available, this is called the XDVR2RTA.

NOTE: Use of other power supply may cause overloading.

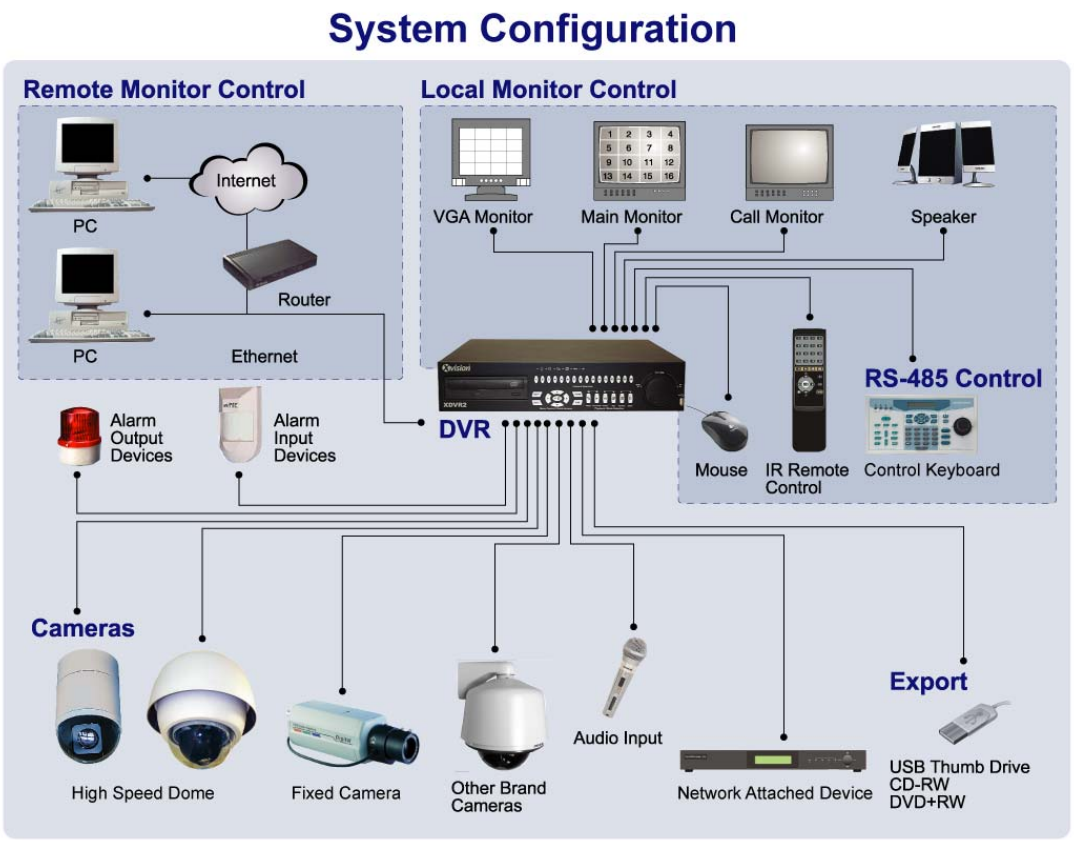
1.1 Product Key Features

The **XDVR2** offers advanced features not typically found in standard multiplexers; it integrates the full features of a DVR, multiplexer and video server (by using the software DVR Remote). The key features of **XDVR2** are listed as follows.

- MPEG-4 high quality compression
- 16 channels video input
- Triplex operation enabling simultaneous viewing live or playback while continuing to record
- DVR Remote web-based software for remote monitoring and control via LAN or Internet
- Embedded Linux operating system
- Real-time "live display" for each channel
- Recording frame rate up to 480 pps (NTSC) / 400pps (PAL)
- 2 Channels of audio recording/ playback
- Three USB2.0 ports for video clip export and/or backup
- Easy software upgrade via USB ThumbDrive®, DVD+RW, or Internet Remote Application
- Up to 4 internal hard disk drives support up to 1TB capacity
- Hard disk drive full alarm for noticing
- 2X Digital Zoom available in live mode
- Export video (AVI & DRV) with audio and digital Signature
- Exported AVI file can be played in any PC with DivX decoder installed
- Automatic camera detection (Plug & Play)
- Covert camera operation provides enhanced security and administrator control
- Per camera configuration for camera settings, frame rate, picture bit rate, alarms, motion detection.
- Programmable day/ night/ weekend scheduling
- Programmable main monitor/ call-monitor switching sequence
- Dual video out for monitoring
- Powerful alarm processor allows flexible alarm trigger and responses, including alarm, motion, and camera failure
- Taxt Message (Short Message Service; SMS) sent to your mobile phone for alarm notice.
- Dome control protocols: DynaColor, Pelco D, Pelco P,AD422 and Fastrax.
- Supports multiple language on-screen menus
- Two levels of password security
- Universal power input, no external power unit.

1.2 Product Application Diagram

Connect the unit with other devices as shown in the system diagram to complete a video surveillance solution. The figure shows also the expandability and flexibility of this digital recording system.



2. System Setup

The notices and introduction on system installation will be described particularly in this chapter. Please follow the description to operate the unit.

In order to prevent the unit from data loss and system damage that caused by a sudden power fluctuation, use of an Uninterruptible Power Supply (UPS) is highly recommended

2.1 Position the Unit

Firstly, note to position / mount the **XDVR2** unit in a proper place and be sure to power off the unit before making any connections. The placed location should avoid hindering or blocking the unit from airflow. Enough airflow is needed to protect the unit from overheating. The maximum allowable temperature of operating environment is 40°C.

The unit utilizes heat-conducting techniques to transfer internal heat to the case, especially to the bottom side of the unit.

NOTE: Be sure not to remove the rubber feet, and always leave a space for air ventilation on the unit's bottom side.

2.2 Selecting Video Format

The **XDVR2** unit is designed to operate under either NTSC or PAL video formats. The switch is positioned on the rear panel.

2.3 Connecting Devices to the Unit

This section lists some notices that should be given before making any connections to the **XDVR2** unit.

NOTE: Connect short-term devices, such as USB ThumbDrive®, USB CD-RW, USB Hard Disk Drive, etc., only after the unit is successfully powered up.

Connecting Required Devices

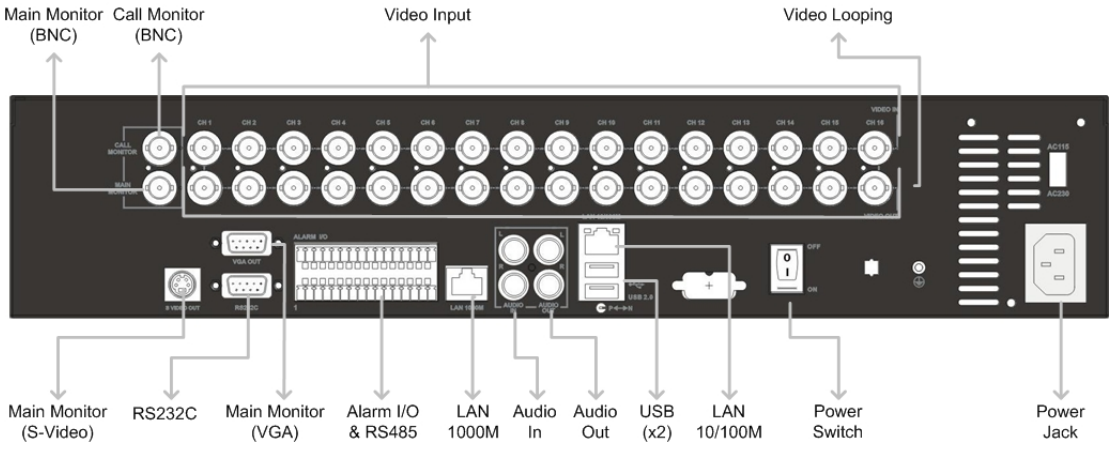
Before power up the unit, you should connect cameras and a main monitor to the unit for basic operation. If needed, connect a call monitor for displaying full screen video of all installed cameras in sequence.

Connecting Short-term Device

If you plan to install any short-term devices to the **XDVR2** and use them as part of the unit system, such as USB CD-RW, USB Hard Disk Drive, etc. Make sure connecting those devices only during the unit is powered up. Because **XDVR2** unit can recognize the external devices only after the power-up process is done completely.

2.4 Rear Panel Connections

There are various connectors on the rear panel used for **XDVR2** installations. The following figure shows the connectors by name; and followed by the detailed description of each connector.



Main Monitor (S-Video / BNC)

Both S-Video and BNC output connectors are offered for connecting to a main monitor. The main monitor displays live image and playback recorded video in full-screen or split-window format.

Call Monitor (BNC)

The call monitor is used to display full screen video of all installed cameras in sequence. The BNC call monitor connector allows user to connect the **XDVR2** unit with an optional call monitor.

Video Input

16 BNC connectors are offered for video input streams from installed cameras. The number of connectors is equal to the number of channels.

Camera Looping

Plenty of BNC connectors are positioned on the real panel for looping out the video input.

LAN Connector (RJ-45)

The **XDVR2** is capable of networking. The LAN port opens the door of **XDVR2** to Ethernet where by the Internet.

Power Jack

The **XDVR2** has a free voltage AC power connection jack. Please connect the power supply that ships with the unit.

NOTE: Use of other power supply may cause overloading.

Power Switch

Used to power up and shut down the unit.

Audio In / Out

The **XDVR2** unit provides two channels of audio recording and playback. Audio In RCA connector is offered for connecting an audio source device (e.g. external amplified microphone) to the unit; Audio Out RCA connector is offered for connecting an audio output device (e.g. amplified speakers) to the unit.

Alarm I/O & RS485

The unit provides an alarm I/O and RS485 port that offers user the flexibility required to connect the unit to the other device.

Pin	Definition	Pin	Definition
1	Ground	**17**	Alarm In 1
2	Normal Close 1	**18**	Alarm In 2
3	Common Node 1	**19**	Alarm In 3
4	Normal Open 1	**20**	Alarm In 4
5	Ground	**21**	Alarm In 5
6	Normal Close 2	**22**	Alarm In 6
7	Common Node 2	**23**	Alarm In 7
8	Normal Open 2	**24**	Alarm In 8
9	Ground	**25**	Alarm In 9
10	Normal Close 3	**26**	Alarm In 10
11	Common Node 3	**27**	Alarm In 11
12	Normal Open 3	**28**	Alarm In 12
13	Ground	**29**	Alarm In 13
14	RS485 D+	**30**	Alarm In 14
15	RS485 D-	**31**	Alarm In 15
16	Ground	**32**	Alarm In 16

VGA Out

A VGA output connector is offered for connecting to a VGA main monitor. The source of image of VGA and BNC main monitor are the same.

RS-232C

The unit provides a RS-232C communication port for sending and receiving signals.

USB Connector (x2)

There are two USB2.0 ports on the rear panel for users to connect external USB devices to the unit, such as ThumbDrive® or CD-RW.

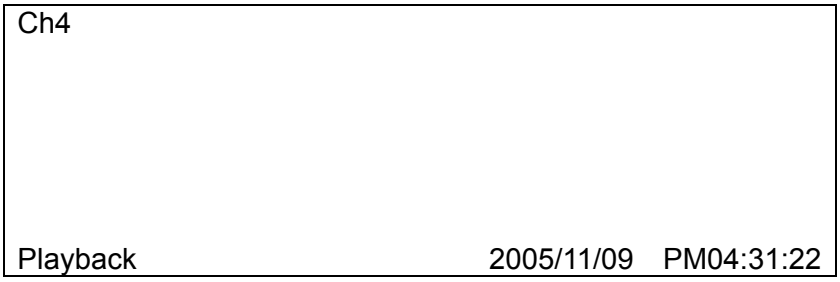
XDVR2 unit allows users to preset the OSD settings using a USB mouse.

3. General System Setup

The **XDVR2** DVR allows user to access some general operations through the

front panel easily. The following subsections introduce the general operations of the unit.

The regular displayed OSD information and its displayed positions are shown as following figure. The channel title will be displayed on the top-left side of the window, either in full screen mode or in multiple channel mode. The current operating mode, including Call mode, Dome-Control mode, Playback mode. Freeze mode and Sequence mode, will be displayed on the bottom-left side of the screen. And the date/ time information will be display on the bottom-right side.

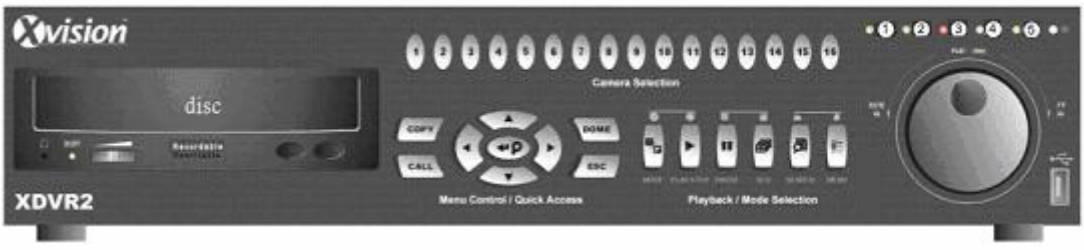


3.1 Front Panel Introduction

The unit's front panel controls enable user to control the unit and preset the programmable functions.

3.1.1 LED Definition

The **XDVR2** LEDs on the front panel are described as follows.



1. Power LED (Green)

The LED lit during the period when the correct power is connected to the unit.

2. HDD LED (Yellow)

The LED should be lit while the HDD is processing data to or from the connected HDD.

3. Alarm LED (Red)

The LED should be lit during an alarm is triggered.

4. Network LED (Green)

The LED should be lit when **XDVR2** is connected to a network and blink when the data is being transferred.

5. REC LED (Green)

The LED should blink while the **XDVR2** is recording.

3.1.2 Functional Keys

The **XDVR2** functional keys on the front panel for normal operation are described as follows.

1. DOME

Press the key to enter dome control mode. Please refer to Section 4.6 Dome Control for detailed controlling operation.

2. MODE

Press repeatedly to select for wanted main monitor display format. There are three available view modes: full screen, 4-window (2×2) and 16-window (4×4). Refer to Section 4.1.1 Viewing Modes for detailed information.

3. SEQ (Sequence)

Press to start automatic sequencing of the video coming from the installed cameras.

4. MENU

Press the key to call the OSD setup menu.

5. CALL

- In Live mode, press to enter call monitor control mode.
- In Playback mode, press to quick export video to external device, including

USB CD-RW and ThumbDrive®, etc. Detailed operation refer to Section 4.7 Quick Video Export through Front Panel.

6. PLAY/STOP

Press this key to switch between live image and playback video.

NOTE: The video of latest 5 ~ 10 minutes cannot be played back, because the video is still saved in the buffer.

7. FREEZE

- Press FREEZE while viewing live image, the live video will be frozen. The date / time information shown on the monitor will continue updating. Press FREEZE again to return to live mode.
- Press FREEZE while playing the recorded video, the playback video will be paused. Press LEFT / RIGHT to move the recorded video reverse / forward by single step. Press FREEZE again to continue playing video.

8. SEARCH

In both Playback and Live mode, user can press SEARCH to call the Search menu for searching and playing back recorded video by date and time or events.

9. ESC

- Press to cancel or exit from certain mode or OSD menu without changing the settings made previously.
- This key allows you to enable the key lock function.

  If the password protection has been enabled, press ESC for two seconds to lock up the function of certain keys on the front panel, including PLAY, MENU, SEARCH, CALL and DOME. Once you lock up the function of these keys, you have to enter the correct password before accessing the functions of these keys. The unlocking duration will list for 5 minutes, then these keys will go back to locked mode.

  If the password protection hasn't been enabled, press ESC for two second to lock/ unlock the functions of these keys.

NOTE: Please go to the <Password> menu to enable or disable the password protection.

NOTE: For XDVR2, Call key will still take effect when the unit is under key locked mode. It is used for accessing "Two Main Monitor Out" function.

10. ZOOM/ENTER

- In OSD menu or selection interface, press the key to make the selection or save settings.
- In live full screen view mode, press to view a 2× zoom image; press it again to return.

11. Direction Keys

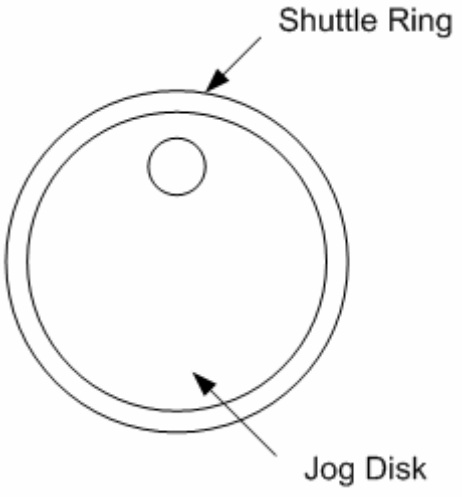
- In Zoom mode, these keys function as Direction keys.
- In the OSD setup menu, the Direction keys are used to move the cursor to previous or next fields. To change the value in the selected field, press UP / DOWN keys.

12. CHANNEL

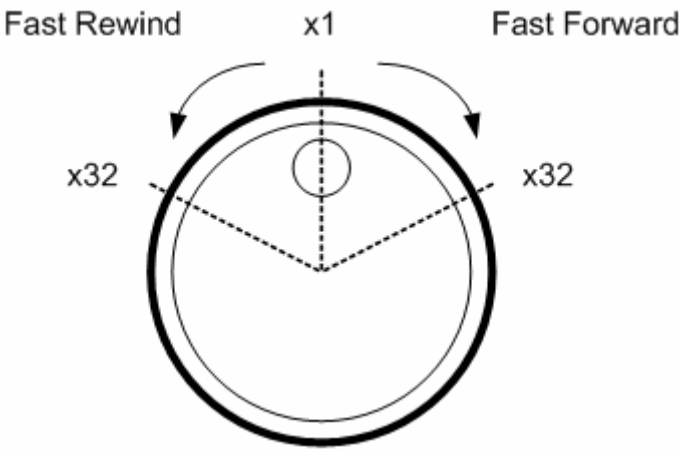
- When in both Live and Playback modes, press the CHANNEL key to view the corresponding video in full screen. The number of the CHANNEL keys corresponds to the number of cameras supported by the unit.
- When in dome control mode, the key named "1" is used to access the Set/Go preset menu; the key named "2" is used to hide or display the dome setting parameters.

13. JOG/SHUTTLE

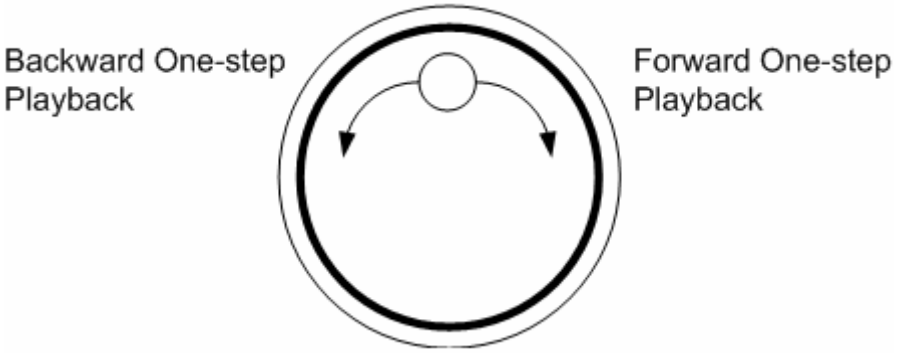
The jog/shuttle knob, shown as below figure, is a combination of a shuttle ring with an embedded jog disk, which is used to provide wide latitude in playback control. Note that the jog/shuttle knob is active only when the DVR unit has been under Playback mode.



- While playing back video, you can use the shuttle ring to select different speed of forward and backward playing. Rotating the shuttle ring counterclockwise causes the unit to playback into faster forward/ backward playing speed. According to the angle you rotate the shuttle ring, you can choose the playing speed from 1X, 2X, 4X, 8X, 16X, and 32X, in both forward and reverse directions, shown as below figure:



- Inside the shuttle ring is the jog disk, shown as the figure, it can turns completely in either directions. Once you freeze the video, you can use the jog disk to go single-step playing back. Clockwise rotation causes a forward one-step playback; and counterclockwise rotation causes a backward one-step playback.



3.2 Install HDD to the Unit

There is a cartridge positioned on the front panel, and it allows user to install a swappable HDD. There will be two possible situations when you install a HDD into your DVR.

- If you install whole new HDDs, the DVR will format it and add it into your database automatically.
- If you install an used HDD which doesn't have the DVR format, the DVR will show up "1 disk(s) with wrong data format! Please format them and then add to the database manually". Then please follow the steps as we describe below:
  - Please enter the menu with the administrator privilege and access the "Database Information" section
  - Please access the "Internal(or external) Disks"
  - You can see the available disks, please select "format" to format it
  - After formatting is OK, please select "Add" to add them into your database.

3.3 Power Up / Down the Unit

If you must shut down the **XDVR2** for any reason, please use the proper shut down and power up procedures to avoid damaging to your DVR unit.

To Power Up the Unit

Check the used type of power source before plug in your DVR unit first (the acceptable power input is between 110V ~AC240V), and turn on the unit using the power switch on the rear panel.

The color bar and system checking information will be shown on the monitor and disappear when the unit has been completely powered up.

To Restart / Shutdown the Unit

To restart/ shutdown the unit, you have to enter the OSD setup menu and select the <Shutdown> menu. Note to enter the OSD setup menu with correct Administrator Password, or, the <Shutdown> menu will be unable to access.

Press MENU and input the administrator password to access the OSD Main menu. Select <Shutdown> in Main Menu and press ENTER to enter the Shutdown menu, which displays as follows.

Shutdown
1. Power Off 2. Reboot

<Power Off>

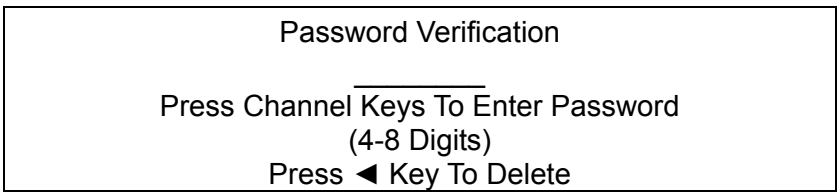
Select this item to shut down the unit. Do not remove the power during shut down until the message "You can safely turn off DVR now!" displays.

<Reboot>

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

3.4 Entering OSD Setup Menu

The OSD Main menu contains a list of items that are used to configure the **XDVR2**. To enter the Main menu, press MENU and then enter Administrator or User password. The Password Verification screen displays as follows.

