

PIVTM Series

MPEG-4 DVR

User's Manual

Model: PIV Series

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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.
- Unplug the unit from the outlet before cleaning. 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.



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.

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1. Overview

The PIV™ Series MPEG-4 DVR 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.

PIV™ Series MPEG-4 DVR includes DvrRemote™ Lite, the remote viewing software that is a Web-browser plug-in, allows user to view live or recorded video images. The remote software is stored in PIV™ Series MPEG-4 DVR 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.

Product Key Features

The PIV™ Series MPEG-4 DVR 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 DvrRemote™ Lite). The key features of PIV™ Series MPEG-4 DVR are listed as follows.

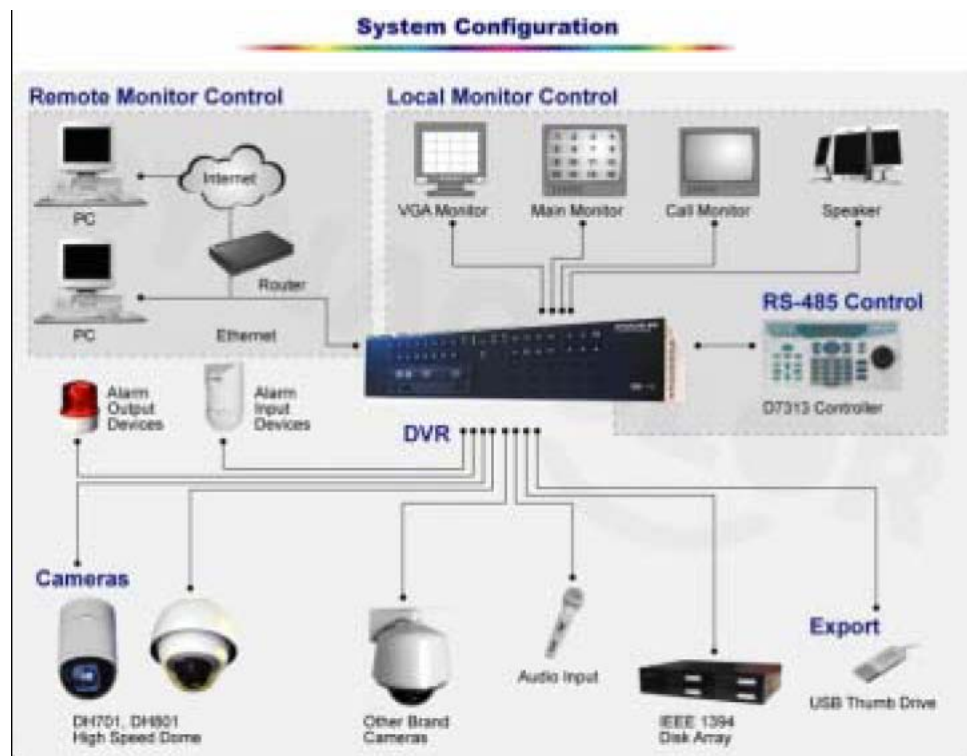
- . • MPEG-4 high quality compression, 5~10 times smaller than MJPEG
- . • Triplex operation (recording, playback and network access)
- . • Remote monitoring, instant recording and dome camera control via Ethernet
- . • Support VGA main output (optional)
- . • Live display: 480pps (NTSC)/ Seriespps (PAL)
- . • 1 Channels, in & out, for audio recording
- . • Support up to internal 1 Optical drive + 2 HDD
- . • USB2.0 port for video clip exporting, support USB ThumbDrive®
- . • Easy software upgrade via USB TumbDrive®, or CD-RW
- . • Export DVR file which can be played via DvrPlayer™
- . • DvrPlayer™ application software will be attached with exported disks
- . • Multiple built-in dome camera protocol: IDView, Pelco D, Pelco P, and

AD422

- . • Digital Zoom 2X2, available in live mode
- . • Programmable call-monitor switching sequence
- . • Pre-Alarm recording
- . • IR Remote controller (Optional)
- . • Multiple language on-screen menus
- . • Network software supports static IP and DHCP
- . • Support RS-485 remote control keyboard (Optional)

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 PIV™ Series MPEG-4 DVR 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 PIV™ Series MPEG-4 DVR is designed to operate under either NTSC or PAL video formats. Please contact with a qualified service person to perform the installation procedure.

2.3 Connecting Devices to the Unit

This section lists some notices that should be given before making any connections to the PIV™ Series MPEG-4 DVR.



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

powered up.

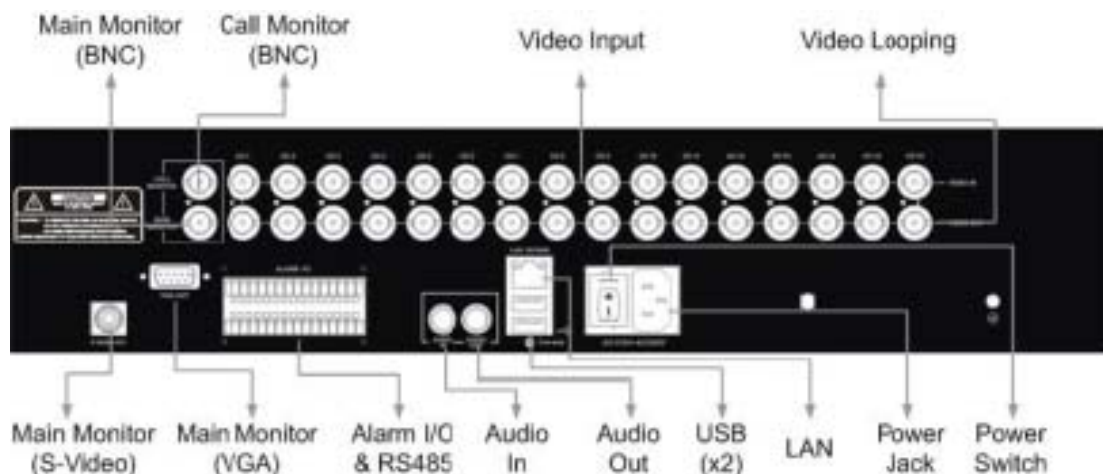
Connecting Required Devices

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 PIV™ Series MPEG-4 DVR and use them as part of the unit system, such as USB CD-ROM, USB Hard Disk Drive, etc. Make sure connecting those devices only during the unit is powered up. Because PIV™ Series MPEG-4 DVR can recognize the external devices only after the power-up process is done completely.