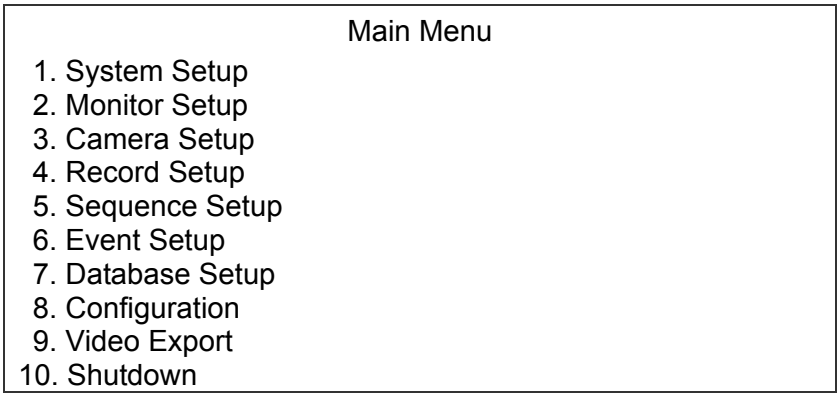


The default passwords are shown in the following table. The same passwords are used for entering the remote viewing software DVR Remote.

Administrator Password	User Password
1 2 3 4	**4 3 2 1**

NOTE: It is strongly suggested to change the passwords to prevent unauthorized access to the unit.

After entering the correct password, the Main menu is displayed.



Move the cursor up / down over the OSD items using the Direction keys and press ENTER to enter the selected sub-menu.

3.5 System Date / Time Setting

User can set the current date, time and other OSD parameters in Date/Time menu (under System Setup menu). The administrator's privileges are required for entering the submenu. In OSD Main menu, select <System Setup> and press ENTER, then select <Date/Time> to access the Date/Time menu; the menu displays as follows.

Date/Time	
1. Date	2005/02/21
2. Time	PM10:39:26
3. Date/Time Display	1 Row
4. Date Display Mode	Y/M/D
5. Time Display Mode	24 HR
6. Date/Time Order	Date First
7. Daylight Saving Time	OFF
8. DST Start	Apr, 1 st Sun, 02:00
9. DST End	Apr, Last Sun, 02:00
10. DST Bias	60 Min

3.5.1 Set Date / Time

Set Date / Time

Select <Date> / <Time> and press ENTER for adjusting the settings. LEFT / RIGHT keys are used to move the cursor to previous or next field, ENTER is for selecting, and UP / DOWN are used to change the value in the selected field.

NOTE: The reset date / time setting applies to record new video, the date and time of previously recorded video will not be changed.

NOTE: If you have to change data/ time settings in any cases, we strongly recommend you to format the HDDs in order to avoid the recorded database corruption.

Date / Time Display

Users are allowed to choose to set the date / time OSD displays in 1 or 2 rows. Use the UP / DOWN keys to change the setting. The default is to display the date / time OSD in one row.

Date Display Mode

This function allows user to set the OSD display type of the date / time. There are three options to select from: <Y/M/D>, <M/D/Y> or <D/M/Y>. "Y" represents "Year", "M" represents "Month" and "D" represents "Day".

Move to the item and press ENTER, the option starts blinking. Use UP / DOWN keys to change the setting. The default setting is <Y/M/D> in both NTSC / PAL formats.

Time Display Mode

User can choose to set the time format to <12 hour> or <24 hour>. Use the UP / DOWN keys to change the format. The default setting is <24 hour>.

Date / Time Order

The item is used to set the order of date / time display to <Date First> or <Time First>. Use UP / DOWN keys to change the setting.

3.5.2 Daylight Saving Time

Daylight Saving Time

The item is for those people who live in certain regions to observe Daylight Saving Time. Select <ON> to enable, or <OFF> to disable the function.

If the function is disabled, the DST Start / End time and DST Bias will be grayed out and cannot be accessed.

NOTE: If this function is enabled, the date/time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. "S" indicates summer time and "W" indicates wintertime.

DST Start / End

The items are used to program the daylight saving duration. Use Direction keys to move the cursor to the next or previous field, UP / DOWN to change the settings in the selected field.

DST Bias

The item allows user to set the amount of time to move forward from the standard time for daylight saving time. The available options are <30>, <60>, <90> and <120> minutes.

3.6 Record Schedule / Quality Setting

The Record Setup menu allows user to set recording quality, recording schedules, and other recording parameters. Administrator's password is required to use Record Setup menu. In the Main menu, move the cursor to <Record Setup> and press ENTER; the following menu is displayed.

Record Setup	
1. Record Mode	720x240@120PPS
2. Schedule Setup	
3. Preset Config	Standard
4. Per Camera Config	
5. esRecord Setup	
6. Data Lifetime	0 Days
7. Pre-Alarm Recording	15 Sec
8. Circular Recording	ON
9. Audio Recording	ON
10. Purge Data	

3.6.1 Record Mode

The Record Mode is for selecting resolution and recording rate. The relative record settings, such as preset configuration, will follow the record mode setting. In normal circumstance, we recommend you to select <720 x 240@120PPS> (<720x288@100PPS> in PAL format).

Move the cursor to <Record Mode> and press ENTER, then select a Record mode using UP / DOWN keys.

NOTE: After changing the Record Mode setting, the warning message "This will FORMAT ALL HARDDISKS and LOAD THE FACTORY DEFAULT CONFIG!" will be shown on the screen. Press ENTER to confirm the selection, then the unit starts to format the hard disks and load the factory default settings, or press ESC to abort.

We strongly recommend to backed up your programmed configuration before making any changes on Record Mode settings.

3.6.2 Schedule Setup

The Schedule Setup is used to set the day and night time, or weekend recording schedule. Select <Schedule Setup> from the Record Setup menu and press ENTER; the following menu is displayed.

Schedule Setup		
1. Day Time Start		AM06:00
2. Night Time Start		PM18:00
3. Weekend Schedule		YES
4. Weekend Start	Fri	AM18:00
5. Weekend End	Mon	PM06:00

- Make appropriate changes of the start time of Day and Night Time using Direction keys.
- Press ENTER to confirm the settings or ESC to cancel.
- If you want to have a weekend record, choose <YES> to enable the Weekend Schedule in advance and then set the Weekend Start/End time.
- Press ESC to back to previous page.

3.6.3 Preset Record Configuration

The <Preset Config> is used to select the preset recording quality and frame rate. In normal circumstances, we strongly suggest you set the item to <Standard>, the default. Below table shows the PPS and picture size under <Standard> in Half-D1 mode. Please refer to Section 5.4.3 Preset Record Configuration for more detailed information.

Halfl-D1 mode (NTSC: 720x240@60PPS; PAL: 720x288@50PPS)			
Normal PPS	**Normal Size**	**Event PPS**	**Event Size**
3.75 NTSC (3.125 PAL)	**11 KB**	**15 NTSC (12.5 PAL)**	**17 KB**

3.6.4 Per Camera Configuration

This function is used to set the Day / Night / Weekend PPS (Picture per Second) and Quality for each channel. The Preset Configuration must be set to <OFF> for accessing these schedules. The menu is displayed as below (Record Mode: 720×240@120PPS in NTSC / 720×288@100PPS in PAL).

Per Camera Config			
Cameral Select			CH1
	Day	**Night**	**Weekend**
Normal PPS	7.5	7.5	7.5
Normal Size	Best	Best	Best
Event Max PPS	30	30	30
Event Size	Best	Best	Best
Event Active	Both	Both	Both

- Firstly, select a Camera for setting its record configuration. The image and recording settings from the selected camera will be displayed on the screen.
- Move the cursor using Direction keys and press ENTER to select an item.
- Change the value using UP / DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Press ESC to return to Record Setup menu.

Please note that the total normal pps for all channels cannot exceed 60 NTSC (720×240@60PPS) / 50 PAL (720×288@50PPS). To increase one channel's pps, you may have to reduce other's first. Event pps is not restricted to this rule, since a smart event scheduler will handle the total pps with a correct weighting.

3.6.5 To Record Event Video Only

If you want your DVR unit to start recording only under the alarm is triggered, follow the steps:

- Enter the OSD setup menu with correct password.
- In the OSD setup menu, select <Record Setup> menu. Move the cursor to the item <Preset Config>, and select <Event only>.

Refer to Section 5.4.3 Preset Record Configuration for more detailed information.

4. Basic Operation

The **XDVR2** allows user to access some general operations through the front panel easily. The following sections introduce the general operations of the unit.

4.1 Viewing Live / Playback Video

The general functions in live and playback mode are described in the following sections.

4.1.1 Viewing Modes

The **XDVR2** supplies user versatile ways of viewing both live and recorded video. Following presents these view formats.

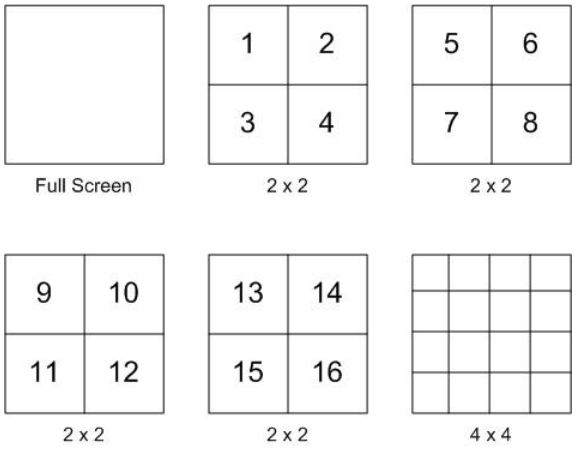
Viewing in Full Screen

Press any CHANNEL key directly to view the corresponding camera image in full view format.

Viewing in Multi-window

Various multi-window view formats are offered for selecting. To switch between available viewing formats, press MODE repeatedly.

The available view formats are illustrated as the following figure.



4.1.2 Digital Zoom

Users are able to view a 2× full screen in live mode. To view the 2× full screen, follow the steps.

- Press a CHANNEL key to view the corresponding camera in full screen.
- Press ZOOM to enter a 2× full screen zoom mode of the selected camera.
- If you need to view specific area of the 2× zoomed screen, use Direction keys to pan / tilt the zoomed area around the original image.
- Either press ZOOM again or ESC to leave the zoom mode.

4.1.3 Viewing Live Cameras

Users are allowed to view live camera in versatile view modes, including full-screen, 2×2 and 4×4. The general operation under live mode is described as follows.

To Freeze Live Image

Press REEZE while viewing live image, the image pauses but the date / time information does not, and the system clock continues running.

Press FREEZE to pause the live image; press FREEZE again to resume the live camera view.

4.1.4 Viewing Recorded Video

To view recorded video, user can press PLAY/STOP key directly. When press the PLAY/STOP key, the unit starts to continue playing back the recorded video from the suspended point of record. If it is the first time to use the PLAY/STOP key, the unit will playback from the very beginning of the record. Alternatively, user can select records from the Search menu to play specific video. Refer to Section 4.3 Searching Recorded Video for more information.

The Forward or Reverse speed indicator will be shown on the bottom-left of the screen, when in the playback mode.

The general operations in playback mode are described as follows.

Key Usage in Playback

The key usage is slightly changed in playback mode. Following is the key usage found in playback mode.

LEFT (Reverse Playback)
The key is used to reverse the recorded video while the unit is playing back. Press the key repeatedly to increase the speed of reverse playback by 1×, 2×, 4×, 8×, 16×, or 32×.

RIGHT (Forward Playback)
The key is used to play the recorded video fast forward. Press the key repeatedly to increase the speed of forward playback by 1×, 2×, 4×, 8×, 16×, or 32×.

FREEZE
Press FREEZE to pause the playback video. When the recorded video is paused, press LEFT / RIGHT to resume playback video single step reverse / forward, respectively. Press FREEZE again to continue playing video.

PLAY/STOP
Press to start playing back video, or to exit current mode or stop playing back video and back to live mode.

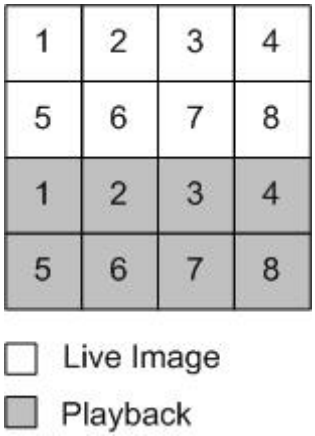
Pause Playback and Single Step Forward

To pause and resume recorded video, follow these steps.

- Press one of the CHANNEL keys to display the corresponding camera in full screen.
- Press PAUSE to pause the current playback image.
- Press RIGHT / LEFT Direction keys to move the video single step reverse / forward. Press and hold RIGHT / LEFT keys to reverse / forward the video single step continuously.
- Press PAUSE again to resume the playback operation.

Viewing Live Image in Playback Mode

Press the MODE key repeatedly in playback mode, a 16-window viewing mode contains both live and playback image appears. This view mode is illustrated as the following figure.



The eight windows on the top side of the screen playback the Live video from channel 1 to channel 8 respectively, and the other windows allow user to view Playback image from channel 1 to channel 8.

4.1.5 Dual Main Output (For XDVR2RT Only)

For **XDVR2RT** users, they can use the Call Monitor as the second Main Monitor, and access lots of functions, such as setup OSD menu, and viewing in different mode, through the second Main Monitor. To perform this function, you have to reset a jumper positioned on the Turbo Module inside the unit,

To use this function, the VGA and BNC connectors, positioned on the rear panel, have to be connected with monitors, respectively. The VGA monitor is treated as the Main Monitor, and BNC monitor the second Main Monitor.

Press CALL key for 3 seconds, the BNC Monitor will be given the same function as the VGA Monitor, except Playback and Search function. You can use the BNC Monitor to take over the **XDVR2RT** unit at the same time, as if the two monitors are connected to two individual **XDVR2RT**.

When using this function, a small figure ( ) appears in the mid-button side of the two monitors—the yellow one represents the monitor is now accessed.

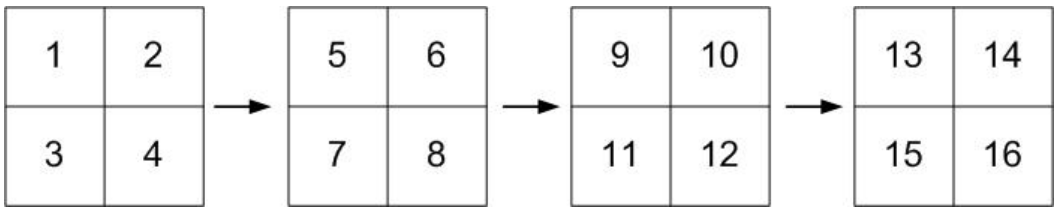
NOTE: Once the VGA monitor is now under Dome Control Mode or the OSD setup mode, or hasn't exit the OSD menu, the BNC monitor is unable to access the OSD setup menu.

4.2 Sequence Setup

This section introduce you how to view in sequence mode with both Main Monitor and Call Monitor, if connected. Sequence function can avoid manually backtracking and give more flexibility while surveillance.

4.2.1 Sequence with Main Monitor

Automatic sequence function can be used in any view mode. Select certain view format and press SEQ to toggle the automatic sequential sequence, press ESC to stop sequencing. The figure below displays the 4-camera sequencing view modes.

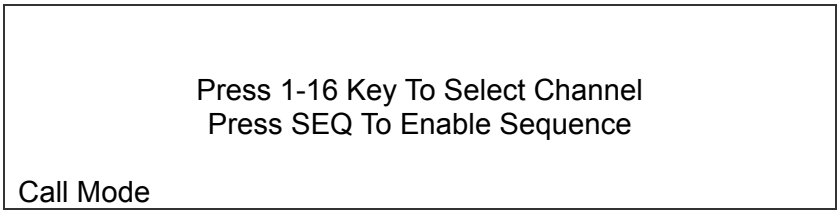


4.2.2 Sequence with Call Monitor

Users are allowed to use the **XDVR2** unit front panel to control a call monitor display without having to access the Main menu. Two viewing modes can be displayed on call monitor: Sequence display and Single camera display. To program the call monitor sequence, see Section 5.5 Sequence Setup.

Follow the steps to control the call monitor.

- Press the CALL key on the front panel to enter call monitor control mode, the message "Call Mode" will be shown on the bottom-left of the screen.



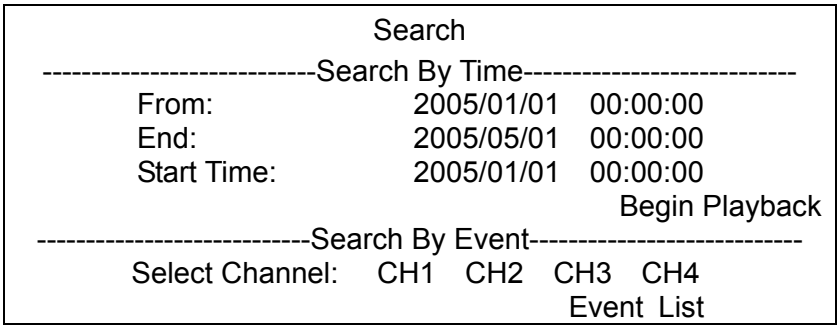
- Press CHANNEL key to display the associated camera on call monitor.

- Alternatively, press SEQ repeatedly to display the sequence of cameras previously programmed in Call Monitor Schedule menu.
- Press ESC to return the front panel to Main monitor control mode.

4.3 Searching Recorded Video

The **XDVR2** is capable of searching and playing back recorded video by date and time or events. Entering the specific date and time of the wanted video, the unit will then search for the matched video and play it on the monitor. Alternatively, user can search event video by selecting channel as well.

In live or playback mode, press SEARCH to enter the Search menu, which is shown as follows.



4.3.1 Searching by Time

Follow the steps to search video by date and time.

- Press SEARCH key to enter the Search menu; the From Time and End Time of the available video is listed on top of the screen. The value is unchangeable.
- Use Direction keys to move the cursor for setting the Start Time; adjusting the date and time values by UP / DOWN keys.
- Press ENTER to confirm the settings or ESC to abort.
- Move the cursor to <Begin Playback> and press ENTER to start playing back the selected video.
- Either press PLAY/STOP again or ESC to return to live video.

NOTE: If there is no available recorded video that matches your specified time and date, the unit starts playback from the next available video.

NOTE: The date/time information will be shown on the screen with a DST icon if the Daylight Saving Time function is enabled. "S" indicates

summer time and "W" indicates wintertime.

4.3.2 Searching by Event

"Event List" allows you to search wanted video by event. The Event List is displayed as below figure:

Event List

First Page

Date	Time	Ch.	Type
2005/03/17	11:26:50	2	Motion
2005/03/17	09:53:03	5	Alarm
2005/03/16	16:14:42	3	Alarm
2005/03/15	03:45:31	1	Motion
2005/03/12	22:27:56	1	Alarm
2005/03/12	10:09:29	7	Motion
2005/03/11	12:18:20	6	Motion
2005/03/10	05:16:00	4	Alarm
2005/03/08	17:11:37	2	Motion
2005/03/08	16:29:10	8	Motion
2005/03/08	03:22:17	2	Alarm

The list displays events by date, time, triggered camera and alarm type. As some events are deleted, others are displayed. The latest recorded event video will be listed on the top.

Follow these steps to search event video through Event List:

- Press SEARCH to enter the Search menu.
- To search event video that has been recorded on a specific camera, use LEFT / RIGHT to move the cursor and press ENTER to select or de-select a channel.
- Move the cursor to <Event List> and press ENTER to list the event video of the selected channels. The Event List displays.
- To exit the event list, press ESC.

Follow the steps to playback video from Event List.

- Press and hold UP / DOWN to scroll through the Event List.
- Press ENTER to play back the selected event record.
- Press PLAY/STOP to return to live mode.

4.4 Video Export

The following sections will guide you how to export video throng the OSD Setup menu and through the hot keys positioned on the front panel, respectively.

4.4.1 Export from OSD Setup Menu

The Video Export menu enables the administrator to export recorded video with digital signature to a USB ThumbDrive®, a CD-RW or to DVD+RW drive. Administrator's password is required to export video.

The exported video will be named by the exporting date and time, and classified by event type. Each recorded video will be exported into four files if exported with digital signature, including *.gpg, *.avi (*.drv), *.sig and readme txt.

Make sure an external storage device is available and connected to the appropriate port for video export.

From the Main menu, select <Video Export> and press ENTER. The menu is displayed.

Video Export	
1. Select Device	
2. Select Ch:	CH1 CH2 CH3 CH4
3. From	2005/03/19 AM07:50:05
4. To	2005/03/28 PM03:09:18
5. Select Events	
6. Data Type	Normal
7. Export Format	DRV
8. Digital Signature	NO
9. Erase Disc	NO
10. Begin Export	NO

4.4.1.1 Select the External Device

The available external devices for exporting video will be listed by name and free size in Select Device menu. The Select Device menu displays as follows.

Select Device		
Device Name	Available	Sel
xxx-xxx-x-x-xx	256 MB	NO
xx-xxx-xx-xxxx	1.5 GB	NO

The **XDVR2** only supports EXT3 file system. If you connect an external HDD to the unit, ensure the format of HDD is EXT3.

Device Name
The item shows the name of the available device.

Available
The item shows the free space of the available device.

Select
Set the item to <YES> to start the export, or <NO> to cancel.

4.4.1.2 Select Video for Exporting

After selecting video clips, set the item <Begin Export> to <YES> and press ENTER to start exporting. Following are the items for selecting video.

Select Channel
Select the channel that the administrator wants to export. Move the cursor to the wanted channel using LEFT / RIGHT keys, select or de-select a channel by pressing ENTER.

From / To Time
The items are used to set the time which data export begins and ends. Move the cursor using Direction keys, and press ENTER to select the date / time items; adjust the selected date and time value by UP / DOWN keys.

NOTE: The exported data between the Start Time and End Time includes both normal and event video.

Select Events

Select the item to display the event list for exporting event video. Move the cursor scroll the event list and press ENTER to select the event you want to export.

Data Type

The item is used to select exporting video type. The options are <Normal> (export normal video only), <Event> (export event video only) and <Both> (export both normal and event video).

NOTE: If you want to export event video only, then please set the "From" and "To" items at the same date and time. Otherwise, not only the event video but also the normal video included between the "From" date/ time and "To" date/time will be exported.

Export Format

The item is for selecting exporting video format. The options are <DRV> and <AVI>.

The *.drv file can only be played back with DVR Remote and DVR**Player** and multiple camera video can be played from one file. The *.avi file can be played back with media players. Note that if multiple channels are exported, each channel is exported to a separate file.

4.4.1.3 Digital Signature

User can export video clip with or without a digital signature. Set the item to <YES> to export with the signature file, or <NO> exports without the signature file.

Each recorded video with digital signature will be exported into four files, including *.gpg, *.avi, *.sig and readme txt. The *.gpg file name is as the last eight MAC (Media Access Control) address of the unit.

Make sure that you have an external storage device, such as a USB Hard Drive or USB ThumbDrive®, available and connected to the appropriate port for export.

For more information on verifying digital signature, see Appendix D: Verifying Digital Signature.

4.4.1.4 Erase Disc

This function is used to remove data found on a CD-RW or DVD+RW disk prior to export new information to the drive. Select <YES> and press ENTER to start deleting data.

4.4.2 Quick Video Export through Front Panel

The unit allows you to export wanted video to the built-in CD-RW or an external device, such as a USB ThumbDrive®, and save the video to *.drv file.

If you want to export video to an external device, make sure the external storage has been connected to the DVR unit and the port has been set appropriately for video export.

NOTE: Once an external device has been connected to the DVR unit, the device has priority over the built-in CD-RW; which means that the wanted video will be exported to the external device instead of the built-in CD-RW.

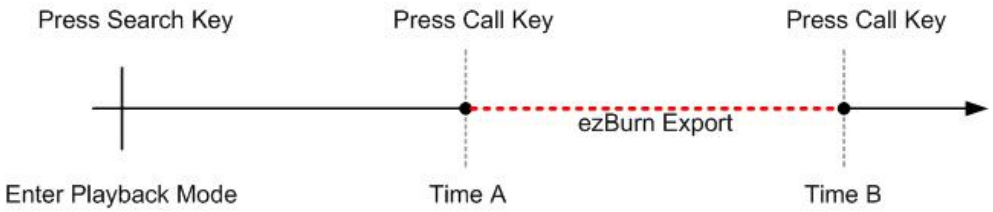
According to the size of video, the export may take you about 10 minutes to 1 hour.

4.4.2.1 ezBurn Introduction

Built with the ezBurn technology, ezBurn function provides users the easier way to export desired video with CD-RW built in or to an external device connected, such as an USB ThumbDrive®.

TWO keys (SEARCH and CALL) and THREE touches are all you need for completing the export. The whole exporting process will be done through the front panel, but no need to enter the OSD setup menu.

The ezburn export process is illustrated as below figure:



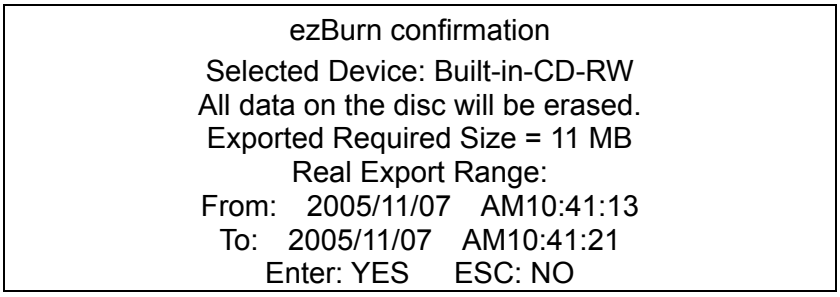
The whole process is described step by step in the following sections.

4.4.2.2 To Export Normal Video

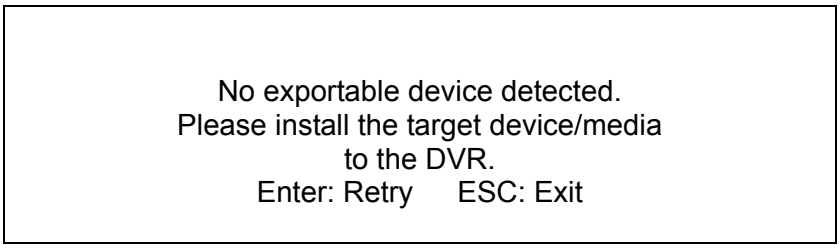
To Export normal video to external device, follow these step:

- Press SEARCH and play wanted normal video by entering date and time. Note if you are viewing in multiple channel mode, please make sure there is no window displaying in Live mode. Otherwise, the export won't work.
- After entering playback mode, plays the video and press CALL on the point that you want to start the export. The playback continues.

- Press CALL again on the point that you want to end the export. Now, the "ezBurn" window displays as below figure. The information shown on the window is for read only.



- If there is no any exportable external device connected to the DVR unit, then a warning message will be shown on the screen, as below figure:

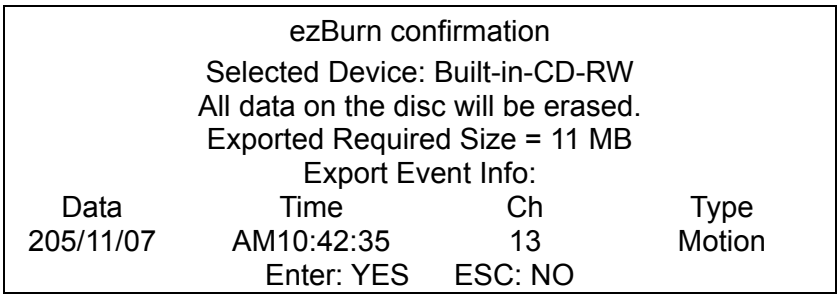


- Press ENTER to start the export; or, press ESC to abort.

4.4.2.3 To Export Event Video

To export event video, follow these steps:

- Press SEARCH and play wanted event video. To play event video, refer to Section 4.3 Searching Recorded Video.
- After entering the playback mode, press CALL. The "ezBurn" window displays as below figure. The information shown on it is for read only.



- If there is no any exportable external device connected to the DVR unit, a warning message will be shown on the screen
- Press ENTER to start the export the whole event video to the connected device; or, press ESC to abort.

4.5 Deleting Recorded Video

User can delete the recorded video in Purge Data menu. The administrator password is required to access the function. Select <Record Setup> from Main menu, and then in Record Setup menu, move the cursor to <Purge Data> and press ENTER; the Purge Data menu is displayed.

Purge Data	
1. Purge All Data	NO
2. Purge All Event Data	NO
3. Purge Event Before	2000/01/01
4. Start to Purge	NO

The first three items are used to select the data that you want be purged. The items are described as follows. After select the data you want to purge, set the forth item <Start to Purge> to <YES> and press ENTER to start the deleting process.

Purge All Data

Select the item to delete all normal recorded video from database.

Purge All Event Data

Select the item to delete all event video from database.

Purge Event Before

The item is used to delete event video that recorded before a specific date.

4.6 Dome Control

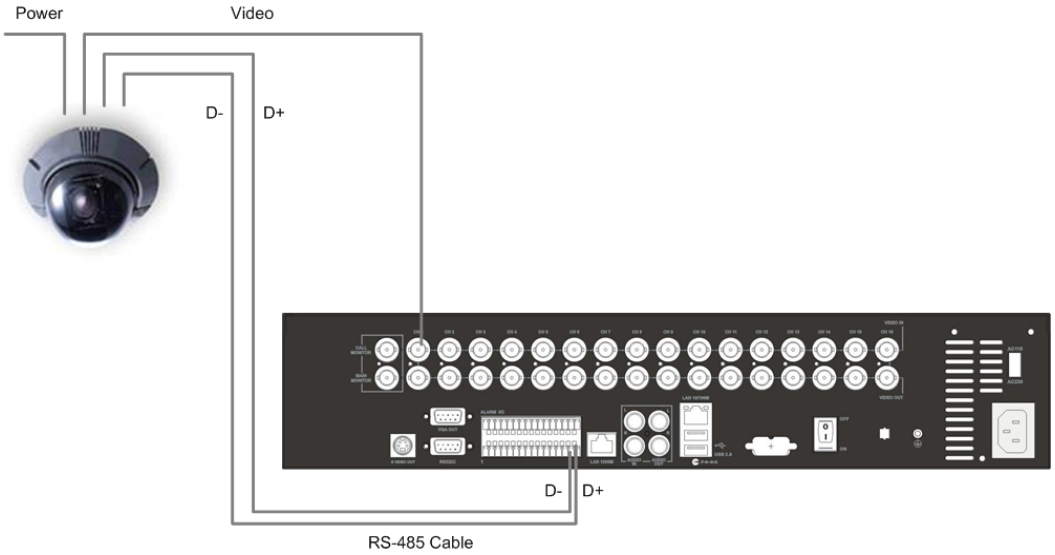
XDVR2 unit allows user to control a dome camera by the front panel.

In Live mode, user can press CHANNEL key to display the desired dome camera in full view. To enter Dome Control mode, press the DOME key and press channel key 2 to display the hint screen; to exit the Dome Control mode and back to live mode, press ESC or DOME. To configure the dome controls settings, see the following sections.

4.6.1 Dome Connection

Follow the steps to install dome camera.

- See Section 2.4 Rear Panel Connections for RS-485 port pin definition.
- Refer to the following figure. Connect the R+, R- terminals on the dome camera to the D+, D- terminals on the RS-485 port by RS-485 cable respectively.



4.6.2 Dome Protocol Setup

The Dome Protocol item lists the available dome protocols for communicating with dome cameras connected to the **XDVR2**. From the Main menu, select <Camera Setup> and press ENTER. The following menu is displayed.

Camera Setup	
1. Camera Select	CH1
2. Dome Protocol	None
3. Dome ID	0
4. Camera Title	
5. Covert	NO
6. Termination	NO
7. Brightness	0
8. Contrast	0
9. Saturation	0
10. Hue	0
11. Audio Association	Both

To configure dome protocol, select a camera first and set the communications protocol associated with dome camera using the Direction keys and ENTER. The available protocol includes <DynaColor>, <Pelco D>, <Pelco P>, <AD422> and <None> (default).

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.6.3 RS485 Setup

XDVR2 controls the domes via RS-485 communication protocol. The RS-485 parameters of **XDVR2** must be set to the same as the parameters set in dome camera .

Users are allowed to change the RS-485 settings of the **XDVR2**. Select <System Setup> in Main menu, then select <RS485 Setup> from the System Setup menu and press ENTER. The following menu is displayed.

RS485 Setup	
1 Unit ID	224
2 Baud Rate	9600
3 Bits	8
4 Stop	1
5 Parity	None

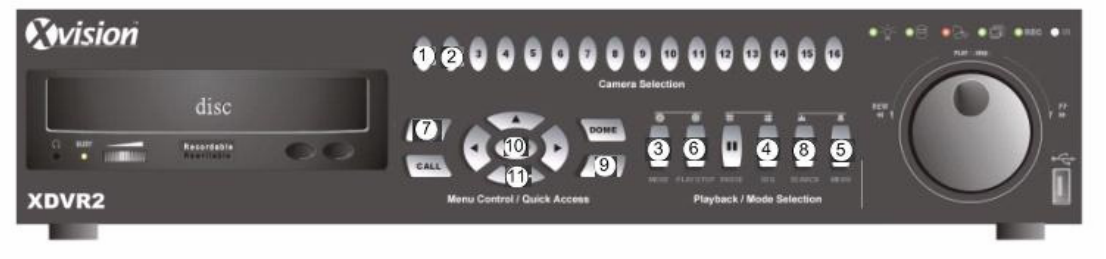
The ID number must match the ID address set by the dome. The Unit ID is in the range of 1 to 255. The default ID is 224. Note that no two devices on the same bus should be given the same ID address, or a conflict may occur.

The default **XDVR2** RS-485 settings are 9600 Baud, 8 Data Bits, 1 Stop Bit and No Parity.

NOTE: The settings become effective after saving the changes and exiting from the menu.

4.6.4 Dome Controlling Key

The function keys used in Dome Control are described as follows.



1. Set / Go Preset

This key is used to enter the Dome Preset menu to set up certain position as a preset and go to the predetermined preset positions for viewing.

2. Toggle Hint Screen

This function is used to avoid viewing the dome parameter information while controlling dome camera. Press this key to hide the screen. Press it again to redisplay the screen.

3. Iris Open

Use to open the Iris on the dome camera.

4. Focus Near

Use to focus the dome camera near.

5. Zoom In

Use to zoom the dome camera in. This function is for user to choose the viewing area, more or less of it.

6. Iris Close

Use to close the Iris on the dome camera.

7. Focus Far

Use to focus the selected dome camera far.

8. Zoom Out

Use to zoom the dome camera out. This function is for user to choose the viewing area, more or less of it.

9. ESC

Use to leave dome control mode and return to live and full screen viewing mode.

10. Enter/ Auto

- In OSD Menu mode, the key is used to make selection.
- In dome control mode, this key is used to activate automatic focus and iris function.

11. Pan / Tilt

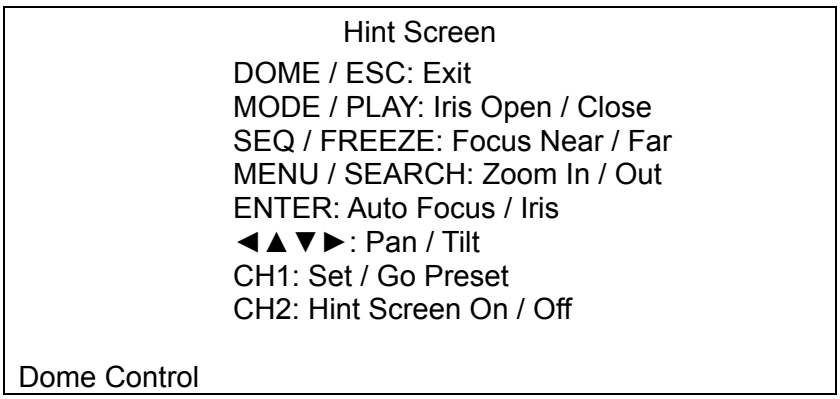
Use to pan and tilt dome camera.

4.6.5 Setting Preset Points

The **XDVR2** unit allows user to set preset positions; the amount of preset points depends on the dome manufacturer.

Follow the steps to set preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter dome control mode. And a Hint Screen, shown as blow figure, displays on the screen.
- Press 2 again to hide the dome control Hint Screen; press 2 one more time to toggle the Hint Screen.
- Use Direction keys to position the dome camera to desired position.



- Press 1 to access the Set/Go Preset function. The Dome Preset menu is displayed.

Dome Preset		
Index	Set Preset	Go Preset
1	NO	NO
2	NO	NO
3	NO	NO
4	NO	NO
5	NO	NO
6	NO	NO
7	NO	NO

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Set Preset> of the selected preset number to <YES>, and press ENTER to save the position. Now the preset is set and ready to call.

4.6.6 Calling Preset Points

Follow the steps to call preset points.

- Press a Channel key to view the corresponding camera in full screen.
- Then press DOME to enter dome control mode. And a Hint Screen, shown as blow figure, displays on the screen.
- Press 2 again to hide the dome control Hint Screen; press 2 one more time to toggle the Hint Screen.
- Press 1 to access the Set/Go Preset function.

Dome Preset		
Index	Set Preset	Go Preset
1	NO	NO
2	NO	NO
3	NO	NO
4	NO	NO
5	NO	NO
6	NO	NO
7	NO	NO

- Use UP / DOWN keys to select the desired preset number from the menu.
- Set the <Go Preset> of the selected preset number to <YES>, and press ENTER to call the preset point.
- Now the selected dome camera rotates to the preset position automatically.

5. Advanced System Configuration

The detailed functions and settings of **XDVR2** can be set using the hierarchical OSD menu. This chapter particularizes the items and options in the OSD menu.

To enter the Main menu, press MENU and then enter Administrator or User password. The default passwords are shown in the following table. The same default passwords are used for entering the remote viewing software DVR Remote.

Administrator Password	User Password
1234	4321

It is strongly suggested to change the passwords to prevent unauthorized access to the unit.

After entering the correct password, the Main menu is displayed.

Main Menu

1. System Setup
2. Monitor Setup
3. Camera Setup
4. Record Setup
5. Sequence Setup
6. Event Setup
7. Database Setup
8. Configuration
9. Video Export
10. Shutdown

Key Usage in OSD Menu

<Direction Keys>

In the OSD menu, Direction keys are used to move the cursor to previous or next fields. UP / DOWN are used to change the value in the selected field.

<ENTER>

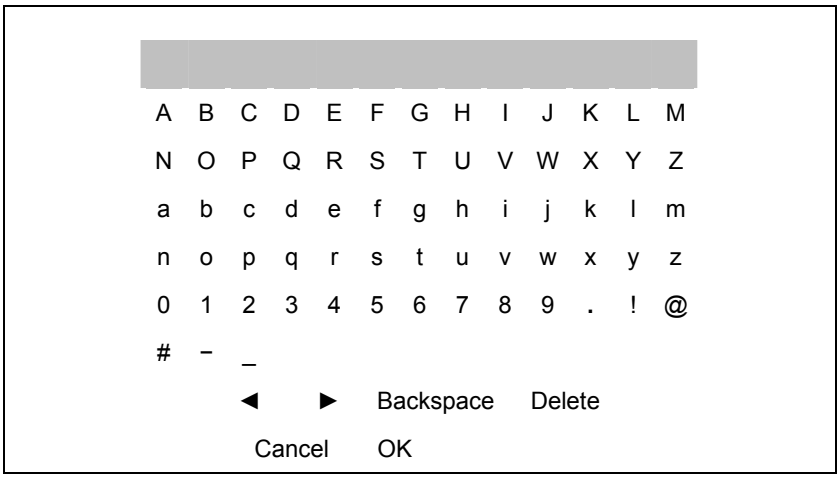
In OSD menu or selection interface, press the key to make selection or save settings.

<ESC>

Press to cancel or exit from certain OSD menu without saving any changes.

Key Usage in Virtual Keyboard

A virtual keyboard shows when edit the settings, such as camera title, e-mail address, etc. The virtual keyboard displays as follows.



<To input characters>
Move the cursor by pressing Direction keys and press ENTER to select characters.

<To move the cursor in title entry>
Press MODE and LEFT / RIGHT simultaneously to move the cursor to left / right in the title entry.

<To delete previous character>
Select <Backspace> and press ENTER, or press MODE and UP simultaneously.

<To delete current character>
Select <Delete> and press ENTER, or press MODE and DOWN simultaneously.

<To exit the virtual keyboard>
Select <OK> and press ENTER to save the settings and exit, or press ESC to exit without saving changes

5.1 System Setup >

Select <System Setup> from the Main Menu and press ENTER to enter the System Setup menu.

System Setup	
1. Version	
2. Language	English
3. Date/Time	
4. Unit Name	DVR
5. Password	
6. Network Setup	
7. RS485 Setup	
8. Audio Output	Live/PB
9. Key Beep	YES

The items in the System Setup menu are described in the following sections.

5.1.1 Version >

The Version menu allows user to view system information such as hardware and software version. From the System Setup menu, select <Version> and press ENTER. The following menu is displayed. The first three items are for read only.

Version	
Model Name	****
Hardware	B2-A1-A5
Software	xxxx-xxxx-xxxx-xxxx
Software Upgrade via Local Device	
Software Upgrade via Internet	

The items in this menu are described in the following subsections.

5.1.1.1 Hardware Version >

The item identifies the hardware version for this unit.

5.1.1.2 Software Version >

The item identifies the software version installed on this unit.

5.1.1.3 Software Upgrade via Local Device >

This item is used for updating the **XDVR2** software by local device. The menu is displayed as follows.

Software Upgrade via Local Device	
Upgrade Version	Select
xxxx-xxxx-xxxx-xxxx	NO

Connect an USB drive contains upgrade software to the unit; the available upgrade files will be listed in the menu. To update the system, select a file and use UP / DOWN keys to choose <YES>. Press ENTER to confirm the selection and start the upgrade process. The **XDVR2** unit uploads the software, updates the system files, and reboots automatically.

The upgrade may take several minutes to save the changes in the memory of the system. After reboot the unit, please check the software version again.

NOTE: No power interruption is allowed during the software update. Ensure that no power interruption can occur until the unit is completely rebooted.

NOTE: Do not remove the external USB ThumbDrive® / CD-ROM before the unit has completely shut down (hard drive and fan are off). Removing the external USB ThumbDrive® / CD-ROM before shut down can cause the system to update improperly.

5.1.1.4 Software Upgrade via Internet >

The item is used to upgrade the unit's software via the internet. Select one of the listed software versions and choose <YES>. The **XDVR2** uploads the software, updates the system files, and reboots automatically.

5.1.2 Language >

The Language item allows user to select the language for the OSD menu and screen messages. Language selection takes effect immediately when the selection is done. Press UP / DOWN to select from listed languages and press ENTER to confirm.

5.1.3 Date / Time >

User can set the current date, time and other OSD parameters in this menu. The Administrator's privileges are required for entering the submenu. In System Setup menu, select <Date/Time> and press ENTER; the Date/Time menu displays as follows.

Date/Time	
1. Date	2005/02/21
2. Time	10:39:26
3. Date/Time Display	1 Row
4. Date Display Mode	Y/M/D
5. Time Display Mode	24 HR
6. Date/Time Order	Date First
7. Daylight Saving Time	ON
8. DST Start	Apr, 1 st Sun, 02:00
9. DST End	Apr, Last Sun, 02:00
10. DST Bias	60 Min

NOTE: The reset date / time setting applies to record new video, the date and time of previously recorded video will not be changed.

NOTE: To avoid record database corruption, after changed Date/Time setting, clear the database is recommended.

5.1.3.1 Date / Time Setting >

Select <Date> or <Time> and press ENTER for adjusting the settings. LEFT / RIGHT keys are used to move the cursor to previous or next field, ENTER is for selecting, and UP / DOWN are used to change the value in the selected field.

5.1.3.2 Date / Time Display >

Users are allowed to choose to set the date / time OSD displays in 1 or 2 rows. Use the UP / DOWN keys to change the setting. The default is to display the date / time OSD in one row.

5.1.3.3 Date Display Mode >

This function allows user to set the OSD display type of the date / time. There are three options to select from: <Y/M/D>, <M/D/Y> or <D/M/Y>. "Y" represents "Year", "M" represents "Month" and "D" represents "Day".

Use UP / DOWN keys to change the setting. The default setting is <Y/M/D> in both NTSC / PAL formats.

5.1.3.4 Time Display Mode >

User can choose to set the time format to <12 hour> or <24 hour>. Use the UP / DOWN keys to change the format. The default setting is <24 hour>.

5.1.3.5 Date/Time Order >

The item is used to set the order of Date/Time display to <Date First> or <Time First>. Select this item and press ENTER, then use UP / DOWN keys to change the setting.