Rear Panel Connections

There are various connectors on the rear panel used for PIV™ Series MPEG-4 DVR installations. The following figure shows the connectors by name; and followed by the detailed description of each connector.



Main Monitor (S-Video / BNC/ VGA)

S-Video , BNC and VGA output connectors are offered for connecting to a main monitor. The main monitor displays live image and playback recorded video in either

full-screen or split-window format. VGA output connector is optional.

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 PIV™ Series MPEG-4 DVR 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.

Video Looping

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

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. The definitions of pins are listed in the below table:

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

15	Ground	31	Alarm In 15
16	Ground	32	Alarm In 16

Audio In / Out The PIV™ Series MPEG-4 DVR 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.

LAN Connector (RJ-45)

The PIV™ Series MPEG-4 DVR is capable of networking. The LAN port opens the door of PIV™ Series MPEG-4 DVR to Ethernet.

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-ROM.

Power Jack

The PIV™ Series MPEG-4 DVR has a free voltage AC power connection jack. Please connect the power supply that ships with the unit.

WARNING: Use of other power supply may cause overloading.

Power Switch

Used to power up and shut down the unit.

3. General System Setup

The PIV™ Series MPEG-4 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.

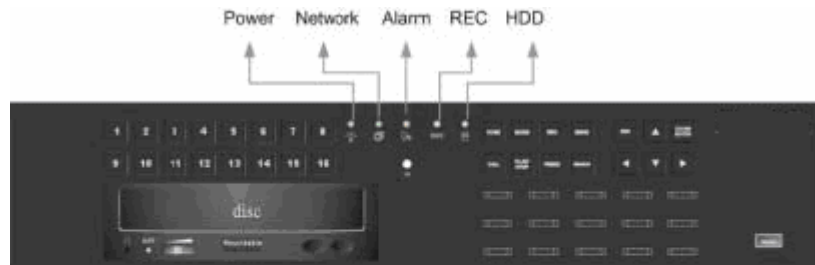
Ch4 Playback 2005/11/09 PM04:31:22

3.1 Front Panel

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

3.1.1 LED Definition

The PIV™ Series MPEG-4 DVR LEDs on the front panel are described as follows.



Power LED (Green)

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

Network LED (Green)

The LED should be lit when PIV™ Series MPEG-4 DVR is connected to a network and blink when the data is being transferred.

Alarm LED (Red)

The LED should be lit during an alarm is triggered.

REC LED (Green)

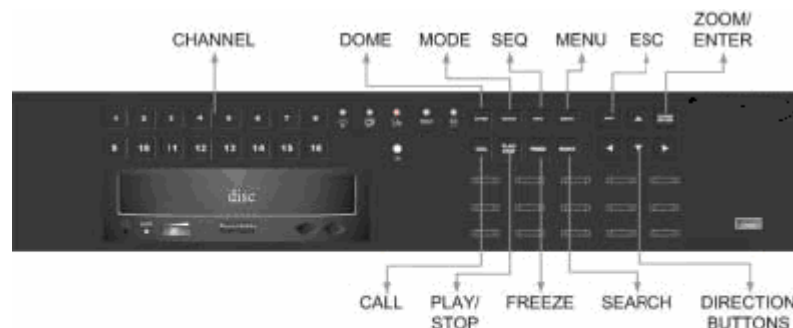
The LED should blink while the PIV™ Series MPEG-4 DVR is recording.

HDD LED (Yellow)

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

3.1.2 Function Buttons

The PIV™ Series MPEG-4 DVR functional buttons on the front panel for normal operation are described as follows.



CHANNEL

- When in both Live and Playback modes, press the CHANNEL button to view the corresponding video in full screen.
- 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.

HOME

Press the key to enter home control mode.

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.

SEQ (Sequence)

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

MENU

Press the button to call the OSD setup menu.

ESC

Press to cancel or exit from certain mode or OSD menu without changing the settings made previously.

ZOOM/ENTER

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

CALL

Press to enter call monitor control mode.

PLAY/STOP

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

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.

SEARCH

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

Direction Buttons

- . • In Zoom mode, these keys function as Direction buttons.
- . • In the OSD 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.

Power Up / Down the Unit

If you must shut down the PIV™ Series MPEG-4 DVR for any reason, please use the proper shut down and power up procedures to avoid damaging your DVR unit.

To Power Up the Unit

Check the used type of power source before plug in your DVR first, 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

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. 1. Power Off
2. 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.

Entering OSD Setup Menu

The OSD Main menu contains a list of items that are used to configure the PIV™ Series MPEG-4 DVR. To enter the Main menu, press MENU and then enter Administrator or User password. The Password Verification screen displays as follows.

Password Verification

Press Channel Keys To Enter Password
(4-8 Digits)
Press ◀ Key To Delete

The default passwords are shown in the following table. The same passwords are used for entering the remote viewing software DvrRemote™ Lite.

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. Shutdown

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

3.3.1 Button Usage in OSD Menu

Direction Buttons

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

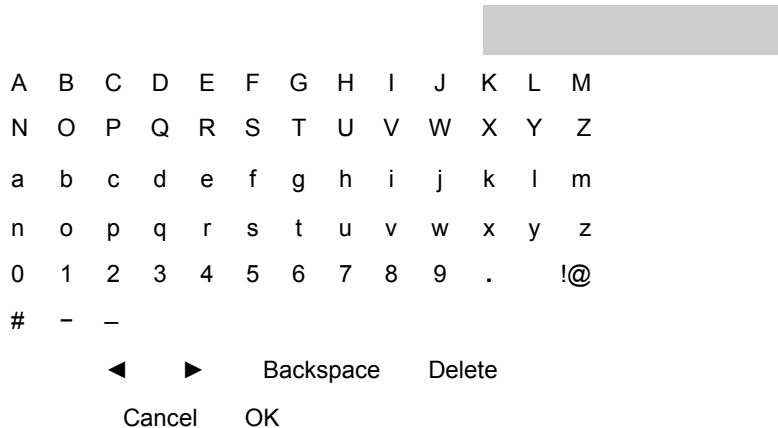
In OSD menu or selection interface, press the button to make selection or save settings.