5.1.3.6 Daylight Saving Time >

The item is for people who live in certain regions to observe Daylight Saving Time. Select <ON> to enable, or <OFF> to disable the function.

If the function is disabled, the DST Start / End time and DST Bias will be grayed out and cannot be accessed. If this function is enabled, the date/time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. "S" indicates summer time and "W" indicates wintertime.

5.1.3.7 DST Start / End >

The items are used to set the daylight saving duration. Use LEFT / RIGHT to move the cursor to the next or previous field, UP / DOWN to change the settings.

5.1.3.8 DST Bias >

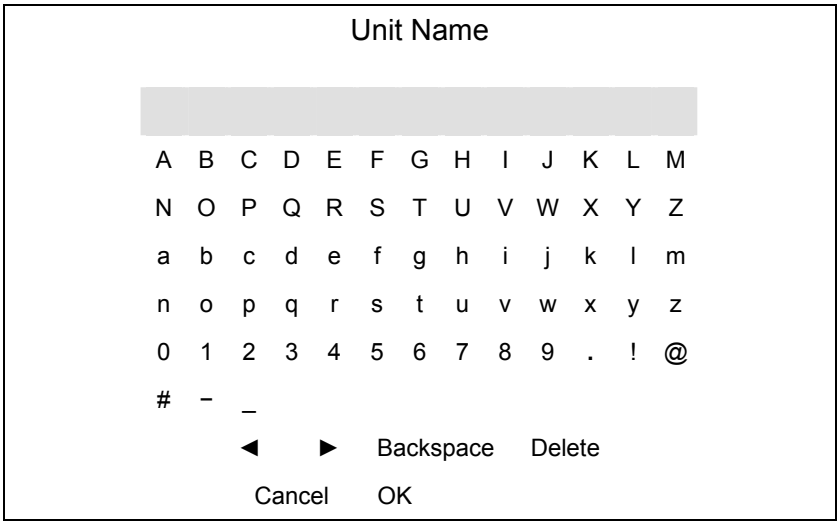
The item allows user to set the amount of time to move forward from the standard time for daylight saving time. Available options are <30>, <60>, <90> and <120> minutes.

5.1.4 Unit Name >

Users are allowed to assign a name, up to 11 characters, to the **XDVR2** unit.

Follow the steps to edit the unit name.

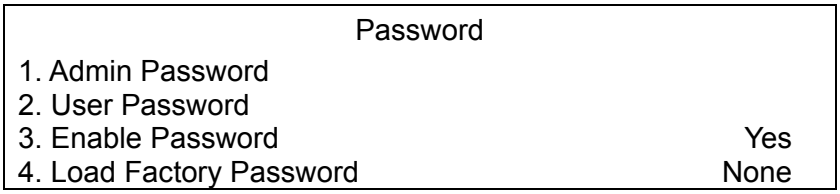
- Select <Unit Name> from System Setup menu and press ENTER. A virtual keyboard displays.



- Use Direction keys to move the cursor to the wanted character.
- Press ENTER to add the character to the entry field (up to 11 characters).
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

5.1.5 Password >

The Password menu allows administrator to change the password settings for accessing the unit. Select <Password> in System Setup menu and press ENTER; the menu displays as follows.



5.1.5.1 Setup Admin / User Password >

Only the administrator is allowed to change the user and administrator password to any 4~8 digit number. Use the UP / DOWN Direction keys to select the desired account and press ENTER, the following menu is displayed.

Use CHANNEL keys to input the new password and confirm the new password. After setting the new password, press ENTER to save the settings and exit.

5.1.5.2 Enable Password >

The item is used to determine if the password is required for accessing the OSD menu. Select <YES> to demand entering password when accessing the OSD menu; if not, select <NO>.

5.1.5.3 Load Factory Password >

This item allows the administrator to reload the factory password in case that the administrator cannot remember the password. There are four options to select from: <Admin> (reload the Admin password only), <User> (reload the User password only), <Both> (reload the Admin and User passwords) and <None> . The factory password is 1234 for administrator and 4321 for user.

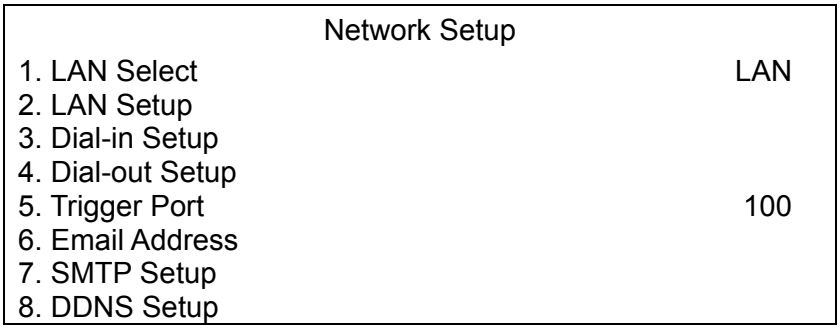
5.1.6 Network Setup >

The Network Setup menu allows the administrator to configure the network by specifying the network related settings, such as IP address and Netmask, etc.

See your network administrator and/or network service provider for more specific information.

Some settings under Network Setup menu, such as IP and PPPoE Account, are to be configured through a virtual keyboard. The function key usage pattern is slightly modified, please refer to Section 3.4.2 Key Usage in Virtual Keyboard.

From the System Setup menu, select <Network Setup> and press ENTER. The following menu displays.



Items in this menu are described in the following sections.

5.1.6.1 LAN Select >

PPPoE stands for Point-to-Point Protocol over Ethernet, which is a specification for connecting the users on an Ethernet to the Internet through a common broadband medium.

This item allows you to select your service type between <LAN>, <PPPoE> or <None>; if you are using an intranet for communication, please select <LAN>, if you are using a broadband medium, such as DSL Line or cable modem, please select <PPPoE>.

If <None> is selected, then there is no need to set further LAN/PPPoE setting, therefore, the second item <LAN Setup> will not be accessible.

5.1.6.2 LAN Setup >

The network related settings in the LAN Setup menu should be associated with the network service type. If you select <LAN> for <LAN Select>, then 6th to 8th item will not be available.

Select <LAN Setup> in Network Setup menu and press ENTER for setting the parameters; the menu displays as follows.

LAN Setup	
1. DHCP	OFF
2. IP	192.168.1.150
3. Netmask	255.255.255.0
4. Gateway	192.168.1.1
5. DNS	0.0.0.0
6. PPPoE Account	
7. PPPoE Password	
8. PPPoE Max Idle	35min
9. Connect At Booting	YES
10. Network Restart	NO

- DHCP >

This item allows user to obtain a dynamic IP address from DHCP (Dynamic Host Configuration Protocol) server during the unit boots up. When using DHCP, the settings are dynamic and they will change every time you power up and power off the unit, depending on your network's setup.

If the item is enabled (ON), a dynamic IP will be assigned to **XDVR2** unit. In this case, user does not need to configure a static IP and the Ethernet settings including IP address, Netmask, Gateway, and DNS settings will be read only. The default setting is <ON>.

If you are using permanent addressing, set DHCP to <OFF> for setting the IP Address, Netmask, Gateway, and DNS. See your network system administrators or IT personnel for appropriate values for these settings.

- IP >

The item is used to configure the IP (Internet Protocol) address of the unit. The IP address is the identifier for your computer or device on a TCP/IP LAN or WAN. Please note that to set a static IP address, DHCP must be set to <OFF>.

- Netmask >

A netmask is a 32-bit mask used to divide an IP address into subnets and specify the networks available hosts. Its value is defined by your network administrator. It takes the form as ***.***.***.***, for example, 255.255.255.255.

This item allows user to enter the value of the Netmask for the unit. Please note that to configure the item, DHCP must be set to <OFF>.

- Gateway >

Gateway is a node on a network that serves as an entrance to another network.

Users are allowed to specify the IP address of the gateway or router associated with this unit. To configure this item, DHCP must be set to <OFF>.

- DNS >

DNS is the abbreviation for "Domain Name System", which is an Internet service that translates domain names into IP addresses. Because domain names are easier to remember.

The item allows user to specify the IP address of the Domain Name System associated with the unit. To configure this item, DHCP must be set to <OFF>.

If the network server is unavailable when using DHCP, the unit searches for the network server and boots up more slowly. This network search continues until it times out.

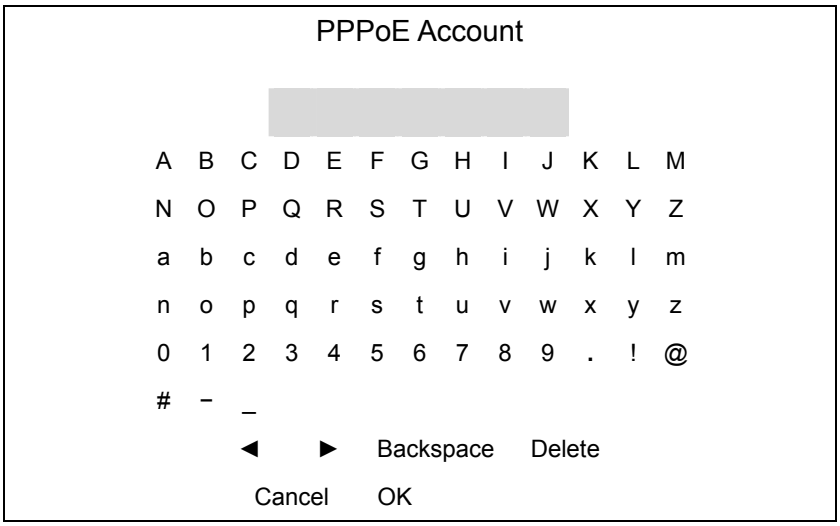
- PPPoE Account >

The item allows user to setup the PPPoE login username.

NOTE: For accessing the PPPoE settings, select <PPPoE> as the Network Type in Network Setup menu.

To setup the login username, follow the steps:

- Select <PPPoE Account> from LAN Setup menu and press ENTER. A virtual keyboard displays.



- Use Direction keys to move the cursor to the wanted character.
- Press ENTER to add the character to the username entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- PPPoE Password >

The item allows user to setup the PPPoE password. Follow these steps to setup the login password.

- Select <PPPoE Password> from LAN Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to select character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- PPPoE Max Idle >

The item indicates the time that the modem connection remains active if there is no acknowledgement from the remote PC. You can select the idle time from 0 to 600 minutes. The default is 35 minutes.

- Connect At Booting >

The unit is allowed to connect to the internet automatically when powered up. Select <YES> to connect at booting, otherwise select <NO>.

- Network Restart >

Network restart is required after changing network settings. Select <YES> to restart the network connection.

5.1.6.3 Dial-in Setup >

The Dial-in function enables user to establish dial-up modem communication to and from **XDVR2** unit for the remote software use. User is allowed to connect only one modem to a **XDVR2** unit.

For more information on dial-up setting on PC, see Appendix C: Dial-up Connections via Modem.

NOTE: The Dial-in Service is not available if no modem connects to the unit.

In Network Setup menu, select <Dial-in Setup> and press ENTER to enter the

Dial-in menu. The menu displays as follows.

Dial-in Setup	
1. Dial-in Service	OFF
2. Dial-in Account	user
3. Dial-in Password	user
4. Server IP	192.168.0.1
5. Client IP	192.168.0.2
6. Dial-in Idle Time	0 Min
7. Dial-in Max Time	0 Min

- Dial-in Service >

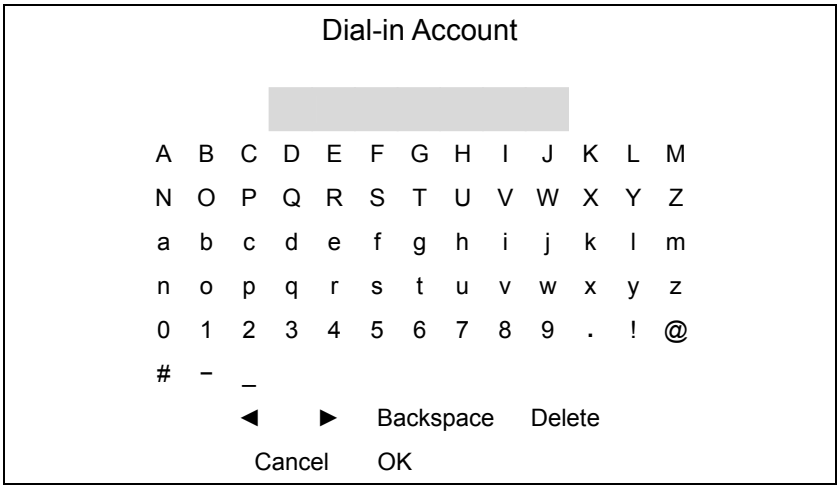
If the **XDVR2** unit does not connect to the Internet, user can communicate to the unit from remote PC through a modem as well. Select <ON> to enable the Dial-in function, or <OFF> to disable. If you select <OFF> for this item, then the rest items will be inaccessible.

- Dial-in Account >

This item enables user to protect the unit by establishing or changing a dial-in user name for modem connection.

To setup the Dial-in Account, follow the steps.

- Select <Dial-in Account> from Dial-in Setup menu and press ENTER. A virtual keyboard displays.



- Use Direction keys to move the cursor to the wanted character.
- Press ENTER to add the selected character to the username entry field.
- When done, move cursor to <OK> and press ENTER to save the settings and exit.

NOTE: The Sever IP and the Client IP must not be set the same one; but they have to set in the same domain.
For example: Server IP: 192.168.0.1
Client IP: 192.168.0.2

- Dial-in Password >

The item allows user to setup the Dial-in password. Follow these steps to setup the login password.

- Select <Dial-in password> from Dial-in Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to select character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- Server IP >

The item is for setting the IP address that identifies the **XDVR2** unit over modem connection. To set the server IP, follow these steps:

- Select <Server IP>.
- Using LEFT/ RIGHT to move the cursor over the IP, and stop on where you want it to be changed.
- Press ENTER, and then use UP/ DOWN to change the value.
- When done, press ENTER again to exit.
- Repeat the procedure till the IP is set completely.

- Client IP >

The item determines the remote PC's IP address for connecting with the **XDVR2** unit. To set the Client IP, follow these steps:

- Select <Client IP>.
- Using LEFT/ RIGHT to move the cursor over the IP, and stop on where you want it to be changed.
- Press ENTER, and then use UP/ DOWN to change the value.
- When done, press ENTER again to exit.
- Repeat the procedure till the IP is set completely.

- Dial-in Idle Time >

This item indicates the longest amount of time that the modem connection remains active if there is no acknowledgement from the remote pc. The value can be set in the range of 0 min to 600 min.

- Dial-in Max Time >

The item indicates the longest amount of time that the connection via modem remains active. The value can be set in the range of 0 min to 600 min.

5.1.6.4 Dial-out Setup >

The Dial-out function enables user to establish dial-up modem communication to and from **XDVR2** unit for remote notification use. User can connect one modem to **XDVR2** unit. For more information on dial-up setting on PC, see Appendix C: Dial-up Connections via Modem.

NOTE: The Dial-out Service is not available if there is no modem connected to the unit.

In Network Setup menu, select <Dial-out Setup> and press ENTER to enter the Dial-out menu. The menu displays as follows.

Dial-out Setup	
1. Dial-out DHCP	OFF
2. Dial-out IP	192.168.254.1
3. Dial-out Netmask	255.255.255.0
4. Dial-out Gateway	192.168.254.254
5. Dial-out DNS	192.168.254.254
6. Phone Number	1234
7. Dial-out Account	user
8. Dial-out Password	user
9. Dial-out Idle Time	0 Min
10. Dial-out Max Time	0 Min
11. Connect	NO

- Dial-out DHCP >

This item allows user to obtain a dynamic IP address from DHCP (Dynamic Host Configuration Protocol) server over modem connection. If the item is enabled (ON), a dynamic IP will be assigned to **XDVR2** unit. In this case, user does not need to configure a static IP and the following settings will be read only.

Select <ON> to enable the DHCP function, or <OFF> to set the dial-out IP address, Netmask, Gateway and DNS manually. The default setting is <ON>.

- Dial-out IP >

The item is for setting a static IP address that identifies the **XDVR2** unit over modem connection. Set the <Dial-out DHCP> to <OFF> for accessing this item.

Move the cursor over <Dial-out IP> and press ENTER, and then press UP / DOWN keys to change the values in the selected field.

- Dial-out Netmask >

The item is for setting the Netmask that identifies the **XDVR2** unit over modem connection. To configure the item, DHCP must be set to <OFF>.

Move the cursor over <Dial-out Netmask> and press ENTER, and then press UP / DOWN keys to change the values in the selected field.

- Dial-out Gateway >

Users are allowed to specify the IP address of the gateway or router associated with this unit. To configure this item, DHCP must be set to <OFF>.

Move the cursor over <Dial-out Gateway> and press ENTER, and then press UP / DOWN keys to change the values in the selected field.

- Dial-out DNS >

The item allows user to specify the IP address of the Domain Name System (DNS) associated with the unit. To configure this item, DHCP must be set to <OFF>.

Move the cursor over <Dial-out DNS> and press ENTER, and then press UP / DOWN keys to change the values in the selected field.

- Phone Number >

The item is used to set the dial-out phone number. Follow these steps to setup the phone number.

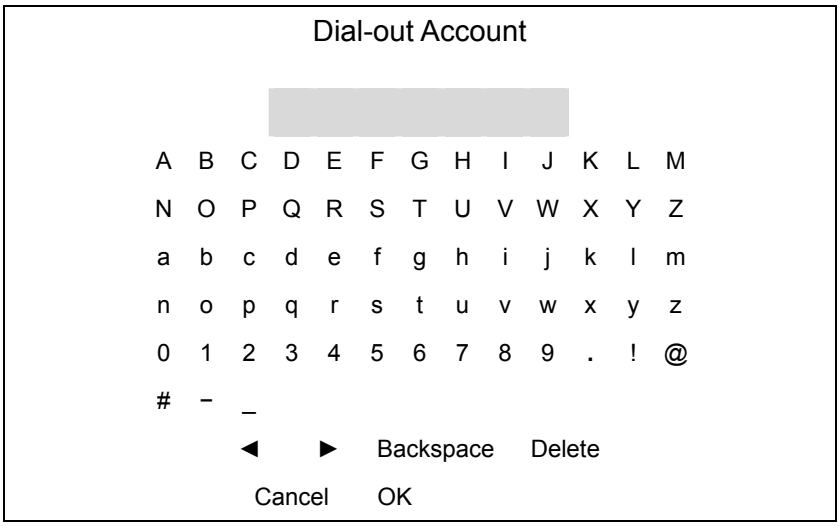
- Select <Phone Number> from Dial-out Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to move the cursor for selecting number.
- Press ENTER to add the selected number to the phone number entry field.
- When done, press ENTER to save the settings and exit.

- Dial-out Account >

This item enables user to set the Dial-out user name, which is used for dialing out to Internet Service Provider server. Contact your network service provider for more specific information.

To setup the Dial-out Account, follow the steps.

- Select <Dial-out Account> from Dial-out Setup menu and press ENTER. A virtual keyboard displays.



- Use Direction keys to move the cursor to the wanted character.
- Press ENTER to add the selected character to the username entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- Dial-out Password >

The item allows user to setup the Dial-out password. Follow these steps to setup the login password.

- Select <Dial-out password> from Dial-out Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to move the cursor for selecting character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- Dial-out Idle Time >

This item indicates the longest amount of time that the modem connection remains active if there is no acknowledgement from the remote pc. The value can be set in the range of 1 min to 600 min. If selecting <0>, the modem connection keeps active continuously.

- Dial-out Max Time >

The item indicates the longest amount of time that the connection via modem remains active. The value can be set in the range of 1 min to 600 min, or <0> to keep the connection indefinitely.

- Connect >

When the Dial-out related settings are configured, set this item to <YES> to starting dial-out or select <NO> to disconnect.

5.1.6.5 Trigger Port >

To avoid the default service port (port 100) to be blocked, the item enables user to change port 100 into another port.

To change the trigger port, move the cursor over <Trigger Port> and press ENTER, then adjust the setting by UP / DOWN keys.

5.1.6.6 Email Address >

This item is used to edit the e-mail address where alarm event information will be sent. Follow these steps to setup the e-mail address.

- Select <Email Address> from Network Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to move the cursor for selecting character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

5.1.6.7 SMTP Setup >

Simple Mail Transfer Protocol (SMTP), a protocol for sending e-mail messages between servers. SMTP is a relatively simple, text-based protocol, where one or more recipients of a message are specified and the message text is transferred.

Select < SMTP Setup> from Network Setup menu and press ENTER; the menu displays as follows.

SMTP Setup	
1. Email via SMTP	NO
2. SMTP Server	
3. SMTP Port	25
4. SMTP Account	
5. SMTP Password	

- Email via SMTP >

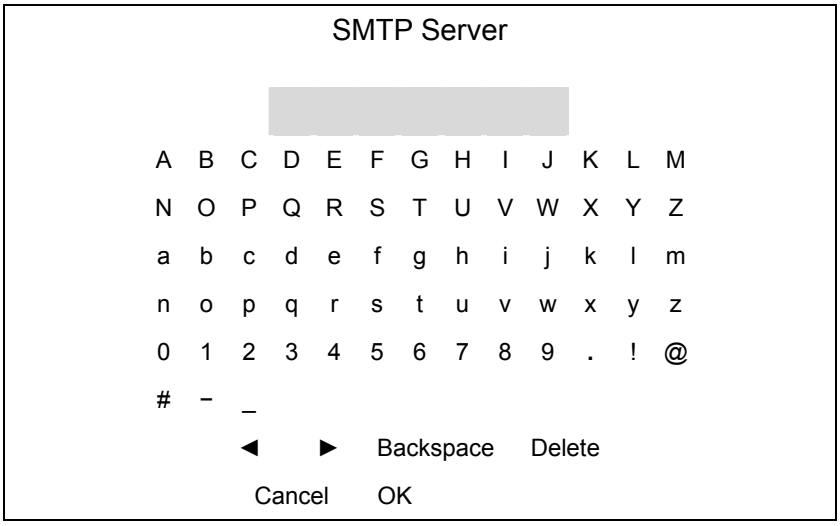
The item enables user to determine if the unit sends e-mail via SMTP. Select <YES> to send e-mail via SMTP using direction keys; if not, select <NO>.

- SMTP Server >

This item enables user to set the SMTP server. Contact your network service provider for more specific information.

Follow the steps to setup the SMTP Server.

- Select <SMTP Server> from SMTP Setup menu and press ENTER. A virtual keyboard displays.



- Use Direction keys to move the cursor to the wanted character.
- Press ENTER to add the selected character to the username entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- SMTP Port >

The item is used to change SMTP port to another port, if necessary. SMTP usually is implemented to operate over Internet port 25.

To change the SMTP port, move the cursor to <SMTP Port> in SMTP Setup menu and press ENTER. Use UP / DOWN keys to change the values in the selected field.

- SMTP Account >

The item allows user to setup the SMTP username. Follow these steps to setup the login password.

- Select <SMTP Account> from SMTP Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to move the cursor for selecting character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

- SMTP Password >

The item allows user to setup the SMTP password. Follow these steps to setup the password.

- Select <SMTP password> from SMTP Setup menu and press ENTER. A virtual keyboard displays.
- Use Direction keys to move the cursor for selecting character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

5.1.6.8 DDNS Setup >

Dynamic Domain Name System (DDNS) allows a DNS name to be constantly synchronized with a dynamic IP address. In other words, it allows those using a dynamic IP address to be associated to a static domain name so others can connect to it by name. Select <DDNS Setup> from Network Setup and press ENTER. The menu displays as below figure.

DDNS Setup	
1. Enable DDNS	NO
2. Host Name	
3. DDNS Port	80
4. Submit/Update	NO

- Enable DDNS >

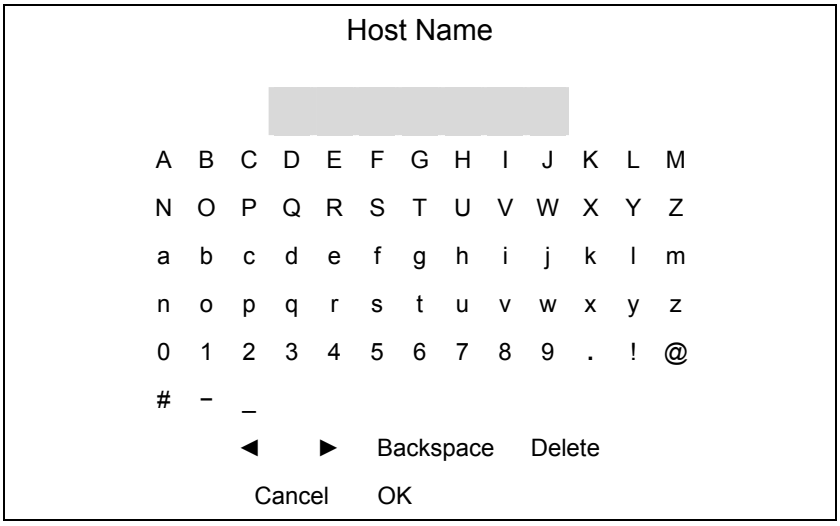
The item is used to enable or disable the Dynamic Domain Name Service. Select <YES> to enable the service, or <NO> to disable.

- Host Name >

The item allows user to setup a domain name, which is used when entering the **XDVR2** unit through the net on your remote PC.

To setup the Host Name of the unit, follow the steps.

- Select <Host Name> from DDNS Setup menu and press ENTER. A virtual keyboard displays as below figure.



- Use Direction keys to select character.
- Press ENTER to add the selected character to the password entry field.
- When done, move the cursor to <OK> and press ENTER to save the settings and exit.

NOTE: No any two **XDVR2** units should be set the same Host Name.

- DDNS Port >

The item allows user to setup the port for DDNS. Press UP / DOWN Direction keys to change the port.

- Submit/Update >

When done, move the cursor to this item and press ENTER to submit the settings.

NOTE: If there are two **XDVR2** units set the same domain name, the later setting will not be submit successfully.

5.1.7 RS485 Setup >

This menu allows setting up the parameters of the unit's RS-485 communications port. From the Main menu, select <RS485 Setup> and press ENTER. The following menu is displayed.

RS485 Setup	
1. Unit ID	224
2. Baud Rate	9600
3. Bits	8
4. Stop	1
5. Parity	None

5.1.7.1 Unit ID >

This item is used to change the RS-485 ID address of the unit. The ID is in the range of <1> to <255>. The default is <224>.

5.1.7.2 Baud Rate >

The Baud rate options for associated with the protocol are <2400>, <4800>, <9600>, <19200> and <38400>. The default is <9600> baud.

5.1.7.3 Bits >

User can specify the bits in a word that are associated with this protocol. The available options are <6>, <7> and <8> bits. The default is <8> bits.

5.1.7.4 Stop >

User can specify the stop bit associated with this protocol. Options are <1> and <2> stop bits. The default is <1> stop bit.

5.1.7.5 Parity >

This item is used to specify the parity associated with this protocol. Options are <ODD>, <EVEN>, and <NONE>. The default is <NONE>.

5.1.8 Audio Output >

The item is used to set the audio output mode. The available options are as follows.

<Live/PB>
Select the item to play the recording sounds of live image in live mode, and sounds of recorded video in playback mode respectively.

<Always Live>
Select the item to play live sounds in both live mode and playback mode.

<OFF>
Select the item to disable the audio output function.

5.1.9 Key Beep >

The item is used to enable or disable the key tone. Select <YES> to enable the key tone, or <NO> to disable.

5.2 Monitor Setup >

The Monitor Setup menu allows user to tune the quality of the displayed image. Select <Monitor Setup> from the Main menu and press ENTER. The following menu is displayed.

Monitor Setup	
1. Show Camera Title	YES
2. Monitor Brightness	0
3. Monitor Contrast	0
4. Monitor Chrominance	0
5. Screen Center Adjust	
6. Show Color Bar	Execute
7. VGA Resolution	800x600

The following sections describe the items found in the Monitor Setup menu.

5.2.1 Show Camera Title >

This item allows user to choose whether to display the camera title on the screen or not. The default is <YES>, which displays the camera titles with the video.

5.2.2 Monitor Brightness >

The function allows user to adjust the brightness of image displayed on the monitor. Move the cursor to the item then press ENTER, and use UP / DOWN keys to adjust the numeric value. The range of brightness values is <-128> to <127>. The default setting is <0>.

5.2.3 Monitor Contrast >

The item is used to adjust the color contrast of image. The range of contrast values is <-128> to <127>; the default setting is <0>.

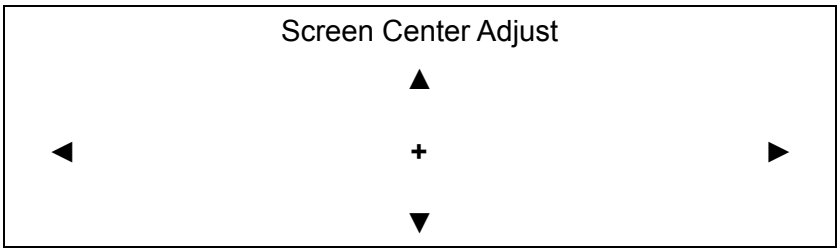
5.2.4 Monitor Chrominance >

Move the cursor over the item and press ENTER for adjusting the chrominance of image displayed on the monitor. Use UP / DOWN keys to adjust the numeric value. The range of chrominance values is <-128> to <127>; the default setting is <0>.

5.2.5 Screen Center Adjust >

The item is used to adjust the screen center of the main monitor display area. Follow the steps to set the center point.

- Select <Screen Center Adjust> from the Monitor Setup menu and press ENTER. The adjusting screen is as follows.



- Position the screen center position using the Direction keys.
- Press ENTER to exit when finished.

5.2.6 Show Color Bar >

Choose this item to display a color bar pattern on the screen. The color bar helps to adjust the monitor hue, saturation, text color, and display options. Press ESC to exit the color bar pattern and return to the OSD menu.

5.2.7 VGA Resolution >

The item allows user to select appropriate VGA resolution for the VGA monitor connected to the unit. The options are <800×600> (default), <1024×768> and <1280× 1024>.

NOTE: If the selected VGA resolution is too high for the monitor, the message "No Signal" will be shown on screen. Then please press ESC on the front panel to restore the original setting.

5.3 Camera Setup >

The items in the Camera Setup menu enable user to set camera parameters, including camera title, dome protocol and ID for each connected camera. The menu is shown as below.

Camera Setup	
1. Camera Select	CH3
2. Dome Protocol	None
3. Dome ID	0
4. Camera Title	CH3
5. Covert	No
6. Termination	Yes
7. Brightness	0
8. Contrast	0
9. Saturation	0
10. Hue	0
11. Audio Association	Both

Items in this menu are described in the following subsections.

5.3.1 Camera Select >

The item is used to select a camera for setting the parameters. The related settings will follow the selected camera, such as dome protocol and camera title.

Move the cursor to <Camera Select> and press ENTER, then select a channel using UP / DOWN keys.

5.3.2 Dome Protocol >

Select the communications protocol associated with your dome camera using the ENTER and Direction keys. The available protocol includes <DynaColor>, <Pelco D>, <Pelco P>, <AD422> and <None> (default).

5.3.3 Dome ID >

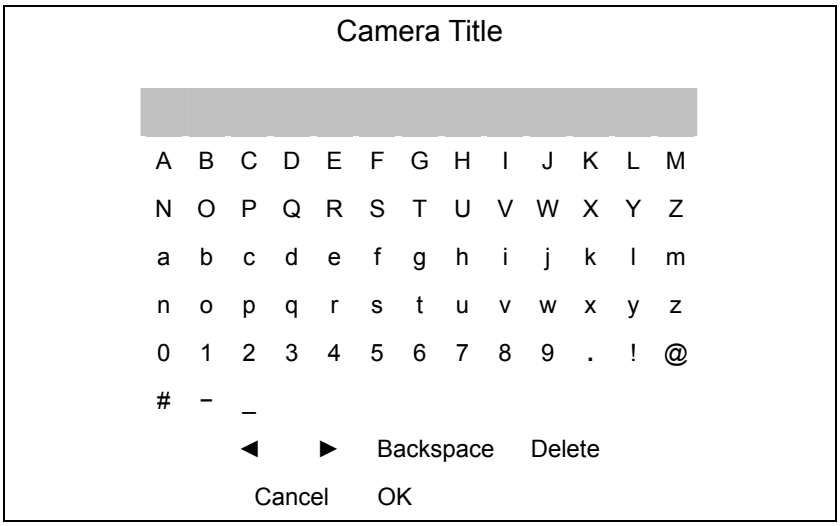
This item is used to assign an ID number to the selected dome camera. Note that ID number must match the ID address set by the dome.

5.3.4 Camera Title >

This item allows the user to change the title of each camera connected to the unit. By default, the titles of cameras are numbered from 1 through 16 respectively. The title is displayed on screen after the changes of the titles are set.

Follow these steps to enter a new title for a camera.

- In the Camera setup Menu, move the cursor to Camera Title and press ENTER. A virtual keyboard with alphanumeric characters is displayed.



- Use Direction keys to position the cursor in the title entry field above the virtual keyboard.
- Use Direction keys to move the cursor through the lists of characters to the one you need. Press ENTER to select a character. Continue until the name is established. Each title can contain up to 11 characters in it.
- After title entry is finished, move the cursor to <OK> and press ENTER; otherwise, either press ESC, or move the cursor to <Cancel> and press ENTER to abort.

5.3.5 Covert >

This function allows user to choose certain camera to be covert while the unit is continuing recording video. Choosing <YES> means to cover the selected camera; and <NO> to remain the selected camera non-covert. The default setting is <NO>.

To make a camera be covert, follow these steps:

- Select the channel that you want to be covert from <Channel Select> item.
- After selecting the channel, move the cursor to <Covert> item and select <YES>.

5.3.6 Termination >

This item is used to enable / disable the 75-termination resistor inside the unit to adjust the image quality of each camera. <YES>= termination resistor enabled (default), <NO> = termination resistor disabled.

NOTE: If the camera loop-out connectors have not been used, the termination resistor should be enabled for appropriate signal termination.

5.3.7 Brightness >

Move the cursor to the item and press ENTER for adjusting the brightness of the camera. Use UP / DOWN keys to adjust the numeric value. The range of brightness values is <-128> to <127>. The default setting is <0>.

5.3.8 Contrast >

Move the cursor to the item and press ENTER for adjusting the contrast of the camera. Use UP / DOWN keys to adjust the value.

5.3.9 Saturation >

Move the cursor to the item and press ENTER to adjust the color saturation of the camera using UP / DOWN keys. This value will be ignored on monochrome monitors. The range of saturation values is <-128> to <127>. The default setting is <0>.

5.3.10 Hue >

Move the cursor to the item and press ENTER for adjusting the hue of the camera. Use UP / DOWN keys to adjust the value.

5.3.11 Audio Association >

The item is used to establish the connection between the selected camera and the two audio-in channels. Move the cursor to <Audio Association> in Camera Setup menu and press ENTER, then select <Both>, <Left Only>, <Right Only> or <None> by UP / DOWN keys to set up the connection.

5.4 Record Setup >

The following three factors will effect the total record time of **XDVR2** unit:

- HDD capacity
- Recording rate (Picture per Second)
- Image quality settings

The greater the recording rate and the higher the quality setting, the shorter the recording time. Most of the related factors can be set here in this submenu.

The Record Setup menu allows user to set recording quality, recording schedules, and other recording parameters. Administrator's password is required to access Record Setup menu. In the Main menu, move the cursor to <Record Setup> and press ENTER. The following menu is displayed.

Record Setup	
1. Record Mode	720x240@120PPS
2. Schedule Setup	
3. Preset Config	Best Quality
4. Per Camera Config	
5. esRecord Setup	
6. Data Lifetime	7 Days
7. Pre-Alarm Recording	15 Sec
8. Circular Recording	ON
9. Audio Recording	ON
10. Purge Data	

5.4.1 Record Mode >

The item is for selecting resolution and recording rate. The relative record settings, such as preset configuration, will follow the record mode setting. The options are <720 x 480@60PPS>, <720 x 240@120PPS> and <360 x 240@240PPS> in NTSC (<720x576@50PPS>, <720x288@100PPS>, <360x 288@200PPS>in PAL).

Move the cursor to this item and press ENTER, then select a Record mode using UP / DOWN keys.

NOTE: After changing the Record Mode setting, the warning message "This will FORMAT ALL HARDDISKS and LOAD THE FACTORY DEFAULT CONFIG!" will be shown on the screen. Press ENTER to confirm the selection, then the unit starts to format the hard disks and load the factory default settings, or press ESC to abort.

We strongly recommend to backup your programmed configuration before making any changes on Record Mode settings.

5.4.2 Schedule Setup >

This submenu is used to set the day and night time, or weekend recording schedule.

The Night and Day schedules are used to define daytime and nighttime; the Weekend schedule is tailored for weekends and holidays.

Select <Schedule Setup> from the Record Setup menu and press ENTER; the following menu is displayed.

Schedule Setup	
1. Day Time Start	AM06:00
2. Night Time Start	PM06:00
3. Weekend Schedule	YES
4. Weekend Start	Fri PM06:00
5. Weekend End	Mon AM06:00

5.4.2.1 Day / Night Time Start >

The Day/Night Start Time determines the beginning of day/night recording time. Time is indicated in 1-minute increments. The time display format in this menu is based on the setting of Time Display Mode.

5.4.2.2 Weekend Schedule >

The Weekend Schedule determines whether a weekend schedule is in effect. Choose <YES> to take effect the related weekend settings.

5.4.2.3 Weekend Start / End >

The Weekend Start Time indicates the specific day and time that a weekend begins, for example, FRI 18:00. The Weekend End Time indicates the specific time and day that a weekend ends, for example, MON 06:00. Time is indicated in 1-minute increments.

Note that the value you have set indicates when the regular Day and Night scheduling ends, and Weekend recording begins.

5.4.3 Preset Record Configuration >

The <Preset Config> is used to select the preset recording quality and frame rate. Different default recording quality levels are offered for user to choose: <Best Quality>, <Standard>, <Extended Record>, <Event Only>, <ezRecord> and <OFF>.

According to various Record modes, the preset configuration options for normal and event status are described in terms of relative recording rate (PPS) and recording size for each channel in the table below.

These preset conditions override any other quality and rate settings. The default Preset Configuration setting is <Standard>.

Record Mode: Full-D1 mode (NTSC: 720×480@60PPS) (PAL: 720×576@50PPS)					
Preset Configuration	**Normal PPS**	**Normal Size**	**Event PPS**	**Event Size**	**Event Active**
Best Quality	3.75 NTSC (3.125 PAL)	20 KB	30 NTSC (25 PAL)	20 KB	Both (Alarm+Motion)
Standard	3.75 NTSC (3.125 PAL)	14 KB	30 NTSC (25 PAL)	20 KB	Both
Extended Record	3.75 NTSC (3.125 PAL)	8 KB	30 NTSC (25 PAL)	20 KB	Both
ezRecord	Auto	Auto	Auto	Auto	Auto
Event Only	0 NTSC (0 PAL)	-	30 NTSC (25 PAL)	20 KB	Both
128Kbps DSL	3 NTSC (3 PAL)	1 KB	3 NTSC (3 PAL)	1 KB	Both
256Kbps DSL	3 NTSC (3 PAL)	2 KB	3 NTSC (3 PAL)	2 KB	Both
512Kbps DSL	3 NTSC (3 PAL)	3 KB	3 NTSC (3 PAL)	3 KB	Both
OFF	User Selected	User Selected	User Selected	User Selected	User selected

Record Mode: Half-D1 mode (NTSC: 720x240@120PPS) (PAL: 720x288@100PPS)					
Preset Configuration	**Normal PPS**	**Normal Size**	**Event PPS**	**Event Size**	**Event Active**
Best Quality	7.5 NTSC (6.25 PAL)	17 KB	30 NTSC (25 PAL)	17 KB	Both (Alarm+Motion)
Standard	7.5 NTSC (6.25 PAL)	11 KB	30 NTSC (25 PAL)	17 KB	Both
Extended Record	7.5 NTSC (6.25 PAL)	5 KB	30 NTSC (25 PAL)	17 KB	Both
Event Only	0 NTSC (0 PAL)	-	30 NTSC (25 PAL)	17 KB	Both
ezRecord	Auto	Auto	Auto	Auto	Auto
128Kbps DSL	3 NTSC (3 PAL)	1 KB	3 NTSC (3 PAL)	1 KB	Both
256Kbps DSL	3 NTSC (3 PAL)	2 KB	3 NTSC (3 PAL)	2 KB	Both
512Kbps DSL	3 NTSC (3 PAL)	3 KB	3 NTSC (3 PAL)	3 KB	Both
OFF	User Selected	User Selected	User Selected	User Selected	User Selected

Record Mode: CIF mode (NTSC: 360x240@210PPS) (PAL: 360x288@200PPS)					
Preset Configuration	**Normal PPS**	**Normal Size**	**Event PPS**	**Event Size**	**Event Active**
Best Quality	15 NTSC (12.5 PAL)	14 KB	30 NTSC (25 PAL)	14 KB	Both (Alarm+Motion)
Standard	15 NTSC (12.5 PAL)	8 KB	30 NTSC (25 PAL)	14 KB	Both
Extended Record	15 NTSC (12.5 PAL)	2 KB	30 NTSC (25 PAL)	14 KB	Both
Event Only	0 NTSC (0 PAL)	-	30 NTSC (25 PAL)	14 KB	Both
ezRecord	Auto	Auto	Auto	Auto	Auto
128Kbps DSL	3 NTSC (3 PAL)	1 KB	3 NTSC (3 PAL)	1 KB	Both
256Kbps DSL	3 NTSC (3 PAL)	2 KB	3 NTSC (3 PAL)	2 KB	Both
512Kbps DSL	3 NTSC (3 PAL)	3 KB	3 NTSC (3 PAL)	3 KB	Both
OFF	User Selected	User Selected	User Selected	User Selected	User Selected

5.4.4 Per Camera Configuration >

This submenu is used to set the Day / Night / Weekend PPS (Picture per Second) and recording quality for each channel. The <Preset Configuration> must be set to <OFF> for accessing these schedules.

The menu is displayed as below in Record mode: 720×240@30PPS in NTSC / 720×288@25PPS in PAL).

Per Camera Config			
Cameral Select			CH1
	Day	**Night**	**Weekend**
Normal PPS	7.5	7.5	7.5
Normal Size	Best	Best	Best
Event Max PPS	30	30	30
Event Size	Best	Best	Best
Event Active	Both	Both	Both

5.4.4.1 Camera Select >

The item is used to select a desired channel for setting the parameters. Move the cursor to <Camera Select> and press ENTER, then select a channel using UP / DOWN keys. Press ENTER again to confirm the setting.

5.4.4.2 Normal PPS >

Normal PPS (Picture per Second) is used to set the recording rate for normal status.

Please note that the total normal pps for all channels is limited under the maximum PPS for each Record mode. To increase one channel's pps, you may have to reduce other's first. Event pps is not restricted to this rule, since a smart event scheduler will handle to the total pps with a correct weighting.

5.4.4.3 Normal Size >

The item is used to set the picture size for normal status recording. The available options are listed as follow: <Low>, <Fair>, <Mid>, <High> and <Best>.

5.4.4.4 Event Max PPS >

Event Max PPS is used to set the event recording rate for Event status. Normally, the Event PPS is set to equal or greater than Normal PPS; the setting is depending on your application. If the Event PPS is set to <0>, **XDVR2** unit stops recording event video during alarms.

5.4.4.5 Event Size >

The item is used to set the picture size for event status recording. Refer to Section 5.4.4.3 for the available options.

5.4.4.6 Event Active >

Users are allowed to choose which alarm type needs to be recorded. The available options are <Alarm> (alarm events), <Motion> (motion detection events), <Both> (alarm event + motion detection), and <None> (no events active). The default setting is <Both>, which includes Alarm and Motion event recording.

5.4.5 ezRecord Setup >

This item aims to avoid the complicated record settings, and to make the setup much easier. Note that the item can be reached only when you select <ezRecord> as the option for <Preset Config>.

Select <ezRecord Setup> from <Record Setup> and press ENTER, the sub-menu appears as below figure:

ezRecord Setup	
How Many Days To Record	6 Days
Daytime Record	Yes
Night Record	Yes
Weekend Record	Yes
The Quality will Be	Best

To have the ezRecord Setup done, follow these steps:

- Select <How Many Days To Record> and press ENTER, then press UP/DOWN to choose the option you want. The maximum of days depends on the size of your HDD, in the other words, the larger the HDD installed, the more days the unit can record.

- Move to <Daytime Record> and press ENTER. This item is for you to select whether you want the DVR to record during daytime. If yes, using UP/DOWN to select <Yes> as option; or, select <No> for not recording during daytime.
- Repeat the same procedures through the 3rd and 4th item, respectively. Note that <Weekend Record> will be not accessible if you select <NO> for the item <Weekend Schedule> in <Schedule Setup>.
- According to upper items you have set, the quality will be automatically accounted and shown on the screen. This item is for read-only. Five options, including <Best>, <High>, <Mid>, <Fair> and <Low>, you may see on this item. We strongly recommend to keep the quality higher than "Middle".