ESC

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

3.3.2 Button Usage in Virtual Keyboard

A virtual keyboard shows when edit the settings, such as camera title, 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 To exit the virtual keyboard

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.

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

System Date / Time Setting

User can set the current date, time and other OSD parameters in Date/Time 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. 1. Date 2005/02/21
 2. 2. Time 10:39:26
 3. 3. Date/Time Display 1 Row
 4. 4. Date Display Mode Y/M/D
 5. 5. Time Display Mode 24 HR
 6. 6. Date/Time Order Date First
 7. 7. Daylight Saving Time ON
 8. 8. DST Start Apr, 1 st Sun, 02:00
 9. 9. DST End Apr, Last Sun, 02:00
 10. 10. DST Bias 60 Min

3.4.1 Set Date / Time

Set Date / Time

Select <Date> / <Time> and press ENTER for adjusting the settings. LEFT / RIGHT buttons 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: To avoid record database corruption, after changed date / time setting, clear the database is recommended.

Date / Time Display

Users are allowed to choose to set the date / time OSD displays in 1 or 2 rows. Use the UP / DOWN buttons 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 buttons 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 buttons to change the setting.

3.4.2 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.

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. 1. Record Mode 720×240@60PPS
2. 2. Schedule Setup
3. 3. Preset Config Standard
4. 4. ezRecord Setup
5. 5. Circular Recording
6. 6. Purge Data ON

3.5.1 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. The options are <720×480@30PPS>, <720×240@60PPS> and <360 ×240@120PPS> in NTSC format; (<720×576@25PPS>, <720×288@50PPS>, <360×288@SeriesPPS>in PAL format).

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



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.

3.5.2 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.   1. Day Time Start   06:00
2.   2. Night Time Start 18:00
3.   3. Weekend Schedule   YES
4.   4. Weekend Start   Fri 18:00
5.   5. Weekend End     Mon 06:00
```

- . • Make appropriate changes of the start time of Day and Night Time using Direction buttons.
- . • 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.

3.5.3 Preset Record Configuration

The <Preset Config> is used to select the preset recording quality and

frame rate. Please refer to Section 5.4.3 Preset Configuration for more detailed information.

4. Basic Operation

The PIV™ Series MPEG-4 DVR allows user to access some general operations through the front panel easily. The following sections introduce the general operations of the unit.

Viewing Live / Playback Video

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

4.1.1 Viewing Modes

The PIV™ Series MPEG-4 DVR supplies user versatile ways of viewing both live and recorded video. Following presents these view formats.

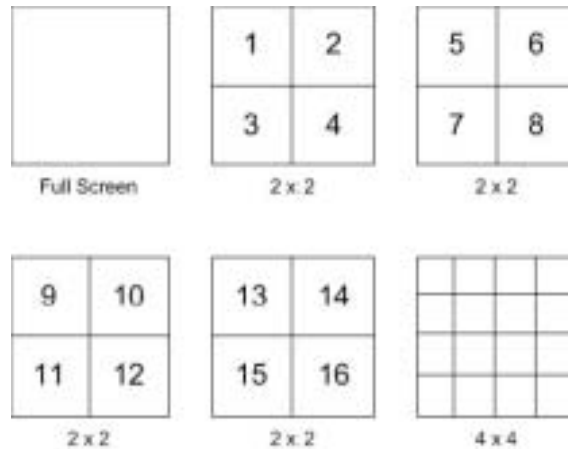
Viewing in Full Screen

Press any CHANNEL button 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.

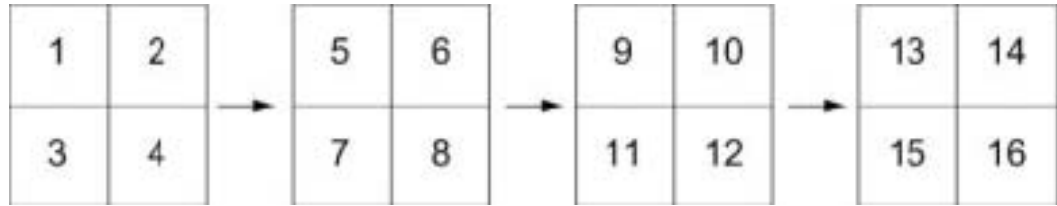
- . • Press a CHANNEL button to view the corresponding camera in full screen.
- . • Press ZOOM to enter a 2× full screen zoom mode of the selected camera.
- . • If you need to view specific area of the 2× zoomed screen, use Direction buttons to pan / tilt the zoomed area around the original image.
- . • 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.

Viewing in Sequence Mode

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.



To assign cameras to certain sequence, refer to Section 5.5.2 Main/ Call Monitor Schedule.

To Freeze Live Image

Press FREEZE 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 button directly. When press the PLAY/STOP button, 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.

Button Usage in Playback

The button usage is slightly changed in playback mode. Following is the

button usage found in playback mode.

LEFT (Reverse Playback)

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

RIGHT (Forward Playback)

The button is used to play the recorded video fast forward. Press the button 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 FREEZE to pause the current playback image.
- . • Press RIGHT / LEFT Direction buttons to move the video single step reverse / forward. Press and hold RIGHT / LEFT buttons to reverse / forward the video single step continuously.
- . • Press FREEZE again to resume the playback operation.

Viewing Live Image in Playback Mode

Press the MODE button repeatedly in playback mode, a 16-window viewing mode contains both live and playback image appears. This view mode is

1	2	3	4
5	6	7	8
1	2	3	4
5	6	7	8

Live Image

Playback

The eight windows on the top side of the screen are used to view 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.

Call Monitor Control

Users are allowed to use the PIV™ Series MPEG-4 DVR 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 button 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 1-8 Key To Select Channel Press SEQ To Enable Sequence

Call Mode

- Press CHANNEL button 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.

Searching Recorded Video

The PIV™ Series MPEG-4 DVR 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.