NOTE: The current number of connected cameras will affect the recording quality automatically calculated through the <ezRecord Setup>. Therefore, once you disconnect cameras or connect more cameras to the unit, you should reset the <ezRecord Setup>.

5.4.6 Data Lifetime >

Data Lifetime indicates the time that a recording is saved and remained in the HDD, between the creation and deletion of a record. Only those video recorded during Data Lifetime will be displayed on the screen and can be played back; those video recorded outside the duration time will be hidden.

Press ENTER to select this item in Record Setup menu, and then use UP / DOWN keys to set the data lifetime. The value ranges from <1> to <365> days, or select <0> to disable the function.

NOTE: If you want to play back the video, which is outside the data duration of lifetime, please extend the duration till the recording data/time of the video is included.

5.4.7 Pre-Alarm Recording >

This item is used to set the duration of pre-alarm recording video. The pre-alarm recording function aims to make user view a more complete event video; what user can view is not only the video recorded after the alarm is triggered, but also the video recorded ahead the alarm.

When an event is triggered while normal recording is in effect, the unit will start copying the pre-alarm and the post-alarm video to the event video. The pre-alarm duration can be set from 0~30 seconds. The default setting is 15 seconds.

The quality of the pre-alarm video is the same as the quality setting for normal record video; and the quality of the post-alarm video is the same as the quality setting for event record video.

5.4.8 Circular Recording >

User can choose to record video in circular mode or in linear mode. If you choose to record in circular mode, then the unit begins to overwrite the oldest recorded video; and stores new video over the HDD spaces. If you choose to record in linear mode in stead, the unit stops recording, and the internal buzzer starts beeping when the HDD is full.

From the Record Setup menu, move the cursor to <Circular Recording> and press ENTER, then select <ON> / <OFF> using UP / DOWN keys.

5.4.9 Audio Recording >

This item allows user to enable / disable Audio recording function of the unit. When set to <ON>, audio input is recorded and saved with the video. When set to <OFF>, audio is ignored. The default setting is <ON>.

5.4.10 Purge Data >

This item is used to delete the Normal or Event recording video. In Record Setup menu, move the cursor to <Purge Data> and press ENTER; the Purge Data menu is displayed.

Purge Data	
1. Purge All Data	NO
2. Purge All Event Data	NO
3. Purge Event Before	2005/01/01
4. Start to Purge	NO

5.4.10.1 Purge All Data >

The item is used to delete all video from database(s). Using UP / DOWN buttons to select <YES> and start the deleting by setting the <Start to Purge> to <YES>.

5.4.10.2 Purge All Event Data >

The item is used to delete all event video from database(s). Using UP / DOWN keys to select <YES> and start the deleting by setting the <Start to Purge> to <YES>.

5.4.10.3 Purge Event Before >

The item is used to delete event video before a specific date. Use LEFT / RIGHT keys to move the cursor to next or previous field, ENTER to select the item and UP / DOWN to adjust the value.

5.4.10.4 Start to Purge >

After selecting the video you want to delete or setting the date for deletion, set this item to <YES> for start the deleting or choose <NO> to cancel.

5.5 Sequence Setup >

The Sequence Setup menu allows setting the camera sequence schedule and dwell time for main and call monitor. Select <Sequence Setup> in Main menu and press ENTER; the menu displays as follows.

Sequence Setup	
1. Main Monitor Dwell	5 Sec
2. Main Monitor Schedule	
3. Call Monitor Dwell	5 Sec
4. Call Monitor Schedule	

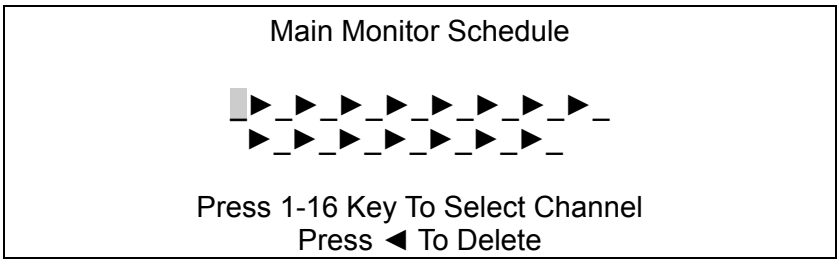
Items in the Sequence Setup menu are described in the following subsections.

5.5.1 Main / Call Monitor Dwell >

The Main / Call Monitor can be set to display full screen video of all installed cameras in sequence. This item is used to set the Main / Call Monitor dwell time, which is the amount of time elapsed between switching images. The dwell time is in the range of 1 to 120 seconds. The default value is 5 seconds.

5.5.2 Main / Call Monitor Schedule >

This item is used to set the Main / Call Monitor camera sequence in full screen format. Move the cursor to <Main Monitor Schedule> and press ENTER; the menu is displayed as follows.



Follow these steps to set a sequence:

- Press LEFT direction key to delete the original setting.
- Press the desired Channel keys to assign a camera to that location in the sequence.
- Continue the steps until the sequence is completed.

A sequence can have up to 16 entries. User can select fewer than 16 entries for camera sequence and leave the remaining entries blank. The sequence can include a specific camera or cameras multiple times.

5.6 Event Setup >

This menu allows user to determine **XDVR2** behavior in response to an alarm event. In the Main menu, move the cursor to <Event Setup> and press ENTER. The following menu is displayed.

Event Setup	
1. Internal Buzzer	ON
2. Event Icon	ON
3. Email Notice	OFF
4. Email Attachment	OFF
5. SMS Setup	
6. Event Full Screen	None
7. Event Duration	5 sec
8. Per Channel Config	

Items in the Event Setup menu are described in the following subsections.

5.6.1 Internal Buzzer >

This item allows user to enable / disable the **XDVR2** internal buzzer. If set to <ON>, the buzzer is activated in response to an alarm. If set to <OFF>, the buzzer is not activated. The default setting is <ON>.

5.6.2 Event Icon >

The item enables (ON) / disables (OFF) the display of Event Icon on the main monitor when an alarm event occurs. The default setting is <ON> (enable).

The event types are represented by a character respectively; the descriptions are as below table.

Event type	Description
A	Alarm in event
M	Motion detection event
L	Video loss event

5.6.3 Email Notice >

The item enables (ON) / disables (OFF) the Email notification of an event. When an alarm event is triggered and <Email Notice> is enabled, an e-mail concerning the alarm event will be sent. The default setting is <OFF>.

NOTE: In order to send an event notification e-mail successfully, ensure that the unit connects to the internet.

5.6.4 Email Attachment >

The function allows the unit to send out brief AVI video regarding the event. The number of the attached AVI video will be equal to the number of cameras you connect to the unit. For example, if the unit has been connected with 8 cameras, then 8 video will be attached with the notice email. The total size of the video will be about 2 Mega,

Select <ON> to enable this function; and <OFF> to disable it. The default is <OFF>.

5.6.5 SMS Setup

SMS is the acronym for Short Message Service. SMS messages are short text messages that are sent directly to a mobile phone. They are also known as text messages. This function allows you to send an SMS message to any mobile phone on a GSM network.

To perform this function, you need a GSM/ GPRS Modem, the three models listed below are recommended:

TC35i Terminal
MC35i Terminal
TC65 Terminal

Connect the GSM/GPRS Modem and the RS232 connector of the unit, which is positioned on the rear panel. Then enter the OSD setup menu and select <SMS Setup>. The following menu displayed.

SMS Setup	
1. SMS Notice	OFF
2. PIN Authentication	ON
3. PIN Code Setup	
4. Receiver Number	
5. Send Test Message	Execute

SMS Notice

Select <ON> to send out short message to the assigned mobile phone; and select <OFF> to disable this function. Select <OFF>, the rest items listed in this sub-menu will no longer be accessed.

PIN Authentication

If you have set PIN code to protect your mobile phone, then you have to select <ON> for this item and enter the set PIN code in the next item.

PIN Code Setup

Used to set the PIN code which has been set for protecting your mobile phone.

Receiver Number

Allow you to enter the number of the assigned mobile phone, which the short message will be sent to.

Send Test Message

Select this item to send a test message to see the setup is successfully done or not.

5.6.6 Event Full Screen

This function allows the unit to display the alarm channel in full screen size when an alarm is triggered.

Select <None> to enable this function; select <Main> to display the alarm channel on Main Monitor when an alarm is triggered; select <Call> to display the alarm channel on Call Monitor; and select <Both> to display the alarm channel on both Main Monitor and Call Monitor.

5.6.7 Event Duration >

This item determines the duration of the buzzer and Alarm Out relay function after an alarm is triggered. The available event duration range is from 1 second to 100 seconds. The default setting is 5 seconds.

5.6.8 Per Channel Config >

This menu is used to set the Video Loss Detect, Motion Detect and Alarm In / Out function for each channel. The menu is displayed as below.

Per Channel Config	
1. Channel Select	CH1
2. Video Loss Detect	ON
3. Motion Detect	ON
4. Detection Config	
5. Alarm In	OFF
6. Alarm Out	None

5.6.8.1 Channel Select >

The item is used to select a desired channel for setting the parameters. Move the cursor to <Channel Select> and press ENTER, then select a channel using UP / DOWN keys. Press ENTER again to confirm the setting.

5.6.8.2 Video Loss Detect >

This item allows user to enable / disable Video Loss as an alarm event. Select <ON> to enable Video Loss alarm events, <OFF> to disable. The default setting is <ON>.

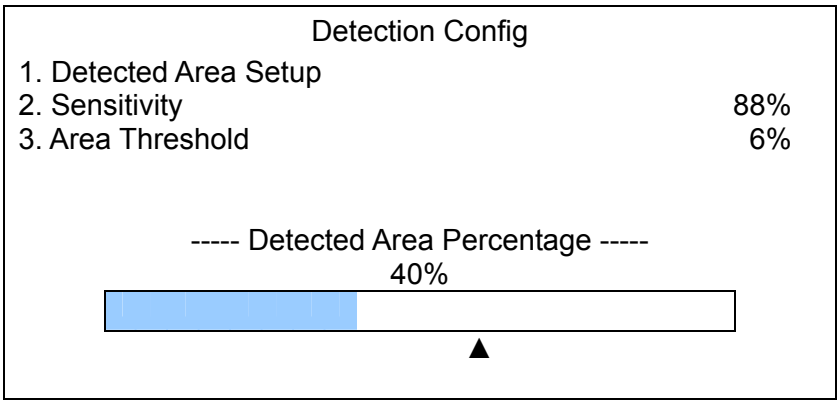
5.6.8.3 Motion Detect >

Use to enable or disable the motion detection function of the **XDVR2**. By default, the value is <OFF>.

If motion detection function is enabled, it is required to define the motion detection parameters such as detection area and sensitivity settings.

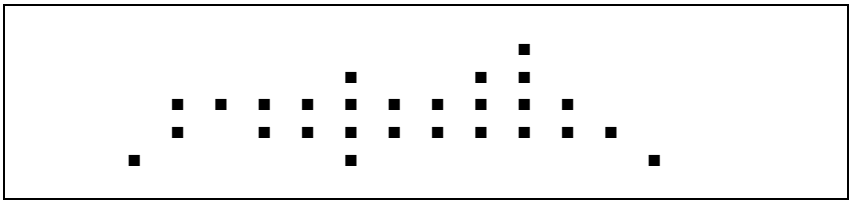
5.6.8.4 Detection Config >

If motion detection function is enabled, it is required to define the motion detection parameters such as detection area and sensitivity settings. Select a channel for setting the parameters, move the cursor to <Detection Config>, and press ENTER. The Detection Configuration menu displays as follows.



- Detected Area Setup >

The Detect Area is displayed as follows after selecting this item. The detection area consists of 273 (21×13) detection grids in NTSC video format or 336 (21 ×16) grids in PAL format.



Use the Direction keys to move the cursor and press ENTER to enable or disable a grid. Press MODE to select all of the grids for detection; press MODE again to de-select all of the grids.

- Sensitivity >

The item is used to set the sensitivity of detection grids for the camera. A greater value indicates more sensitive motion detection. A motion alarm will be triggered, once the amount of motion detected exceeds the Threshold value

Move the cursor to <Sensitivity> and press ENTER, and then use UP / DOWN keys to adjust the value. The value is indicated in 4% increment.

- Area Threshold >

<Area Threshold> means the motion alarm triggered level; if the percentage of triggered grids to total detection area is greater than the set value, the motion alarm will be triggered.

For example, if 10 grids are selected and the < Area Threshold > value is 70%, the motion alarm will be triggered when 7 grids are motion detected.

Move the cursor to < Area Threshold > and press ENTER, and then use UP / DOWN keys to adjust the value. The value is indicated in 4% increment.

- Detected Area Percentage >

The part shows the percentage and variation of the detected volume.

5.6.8.5 Alarm In >

This item allows user to enable / disable alarm input detection. According to your application, select <N/O> (Normal Open) or <N/C> (Normal Close) to enable the alarm input detection or select <OFF> to disable the detection. The default setting is <OFF>.

If you set this item to <N/C> but did not install any device to the unit, the alarm will be triggered and the Event Icon displayed continually until this item is changed to <N/O>, <OFF> or install a device to the unit.

5.6.8.6 Alarm Out >

This item allows user to assign an alarm on certain channel to activate the relays. These signals can be used to drive a light or siren to caution an alarm event. The default setting is <None>.

The available options and the corresponding activated alarm outs are listed as below table:

Option	Activating Relay	Option	Activating Relay
<A only>	Alarm Out A	**<B+C>**	Alarm Out B & Alarm Out C
<B only>	Alarm Out B	**<A+C>**	Alarm Out A & Alarm Out C
<C only>	Alarm Out C	**<All>**	All Alarm Out
<A+B>	Alarm Out A & Alarm Out B	**<None>**	No Alarm Out

5.7 Database Setup >

The menu displays information of internal and external disks. In the Main menu, move the cursor to <Database Setup> and press ENTER. The following menu is displayed.

Database Setup	
1. Total Size	xxx GB
2. Free Size	xxx GB
3. Avail. REC Time	3Days 7Hrs
4. Internal Disks	
5. External Disks	

NOTE: If the hard disk is failed detected, the message "HDD fail" will display.

5.7.1 Total / Free Size of HDD >

The Total Size of HDD shows the total capacity of HDD that has been added into database. The Free Size of HDD indicates the free space for recording of the HDD added in database. The information is read-only.

5.7.2 Avail. REC Time >

The Avail REC Time indicates the available duration for recording. If the unit is set to record in circular mode, the item will show "Circular". The information is read-only.

5.7.3 Internal / External Disks >

Select <Internal Disks> or <External Disks> to see information on the storage devices connected to the unit. The submenu is displayed as below.

Internal Disks		
Name	Active	Action
xxx xxxxxxx-xxxxxx	YES	None

The information of built-in HDD and external storage device will be listed by model name and status. If no storage device connects to the unit, the message "No Available Items!" will show on screen.

NOTE: If the file system of the internal HDD is not compatible for the DVR, the system will format the internal HDD automatically without notice.

<Active>
The item indicates if the storage device is added into database or not. <YES> means the device has been added into database.

<Action>
The item allows user to add storage device into database or remove device from database.

The options are <None> (no action), <Add> (add the selected device into database), <Remove> (remove the selected device from database), <Format> (format the selected device).

NOTE: Before removing external devices from the unit, remember to remove the device from database.

5.8 Configuration >

The Configuration menu can be used to restore the default factory settings, import and export configuration.

Select <Configuration> from the Main menu and press ENTER. The following menu is displayed.

Configuration	
1. Load Factory Default	NO
2. Import Config	
3. Export Config	

Items in this menu are described in the following subsections.

5.8.1 Load Factory Default >

This item is used to load the factory setting; select <YES> to recall the factory default setup configuration from the read-only memory, or <NO> to cancel.

5.8.2 Import Configuration >

This item allows user to load a unit configuration that was saved in an external drive. To import a configuration that was previously exported, make sure the device that saved the configuration is connected to the unit. Select <Import Config> from the Configuration menu and press ENTER. The following menu is displayed.

Import Config	
Config Name	Select
xxxx-xxxx	NO
xxx-xx	NO

Press UP / DOWN to select one of the listed available configuration files, and choose <YES> to start import.

NOTE: If the imported configuration has different record mode from the unit's, the warning message "This config has different record mode. This will FORMAT ALL HARDDISKS." will show.

NOTE: Remove the ThumbDrive® used for importing configuration after the unit restarts, or it will be formatted as well.

5.8.3 Export Configuration >

The Administrator is allowed to save a unit configuration by exporting it to an external drive, such as a USB Flash Drive. Before exporting the configuration, make sure the device in which the configuration will be saved is attached to the unit appropriately. Select <Export Config> from the Configuration menu and press ENTER. The following menu is displayed.

Export Config	
1. Copy Destination	
2. Config Name	
3. Begin Export	NO

Items in this menu are described in the following sections.

5.8.3.1 Copy Destination >

Select this item to list available destinations (external memory devices) to which the configuration can be exported. Press UP / DOWN to set a destination. Please note that saving a different configuration to the same copy destination with the same file name will overwrite the previous configuration file without warning.

NOTE: Users are not allowed to select any CD-R/W or DVD+RW as a copy destination, including built-in CD-R/W and DVD+RW.

5.8.3.2 Configuration Name >

This item allows user to assign the exported configuration file a name. Use the virtual keyboard to enter the configuration file name.

Note that the file name can contain up to 15 characters, with no spaces.

5.8.3.3 Begin Export >

Select <YES> to begin exporting the configuration file, or <NO> to abort the export.

NOTE: We strongly recommend users to export configuration before upgrading your system, and back it up routinely, just in case for unexpected situation.

5.9 Video Export >

The Video Export menu enables the administrator to export recorded video with digital signature to a USB ThumbDrive®, a CD-RW or to DVD+RW drive. Make sure an external storage device is available and connected to the appropriate port for video export. Administrator's password is required to export video.

If the <Pre-Alarm Recording> function is enabled, the event video will be exported into two files, including pre-alarm video and video recorded after the alarm is triggered.

Each recorded video will be exported into four files when exporting with digital signature, including *.gpg, *.avi (*.drv), *.sig and readme txt. To export 1GB file with digital signature may take you about 30 minutes.

From the Main menu, select <Video Export> and press ENTER. The following menu is displayed.

NOTE: The inserted CD will be ejected when its capacity is 99% full.

Video Export	
1. Select Device	
2. Select Ch:	CH1 CH2 CH3 CH4
3. From	2005/03/19 AM 07:50:05
4. To	2005/03/28 PM 03:09:18
5. Select Events	
6. Data Type	Normal
7. Export Format	DRV
8. Digital Signature	NO
9. Erase Disc	NO
10. Begin Export	NO

Items in the menu will be described in the following section.

5.9.1 Select Device >

The available external devices for exporting video will be listed by name and free size in Select Device menu. The Select Device menu displays as follows.

Select Device		
Device Name	Available	Sel
xxx-xxx-x-x-xx	256 MB	NO
xx-xxx-xx-xxxx	1.5 GB	NO

The **XDVR2** only supports EXT3 file system. If you connect an external HDD to the unit, ensure the format of HDD is EXT3.

<Device Name>
The item shows the name of the available device.

<Available>
The item shows the free space of the available device.

<Sel>
Set the item to <YES> to set it as an exporting destination; or <NO> to cancel.

5.9.2 Select Channel >

The item is used to select channels for export. Move the cursor to the wanted channel using LEFT / RIGHT keys, select or de-select a channel by pressing ENTER.

5.9.3 From / To Time >

The items are used to set the time which data export begins and ends. Move the cursor using Direction keys, and press ENTER to select the date / time items; adjust the selected date and time value by UP / DOWN keys.

NOTE: When the Start / End Time are set, remember to select the exporting Data Type.

5.9.4 Select Events >

Select the item to display the event list for exporting event video. Move the cursor scroll the event list and press ENTER to select the event you want to export.

5.9.5 Data Type >

The item is used to select exporting video type. The options are <Normal> (export normal video only), <Event> (export event video only) and <Both> (export both normal and event video).

NOTE: If you want to export selected event video using the item <Select Event>, you have to set <From> and <To> at the same day and time; otherwise, not only the selected event video will be exported to the selected destination, but also other event video recorded during the period between <From> and <To>.

NOTE: You will not be allowed to access the <Select Events> if the Data Type is set to <Normal>.

5.9.6 Export Format >

The item is for selecting exporting video format. The options are <DRV> and <AVI>.

The *.drv file can only be played back with DVR**Remote** and DVR**Player** and multiple camera video can be played from one file. The *.avi file can be played back with Windows Media Player. Note that if multiple channels are exported, each channel is exported to a separate file.

5.9.7 Digital Signature >

The Digital Signature function enables user to export video clip with the unit's unique signature key. It aims to authenticate a video clip exported from the unit and it has not been modified. User can export video clip with or without a digital signature file (*.sig). Set the item to <YES> to export with the signature file, or <NO> exports without the signature file.

Make sure that you have an external storage device, such as a USB Hard Drive or USB ThumbDrive®, available and connected to the appropriate port for export.

For more information on verifying digital signature, see Appendix D: Verifying Digital Signature.

5.9.8 Erase Disc >

This function is used to remove information found on a CD-RW or DVD+RW disk prior to exporting new information to the drive. Select <YES> and press ENTER to start deleting data.

5.9.9 Begin Export >

Select <YES> and press ENTER to start exporting.

5.10 Shutdown >

The item is used to shut down or reboot the unit. If you must shut down the **XDVR2** for any reason, please use the proper shut down and power up procedures to avoid damage to your unit.

To restart/ shutdown the unit, you have to enter the OSD setup menu with correct Administrator Password, or, the <Shutdown> menu will be unable to access.

Select <Shutdown> in Main menu and press ENTER to access the Shutdown menu, which displays as follows.

Shutdown
1. Power Off 2. Reboot

Power Off

Select this item to shut down the unit. Do not remove the power during shut down until the message "You can safely turn off DVR now!" displays.

Reboot

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

Appendix A: Technical Specifications

All specifications are subject to change without notice.

MODEL NAME			XDVR2
Video	Operation System		Embedded (Linux)
	Video Standard		NTSC/PAL switch selectable
	Video Operation		Triplex+(Live, Record, Playback , Remote, and Internet access)
	Resolution – Live Video		NTSC: 720 x 480 pixels PAL: 720 x 576 pixels
	Input		BNC x 16,1.0Vp-p/75 ohm
	Outputs	Main Monitor	BNC x 1, S-Video x 1, 1.0Vp-p/75 ohm
		Call monitor	BNC x 1, 1.0Vp-p/75 ohm
		Loop	BNC x 16,1.0Vp-p/75 ohm
	VGA Output		800 x 600, 1024 x 768, 1280 x 1024 pixels @ 60Hz
	Picture Refresh Rate		NTSC: 480 PPS(16CH) PAL: 400 PPS(16CH)
	Digital Zoom		2 x 2
	Camera Installation		Plug & Play
Audio	Input		RCA x 2, Line-In
	Output		RCA x 2, Line-Out
	Recording Mode		Always Real Time Record, Synchronized w/ Video
	Compression Method		ADPCM, G.726
	File Size		8KB/Sec
	Operation		Remote + VCR mode
	Playback		Only for Video Original Speed
Recording	Compression Method		MPEG-4 Advanced Simple Profile
	Recording Mode		Schedule, Alarm, Motion Detection
	Pre-Alarm		0~30 sec
	Resolution & Rate	NTSC	720x480: 60 pps
			720x240: 120 pps
			360x240: 240 pps
		PAL	720x576: 50 pps
			720x288: 100 pps
			360x288: 200 pps
	Recording Quality		8 levels presets, adjustable
	Image Size		2K to 20K Byte/picture
	Storage Mode		Linear/Circular
Playback	Playback		Play, Stop, Pause, Rewind, Forward, Search
	Playback Speed Adjustment		Yes 1X, 2X…32X
	Retrieve		Date/Time, Event
	Data Life Time		Yes(Programmable)
Storage	Build-in Storage		X2 ATA 133 / UDMA 133 IDE, HDD/CD-RW/DVD+RW
	Built-in HDD		NAS
	Export		X3 USB2.0 ports, support ThumbDrive®, CD-RW, or DVD+RW
Alarm	Alarm Input		X4, Terminal Block | X8, Terminal Block | X16, Terminal Block
	Alarm Detection		N.C./N.O., Programmable
	Auditory Alert		Built-in Buzzer
	Motion Detection		21 X 13(NTSC), 21 X 16(PAL) Grid Array, Sensitivity, Trig Level Adjustable
	Video Loss Detection		Programmable
	Alarm Relay Output		X3, Terminal Block, 1.0A/24V (Programmable)
Communication	Network Connectivity		Ethernet RJ-45 connector, 10/100Mbps, supports DHCP/PPPoE/DDNS
	Remote Control Software		DVR Remote
	Access Control		2 Level Password
	Remote Operation		Monitoring, Playback, Recording, System Setup, Dome Camera Control

	RS232C	D-sub 9 pin female
	RS485	Terminal Block
	Dome Control Protocol	DynaColor, Pelco P, Pelco D, AD422

Appendix B: Record Duration

The record duration relates to recording rate, image quality and HDD capacity. Refer to the following table.

NOTE: Record duration times are based on actual tests and represent average file sizes. Performance may vary depending on specific installations and use. Audio recording requires 8 KB per second (or 0.7 GB per day) for data storage.

Number of Days of Recording @60PPS (without Audio)

Recording Rate		Recording Picture Quality Mode									
Total Images Per Second NTSC	Total Images Per Second PAL	Low		Fair		Mid		High		Best	
		NTSC (8 KB)	PAL (8 KB)	NTSC (11 KB)	PAL (11 KB)	NTSC (14 KB)	PAL (14 KB)	NTSC (17 KB)	PAL (17 KB)	NTSC (20 KB)	PAL (20 KB)
160 GB Internal Storage											
30	25	7.5	9.0	5.5	6.6	4.3	5.2	3.6	4.3	3.0	3.7
15	12.5	15.0	18.0	11.0	13.2	8.7	10.4	7.2	8.6	6.1	7.3
7.5	6.25	29.9	35.9	21.9	26.3	17.3	20.8	14.3	17.2	12.2	14.6
300 GB Internal Storage											
30	25	14.0	16.8	10.3	12.3	8.1	9.7	6.7	8.1	5.7	6.9
15	12.5	28.1	33.7	20.6	24.7	16.2	19.5	13.4	16.1	11.4	13.7
7.5	6.25	56.1	67.3	41.2	49.4	32.5	39.0	26.8	32.2	22.9	27.4
600 GB Internal Storage											
30	25	28.1	33.7	20.6	24.7	16.2	19.5	13.4	16.1	11.4	13.7
15	12.5	56.1	67.3	41.2	49.4	32.5	39.0	26.8	32.2	22.9	27.4
7.5	6.25	112.2	134.7	82.3	98.8	65.0	78.0	53.7	64.4	45.7	54.9

Number of Days of Recording @120PPS (without Audio)

Recording Rate		Recording Picture Quality Mode									
Total Images Per Second NTSC	Total Images Per Second PAL	Low		Fair		Mid		High		Best	
		NTSC (5 KB)	PAL (5 KB)	NTSC (8 KB)	PAL (8 KB)	NTSC (11 KB)	PAL (11 KB)	NTSC (14 KB)	PAL (14 KB)	NTSC (17 KB)	PAL (17 KB)
160 GB Internal Storage											
60	50	5.9	7.1	3.7	4.5	2.7	3.3	2.2	2.6	1.8	2.1
30	25	11.8	14.1	7.5	9.0	5.5	6.6	4.3	5.2	3.6	4.3
15	12.5	23.5	28.2	15.0	18.0	11.0	13.2	8.7	10.4	7.2	8.6
7.5	6.25	47.0	56.4	29.9	35.9	21.9	26.3	17.3	20.8	14.3	17.2
300 GB Internal Storage											
60	50	11.0	13.2	7.0	8.4	5.1	6.2	4.1	4.9	3.4	4.0
30	25	22.0	26.5	14.0	16.8	10.3	12.3	8.1	9.7	6.7	8.1
15	12.5	44.1	52.9	28.1	33.7	20.6	24.7	16.2	19.5	13.4	16.1
7.5	6.25	88.2	105.8	56.1	67.3	41.2	49.4	32.5	39.0	26.8	32.2
600 GB Internal Storage											
60	50	22.0	26.5	14.0	16.8	10.3	12.3	8.1	9.7	6.7	8.1
30	25	44.1	52.9	28.1	33.7	20.6	24.7	16.2	19.5	13.4	16.1
15	12.5	88.2	105.8	56.1	67.3	41.2	49.4	32.5	39.0	26.8	32.2
7.5	6.25	176.4	211.6	112.2	134.7	82.3	98.8	65.0	78.0	53.7	64.4

Number of Days of Recording @240PPS (without Audio)

Recording Rate		Recording Picture Quality Mode									
Total Images Per Second NTSC	Total Images Per Second PAL	Low		Fair		Mid		High		Best	
		NTSC (2 KB)	PAL (2 KB)	NTSC (5 KB)	PAL (5 KB)	NTSC (8 KB)	PAL (8 KB)	NTSC (11 KB)	PAL (11 KB)	NTSC (14 KB)	PAL (14 KB)
160 GB Internal Storage											
60	50	13.7	16.5	5.9	7.1	3.7	4.5	2.7	3.3	2.2	2.6
30	25	27.4	32.9	11.8	14.1	7.5	9.0	5.5	6.6	4.3	5.2
15	12.5	54.9	65.8	23.5	28.2	15.0	18.0	11.0	13.2	8.7	10.4
7.5	6.25	109.7	131.7	47.0	56.4	29.9	35.9	21.9	26.3	17.3	20.8
300 GB Internal Storage											
60	50	25.7	30.9	11.0	13.2	7.0	8.4	5.1	6.2	4.1	4.9
30	25	51.4	61.7	22.0	26.5	14.0	16.8	10.3	12.3	8.1	9.7
15	12.5	102.9	123.5	44.1	52.9	28.1	33.7	20.6	24.7	16.2	19.5
7.5	6.25	205.8	246.9	88.2	105.8	56.1	67.3	41.2	49.4	32.5	39.0

600 GB Internal Storage											
60	50	51.4	61.7	22.0	26.5	14.0	16.8	10.3	12.3	8.1	9.7
30	25	102.9	123.5	44.1	52.9	28.1	33.7	20.6	24.7	16.2	19.5
15	12.5	205.8	246.9	88.2	105.8	56.1	67.3	41.2	49.4	32.5	39.0
7.5	6.25	411.5	493.8	176.4	211.6	112.2	134.7	82.3	98.8	65.0	78.0

Appendix C: Dial-up Connections via Modem

A dial-up modem connection allows user to use the remote software and receive alarm notice without an internet connection. Following are the steps for establishing the connection between a **XDVR2** unit and a PC.

Establishing Dial-in Connection

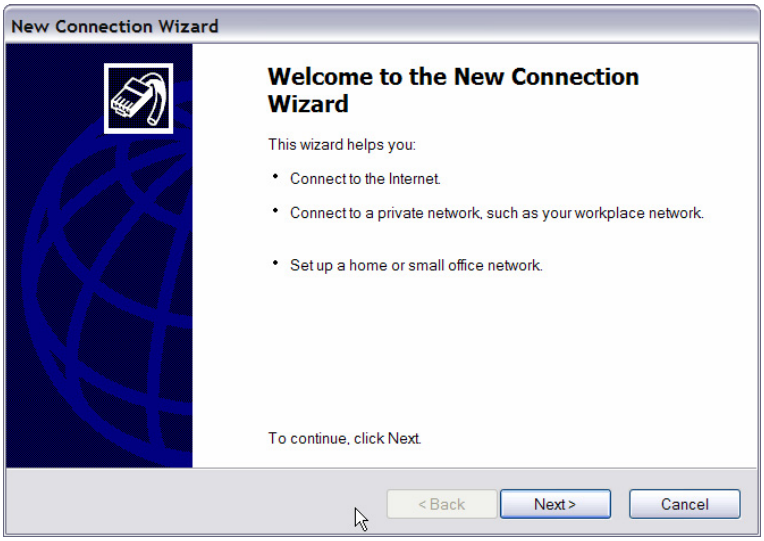
The Dial-in function enables user to establish dial-up modem communication to and from **XDVR2** unit for the remote software use. Follow the description to set up your DVR and PC.

DVR Configuration:

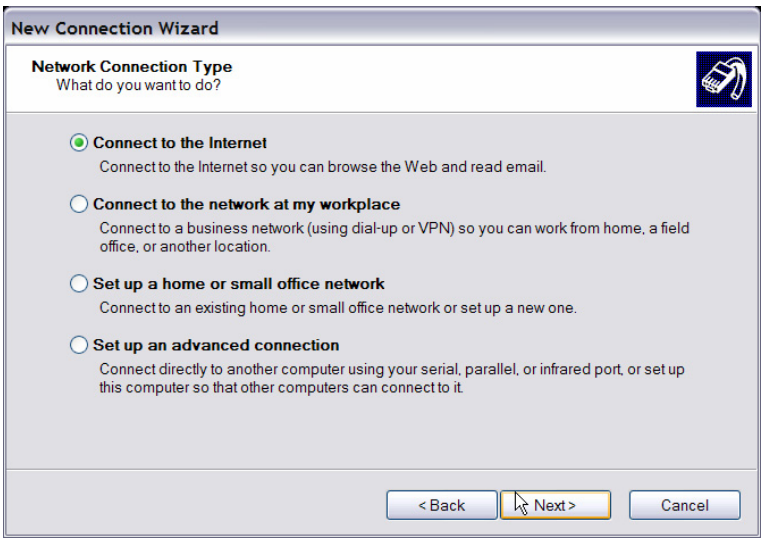
- Connect an USB modem to the USB socket and connect a working phone line to the modem.
- Press MENU and input the Administrator password to access the OSD Main menu. Select <Network Setup> and then <Dial-in Setup> to set up the Dial-In settings, including Dial-in Account and password, etc.
- For more information on dial-in settings, see Section 5.1.6.3 Dial-in Setup.

PC Configuration:

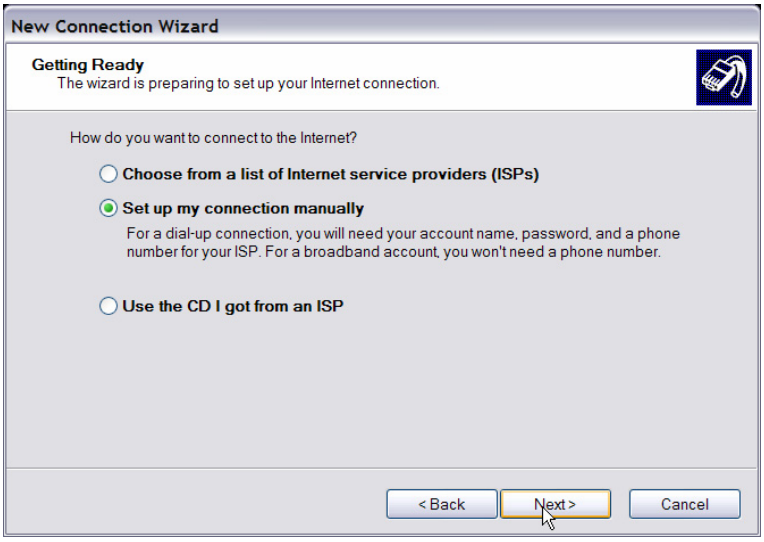
- Click <Start>, <My Network Places>, <View Network Connections> and then select <Create New Connection>. The New Connection Wizard is displayed. Click <Next> to continue.



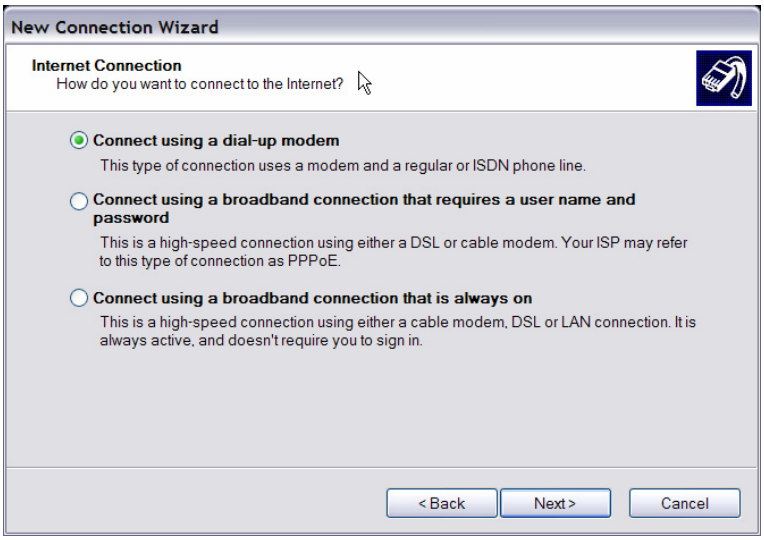
- Set up the network connection type. Select <Connect to the Internet> and click <Next> to continue.



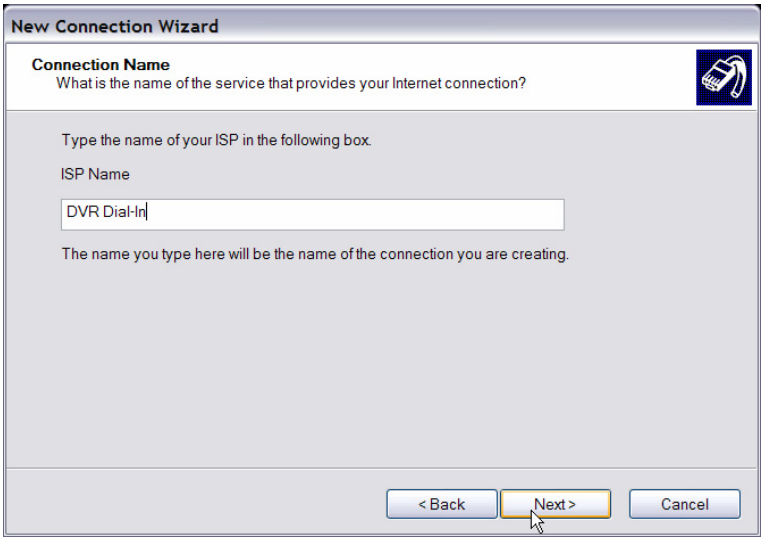
- Select <Set up my connection manually> and click <Next> to continue.



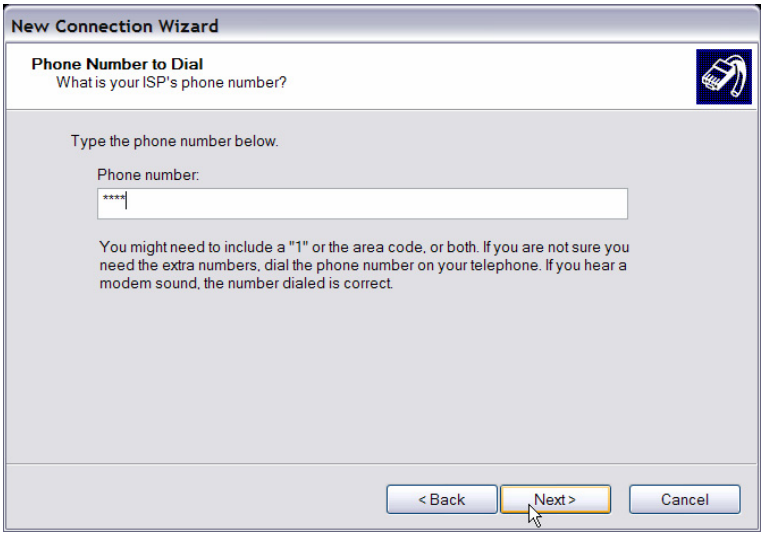
- Select <Connect using a dial-up modem> to connect to the internet through phone line and a modem. Click <Next> to continue.



- Type the name of the connection you are creating.

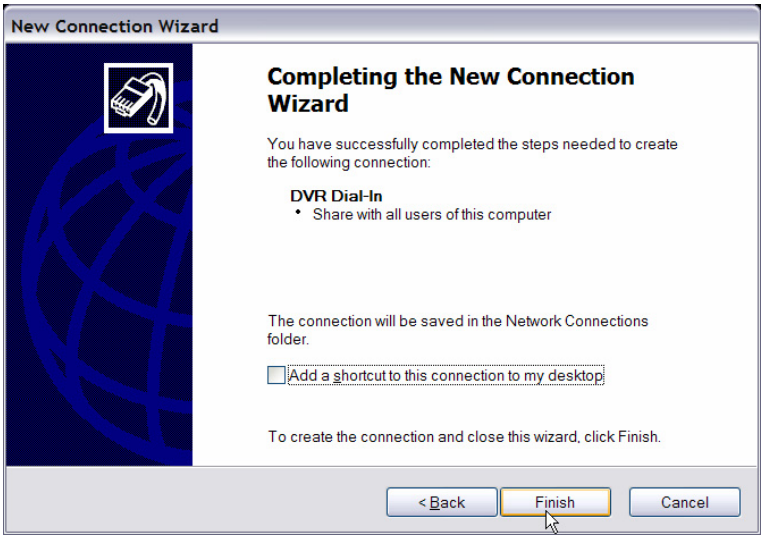


- Enter the phone number of the modem that is connected to the unit.

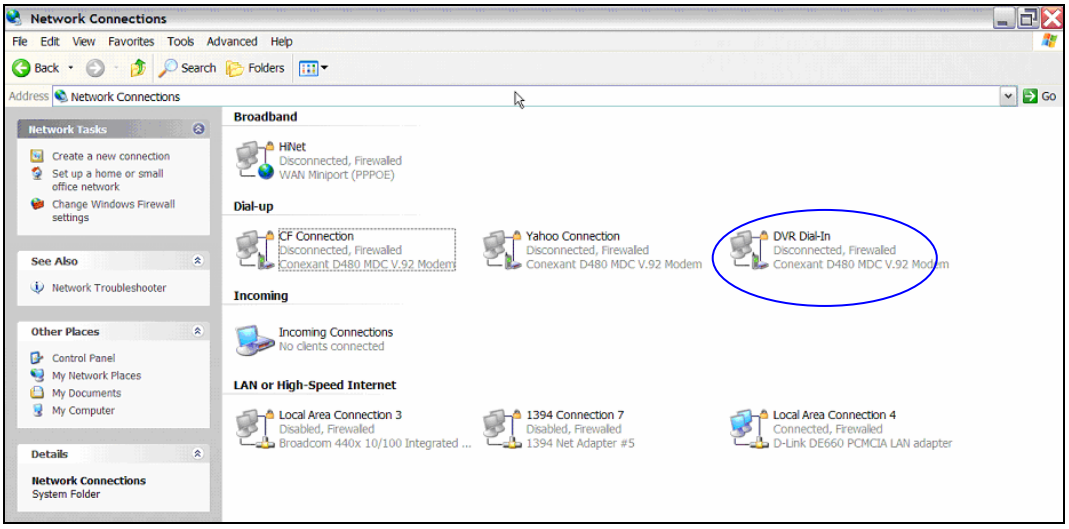


- Enter the Username and Password that is set in the Dial-in Setup menu.

- Click <Finish> to complete the dial-in connection.



- Now the dial-in connection is established.



Establishing Dial-out Connection

The Dial-out function enables user to establish dial-up modem communication to and from **XDVR2** unit for remote notification use. Follow the description to set up your DVR and PC.

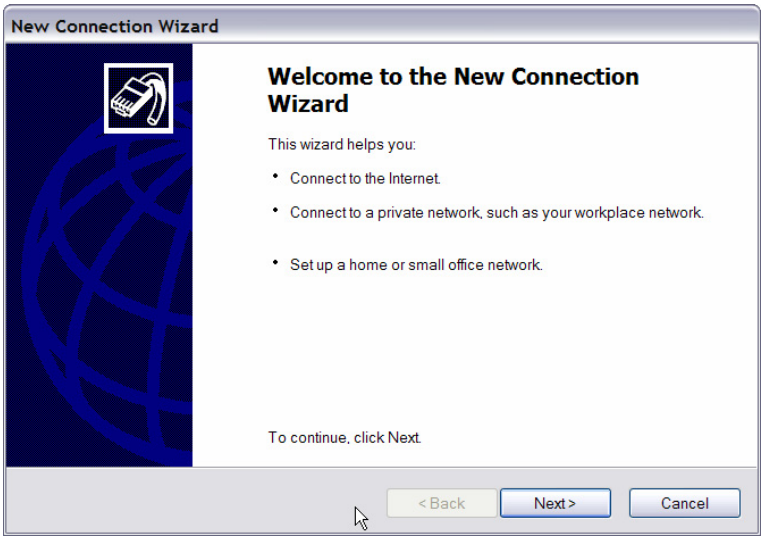
DVR Configuration:

- Connect an USB modem to the USB port and connect a working phone line to the modem.
- Press MENU and input the Administrator password to access the OSD Main menu. Select <Network Setup> and then <Dial-out Setup> to set up the Dial-out settings.
- Select the <Email Address> in Network Setup menu to edit an e-mail address for alarm notification.