```
Search -----Search By Time----- From: 2005/01/01 00:00:00 End:
2005/05/01 00:00:00 Start Time: 2005/01/01 00:00:00 Begin Playback
```

```
-----Search By Event----- Select Channel: CH1 CH2 CH3 CH4
Event List
```

4.3.1 Searching by Time

Follow the steps to search video by date and time.

- Press SEARCH button 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 buttons 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 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

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 each event 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.

Deleting Recorded Video

User can delete the Normal and Event 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. 1. Purge All Data NO
2. 2. Purge All Event Data NO
3. 3. Purge Event Before 2000/01/01
4. 4. Start to Purge NO

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

Purge All Data

Select the item to delete all 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.

Dome Control

PIV™ Series MPEG-4 DVR allows user to control a dome camera by the front panel.

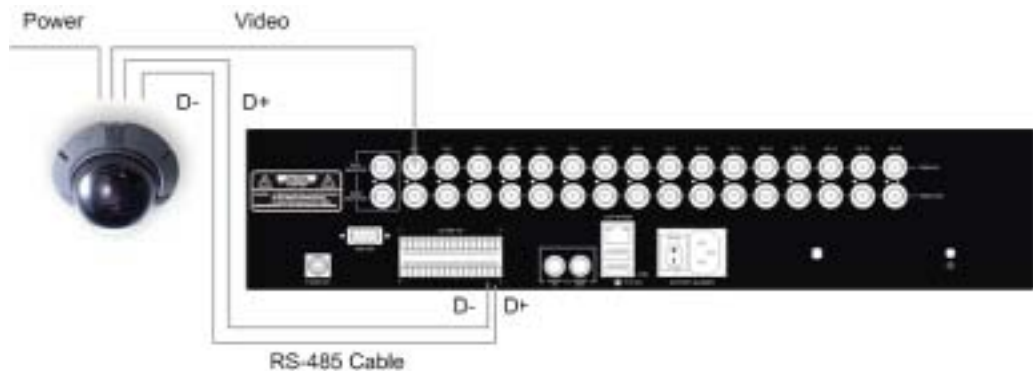
In Live mode, user can press CHANNEL button to display the desired dome camera in full view. To enter Dome Control mode, press the DOME button and press channel key 2 to display the hint screen; to exit the Dome Control mode and back to live mode, press ESC or DOME.

To configure the dome controls settings, see the following sections.

4.5.1 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.



4.5.2 Dome Protocol Setup

The Dome Protocol item lists the available dome protocols for communicating with dome cameras connected to the PIV™ Series MPEG-4 DVR. From the Main menu, select <Camera Setup> and press ENTER. The following menu is displayed.

Camera Setup

1. 1. Camera Select
2. 2. Dome Protocol
3. 3. Dome ID
4. 4. Camera Title
5. 5. Covert
6. 6. Termination
7. 7. Brightness
8. 8. Contrast
9. 9. Saturation
10. 10. Hue

CH1 None 0

NO
NO 0 0 0 0

To configure dome protocol, select a camera first and set the communications protocol

associated with dome camera using the Direction buttons and ENTER. The available protocol includes <IDView>, <Pelco D>, <Pelco P>, <AD422> and <None> (default).



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

4.5.3 RS485 Setup

PIV™ Series MPEG-4 DVR controls the domes via RS-485 communication protocol. The RS-485 parameters in PIV™ Series MPEG-4 DVR must be set to the same parameters as the protocol for RS-422 setup of the dome.

Users are allowed to change the RS-485 settings of the PIV™ Series MPEG-4 DVR. 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.

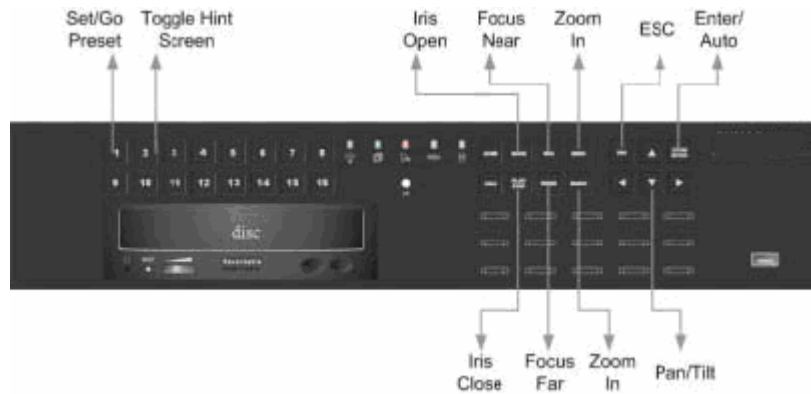
The default PIV™ Series MPEG-4 DVR RS-485 settings are 9600 Baud, 8 Data Bits, 1 Stop Bit and No Parity.



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

4.5.4 Dome Controlling Button

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



Set / Go Preset

This button 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.

Toggle Hint Screen

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

Iris Open

Use to open the Iris on the dome camera.

Focus Near

Use to focus the dome camera near.

Zoom In

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

ESC

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

Auto / Enter

- 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.

Iris Close

Use to close the Iris on the dome camera.

Focus Far

Use to focus the selected dome camera far.

Zoom Out

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

Pan / Tilt

Use to pan and tilt dome camera.

4.5.5 Setting Preset Points

The PIV™ Series MPEG-4 DVR 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.
- . • Use Direction buttons to position the dome camera to desired position.
- . • Press 2 to view the dome control Hint Screen; press 2 again to toggle the Hint Screen.

Hint Screen DOME / ESC: Exit MODE / PLAY: Iris Open / Close SEQ /
FREEZE: Focus Near / Far MENU / SEARCH: Zoom In / Out ENTER: Auto
Focus / Iris ◀▲▼▶: Pan / Tilt CH1: Set / Go Preset CH2: Hint Screen On / Off

Dome Control

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

Index 1 2 3 4 5 6 7

Dome Preset Set Preset NO NO NO NO NO NO NO

Go Preset NO NO NO NO NO NO NO

- . • Use UP / DOWN buttons 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.

4.5.6 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.
- Press 2 to view the dome control Hint Screen; press 2 again to toggle the Hint Screen.
- Press 1 to access the Set/Go Preset function.
- Use UP / DOWN buttons 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.

Index	Dome Preset	
	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

Video Export

The unit allows you to export wanted video to the built-in CD-RW or an external device, such as a USB thumb Drive, 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.

4.6.1 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.

```
ezBurn confirmation Selected Device: Built-in-CD-RW All data on the disc will be erased.  
Exported Required Size = 11 MB Real Export Range: From: 2005/11/07 AM10:41:13 To:  
2005/11/07 AM10:41:21 Enter: YES ESC: NO
```

- 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:

```
No exportable device detected.  
Please install the target device/media  
to the DVR.  
Enter: Retry ESC: Exit
```

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

4.6.2 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 “esBurn” 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.

```

ezBurn confirmation
Selected Device: Built-in-CD-RW
All data on the disc will be erased.
Exported Required Size = 11 MB
Export Event Info:
Data      Time      Ch      Type
205/11/07 AM10:42:35 13      Motion
Enter: YES  ESC: NO

```

5. Advanced System Configuration

The detailed functions and settings of PIV™ Series MPEG-4 DVR 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 DvrRemote™ Lite.

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. 1. System Setup
2. 2. Monitor Setup
3. 3. Camera Setup
4. 4. Record Setup

- 5. 5. Sequence Setup
- 6. 6. Event Setup
- 7. 7. Database Setup
- 8. 8. Configuration
- 9. 9. Shutdown

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. 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.

Version Hardware V1.0 Software xxxx-xxxx-xxxx-xxxx Software Upgrade via Local Device

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 PIV™ Series MPEG-4 DVR 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 buttons to choose <YES>. Press ENTER to confirm the selection and start the upgrade process. The PIV™ Series MPEG-4 DVR 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 Thumb drive/CD-ROM before the unit has completely shut down (hard drive and fan are off). Removing the external USB Thumb drive/CD-ROM before shut down can cause the system to update improperly.

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

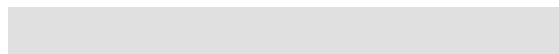
5.1.4 Unit Name

Users are allowed to assign a unit name, up to 11 characters, to the PIV™ Series MPEG-4 DVR.

Follow the steps to edit the unit name.

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

Unit Name



A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
a b c d e f g h i j k l m
n o p q r s t u v w x y z

0 1 2 3 4 5 6 7 8 9 . !@
 # - -
 ◀ ▶ Backspace Delete
 Cancel OK

- Use Direction buttons 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.

Password	
1. Admin Password	
2. User Password	
3. Enable Password	NO
4. Load Factory Password	None

5.1.5.1 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 buttons to select the desired account and press ENTER, the following menu is displayed.

Admin Password

Press Channel Keys To Enter Password
 (4-8 Digits)
 Press ◀ To Delete

Use CHANNEL buttons 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 three options to select from: <Admin> (reload the Admin password only), <User> (reload the User password only), and <All> (reload the Admin and User passwords). 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.

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

- ```

 Network Setup
1. 1. LAN Setup
2. 2. Trigger Port 80
```

Items in this menu are described in the following sections.

### 5.1.6.1 LAN Setup

The network related settings in the LAN Setup menu should be associated with the network service type.

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

#### LAN Setup

1. 1. DHCP ON
2. 2. IP xxx.xxx.xxx.xxx
3. 3. Netmask xxx.xxx.xxx.xxx
4. 4. Gateway xxx.xxx.xxx.xxx
5. 5. DNS xxx.xxx.xxx.xxx
6. 6. Connect At Booting YES
7. 7. 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 PIV™ Series MPEG-4 DVR. 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 Server”, 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 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.

## **-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>`. The

default setting is <YES>.

## **-Network Restart**

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

### **5.1.6.2 Trigger Port**

To avoid the default service port (port 80) to be blocked, the item enables user to change port 80 into another port.

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

### **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 Key Beep

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

### 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. 1. Show Camera Title YES
2. 2. Monitor Brightness 0
3. 3. Monitor Contrast 0
4. 4. Monitor Chrominance 0

5. 5. Screen Center Adjust
6. 6. Show Color Bar
7. 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 buttons 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**

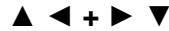
Move the cursor over the item and press ENTER for adjusting the chrominance of image displayed on the monitor. Use UP / DOWN buttons to adjust the numeric value. The range of chrominance values is <-128> to <127>; the default setting is <0>.

### **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.

Screen Center Adjust



- Position the screen center position using the Direction buttons.
- 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.

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

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 buttons.

### 5.3.2 Dome Protocol

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

### 5.3.3 Dome ID

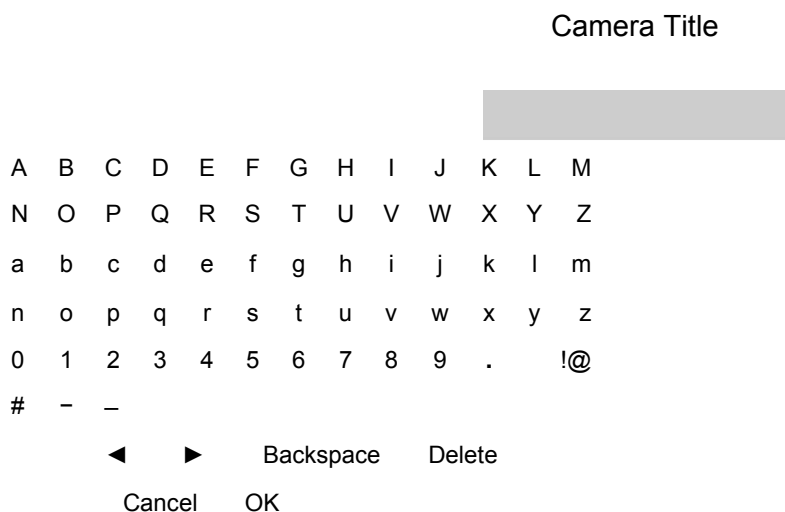
This item is used to assign an ID number to the selected dome camera. Note that ID number must match the ID address set by the dome.

### 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 buttons to position the cursor in the title entry field above the virtual keyboard.
- Use Direction buttons 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 it to be covert from the <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 buttons 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 buttons 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 buttons. 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 buttons to adjust the value.

### Record Setup

The following three factors will effect the total record time of PIV™ Series MPEG-4 DVR:

- . • 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        | 720×240@60PPS |
| 2. Schedule Setup     |               |
| 3. Preset Config      | Standard      |
| 4. ezRecord Setup     |               |
| 5. Circular Recording | ON            |
| 6. 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 × 480@30PPS>, <720 × 240@60PPS> and <360 ×

240@120PPS> in NTSC (<720×576@25PPS>, <720×288@50PPS>, <360× 288@SeriesPPS>in PAL).

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



**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. 1. Day Time Start 06:00
2. 2. Night Time Start 18:00
3. 3. Weekend Schedule YES
4. 4. Weekend Start Fri 18:00
5. 5. Weekend End Mon 06:00

### 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>, <ezRecord >, <512Kbps DSL>, <256Kbps DSL> and <128Kbps DSL >.

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>.

| <b>Record Mode: Full-D1 mode (NTSC: 720×480@30PPS) (PAL: 720×576@25PPS)</b> |                                  |                    |                               |                   |                        |
|-----------------------------------------------------------------------------|----------------------------------|--------------------|-------------------------------|-------------------|------------------------|
| <b>Preset Configuration</b>                                                 | <b>Normal PPS</b>                | <b>Normal Size</b> | <b>Event PPS</b>              | <b>Event Size</b> | <b>Event Active</b>    |
| Best Quality                                                                | 3.75 NTSC<br>(3.125 PAL)         | 20 KB              | 15 NTSC<br>(12.5 PAL)         | 20 KB             | Both<br>(Alarm+Motion) |
| <b>Standard<br/>(Default)</b>                                               | <b>3.75 NTSC<br/>(3.125 PAL)</b> | <b>14 KB</b>       | <b>15 NTSC<br/>(12.5 PAL)</b> | <b>20 KB</b>      | <b>Both</b>            |

|                                                                                           |                       |      |                    |       |      |
|-------------------------------------------------------------------------------------------|-----------------------|------|--------------------|-------|------|
| ezRecord                                                                                  | Auto                  | Auto | Auto               | Auto  | Auto |
| Extended Record                                                                           | 3.75 NTSC (3.125 PAL) | 8 KB | 15 NTSC (12.5 PAL) | 20 KB | Both |
| 512Kbps DSL                                                                               | 3 NTSC (3 PAL)        | 3 KB | 3 NTSC (3 PAL)     | 3 KB  | Both |
| 256Kbps DSL                                                                               | 3 NTSC (3 PAL)        | 2 KB | 3 NTSC (3 PAL)     | 2 KB  | Both |
| 128Kbps DSL                                                                               | 3 NTSC (3 PAL)        | 1 KB | 3 NTSC (3 PAL)     | 1 KB  | Both |
| <b>NOTE:</b> If selecting Full-D1 mode, only the image from channel 1~8 will be recorded. |                       |      |                    |       |      |

| <b>Record Mode: Half-D1 mode (NTSC: 720×240@60PPS) (PAL: 720×288@50PPS)</b> |                              |                    |                           |                   |                     |
|-----------------------------------------------------------------------------|------------------------------|--------------------|---------------------------|-------------------|---------------------|
| <b>Preset Configuration</b>                                                 | <b>Normal PPS</b>            | <b>Normal Size</b> | <b>Event PPS</b>          | <b>Event Size</b> | <b>Event Active</b> |
| Best Quality                                                                | 3.75 NTSC (3.125 PAL)        | 17 KB              | 15 NTSC (12.5 PAL)        | 17 KB             | Both (Alarm+Motion) |
| <b>Standard (Default)</b>                                                   | <b>3.75 NTSC (3.125 PAL)</b> | <b>11 KB</b>       | <b>15 NTSC (12.5 PAL)</b> | <b>17 KB</b>      | <b>Both</b>         |
| Extended Record                                                             | 3.75 NTSC (3.125 PAL)        | 5 KB               | 15 NTSC (12.5 PAL)        | 17 KB             | Both                |
| ezRecord                                                                    | Auto                         | Auto               | Auto                      | Auto              | Auto                |
| 512Kbps DSL                                                                 | 3 NTSC (3 PAL)               | 3 KB               | 3 NTSC (3 PAL)            | 3 KB              | Both                |
| 256Kbps DSL                                                                 | 3 NTSC (3 PAL)               | 2 KB               | 3 NTSC (3 PAL)            | 2 KB              | Both                |
| 128Kbps DSL                                                                 | 3 NTSC (3 PAL)               | 1 KB               | 3 NTSC (3 PAL)            | 1 KB              | Both                |

| <b>Record Mode: CIF mode (NTSC: 360×240@120PPS) (PAL: 360×288@SeriesPPS)</b> |                            |                    |                           |                   |                     |
|------------------------------------------------------------------------------|----------------------------|--------------------|---------------------------|-------------------|---------------------|
| <b>Preset Configuration</b>                                                  | <b>Normal PPS</b>          | <b>Normal Size</b> | <b>Event PPS</b>          | <b>Event Size</b> | <b>Event Active</b> |
| Best Quality                                                                 | 7.5 NTSC (6.25 PAL)        | 14 KB              | 15 NTSC (12.5 PAL)        | 14 KB             | Both (Alarm+Motion) |
| <b>Standard (Default)</b>                                                    | <b>7.5 NTSC (6.25 PAL)</b> | <b>8 KB</b>        | <b>15 NTSC (12.5 PAL)</b> | <b>14 KB</b>      | <b>Both</b>         |
| Extended Record                                                              | 7.5 NTSC (6.25 PAL)        | 2 KB               | 15 NTSC (12.5 PAL)        | 14 KB             | Both                |
| ezRecord                                                                     | Auto                       | Auto               | Auto                      | Auto              | Auto                |
| 512Kbps DSL                                                                  | 3 NTSC (3 PAL)             | 3 KB               | 3 NTSC (3 PAL)            | 3 KB              | Both                |

|             |                |      |                |      |      |
|-------------|----------------|------|----------------|------|------|
| 256Kbps DSL | 3 NTSC (3 PAL) | 2 KB | 3 NTSC (3 PAL) | 2 KB | Both |
| 128Kbps DSL | 3 NTSC (3 PAL) | 1 KB | 3 NTSC (3 PAL) | 1 KB | Both |

## 5.4.4 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 2 Days Daytime Record Yes Night Record Yes
Weekend Record YesThe Quality will Be Fair
```

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 of 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 item 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>.

## 5.4.5 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 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 buttons.

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

### 5.4.6.1 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>.

### 5.4.6.2 Purge All Event Data

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

### 5.4.6.3 Purge Event Before

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

### 5.4.6.4 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.

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

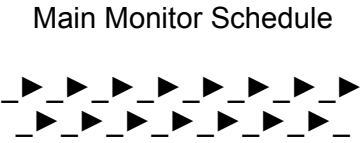
Items in the Sequence Setup menu are described in the following subsections.

### 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.



Press 1-16 Key To Select Channel Press ◀ To Delete

Follow these steps to set a sequence:

- . • Press LEFT direction button to delete the original setting.
- . • Press the desired Channel buttons 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.

## Event Setup

This menu allows user to determine PIV™ Series MPEG-4 DVR 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. Event Full Alarm   | OFF   |
| 4. Event Duration     | 5 sec |
| 5. 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 PIV™ Series sMPEG-4 DVR 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 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 Series seconds. The default setting is 5 seconds.

## 5.6.4 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

### 5.6.4.1 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 buttons. Press ENTER again to confirm the setting.

### 5.6.4.2 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>.

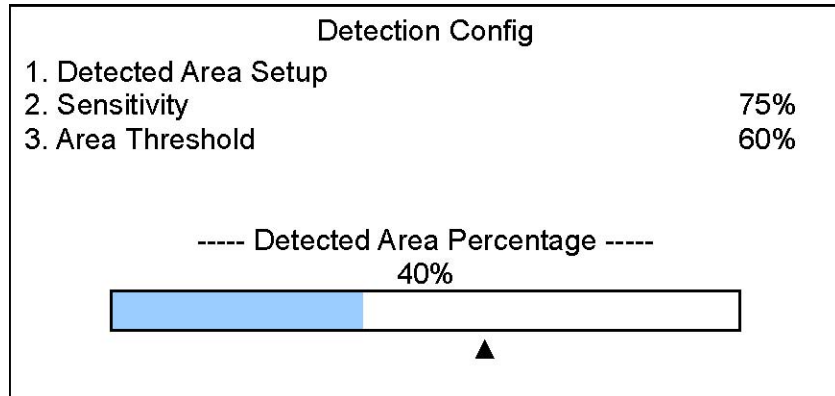
### 5.6.4.3 Motion Detect

Use to enable or disable the motion detection function of the PIV™ Series MPEG-4 DVR. 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.

### 5.6.4.4 Detection Configuration

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 buttons 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 buttons 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 buttons 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.

### **5.6.4.5 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.

### **5.6.4.6 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.

Select from the options: <A Only > indicates "Alarm Out A", <B Only> indicates "Alarm Out B", <A+B> indicates "A and B Alarm Out" and <None> indicates "No Alarm Out". The default setting is <None>.

## 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. 1. Total Size xxx GB
  2. 2. Free Sizexxx GB
  3. 3. Avail REC Time 3Days 7Hrs
  4. 4. Internal Disks
  5. 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 xxxxxxxx-xxxxxxx | 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.

## 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. 1. Load Factory Default NO
  2. 2. Import Config
  3. 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. 1. Copy Destination
2. 2. Config Name
3. 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:** The DVR doesn't support CD-RW as a copy destination.



### 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 Shutdown

The item is used to shut down or reboot the unit. If you must shut down the PIV™ Series MPEG-4 DVR for any reason, please use the proper shut down and power up procedures to avoid damage to your unit.

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

#### Shutdown

1. 1. Power Off
2. 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.

| Specifications             |                               |                     |                                                                                                                                                                           |                        |
|----------------------------|-------------------------------|---------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <b>Video</b>               | <b>Operation System</b>       |                     | Embedded (Linux)                                                                                                                                                          |                        |
|                            | <b>Video Stand</b>            |                     | NTSC/PAL switch selectable                                                                                                                                                |                        |
|                            | <b>Video Operation</b>        |                     | Triplex+ (Live, Record, Playback, Remote, and Internet access)                                                                                                            |                        |
|                            | <b>Resolution- Live Video</b> |                     | NTSC: 720x480 pixels; PAL: 720x576 pixels                                                                                                                                 |                        |
|                            | <b>Input</b>                  |                     | BNCx16, 1.0Vp-p/75 ohm                                                                                                                                                    |                        |
|                            | <b>Outputs</b>                | <b>Main Monitor</b> | BNCx1, S-Videox1, 1.0Vp-p/75 ohm                                                                                                                                          |                        |
|                            |                               | <b>Call Monitor</b> | BNCx1, 1.0Vp-p/75 ohm                                                                                                                                                     |                        |
|                            |                               | <b>Loop</b>         | BNCx8, 1.0Vp-p/75 ohm                                                                                                                                                     | BNCx16, 1.0Vp-p/75 ohm |
|                            | <b>VGA Output</b>             |                     | 800x600, 1024x768, 1280x1024 pixels @ 60Hz (Optional)                                                                                                                     |                        |
|                            | <b>Picture Refresh Rate</b>   |                     | NTSC: 480PPS (16 CH); PAL: 400PPS (16CH)                                                                                                                                  |                        |
| <b>Digital Zoom</b>        |                               | 2x2                 |                                                                                                                                                                           |                        |
| <b>Camera Installation</b> |                               | Plug & Play         |                                                                                                                                                                           |                        |
| <b>Audio</b>               | <b>Input</b>                  |                     | RCAx1, Line-In                                                                                                                                                            |                        |
|                            | <b>Output</b>                 |                     | RCAx1, Line-Out                                                                                                                                                           |                        |
|                            | <b>Recording Mode</b>         |                     | Always Real Time Record, Synchronized w/ Video                                                                                                                            |                        |
|                            | <b>Compression Method</b>     |                     | ADPCM, G.726                                                                                                                                                              |                        |
|                            | <b>File Size</b>              |                     | 8KB/Sec                                                                                                                                                                   |                        |
|                            | <b>Operation</b>              |                     | Remote + VCR mode                                                                                                                                                         |                        |
|                            | <b>Playback</b>               |                     | Only for Video Original Speed                                                                                                                                             |                        |
| <b>Recording</b>           | <b>Compression Method</b>     |                     | MPEG-4 Advanced Simple Profile                                                                                                                                            |                        |
|                            | <b>Recording Mode</b>         |                     | Schedule, Alarm, Motion Detection                                                                                                                                         |                        |
|                            | <b>Resolution &amp; Rate</b>  |                     | NTSC: 30PPS@720x480 pixels; PAL: 25PPS@720x576 pixels<br>NTSC: 60PPS@720x240 pixels; PAL: 50PPS@720x288 pixels<br>NTSC: 120PPS@360x240 pixels; PAL: 100PPS@360x288 pixels |                        |
|                            | <b>Recording Quality</b>      |                     | 5 levels presets, adjustable                                                                                                                                              |                        |
|                            | <b>Image Size</b>             |                     | 2K to 20K Byte/Picture                                                                                                                                                    |                        |
|                            | <b>Storage Mode</b>           |                     | Linear/Circular                                                                                                                                                           |                        |
| <b>Playback</b>            | <b>Playback</b>               |                     | Play, Stop, Pause, Rewind, Forward, Search                                                                                                                                |                        |
|                            | <b>Playback Speed</b>         |                     | Yes (1x, 2x, ... 32x)                                                                                                                                                     |                        |

|                      |                                      |                                                                             |
|----------------------|--------------------------------------|-----------------------------------------------------------------------------|
|                      | <b>Adjustment</b>                    |                                                                             |
|                      | <b>Retrieve</b>                      | Date/Time, Event                                                            |
| <b>Storage</b>       | <b>Build-in Storage</b>              | X2 ATA 133/ UDMA 133 IDE, HDD/CD-RW                                         |
|                      | <b>Built-in HDD</b>                  | Up to 2 built-in HDDs                                                       |
|                      | <b>Export</b>                        | X3 USB2.0 ports, support ThumbDrive® and CD-RW                              |
| <b>Alarm</b>         | <b>Alarm Input</b>                   | X16, Terminal Block                                                         |
|                      | <b>Alarm Detection</b>               | N.C./N.O., Programmable                                                     |
|                      | <b>Auditory Alert</b>                | Built-in Buzzer                                                             |
|                      | <b>Motion Detection</b>              | 21x13 (NTSC), 21x16 (PAL) Grid Array,<br>Sensitivity, Trig Level Adjustable |
|                      | <b>Video Loss Detection</b>          | Programmable                                                                |
|                      | <b>Alarm Relay Output</b>            | X2, Terminal Block, 1.0A/24V (Programmable)                                 |
| <b>Communication</b> | <b>Network Connectivity</b>          | Ethernet RJ-45 connector, 10/SeriesMbps, supports DHCP                      |
|                      | <b>Remote Control Software</b>       |                                                                             |
|                      | <b>Access Control</b>                | 2 Level Password                                                            |
|                      | <b>Remote Operation</b>              | Monitoring, Instant Recording, Dome Camera Control                          |
|                      | <b>RS485</b>                         | Terminal Block                                                              |
|                      | <b>Dome Control Protocol</b>         | IDView, Pelco P, Pelco D, AD422                                             |
| <b>General</b>       | <b>Unit Dimension (WxHxD)</b>        | 440x90x345mm (17.3x3.45x13.58 inches)                                       |
|                      | <b>Unit Weight</b>                   | 5.7Kg (12.56 lbs) w/ CD-RW                                                  |
|                      | <b>Package Dimension (WxHxD)</b>     | 590x210x460 mm (23.2x8.27x18.1 inches)                                      |
|                      | <b>Package Weight</b>                | 8.2Kg (18.06 lbs)                                                           |
|                      | <b>Operation Temperature</b>         | 0°C - 40°C (32°F - 104°F)                                                   |
|                      | <b>Relative Humidity</b>             | 5% - 85% Non-condensing                                                     |
|                      | <b>Power Consumption &amp; Input</b> | AC Series ~ 240V, 50-60Hz, 80W                                              |

## 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 @30PPS (without Audio)

| Recording Rate                 |                         | Recording Picture Quality Mode |               |                 |                |                 |                |                 |                |                 |                |
|--------------------------------|-------------------------|--------------------------------|---------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|-----------------|----------------|
| Total Images Per Second        | Total Images Per Second | Low                            |               | Fair            |                | Mid             |                | High            |                | Best            |                |
|                                |                         | NTSC<br>(8 KB)                 | PAL<br>(8 KB) | NTSC<br>(11 KB) | PAL<br>(11 KB) | NTSC<br>(14 KB) | PAL<br>(14 KB) | NTSC<br>(17 KB) | PAL<br>(17 KB) | NTSC<br>(20 KB) | PAL<br>(20 KB) |
| <b>160 GB Internal Storage</b> |                         |                                |               |                 |                |                 |                |                 |                |                 |                |
| 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           |
| <b>300 GB Internal Storage</b> |                         |                                |               |                 |                |                 |                |                 |                |                 |                |
| 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           |
| <b>600 GB Internal Storage</b> |                         |                                |               |                 |                |                 |                |                 |                |                 |                |
| 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 @60PPS (without Audio)

| Recording Rate          |                         | Recording Picture Quality Mode |     |      |     |      |     |      |     |      |     |
|-------------------------|-------------------------|--------------------------------|-----|------|-----|------|-----|------|-----|------|-----|
| Total Images Per Second | Total Images Per Second | Low                            |     | Fair |     | Mid  |     | High |     | Best |     |
|                         |                         | NTSC                           | PAL | NTSC | PAL | NTSC | PAL | NTSC | PAL | NTSC | PAL |

| NTSC                           | PAL  | (5 KB) | (5 KB) | (8 KB) | (8 KB) | (11 KB) | (11 KB) | (14 KB) | (14 KB) | (17 KB) | (17 KB) |
|--------------------------------|------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| <b>160 GB Internal Storage</b> |      |        |        |        |        |         |         |         |         |         |         |
| 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    |
| <b>300 GB Internal Storage</b> |      |        |        |        |        |         |         |         |         |         |         |
| 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    |
| <b>600 GB Internal Storage</b> |      |        |        |        |        |         |         |         |         |         |         |
| 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 @120PPS (without Audio)**

| Recording Rate                 |                         | Recording Picture Quality Mode |        |        |        |        |        |         |         |         |         |
|--------------------------------|-------------------------|--------------------------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| Total Images Per Second        | Total Images Per Second | Low                            |        | Fair   |        | Mid    |        | High    |         | Best    |         |
|                                |                         | NTSC                           | PAL    | NTSC   | PAL    | NTSC   | PAL    | NTSC    | PAL     | NTSC    | PAL     |
| NTSC                           | PAL                     | (2 KB)                         | (2 KB) | (5 KB) | (5 KB) | (8 KB) | (8 KB) | (11 KB) | (11 KB) | (14 KB) | (14 KB) |
| <b>160 GB Internal Storage</b> |                         |                                |        |        |        |        |        |         |         |         |         |
| 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    |
| <b>300 GB Internal Storage</b> |                         |                                |        |        |        |        |        |         |         |         |         |
| 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 |