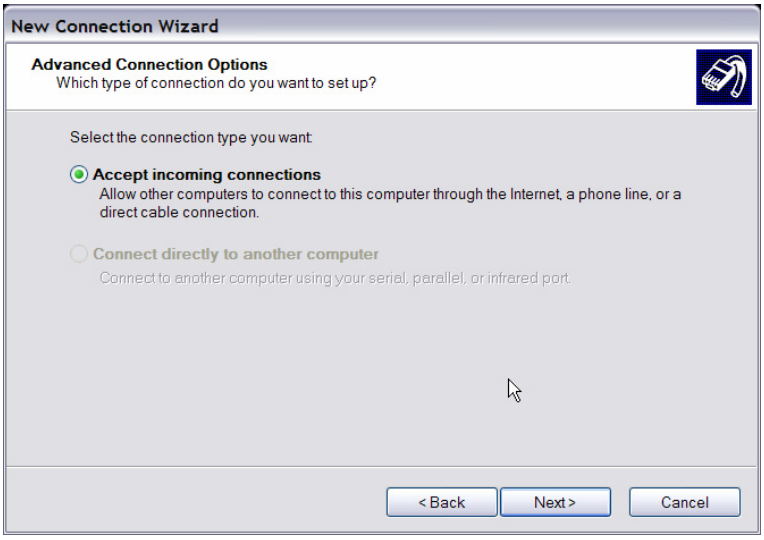
- Select <Event Setup> in Main menu and set the Email Notice function to <ON> (enabled).
- Exit the OSD menu and save the configuration.
- For more information on dial-out settings, see Section 5.1.6.4 Dial-out Setup.

PC Configuration:

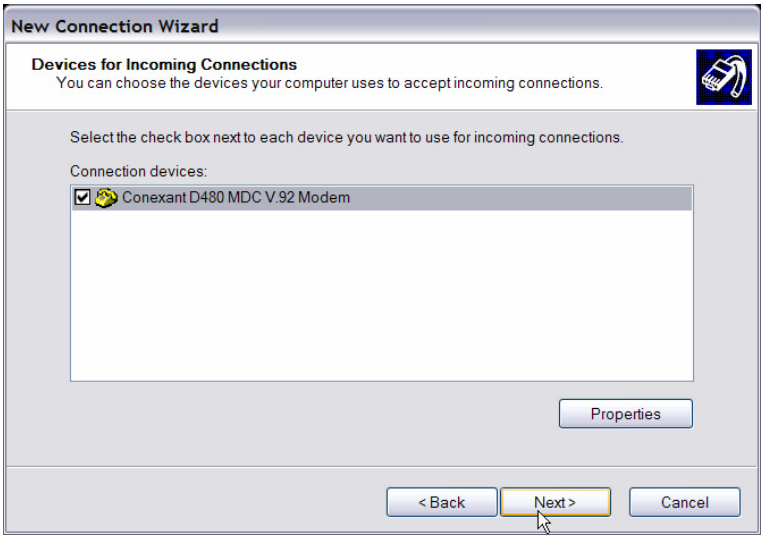
- Click <Start>, <My Network Places>, <View Network Connections> and then select <Create New Connection>. The New Connection Wizard is displayed. Click <Next> to continue.



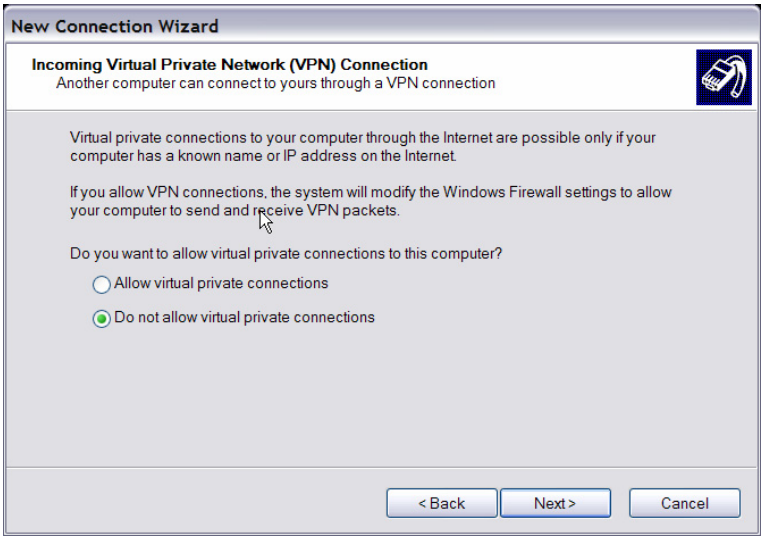
- Set up the network connection type. Select <Set up an advanced connection> and then <Accept incoming connections>. Click <Next> to continue.



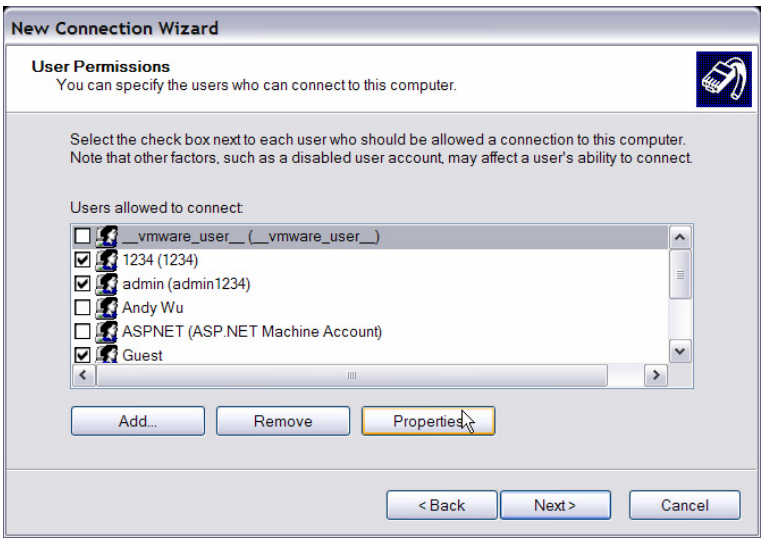
- Choose the modem device that will be used by the PC and click <Next>.



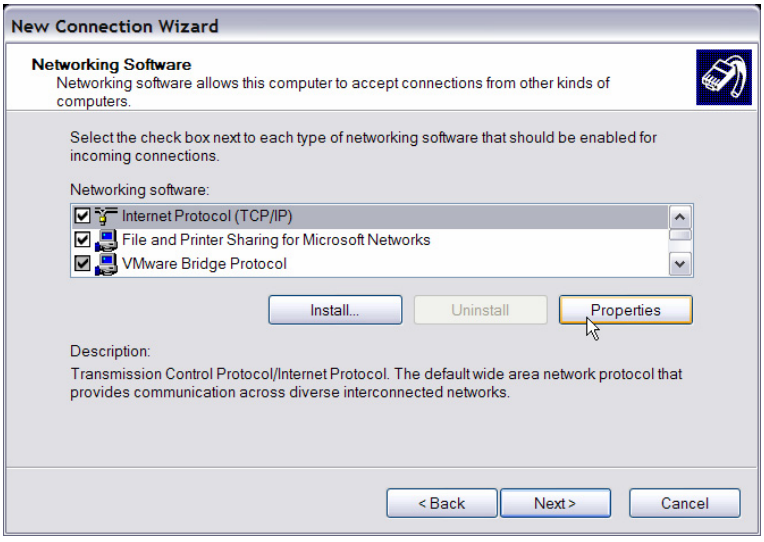
- In Incoming VPN Connection menu, choose <Do Not allow virtual private connections> and click on <Next>.



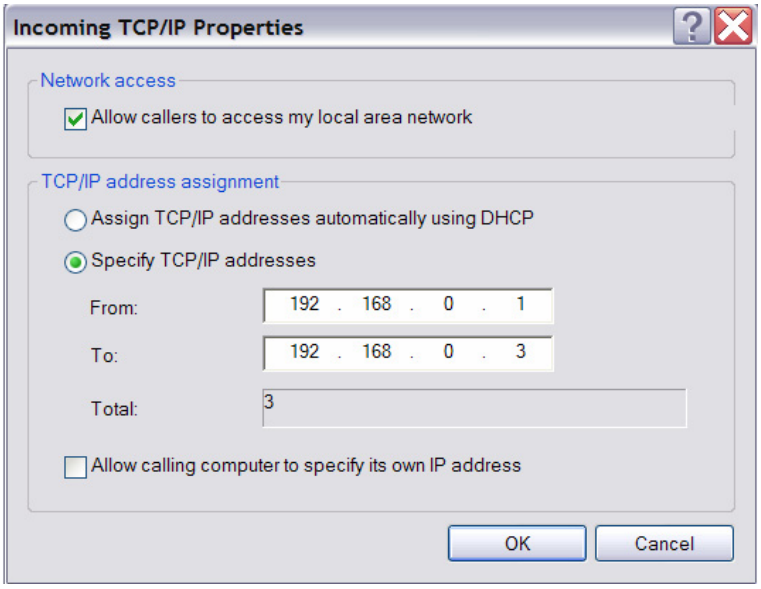
- In User Permission menu, select the users that will be using this connection. If needed, add a new user with the same user password that is set up in Dial-out Setup menu in local DVR. When done, click <Next> to continue.



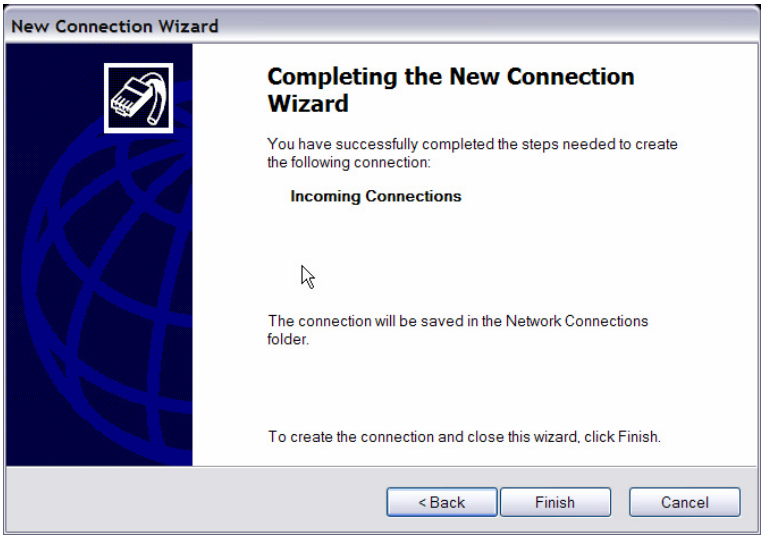
- In Networking Software menu, select <TCP/IP> and click on <Properties>.



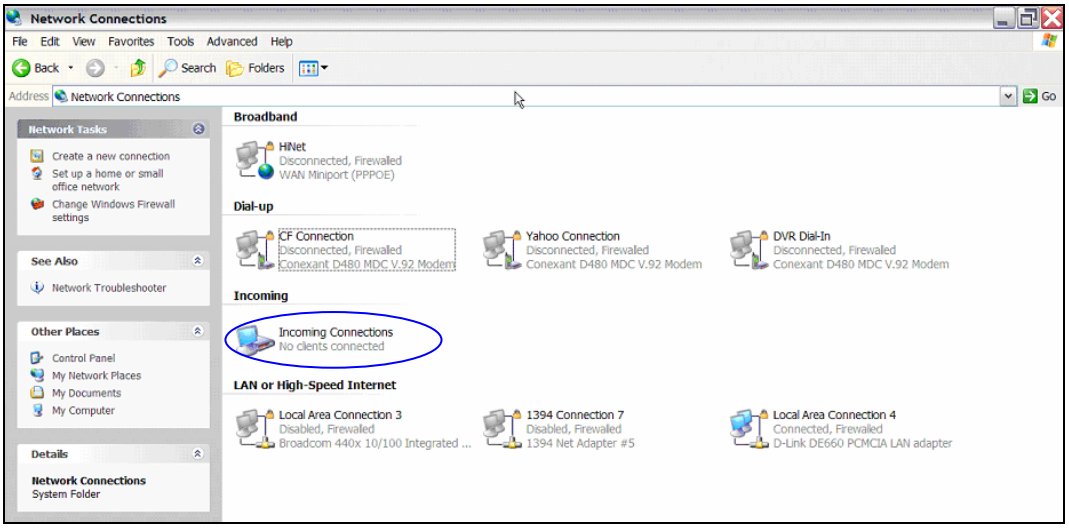
- In TCP/IP address assignment, if the PC has DHCP server, then choose <Assign TCP/IP addresses automatically using DHCP>, else choose <Specify TCP/IP addresses> and enter the range of IP addresses that you wish to use. Once done, click <OK> to confirm and back to Networking Software menu. Click on <Next> to continue.



- Click <Finish> to complete the process.



- The Incoming connection is established.



Appendix D: Verifying Digital Signature

The digital signature aims to authenticate a video file exported from the unit. Follow the description to export video with digital signature and verify the digital signature.

To export recorded video with digital signature:

To export recorded video with digital signature to a USB hard drive or CD-RW drive / DVD+RW drive, follow these steps.

- In <Video Export> menu, select copy device, data type, expected channel and start/end time, or event video clips.
- Set the <Digital Signature> function to <YES>.
- Start exporting process by setting <Begin Export> to <YES>.

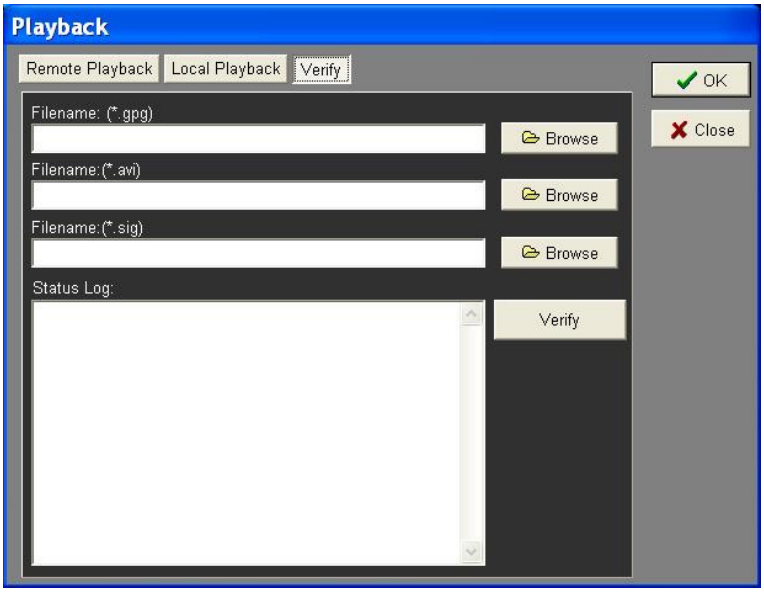
Video Export	
1. Select Device	
2. Select Ch:	CH1 CH2 CH3 CH4
3. Start Time	2005/03/19 AM 07:50:05
4. End Time	2005/03/28 PM 03:09:18
5. Select Events	
6. Data Type	Normal
7. Digital Signature	NO
8. Erase Disc	NO
9. Begin Export	NO

Each recorded video will be exported into four files with different filenames, including *.gpg, *.avi, *.sig and readme.txt.

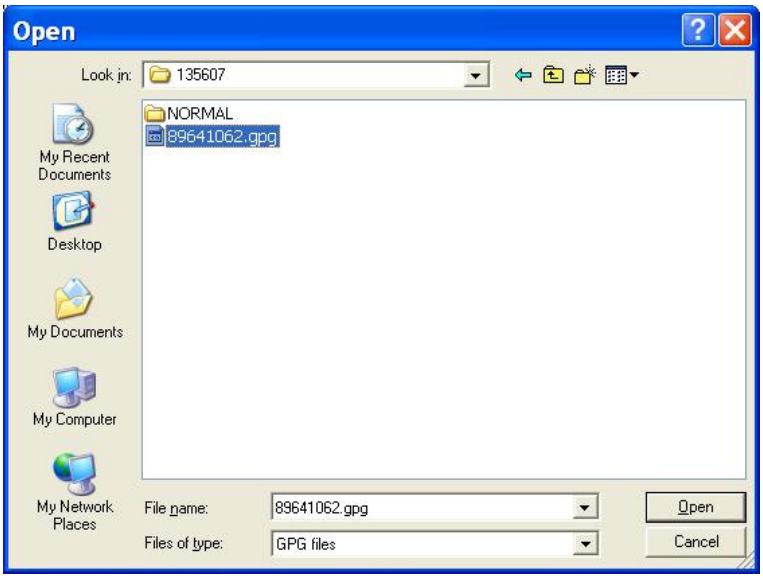
To verify the exported recorded video:

Following are the procedures for digital signature verification.

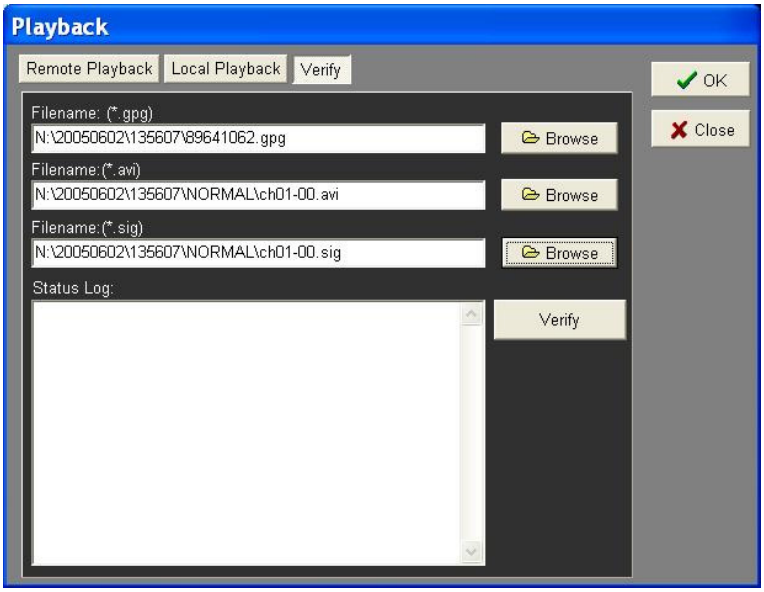
- Start your DVR Remote and click <Play> on the main window tool bar.
- Click <Verify> tab to display the Verify window.



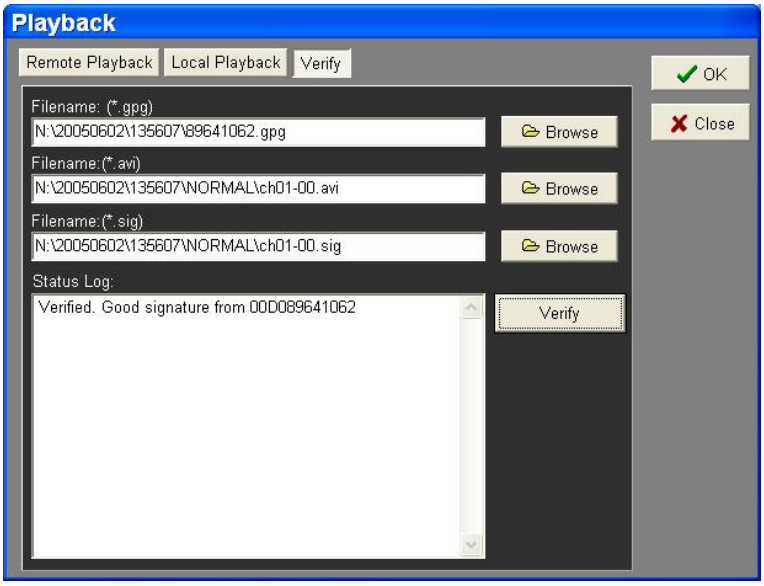
- Click <Browse> to select the *.gpg, *.avi, *.sig files respectively, which belong to the exported video you want to authenticate.



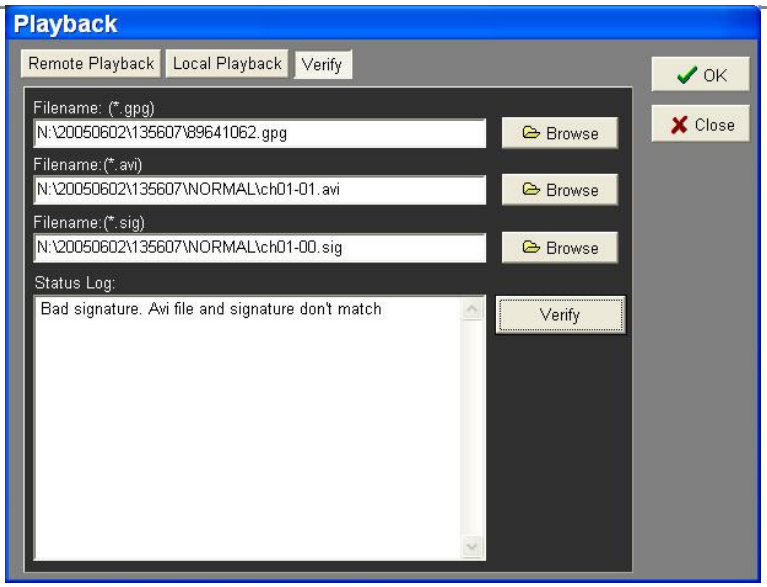
- Click <Verify> to start verifying digital signature.



- The result of verify shows in the <Status Log> field. It returns a GOOD or BAD signature result. A GOOD signature indicates the exported clip has not been altered.



<GOOD> Signature



<BAD> Signature

Appendix E: Recommended HDDs

1.	Maxtor:	Diamond Max Plux9	80G/160G/300G
		Diamond Max Plus 16	80G/160G/300G
2.	Seagate:	Barracuda 7200.7	200G
		Barracuda 7200.8	250G/300G/400G
3.	Hitachi:	Deskstar 7200rpm	60G/300G400G

Appendix F: IR Remote

An IR Remote will attached in the content box and deliver to you with your XDVR2. The keys on the IR Remote are listed as below figure: