H.264 HD-SDI 1080P Resolution Digital Video Recorder

User's Manual

VER. 2.0

Future of Digital Video Recording at Hand

Safety Information

*The safety information is provided for the wellness of the equipment and for the safety of the operator.
Please review and observe all instructions and warnings in this manual.*

> **Note :** *Keep this manual handy every time you operate this equipment. Also, check with your dealer
> for further assistance and for the latest revision of this manual. Your dealer might provide you with a
> digital version of this manual. We also ask you to keep the original box and packing materials in case
> of return or for long-term storage of the DVR unit.*

Preparations before installation

To protect your DVR from damage and to optimize performance, be sure to keep the DVR away from dust,
humidity, and areas with high voltage equipment such as a refrigerator.

Do not install or place equipment in areas where the air vents can be obstructed, such as in tight enclosures
or small utility closets.   Keeping the unit in a temperature-controlled room with ample regulated power is
highly recommended.   Do not overload the wall outlet, as this can result in the risk of fire or electric shock.

Uninterruptible power devices such as UPS power surge protectors are recommended, and the DVR units
must at least be connected with a UL, CUL, or CSA approved power surge protector. Avoid direct sun light
and avoid heat.

FCC Information

This equipment has been tested and found to comply with the limits of Class A
digital device, pursuant to part 15 of the FCC Rules. These limits are designed to
provide reasonable protection against harmful interference when the equipment is
operated in a commercial environment. This equipment generates, uses, and
radiates radio frequency energy, and if not installed and used in accordance with the
user manual, it may cause harmful interference to radio communications.   Operation of this equipment in a
residential area is likely to cause harmful interference, in which the user will be required to correct the
interference at his own expense. Changes or modifications not expressly approved by the party responsible
for compliance could void the user's authority to operate the equipment under FCC rules.

UL Information

- For pluggable equipment, the socket-outlet shall be installed near the equipment and shall be easily
accessible.

- If the battery is placed elsewhere in the equipment, there shall be a marking close to the battery or
statement in the servicing instructions.

CAUTION	RISK OF EXPLOSION IF AN INCORRECT BATTERY TYPE IS USED. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS. THIS EQUIPMENT IS FOR INDOOR USE, AND ALL THE COMMUNICATION WIRING IS LIMITED TO INDOORS.

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Chapter 1

DVR USER MANUAL

1. Getting Started

1.1 Checking Supplied Items

Verify you have the following items supplied with your DVR. If any of these items are missing or damaged, notify your vendor immediately. Do not dispose of the packing utilities in case of moving or storage purposes.

Items	Photo	Quantity
Quick Start Guide		1
CD (Manual & Software)		1
Power Cable and Rack Mount Bracket (W/ Screws)		1
IR Remote Controller		1
USB Mouse		1
Rack Mount Bracket (W/ Screws)		2 (Brackets) 4 (Screws)

1.2 DVR Features

- H.264 Video Compression
- Recording & Playback at 1280x720 or 1920 x 1080
- Full HD Display - HDMI Output (1920 x 1080)
- Digital Zoom Function on LIVE & PLAYBACK
- Multi-Channel Audio Recording
- Video Loss and S.M.A.R.T HDD Error Detection
- E-Mail Notification
- DVD-RW Built In
- Free DDNS
- Easy Software Upgrade by USB Port and Network Software
- Instant and Convenient Backup via USB Flash Drive, Network, or DVD-RW
- Watermarked Backup Format and Digital Zoom Function on DVR player
- AVI Backup
- Individual Channel Operation
- Intuitive and Easy GUI Interface
- Remote Client Software
- 4 Sensor Input, 2 Output
- Powerful Mobile Application on iPhone and Android Phone
- Easy and Convenient Setup

1.3 System Startup and Shutdown

1.1.1 System Startup

Make sure all necessary devices are properly connected to the back of the DVR (See section 1.5 REAR PANEL for additional information). Connect the power cord to the power jack on the rear panel of the DVR.

The boot-up screen will display as shown below. Please wait until the boot-up process completes.

When the DVR boots up for the first time, you will be asked to setup the language and date & time for the DVR.

Then, live mode will display.

TROUBLESHOOT	**Camera Connection** Cameras must be connected to the system **before** turning on the DVR. If a camera is connected to the DVR is in use, the camera's signal will not be detected properly. This may result in an abnormal display on live mode & an error message in playback mode. If this occurs, check the camera's resolution & adjust the resolution settings in the DVR for that camera. Then, restart the system.

1.1.2 System Login

LOGIN screen is displayed. Select USER (ADMIN/USER1/USER2/USER3), then enter the password.

Default Password: 1111
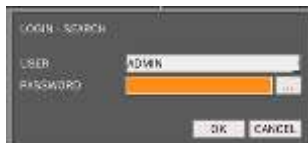
1.4   Front Panel

Front panel allows the user to operate the DVR without having to use the IR remote or a mouse.

NOTE   **I- Backup (Instant Backup)**
In playback mode, the user can press the [I-BACKUP] button on the front   keypad to configure both Start and End time. Once the times are set, click the [START] button to start the backup process.
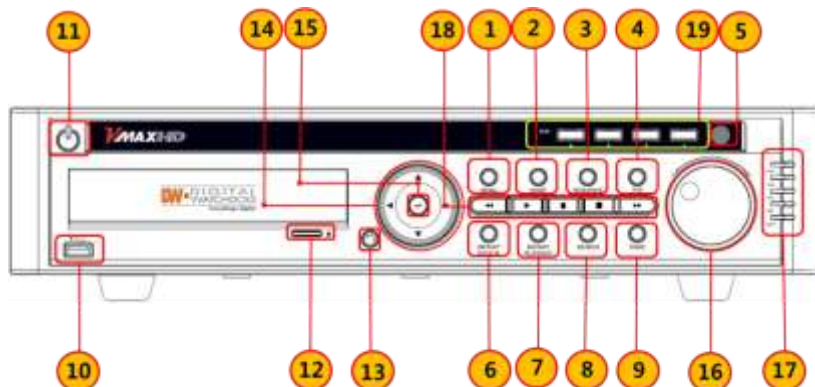
No.	Buttons	Functions
1	Menu	Display the Setup Menu.
2	Mode	Change the cameras display Mode between single channel & 4-channel view.
3	Sequence	Change the display channel automatically when in single channel mode.
4	PTZ	Control a PTZ camera.
5	IR Receiver	IR Receiver for Remote controller.
6	Instant Backup	Start "Instant Backup" to a USB flash drive.
7	Instant Playback	View video playback. By default, video will be displayed from the last 3 minutes before current time.
8	Search	Go to search mode.
9	Panic Record	Start Emergency Recording.
10	USB Port	USB Port (Ver. 2.0) for Mouse Operation, Backup or Firmware Upgrade.
11	Power	Turn DVR On/Off.
12	DVD Door Button	Open & Close the DVD's protecting door.
13	ESC	Exit Menu or back to previous menu.
14	Directional Arrows	Menu Setup Navigation / Change Display Mode / PTZ Control.
15	Enter Button	Select Value or Setting.
16	Jog Shuttle	Fast Forward or Rewind when playback.
17	LED Indicator Indicate	System Status (from top to bottom): Power, HDD, Record, Network and Backup.
18	Playback Navigator	Play, Fast Forward, Rewind or pause.
19	Channel Button	Select Display channel 1,2,3 and 4.

1.5   Rear Panel
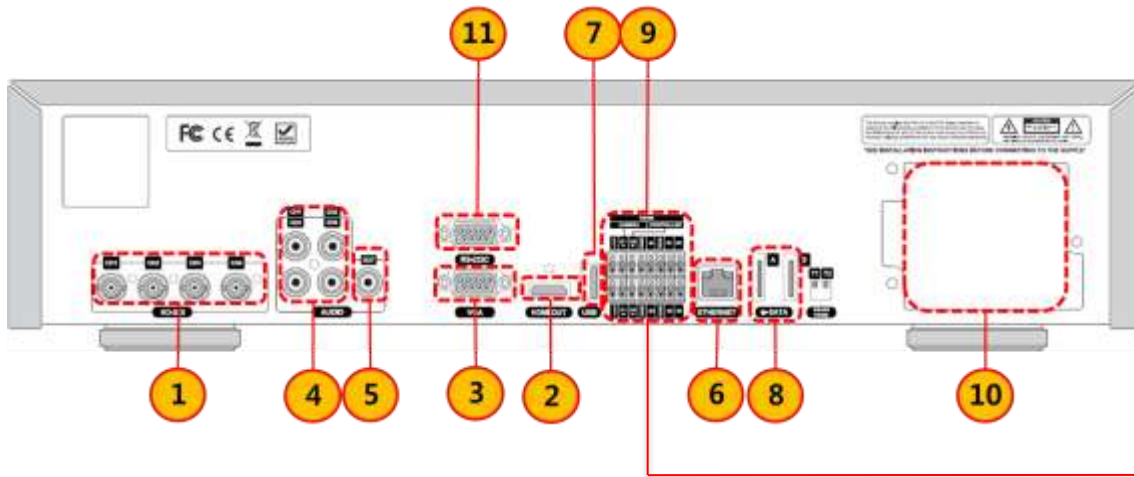
No.	Buttons	Functions		
1	Video In	Video input terminal		
2	HDMI Out	1920X1080 Main Monitor		
3	VGA	VGA (Video Graphics Array) output terminal. Connects to the PC VGA monitor.		
4	Audio In	Four connectors for audio input.		
5	Audio Out	One connector for audio output.		
6	Ethernet	RJ45 Network terminal		
7	USB	USB Terminal for mouse connection, backup and firmware upgrade.		
8	E-STATE	External SATA terminal		
9	Input & Output	1	RS-485	For PTZ Camera
		2	RS-485	For Keyboard Controller
		3	Reserved Pin	Currently not in use
		4	Sensor Input	Connect 4 sensors input
		5	Alarm Output	Connect 1 alarm output
10	Power	DC12V input		
11	RS-232C	RS-232 Connection terminal for engineering and debugging.		
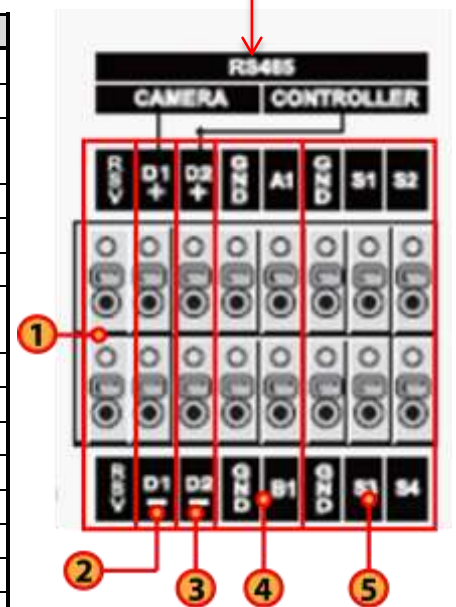
1.6 IR Remote Control

The IR remote controller allows you to control the DVR without the mouse or front panel buttons.
To use IR Remote Controller, the ID of the IR Controller must be the same as the ID of the DVR.
Default ID # for DVR and IR Remote Controller is "1".
If you have more than one DVR you can use one IR remote by setting a unique ID for each DVR.

No.	Buttons	Functions
A	Power	Goes to standby mode or turns on
B	Display	Display single or split screen
C	F/REW	During playback - Moved video 60 seconds backward. During pause- Moved video one frame backward.
D	F/ADV	During playback – Moves video 60 seconds forward. During pause – Moves video one frame forward.
E	Play	Play or pause the footage in playback
F	REW	Rewind video at different speeds during playback.
G	FF	Fast forward video at different speeds during playback.
H	Backup	Start backup in live or playback mode.
I	Alarm	Disable alarm operation.
J	Setup	Launch SETUP menu.
K	Audio	Mute, Single, MIX for all channels in single or split mode.
L	SEQ	Start auto sequencing of the screen in full screen mode.
M	Lock	Lock all of key function.
N	Record	Start and stop PANIC recording.
O	Search	Go to the search menu.
P	Arrows	Move Up/ Down/ Left/ Right between display menus.
Q	Select	Select menu or store setup value.
R	ID	When using the controller with more than one DVR, press ID and the number corresponding to the DVR's ID.
S	ESC	During setting - return to previous menu screen. During playback - exit from playback.
T	Number pads	select channel (1~9) or enter DVR ID number
U	PTZ	Call a PTZ menu

2. **Operation**

2.1   Live Display Mode

2.1.1 Channel Selection

The images can be seen on real-time by in single channel or 4-channel mode as seen below. To switch from a single-channel view to a multi-channel view and vice versa, choose one of the following options:

| [1 Channel] | [4 Channel] |

1.   Using your Remote Control (See section **1.6 IR Remote Control** for more information):

  a.   Press the channel number you wish to view in single-channel mode.

  b.   Press the "Select" button to return to multi-channel mode.

  c.   If "Select" is pressed while in multi-channel mode, the DVR will display the last channel seen in single mode.

2.   Using the USB Mouse:

  a.   Move the mouse's cursor over to the channel you wish to view in single mode.

  b.   Double-click on the screen. The channel selected will be displayed in single-channel mode. You can also right-click to open the pop-up menu (see section **2.1.5 Pop-up Menu**) and select Display→ 1Screen.

  c.   To change from single to multi-channel mode, right-click on the screen and select Display→ 4Screens.

3.   Using the DVR's Front Panel (See section **1.4 Front Panel** for more information):

  a.   Press the channel number you wish to view in single-channel mode from the four buttons at the top of the DVR's front panel.

  b.   Press the "Enter" button to return to multi-channel mode.

  c.   If "Enter" is pressed while in multi-channel mode, the DVR will display the last channel seen in single mode.

Administrator user can set different level of authorization for each user. If a certain user is not allowed to view a certain playback channel, then no image will appear on the display screen. Refer to **3.1.2 User** for more information.

2.1.2 Icons Description

The DVR can be set to different recording modes, identified by an icon on each channel screen.

Icon Shown on Upper Right Corner		Icon Shown on Lower Right Side	
	Continuous Record	PANIC	Using Emergency Recording
	Motion Detection Record	P T Z	PTZ control is activated
	Sensor input Record	S E Q	Channels are displayed in Sequence Mode
	Emergency Recording		

2.1.3 Toolbar

Move the mouse cursor to the bottom of the screen in live mode to view the menu bar.

<Toolbar in Live mode>

	Setup Menu
	Single Screen Mode- Display the last channel viewed in single mode. Multi-Channel mode- Displays all 4 channels, based on user permissions.
	Freeze Button- Freeze live video
	Sequence Display Button
	Channel Selection Button
	Panic Record Button - In emergency recording, the system will follow recording settings.
	PTZ Control Button - Use the virtual PTZ controller to adjust the Pan/Tilt/Zoom/OSD/Tour/Auto-scan/Preset of a PTZ camera.
	Instant Playback - Playback the most recent video clip recorded
98%	HDD usage. If it shows 98%, 98% of the HDD space has been used for recording

NOTE	If you do not see any icon on the top right corner of the live screen mode; it means that the system is not recording. In this case, you need to check the [RECORD] settings in the main setup menu. See section **3.3 RECORD** for more information.

2.1.4 Pop-up Menu

Right clicking with your mouse on the screen will open the pop-up menu. This menu includes the main features for easy access.

DISPLAY	Select from Single Channel mode or multi-channel mode.
SEQUENCE **SEQ**	The display screen will display all channels one after another in a sequence (Available on single-screen mode).
AUDIO	Hear the audio from the camera through a speaker connected to DVR. Audio Mute, 1 channel or 4 channels.
ALARM	Enable or Disable "Alarm Out" function.
FREEZE	Live video pause in a still image (Refer to **2.2 Freeze**).
PTZ	Enable PTZ control. Available only in single channel mode and only when camera is setup as PTZ. (Refer to **2.4 PTZ**).
PANIC RECORD	Trigger Emergency Recording (Refer to **2.1.3 Toolbar**).
INSTANT PLAYBACK	Play the latest video recorded (Refer to **2.5 Instant Playback**).
SEARCH	Go to Search mode. (Refer to **2.7 Search**).
BACKUP	Save recorded video to an external USB flash drive. (Refer to **2.6 Backup & Instant Backup**).
MENU	Go to the main menu to set up the DVR. (Refer to **3.0 Setting**).
SYSTEM SHUTDOWN	Turn off the DVR. In order to turn it off, the password must be entered.

2.2   Freeze Mode

Freeze mode turns live video display to a still image. The date/ time information does not, the system clock continues running. To turn freeze mode on, click the right button on the mouse when viewing a live image and select the [FREEZE] option on the pop-up menu. You can also click on the ⟦ • ⟧ button at the menu bar.

To resume the live view, press [FREEZE] again, or click the right button on the mouse and select the [FREEZE] option.

2.3   Digital Zoom

VMAX HD supports Digital Zoom feature during live and playback mode

1. Double click the target channel.

2. Click the left button of the mouse and drag to make rectangular shape.

3. The smaller the rectangle you draw, the bigger the zoom.

4. To go back to full-size screen, click anywhere on the screen.

2.4   PTZ Operation

User can go to PTZ mode by selecting the   button on the menu bar located on the bottom of the main screen (Feature available in single channel mode).
You can also access the PTZ control from the DVR's front panel PTZ button.

In PTZ mode, click the right button on the mouse to display the pop-up menu for the PTZ function as seen in the image below.

To indicate you are in PTZ mode, the PTZ icon will appear at the bottom of the screen.

If you wish to switch from one PTZ channel to a new one, select INITIALIZE on the new channel to adjust the PTZ control to the settings set for the current channel.

To setup your PTZ camera, please see section **3.2 Device** for more information.

| **NOTE** | If a PTZ camera is not connected or not setup properly in the setup menu, this feature will be disabled. |

2.4.1 INITIALIZE

If you have multiple PTZ cameras connected to your VMAX HD, use the INITIALIZE command when you switch from one PTZ channel to the next. This will indicate to the DVR that the channel has been changed and the DVR will automatically update itself to match the PTZ settings of the current channel.

2.4.2 Pan/ Tilt

If selected, this virtual controller will allow full control of the camera's pan and tilt. Use this to adjust the camera's view from the DVR.

2.4.3 Zoom/ Focus

If selected, this virtual controller will allow full control of the camera's zoom and focus. Use this to adjust the camera's focus and optically zoom in and out of the camera's view.

2.4.4 OSD Menu

If selected, this virtual controller will allow full control of the camera's On Screen Display (OSD). Use this to control the camera's complete setup and configuration remotely from the DVR.

2.4.5 Auto Scan

Auto Scan enables you to start and stop scan patterns set in the camera. When selected, a numeric pad will appear on the screen. Use it to select the auto scan you want to activate and select START. To stop an Auto Scan, click on the STOP button.

NOTE   Auto Scan setup and configuration must be done via the PTZ camera's setup menu. Please consult your camera's manual for more information.

2.4.6 Preset

The Preset option enables you to setup and go to a specific preset. A preset is any unique position, focus and zoom set by the user for a specific purpose. When selected, a numeric pad will appear on the screen. Use it to select the preset number you want to modify or view. To set a specific preset, enter the preset's number. Then, move the PTZ camera to the desired position and click on SET. To view a preset, enter the preset's number and select GO. Make sure the preset you select has been set before selecting it.

NOTE   The number of presets varies for each PTZ camera based on make and model. The VMAX HD supports a maximum of 255 presets. Please consult your PTZ camera's manual for more information.

2.4.7 Tour

The Tour option enables you to start and stop a specific tour. A Tour is a function that enables the PTZ camera to move between 2 predetermined presets. To start a Tour, use the numeric pad to select a specific tour. Then click START to get the camera to start following the tour. To stop the camera's movement, click STOP. Tour setup requires at least two (2) presets to be available.

NOTE   Tour setup and configuration must be done via the PTZ camera's setup menu. Please consult your camera's manual for more information.

2.4.8 PTZ Exit

To exit PTZ control in the DVR, click on PTZ Exit.

2.4.9 OSD Control Via Coaxial Cable

The VMAX HD is equipped with the option of controlling the OSD menu of Digital Watchdog's HD-SDI Cameras with no need for additional cabling. This feature makes installation and camera configuration simpler than ever before.

Using the Coaxial cable as a two-way data transfer cable, the DVR can receive image from the camera and send back control commands at the same time.

1. To setup the DVR for OSD Remote Control (See Section **3.2.6 PTZ** for more information):

    a. Go to the DVR's Menu by following one of the following options:

        i. Right-click anywhere on the screen and select "Menu".

        ii. Press the Menu button on the front panel of the DVR.

        iii. Press the Setup button in the IR Remote Control.

    b. In the DVR's menu, go to Device→ PTZ.

    c. Select the channel you wish to setup. The screen behind the menu will display live image from the channel you have selected.

    d. Select "FASTRAX II COAX" from the Camera Protocol Drop-Down menu.

    e. Leave speed as default.

    f. Set the ID in the DVR's setup menu to match the camera's ID. The camera's ID can be found in the camera's OSD menu, under "Property".

REMEMBER!   If you have more than one of Digital Watchdog's HD-SDI cameras you wish to setup, you will have to assign each camera a different ID number. Then, match that ID number with the ID section in the DVR's Setup menu (Device→ PTZ).

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2. To Activate OSD Remote Control:

    a. In Live mode, select a single camera and switch to single-channel mode by following one of the following options:

        i. Double-click on the view from the selected channel

       ii.   Press the channel number in the top right corner of the DVR's Front Panel/

      iii.   Press the channel number using the remote control's numeric pad.

   b.   Right-click anywhere on the screen and select "PTZ". The PTZ icon will appear at the bottom right of the screen.

NOTE	If the camera has not been properly setup in the DVR's Setup menu, the PTZ option will not be displayed in the Pop-Up Menu.

   c.   Right- Click on the screen again and select OSD.

   d.   The camera's OSD menu will appear on the left side of the screen.

   e.   The DVR's OSD Virtual controller will appear on the bottom right side of the screen.

   f.   Using the virtual controller's arrows, move up and down the camera's menu options. Move left and right to adjust any available variables in the camera's setup menu.

   g.   Click on "SEL" to select a category or enter a sub-menu.

   h.   Click on "ESC" to exit a sub-menu into the camera's main menu.

3.   To Exit the Camera's OSD Menu:

   a.   Using the virtual controller, go to the camera's **9. EXIT** option and click "SEL".

   b.   Select "YES Save" to save any changes made to the camera's configuration.

   c.   Select "NO Save" to cancel any changes and exit the camera's menu.

2.5   Instant Playback of Recorded Video

To go to Playback mode, select one of the following options:

Click the ▶ button in the virtual menu bar or, right click on the screen and select "INSTANT PLAYBACK" from the pop-up menu.

[Playback Screen & Tool Bar]

Go to Channel		In single channel mode, select a specific channel to view.
Screen Display		Select from single and multi-channel view.
Search Bar		The search bar will display by default 24 hours of recorded data from 3 minutes before current time. Times when there is data recorded will be marked in orange. Using the mouse, you can click on any portion of the search bar to view video from that time automatically
Playback Controllers		Rewind. Select from 1x, 2x, 4x, 8x, 16x, 32x speed
		Frame-by-Frame Rewind
		Pause video
		Play Video
		Frame-by-Frame Fast Forward
		Fast Forward. Select from 2x, 4x, 8x, 16x, 32x speed
Search Options		Select from Calendar Search, Date & Time Search, First or Last Data System Log Search or Event Log Search (See section **2.7 Search Recording Image** for more information).
Calendar Search		Use this to search video for a specific date and time. (Dates available may vary depending on HDD size and settings. Please see 3.1.4 HDD for more information)
Remote Backup		Remote Backup video to an external storage device (See section **2.6.1 Backup** for more information).
Instant Backup		Perform Quick Backup during Playback(See section **2.6.2 Instant Backup** for more information).
Close Button		Close the playback mode and return to Live video.

2.6   Backup & Instant Backup

Connect an appropriate USB flash drive or insert an empty DVD to the DVD-RW and press [ ] to start the instant playback, or [ ] to start the remote backup.
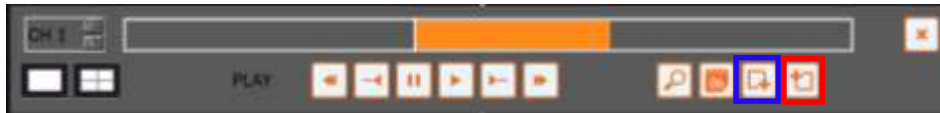
2.6.1 Backup

You can backup video from your DVR to an external storage device.

1. Click [ ] button on the toolbar. The following screen will be shown.

2. Select what cameras you want to backup.

3. Set the beginning date & time in [FROM].

4. Set the ending date & time in [TO].

5. Select the external memory device the backup file will be save to.

6. Click [FORM] and select the format of the file:

    a. Screen: capture the live screen in a still image.

    b. Video (NSF): Backup duration is up to 24 hours and it is watermarked.

    c. Video (AVI): Backup duration is up to 1 hour.

7. Click [BACKUP] to start the backup process

8. The progress of the backup will be displayed in the progress bar.
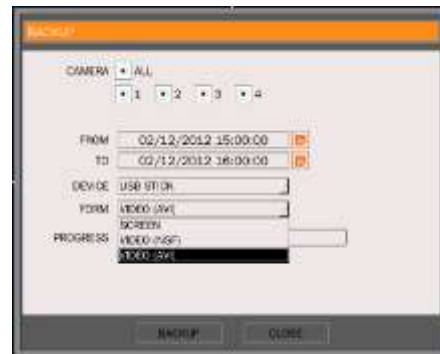
NOTE   DVD option for backup device is only displayed when DVD writer is built-in to the DVR.

2.6.2 Instant Backup

Click ⬚ button on the toolbar. The system will be in instant backup mode. Click on the backup icon again to indicate the end time of the instant backup file.

The INSTANT BACKUP screen will pop-up. Select format: NSF (Watermarked File Format) or AVI. Then, click NEXT and select the channels to back up. Press the START button to begin backing up the file.

2.6.3 Backup Video Player

[NSF]

When backing up video in NSF format, VMAX HD player will be saved with the video file. User can find it in the [DvrPlayer] folder in the USB flash drive. This function allows the user to play the video clip without having to install additional software on the computer.

To view a backup viedo in the NSF player:

1. Open the DVDPlayer

2. Open the folder where the playback video is located.

3. Using your computer mouse, click and hold on the file you want to view and drag it to the display screen of the DVDPlayer.

In 1channel full screen mode, Digital Zoom In/Out function is activated. Control the zoom in/out by scrolling the mouse's wheel forward/backwards, respectively.

< HD Player for NSF >

[AVI]

When archiving the video clip in AVI, it can be played with any general multimedia player.

2.7 Search Recording Image

There are four (4) ways to access the search features on the VMAX HD

1. Right click on the screen and select SEARCH in the pop-up menu.

2. Press the SEARCH button on the front panel.

3. Press the SEARCH button on the IR Remote Controller.

4. If in Playback mode, click on the Search options button 🔍 in the menu bar.

2.7.1 Calendar Search

The calendar displays dates with recorded video data in gray. Select the month and year by clicking the right and left arrow buttons. Then select the desired dates. The selected date is highlighted in orange. The recorded data for the selected date will appear.

Once the recorded video data of the selected date appears, user can adjust the vertical search line to the time you want to view by clicking with the mouse on a specific part of the search line. User can select specific minutes by using the clock button above the search line. Click [OK] to play the selected video.

The colors of the time bar are different, depending on the recording data:

No Color-No Recording.

Orange Color - Video recorded available

Green Color- Video recorded with Audio available

NOTE	If you know the exact Date & Time you wish to playback, it's recommended to use the "Date & Time" Search tool. If you are not sure about the specific date & time you are searching for, it is recommended to use the "Calendar" Search tool.

2.7.2 Date/Time Search

The calendar displays dates with recorded video data in gray color. The month and year by clicking on the arrows in the top right side of the window. Then select the desired dates. The selected date will be highlighted with orange color.   Enter the desired time and click OK button to start the play. By default, the hours in the time bar will be displayed every three hours.

DATE/TIME SEARCH						
MONTH FEBRUARY			YEAR 2012			
Sun	Mon	Tue	Wed	Thu	Fri	Sat
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29			

TIME (HOUR/MIN/SEC)   18 : 12 : 0

OK   CANCEL

2.7.3 First Data

This search option will display playback video of the oldest available recording.

2.7.4 Last Data

This search option will display playback video of the latest available recording.

2.7.5 System Log

The System Log Search finds particular system log information, quickly and easily.

The System Log Report can be save to a USB memory device as a .txt file.

1. Select a Date.

2. Select type of data you want to include in the log report.

   a. System: includes system reboot, errors and user access to the DVR.

   b. Setup: includes any setup changes.

   c. Panic Recording: when panic recording was enabled.

   d. Video: video loss.

   e. All: include all data.

3. Click Search to apply your selections to the log report.

4. To export the system log report to a USB drive, select the memory device from the list, and click EXPORT.

5. Once export is completed, the user can find a folder titled with the exported date created in the USB thumb drive (There is [system.log] file stored in the folder.)

2.7.6 Event Log

The Event Log Search finds particular events, quickly and easily.

1. Select a Date.

2. Select type of data you want to include in the log report.

    a. Motion: Video recorded when motion was detected.

    b. Sensor: Video recorded when a sensor was activated.

    c. Continuous: Video recorded continuously.

    d. Instant Recording: Video recorded when instant (panic) recording was enabled.

    e. All: include all data.

3. Click Search to apply your selections to the log report.

4. To export the system log report to a USB drive, select the memory device from the list, and click EXPORT.

5. Once export is completed, the user can find a folder titled with the exported date created in the USB thumb drive (There is [system.log] file stored in the folder).
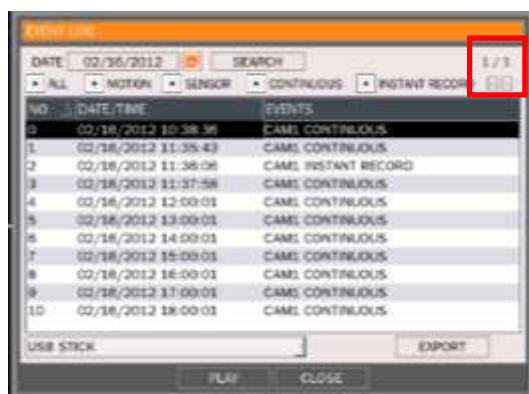
NOTE	If there is no alarm log even after the alarm input setting has been made, please check the alarm connection port of the DVR rear panel.
	Some Event and/or System Log data will be displayed in more than one page. To view the next page of data, click the arrow buttons in the top right corner of the window.

3. Settings

General setting structure consists of System, Device, Record, Network, and Quick Setup as shown below.

There are several ways to access the DVR's setup menu:

1. Right click on the screen and select MENU.

2. Click on the menu button in the virtual menu bar.

3. Press setup in the IR remote controller.

4. Press the menu button in the DVR's front panel.

Each Setup menu includes a [HELP] button for instant help on main features and settings. If you need more information or clarification, click on the Help button for more information.
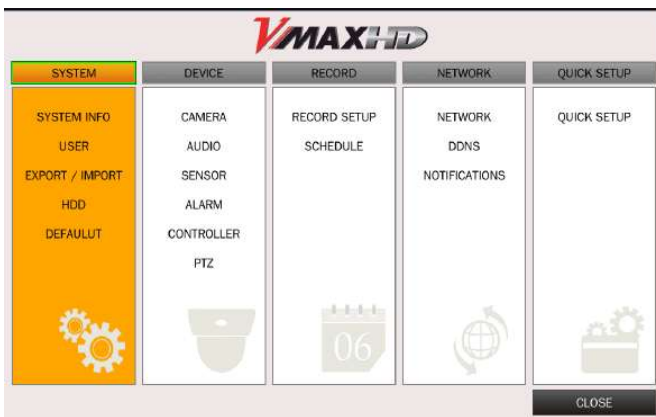
[MENU]

| TIP | If you remain in the menu screen without operation for 5minutes, the DVR automatically returns to live display mode. |

Main Menu	Sub Menu
SYSTEM	SYSTEM INFO
	USER
	EXPORT/IMPORT
	HDD
	DEFAULT
DEVICE	CAMERA
	AUDIO
	SENSOR
	ALARM
	CONTROLLER
	PTZ
RECORD	RECORD SETUP
	SCHEDULE
NETWORK	NETWORK
	DDNS
	NOTIFICATIONS
QUICK SETUP	QUICK SETUP

3.1   System

The SYSTEM Setup menu allows you to view the DVR's general information, modify user access to the DVR, export and import settings, manage the DVR's HDDs or set the DVR to its factory default settings.
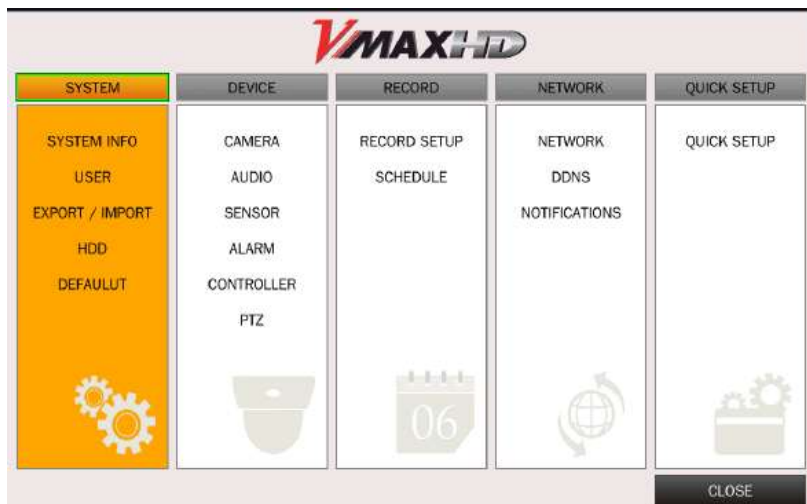
3.1.1 System Info

1. **SITE NAME**
   Set DVR ID using the mouse or the control button on the remote control. Press OK to apply the DVR ID.

2. **DATE/TIME**
   Set DVR date & time using the mouse or the control button on the remote control. Press OK to apply changes.

Select DAYLIGHT SAVING and select the appropriate daylight saving time zone.
The options are:

- OFF: Daylight saving is turned off.

- USA: Applies the USA daylight saving time.

- EU: Applies the EU daylight saving time.

- OTHERS: If the time zone is neither USA nor EU, set the date and time of the daylight saving period.

CAUTION

If using OTHER daylight savings, do not set the start time to 23:00 for DLS.
DLS cannot be applied if the date of BEGIN and END is the same.

3. **LANGUAGE**
   Select the display language.

4. **REMOTE ID**
   Select an ID of remote control.

   - Select ID number.

   - Press the same number as ID set in DVR on the remote.

5. **VIDEO SIGNAL**
   Shows the video resolution of each camera connected to DVR.

6. **IP ADDRESS**
   Shows the current network address of DVR.

7. **MAC ADDRESS**
   Shows the DVR's unique Mac address.

8. **KEY TONE**
   Enable or Disable the key tone for button operation on the front or IR remote controller.

9. **VIDEO OUTPUT(HDMI/VGA)**

   Select the Video output resolution from the following options:

   - 1280x720p/1920x1080i/1920x1080p/1280x720p(DVI)/1920x1080i(DVI)/1920x1080(DVI)

   - DVI (Digital Visual Interface) is for monitors that use DVI signal format.

10. **F/W VERSION**
    Shows the current firmware version installed on the DVR.

11. **SYSTEM UPGRADE**
    Users can easily upgrade the DVR via USB or Network (Remote Upgrade).

    a. Create a new folder named "upgrade" in the USB flash drive root directory.

    b. Copy the firmware upgrade files to that folder.

c. Plug in the USB flash drive on the front panel.

d. Select SYSTEM UPGRADE.

e. Select 'SCAN.' The DVR will automatically begin the upgrade process. The progress of the upgrade will be displayed in the percentage bar.

f. When Upgrade is complete, system will reboot to apply the new upgrade.
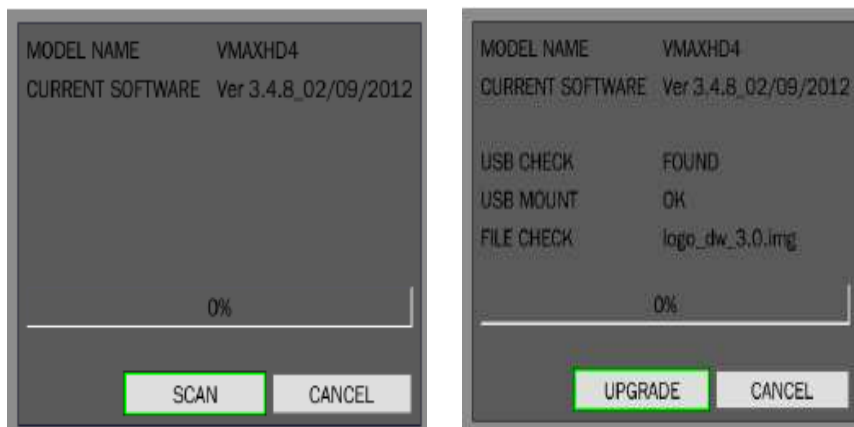
3.1.2 User
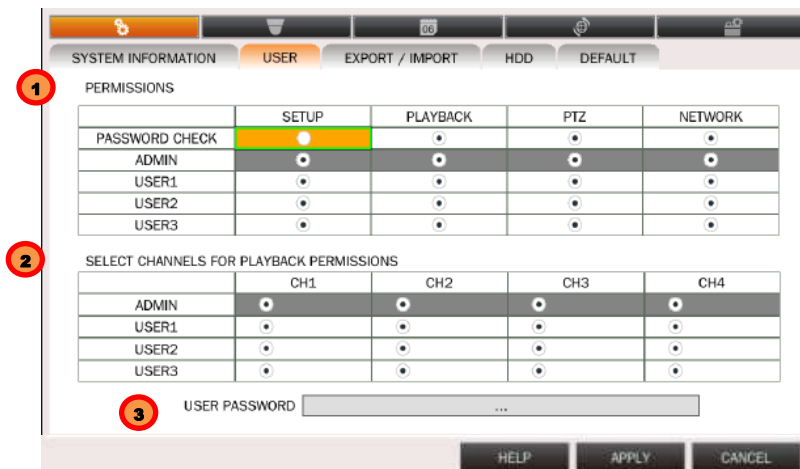
The user setup menu allows administrator to control different users' access to the DVR.

1. **PERMISSIONS**
   Admin's permissions will appear in gray, indicating it cannot be modified.
   Only the Admin will have access to the menu.

   a. PASSWORD CHECK: Check the boxes next to each user to enable or disable their access to specific features and to specific channels.

Selected Checkbox: The DVR will ask for a password when the function is selected for all users.

b. Blank Checkbox: The DVR will not ask for a password when the function is selected for all users.

c. SETUP: Enable/Disable of access to Setup

d. PLAYBACK: Enable/Disable of access to Playback

e. PTZ: Enable/Disable of access to PTZ Control

f. NETWORK: Enable/Disable of access to Network

2. **SELECT CHANNELS FOR PLAYBACK PERMISSIONS**
   Admin's Channel Access will be in gray, indicating it cannot be modified.

   a. Set authority level of playback on each user.

   b. Checked box: authorized to playback.

   c. Blank check box: No authority.

3. **USER PASSWORD**
   Options are ADMIN, USER1, USER2 and USER3.

   a. Select USER PASSWORD using the mouse or the control button on the remote control and press SEL button.

   b. Select the user you want to modify and enter the current password.

   c. Enter a new password and confirm password

   d. Select OK. Then the message "MATCH PASSWORD" will be displayed.

   i. The factory default password for all users is "1111".

   ii. The password input is available up to 8 digits.
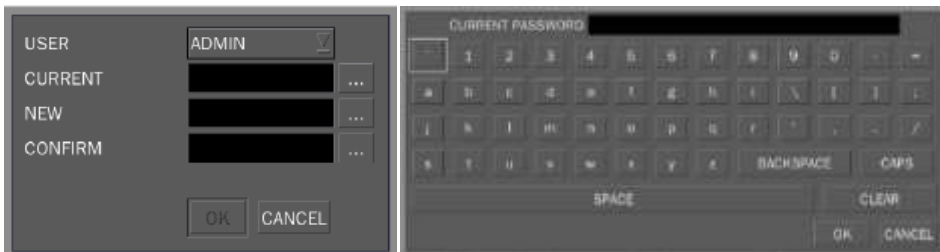
NOTE	Each DVR can have up to 4 users, including the Administrator. **It is highly recommended to assign a new password to protect the system.**

3.1.3 Export/Import

Users can copy and paste the system configuration values in this menu.

1. **EXPORT SETUP TO USB** enables user to copy the settings for the DVR to any USB memory devices.

    a. Click Export.

    b. A warning window will appear. If you wish to continue, click OK.

    c. The DVR will scan for the USB.

    d. If a proper USB is connected to the DVR, a 'Configuration Success' message will appear.

2. **IMPORT SETUP FROM USB** enables user to recall the settings saved from other systems using CD/DVD/USB memory devices. During the import process, make sure that the firmware version of source DVR is the same as the destination DVR.

    a. Click Import.

    b. A warning window will appear. If you wish to continue, click OK.

    c. The DVR will ask if you would like to save the imported settings. If yes, click OK.

    d. When the import process is complete, the DVR will request to remove the USB before rebooting.

    e. System will reboot to apply the imported settings.

3.1.4 HDD

[HDD] tab displays the information of HDD that is mounted on the VMAXHD.

1. [FORMAT] Formats the entire HDD installed in the DVR.

2. [HEALTH INFO] Displays the information of HDD.

3. [HDD INFO] Displays the information of HDD status.
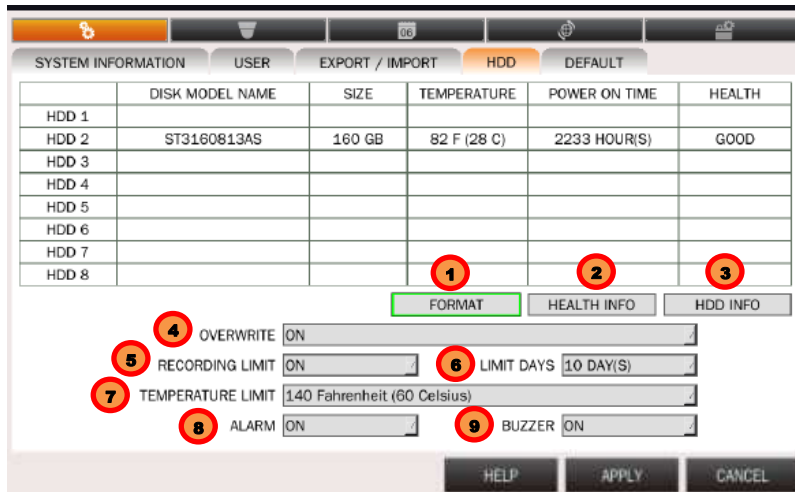
4. OVERWRITE
   When enabled, the DVR will continue recording and overwrite the oldest existing recorded data once the hard drive is full.   When disabled, the recording will stop once the hard drive is full.

5. RECORDING LIMIT
   Enable/disable recording limit.

6. LIMIT DAYS
   Set the recording limit days (1- 90days). If the RECORDING LIMIT DAYS are set to 1, data recorded will be overwritten after 24 hours.

7. TEMPERATURE LIMIT
   Set the specific temperature of HDD to prevent HDD failure in advance. Normal temperatures are between 30 to 45 degrees Celsius.

8. ALARM
   Enable/disable the alarm in case the temperature is over the limit.

9. BUZZER
   Enable/disable the buzzer in case the temperature is over the limit.

3.1.5 Factory Default

Users can set the system back to factory default configuration.

If you select to return the DVR to its factory default settings, the system will reboot to make sure changes have been applied.
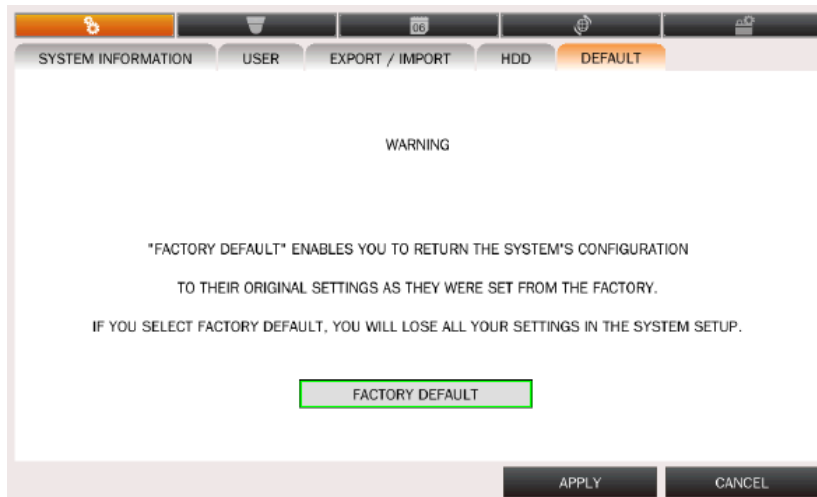
| NOTE | Once you click the [FACTORY DEFAULT] button and enter the admin password, previous configuration values may be deleted. The system settings will be set to factory defaults, but the recorded video data will not be erased. |

3.2   DEVICE

The Device setup menu allows the administrator to configure the Camera, Audio, Sensor, Alarm, Controller and PTZ.

3.2.1 Camera

The [CAMERA] tab enables user to change camera settings. Users can change Title, Covert and Motion Area Setting for each camera.

1.   Select a **CAMERA** from the drop down menu.

2.   Using the virtual keyboard, modify the **CAMERA'S NAME** (default is Channels' number).

3.   **COVERT**: This function, also called "hidden camera," hides the camera display as if there were no camera recording. Covert applies to both Live and Playback View.

4.   **MOTION ZONE**: Select Full (the entire camera's view) or Partial zone. Default motion detection zone is set to full.

5.   **MOTION ZONE SETUP**: You can setup only part of the screen to motion detection. This option is enabled only if Motion Zone is set to Partial.

a. Enter the motion zone setup.

b. The motion zone setup grid will appear on the camera's display.

c. Select the motion detection area by clicking on the desired area of the camera's view. You can also click on the screen and hold, dragging the mouse to select a large area.

d. Areas set to motion detection will be marked in green.

e. To save, press the ESC ⊙ button in the DVR's front panel, or right click on the screen with your mouse.

f. Click APPLY to save all changes.

6. **MOTION SENSITIVITY**: Select the level of sensitivity the camera will have to motion. Select from 1~9, 1- being the lowest sensitivity and 9- highest sensitivity.
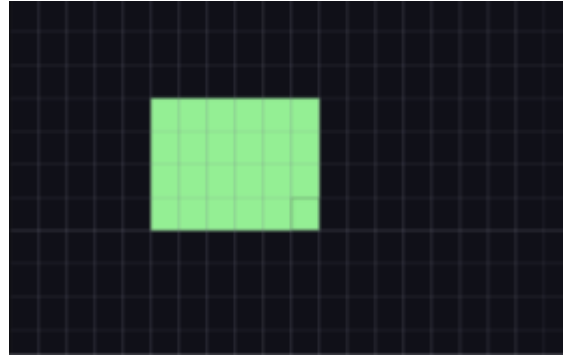
3.2.2 Audio

Users can enable/disable the audio input of each channel and output during live display.

1. Make sure all cables are properly connected to the back of the DVR (See **1.5 Rear Panel** for more information).

2. Select the channel you want to enable for audio recording and turn Audio ON.

3. If applicable, select Apply All to enable audio recording on all channels (to make sure the DVR records on audio mode, please see section **3.3 Record** for more information).

4. Click APPLY to save all changes.
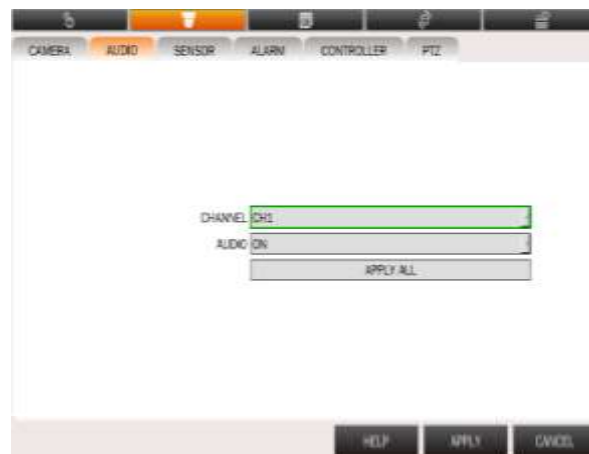
3.2.3 Sensor

The VMAX HD supports four (4) sensor connectors. Select from OFF, Normally Open [N.O], and Normally Closed [N.C].

1. Make sure all cables are properly connected to the back of the DVR (See **1.5 Rear Panel** for more information).

2. Select the sensor you want to set or modify.

3. Select the type connection: Normal Open [N.O], Normal Closed [N.C]

4. Click APPLY to save all changes.

3.2.4 Alarm

If enabled, [ALARM] records only when motion detection is triggered within the defined motion area.

1. **ALARM-OUT**: One Alarm-out available

2. **SENSOR IN**: Activate alarm when the sensors selected are activated. Select from 1 to 4.

3. **MOTION ON**: Activate alarm when the Camera motion detection is triggered. Select On/ Off to enable or disable each channel's motion detection.

4. **VIDEO LOSS ON**: Activate alarm when there is video loss on each channel (1-4).

5. **ALARM DURATION**: Set alarm duration from 5~ 60 seconds.

6. **ERROR ALARM**: Enable or disable the alarm for DVR errors. Select from HDD ERROR, VIDEO LOSS, ALL, OFF.

3.2.5 Controller

If a Joystick controller is used, select a controller protocol from Controller menu. Set SPEED (Baud Rate) and ID number.

To setup a joystick controller:

1. Connect an RS-485 cable from the controller to the back of the DVR (See section **1.5 Rear Panel** for more information).

2. In the DVR, go to Menu→ Device→ Controller.

3. Select the protocol used by your controller from the drop-down list.

4. Setup the corresponding speed. Select from 19200, 14400, 9600, 4800, or 2400 Baud-rate.

5. Select the matching ID of the controller from the drop-down list.

| NOTE | The Protocol. Speed & ID set in the DVR must match the same settings in the controller. |

3.2.6 PTZ

If you wish to connect a PTZ camera to the VMAX HD, use this setup menu to connect it.

To setup a PTZ Camera:

1. Connect an RS-485 cable from the camera's board to the back of the DVR (See section **1.5 Rear Panel** for more information).

2. In the DVR, go to Menu→ Device→ PTZ.

3. Select the Channel you want to setup as a PTZ camera.

4. Select the camera's protocol from the drop-down list.

5. Setup the corresponding speed. Select from 19200, 14400, 9600, 4800, or 2400 Baudrate.

6. Select the matching ID of the PTZ Camera from the drop-down list. Select from 0~63.

| **TROUBLESHOOT** | **Camera Connection**
If you cannot control your PTZ camera, try the following:
1. Check if the protocol set in the DVR is the same as used in the camera.
2. Check if the baud-rate set in the DVR is the same as used in the camera and that it is in accordance with the assigned value for that PTZ protocol.
3. Check if the address of the camera is correct.
4. Check if the wiring is correct and the wires are not damaged.
If the problem persists, consult your PTZ camera's manual for additional information. |

3.3   Record

Configure various record settings such as Continuous, Motion, Sensor and Schedule for each individual camera channel.
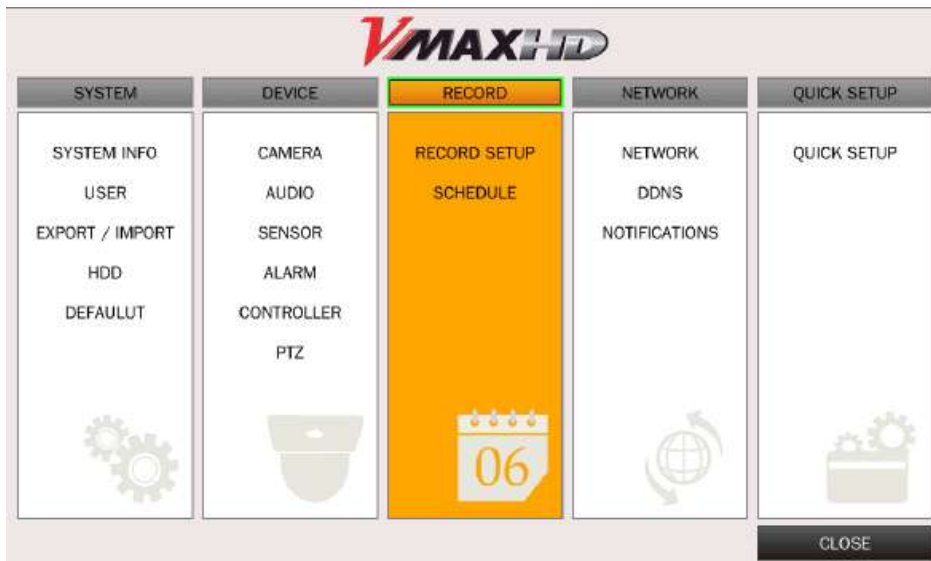
3.3.1 Record Setup

Configure record settings such as Resolution, FPS, Quality, Pre/Post Record and Record Type (Continuous, Motion, Schedule and Sensor). Configure for each channel or use the **[APPLY ALL]** button to apply the same settings to all cameras.

1. **CHANNEL**
   Select a channel from CH1 to CH4 to configure the recording setup.

2. **RESOLUTION**
   Select a specific resolution.
   1280x720 (HD) / 640x360 (D1) / 1920x1080 (FULL HD) / 1920x540 (Half of FULL HD).
   The higher the resolution, the better the image quality will be. However, it will also increase the video size.
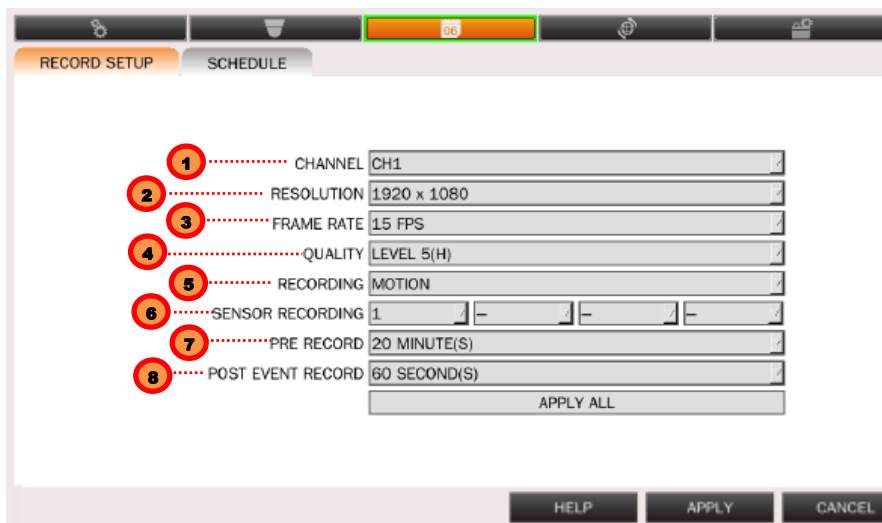

NOTE In case 1920x1080 and 1920x540 is not shown on RESOLUTION, please check the resolution of CAMERA first. Then, follow the procedure below:
- Change the resolution of camera to 1920x1080.
- Restart the DVR and check RESOLUTION on RECORD.

---

3. **FRAME RATE**
   Select the frame rate (1FPS ~ 30FPS).
   Recommended frame rate is **15FPS per channel for 1920x1080 resolution**.
   The higher the FPS, the better the image quality will be. However, it will also increase the video size.

4. **QUALITY**
   Select the video quality from LEVEL1 (LOW) to LEVEL5 (HIGH).
   The higher the quality, the better the image will be. However, it will also increase the video size.

5. **RECORDING**
   Select the recording mode (Continuous / Motion / Schedule / Sensor)
   Before setting a channel to a specific recording mode, make sure it is properly setup.
   For Motion setup, see section **3.2.1 Camera** for more information.
   For Schedule setup, see section **3.3.2 Schedule** for more information.
   For Sensor setup, see section **3.2.3 Sensor** for more information.

6. **SENSOR RECORDING**
   If Sensor recording mode is selected, select which sensors will activate recording.

7. **PRE RECORD**
   Enable/disable pre-event recording. Select from 15 Seconds up to 20 minutes.

8. **POST EVENT RECORD**
   Set the post event recording time duration for the specified channel. Select from 10 seconds up to 60 seconds.

9. If applicable, click APPLY ALL to save current settings to all channels.

10. Click APPLY to save all changes.

3.3.2 Schedule

You can set the cameras to record at different modes based on a preset schedule.

To set the Recording Schedule:

1. Select CHANNEL (by default it will be CH1).

2. Select a recording mode you want to set to the schedule.

    a. **NONE**: Disable recording.

    b. **CONTINUE**: CONTINUOUS recording (Highlighted in Pink).

    c. **MOTION**: MOTION recording (Highlighted in Green).

    d. **SENSOR**: SENSOR recording (Highlighted in Yellow).

3. Highlight the days and hours you wish to set for the selected recording type.

4. To copy a schedule to a different channel, select the channel from the COPY SCHEDULE menu.
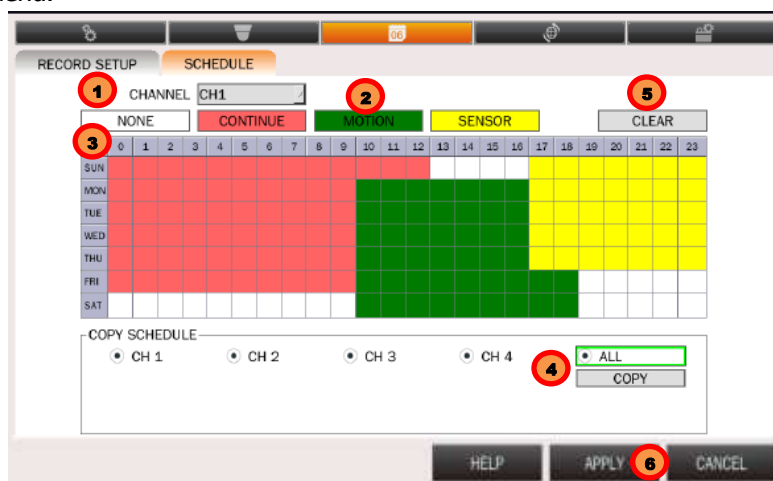
5. To cancel recording for a specific time, select [CLEAR] button and click or drag the specific date/time.

6. When you are finished, click APPLY to save all changes.

3.4   Network

The Network menu allows you to configure the DVR's network settings, including IP configuration, DDNS, and E-mail notifications.

3.4.1 Network
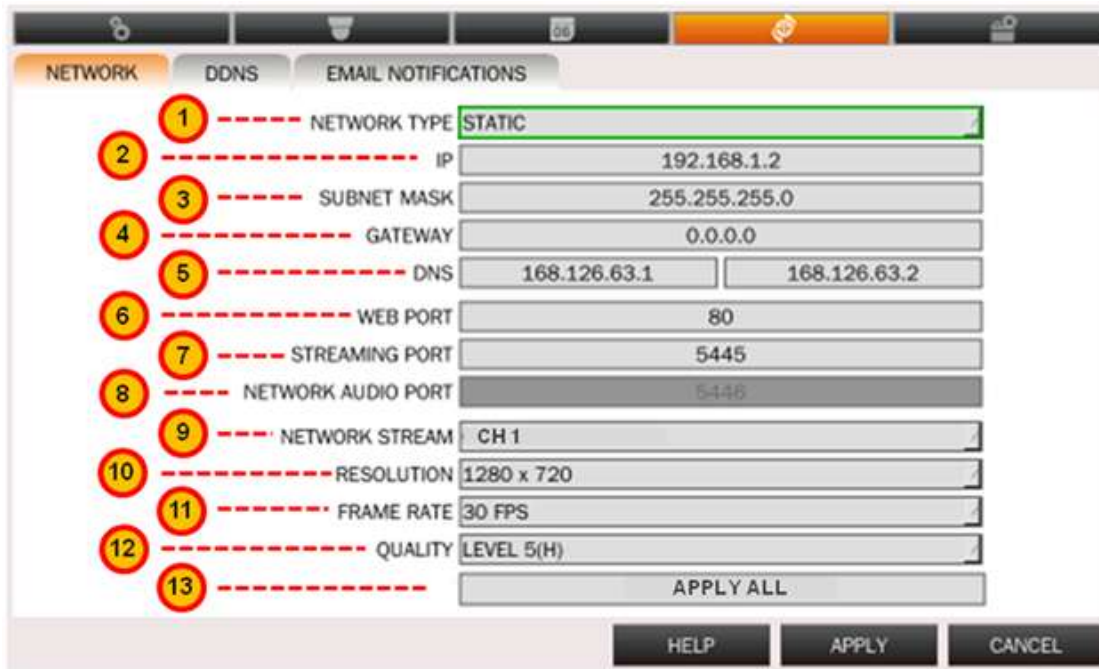
1. NETWORK TYPE
   Select the type of IP address you want to assign the DVR. Select [STATIC] for fixed or [DHCP] for dynamic IP Address. (See section **3.4.4 Network Setup for Internal Access** and   **3.4.5 Network Setup for External Access** for additional Network configuration information).

    a.   [DHCP] An IP address is automatically assigned by the DHCP server, which automatically assigns the IP address and other parameters to new devices.

    b.   [STATIC] The user manually assigns IP address, Subnet Mask, Gateway, and DNS.

2. IP
Once the settings have been set to DHCP or Static, the DVR's IP address will appear under the IP tab. If [STATIC] is selected, the IP section will be open for editing. If [DHCP] is selected, the IP Section will not be available for editing. Instead, it will only display the DVR's IP address as the network assigned it.

3. SUBNET MASK
Clarifies the subnet that the system belongs to. Standard address is [255.255.255.0]. For more information, please consult your network administrator or your internet service provider.

4. GATEWAY
The IP address of the network router or gateway server. The gateway is required in order to connect through the external router from the remote. For more information, please consult your network administrator or your internet provider.

5. DNS SERVER
There are two DNS Server settings, one for the Preferred DNS and one for the Alternative DNS. To access the DVR via the internet, enter the IP address of the Domain Name Server (DNS) Server. This is provided by your internet service provider.

NOTE   Unless DNS is properly set, the DDNS and the e-mail features will not work.

---

6. WEB PORT
"Default is 80" when connecting using the Web Browser.

7. STREAMING PORT: Enter the network port number. Default streaming port is 5445.

8. NETWORK AUDIO PORT: "5446" is fixed port number for the audio streaming over the network.

9. NETWORK STREAM
Select a channel to set up the network streaming for remote monitoring.

10. RESOLUTION
Set the resolution for the network stream. Options are "640x360" and "1280x720".
For low bandwidth networks, it is recommended to set the streaming resolution to 640X360.

11. FRAMERATE
Select the frame rate (1FPS ~ 30FPS).
The higher the FPS, the better the image quality will be. However, it will also increase the video size.

12. QUALITY
Select the video quality from LEVEL1 (LOW) to LEVEL5 (HIGH).
Higher quality means better the image will be. However, it will also increase the video size.

NOTE	It is highly recommended that you contact you Network Administrator and Internet Service Provider for information on correct Network setup.

13. HD APPLY ALL
Apply the setting value to other channels.

3.4.2 DDNS

DDNS (Dynamic Domain Name System) allows a DNS name to be constantly synchronized with a dynamic IP address.

DDNS allows you to use a URL address to access your DVR instead of a numerical IP address.

1. **SERVER1**
   Select Server 1 to setup a DDNS using okddns.com server (oknnds.com is a free service).

   a. Go to okddns.com and click on DDNS REGISTRATION.

   b. Enter your DVR's MAC address (found in the System Info tab).

   c. Enter a desired Domain Name and click on Validate Duplication.

   d. If the Domain Name you have selected is available, click Register to complete the registration.

   e. In the DVR, go to Menu→ Network→ DDNS.

   f. Select Server1 in the DDNS drop down list, and select okddns.com in the Server1 DDNS Server Name.

   g. Set the DDNS interval from 5~ 60 minutes. This sets how often the DVR will test if the DHCP IP Address has changed.

2. **SERVER2**
   dyndns.com. You can use this option if you wish to setup a Domain Name using dyndns.com server. Note: This service requires subscription and payment.

3. **SERVER3**
   Auto DDNS. This is an easy auto DDNS setup feature. If selected, the DVR will automatically register itself with the okddns.com server. This feature will setup DDNS

automatically for you. In addition, unlike in Server1 option, this option will provide you with DVR health checking and additional features such as UPnP, at no cost to you.

   a. Input a desired hostname and click 'APPLY'

   b. The system will make sure the Hostname you selected is available.

   c. If you do not want to set a specific hostname, click 'AUTO' and 'APPLY'.

   d. Your DVR's MAC address will be set as your Hostname if you select the AUTO Setup option.

   e. If you want to change the host name, input the hostname and click 'APPLY'

3.4.3 E-MAIL Notification

The system can send notification to an Email address over the network when an event alarm is triggered.

1. **SEND EMAIL**
   Enable/disable E-mail notifications.

2. **TRANSMISSION MODE**
   Select whether the E-mail will be sent as a text only message, or with an attachment of a video corresponding with the event being notified.

3. **IP NOTIFICATION**
   Enable/disable sending e-mail when the IP address of your DVR is changed.

4. **EVENT ALARM**
   Enable/disable sending e-mail reports on the channel that triggered the alarm when an alarm event is triggered.

5. **S.M.A.R.T**
   Enable/disable sending e-mail when any HDD abnormality is detected.
   This is connected with HDD TEMPERARTURE LIMIT (Refer to HDD menu in SYSTEM).

6. **MAIL BY STATUS**
   Enable/disable sending periodical e-mail of the system status.

7. **PERIOD**
   Select the frequency in which the DVR will send email notifications.
   Daily- The VMAX HD will send one email a day, at a pre-defined hour.
   Weekly- The VMAXH HD will send one email a week, at a pre-defined day and hour.
   Monthly- The VMAXH HD will send one email a month, at a pre-defined day, hour, and the week number.

EXAMPLE If the DVR is set to send monthly Email notifications, it can be set to send an Email at 10:00 AM of the Third Friday of every month.

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8. **SECURE OPTION**
   Select the secure mail server connection method (SSL or TLS). This will allow you to setup the sending email from a public E-mail account such as Gmail, Hotmail, Yahoo, Etc.

9. **MAIL PORT**
   Set to 25 by default.

10. **MAIL SERVER**
    Enter the appropriate mail server information.

11. **ID**
    Enter the User ID of an E-mail account associated with the DVR.

12. **PASSWORD**
    Enter the password for the mail server.

13. **MAIL FROM**
    Enter the mail address from which the notifications will be sent.

14. **MAIL TO**
    Enter the appropriate email address to enable sending e-mail reports. Current version is limited to one email address.

3.4.4 Network Setup for Internal Use

The VMAX HD can be setup to be accessed remotely either from within the network or externally via the internet.

1. Right-click on the screen and select Menu. Go to Network

2. Select the network type.

    [DHCP]   If selected, the system will automatically assign the DVR an IP address, subnet mask, gateway and DNS server that match the network's requirements.
    [STATIC] If selected, enter manually all the necessary information below.

NOTE — Contact your Network Administrator & Internet Service Provider for proper network configuration.

3. Web Port and Streaming port are set by default to 80 and 5445, respectively. This information is necessary when connecting to the DVR externally. If necessary, modify the ports according to your network requirements.

NOTE — Some internet service providers block port 80. It is recommended that you change the DVR's web port to 81 or 82 just in case.

4. Network Stream: Use this section to setup the streaming resolution of the DVR′s video over the internet. The higher the resolution and frame rate, the better quality the image will be. However, the higher the quality, the more bandwidth space it will require.

    a. Set the resolution for the network stream. Options are "640x360" and "1280x720.

    b. Set the Frame Rate from 1-30 frames per second.

    c. Set the Quality of the video from Level 1(low) - Level 5 (High).

NOTE — If the bandwidth is low, the resolution should be set as 640x360.

3.4.5 Network Setup for External Use

To connect to the VMAX HD externally via the internet, you will need to setup the DVR's ports in your router.

NOTE — Contact your Network Administrator & Internet Service Provider for proper network configuration.

1. Set the Network type as DHCP.

2. Once the system generates all the necessary information, change the network type to static and save the settings without changing anything.

3. go to a computer that is connected to the same network as the DVR and go to Start→ Programs→ Accessories→ Command Prompt.

4. Enter the command ipconfig and press enter. Write down the following information:

   a. subnet mask

   b. Gateway (This is your router's IP address).

5. Open an internet explorer webpage and enter the gateway address in the address bar. Enter user ID and password to access your router. Contact your Internet Service Provider for this.

6. Depending on your router's make and model, open the ports associated with the DVR (80, 5445, 5446 if applicable). You can check portforward.com for additional information relevant to your specific router.

3.5 Quick Setup

[QUICK SETUP] enables easy setup for recording resolution, recording speed by frame, recording mode, and recording periods.

The system will follow the configurations for [QUICK SETUP] regardless of configurations set in other menus. Do not check [USE QUICK STEUP], if you want to use full system configuration defined in other menus.

NOTE   Disable [QUICK SETUP] to use the configuration from the other menus.

Chapter 2

WEB BROWSER

4. **Web Viewer**

The DVR has a built-in web server.

With an ordinary web-browser over the network, users can stay connected to the system for monitoring, playback, or remote configuration.

NOTE	In order to connect to the VMAX HD remotely, Network configuration must be setup in the DVR. Please see section 3.4 Network for more information.
	If you are trying to connect to the DVR from outside the network, make sure the DVR's ports are forwarded in your router. Please consult your Network Administrator or Internet Service Provider for more information.

4.1 Web Live Viewer

1. Using a computer that has access to the internet, open an Internet Explorer browser.

2. In the address bar, enter the DVR's IP address.

    a. If you are connecting to the DVR from a computer connected to the same network as the DVR use the DVR's internal IP address. Press Enter.

    b. If you are connecting to the DVR from outside the network (over the internet, for example), enter the DVR's fixed public IP address or the DDNS address. Press Enter.

    c. If you want to access your DVR using a DDNS, enter the registered hostname in the address bar of an Internet Explorer page in the following format: http://domainname.okddns.com

3. The window below will appear.

4. If necessary, you will be asked to install ActiveX add-on on your Internet Explorer. A pop-up window will appear, press 'Install' or 'Allow' to install the necessary ActiveX files.

5. Select the "Connect" icon then below configuration window appear.

6. Enter the DVR's IP address, assigned port number (default 5445), User ID and Password. (Default admin user and password: admin/1111)
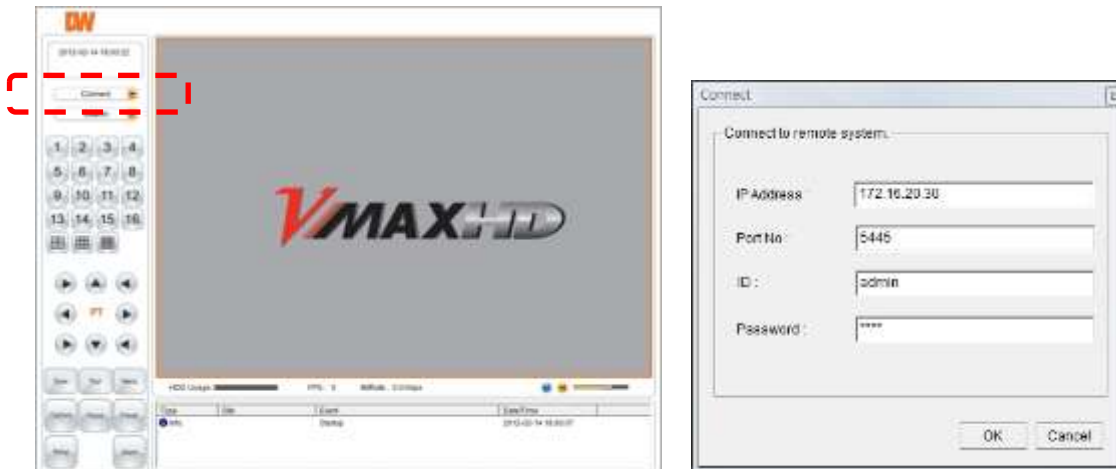
| **NOTE**	For the ID, Password and port Number information, follow DVR's setup configuration

If all the information has been entered correctly, the page will display your DVR's cameras as seen below.

No.	Item	Description
1	Information	Display current date and time with connected IP address.
2	Mode Status	Display options. "Connect" or "Disconnect".
3	Display Panel	Display camera's image in live and search modes.
4	PTZ Panel	PTZ Camera Control in Live Mode.
5	PTZ and Menu	PTZ submenu and client software control menu.
6	HDD Status	DVR's HDD usage status.
7	Volume	Adjust Volume.
8	Monitoring	Event log for current monitoring (Connection, Event).

4.2   Web Playback

Click on the SEARCH button to search recorded video.
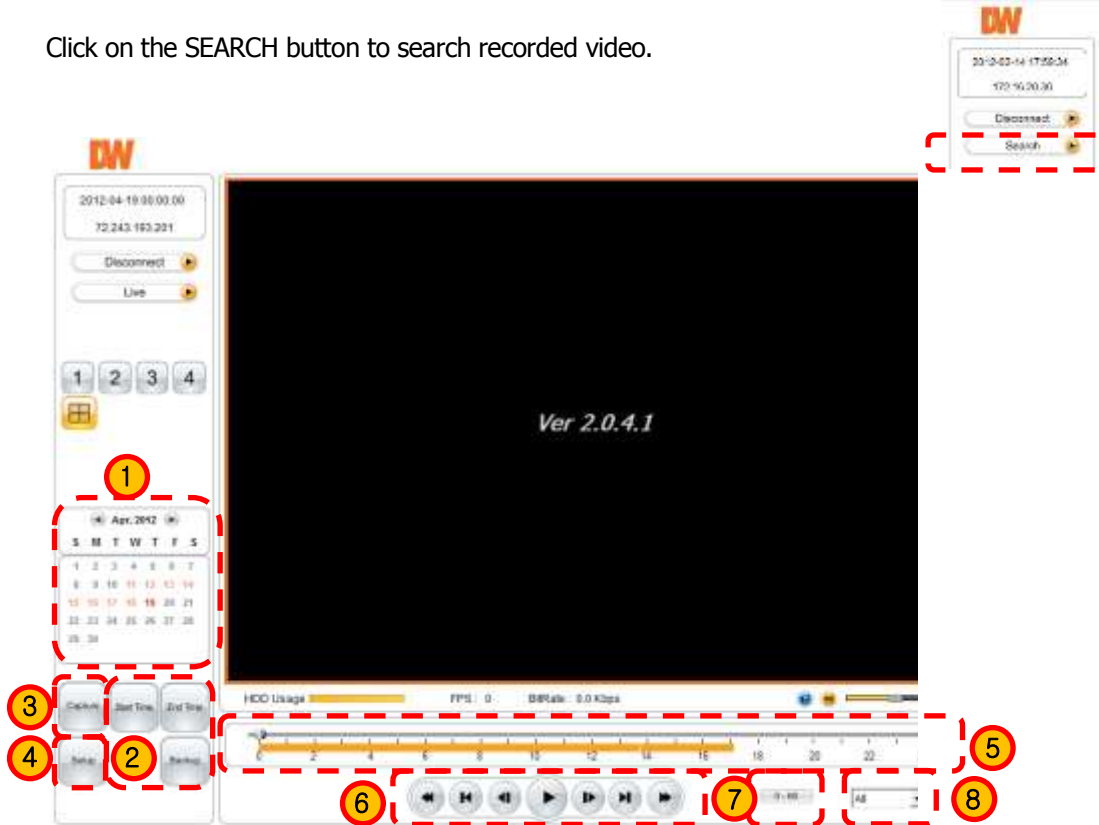
| No.	Item	Description
1	Calendar	Days with video recorded on them will be displayed in color.
2	Backup	Capture image, Start & End time for Backup and setup buttons.
3	Capture	Capture a screen shot of current video.
4	Setup	Go to the DVR remote setup menu.
5	Time Bar	Time bar shows recorded section.
6	Playback Speed	Control the playback speed.
7	Hour/Minute	0 - 60 : Minute, 0 - 24 : Hour
8	Screen Display	Select from single or multi-channel view

4.3 Image Capture

The VMAX HD's Web Viewer allows you to capture still screen shots of video you're currently watching.

To do so:

1. Go to search mode.

2. Select the date & time you want to view in playback.

3. Click on the PLAY button to view the video.

4. When you locate the image you want to save, click on the CAPTURE button. If you want to save a screen shot of a single channel, be sure you are in single channel view. Selecting the capture option while in multi-channel view will capture all 4 channels and their display.

5. If necessary, modify where you want to save the file and file name.

6. When you are done, click OK.

7. File will be saved as BMP by default.
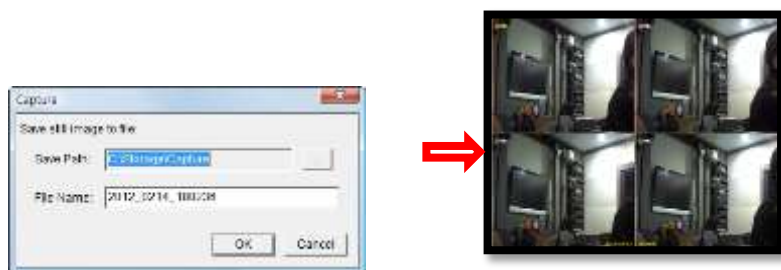
| NOTE | User have to change the setup the window protection mode with non-protection in order to save the image at the Window Vista and Window 7. If user set the save path with different location then doesn't need to set the non-protection mode. |

4.4   Web Backup

The VMAX HD's web viewer allows you to create backup files to be saved on your computer.

To do so:

1.   Select Start Time and End Time from the calendar.

    a.   Select a date from the calendar and time from the time bar.

    b.   When you are done, click on Start Time to define current time as the beginning time of the Backup file.

    c.   Select the end time of the backup file. Select the day from the calendar and time from the time bar.

    d.   When you are done, click on the End Time to define current time as the ending time of the backup file.

    e.   A green line in the time line will indicate the selected time for backup.

2.   Click Backup to open the Backup setup window.
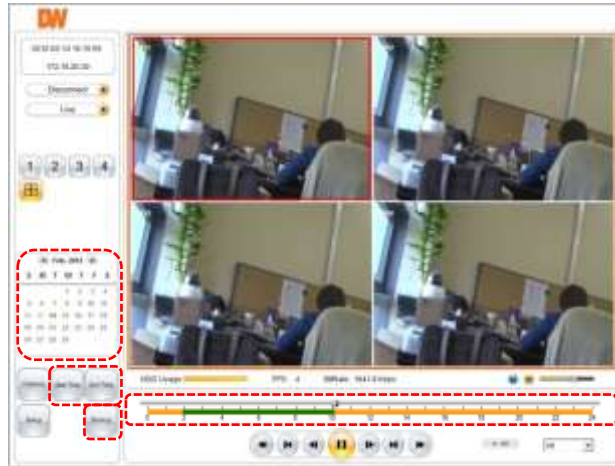
NOTE   Make sure you select a date & time that the DVR was operating correctly and there is Video recorded.

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3.   Select the channels you want to backup.

4.   Make sure the start and end time match your needs or adjust them accordingly.

5.   Select the directory where the backup file will be saved. (Make sure you select a location that has enough memory to support the size of the backup file). By default, the file is saved to "C://storage/backup".

6.   When you are finished, click OK to start the backup.

7.   The progress bar will display the backup progress bar.
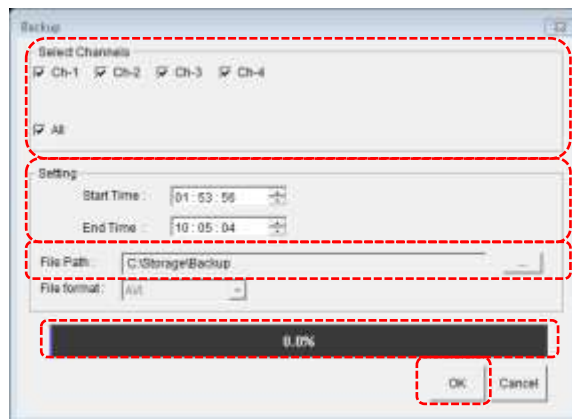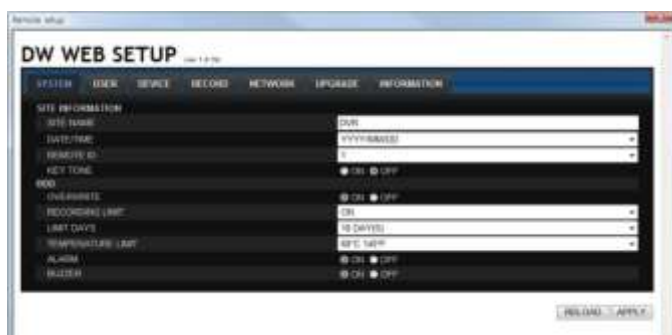
4.5   Web Setup

User can remotely setup all of the DVR's configuration. The Setup button on the Web Viewer allows complete access to the DVR's complete Setup menu. To access the DVR's Setup remotely, enter the password.

4.5.1 System

For more information, see section **3.1.1 SYSTEM**

4.5.2 User

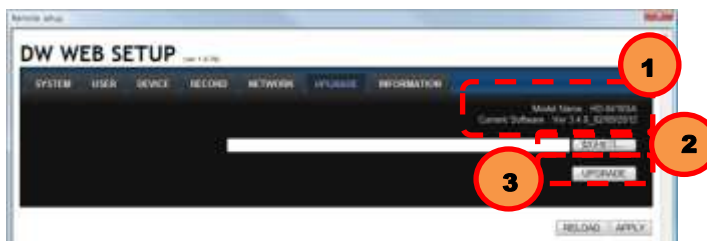For more information, see section **3.1.2 SYSTEM**

4.5.3 Device

For more information, see sections **3.2 DEVICE** and **3.3.2 SCHEDULE**

4.5.4 Record

For more information, see section **3.3.1 RECORD SETUP**

4.5.5 Network

4.5.6 Upgrade

1. Check current firmware version

2. Search the upgrade file that you want to upgrade

3. Click on UPGRADE to start the upgrade

4.5.7 Information

User can check current firmware version and IP information

Chapter 3

SINGLE SITE CLIENT SOFTWARE MANUAL

5. **Client Software User Guide**

5.1 PC Requirements

Recommended PC Requirements

OS	Windows XP, Vista, 7
CPU	Pentium Dual Core 1.8GHz or higher
VGA	1024*768, 256MB Supporting DirectX
RAM	1GB
HDD	20MB for installation, 10GB for Remote Backup

Minimum PC Requirement

OS	Windows XP, Vista
CPU	Pentium 4, 2GHz
VGA	1024*768, 64MB 24Bit Color Graphic Card
RAM	1GB
HDD	20MB Free Space

5.2 Multi-Site Software

The VMAXHD can also be monitored via Digital Watchdog's NxMS software. NxMS is a powerful, feature-rich network management software. A variety of DVRs, servers, and IP cameras   can be connected and centralized under a single software. NxMS is not only an efficient way to watch live and recorded video, but it is also easy to control and record the connected DVRs and IP cameras from anywhere.

The NxMS software and user guide can be located on the CD included with your DVR.

NxMS Features:

- o Multi-Site Access [Up to 256 from 1 Remote Workstation]

- o 256 Cameras [Across 3 Monitors] Live View for Total Awareness

- o Email Hub for Alarms and Alerts from Any DW DVR Connected to It

- o Visual Awareness Using Video and CAD Image Features

- o Easy Setup

- o Function and Camera Security

- o Full DVR Playback Functions

- o PTZ Control and Setup Support

- o Remote DVR Software Upgrade

- o Backup Locally Saved Video to CD, DVD, HDD, etc.

- o Backup Proprietary Video from All Supported DVRs

5.3 Install

1. Run the CD included with the VMAX HD.

2. Double click on the VMAX Client software icon.   vmax_3.0.6.0_120213

3. A Setup Window will appear as below. Follow the instructions to complete the installation.

    a. Select the directory to where you would like to save the software. Click [NEXT].

    b. Select which shortcuts you want to install on your desktop. Click [NEXT].

    c. Press the [INSTALL] to begin installation.

    d. When installation is complete the Desktop icon will appear.

5.4 Uninstall

To uninstall client software, run main software again. A small pop up appear as below,
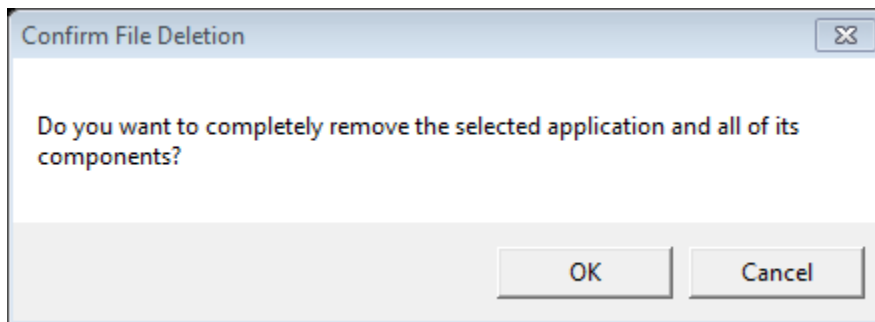
Account Manager will appear in Windows7 or Windows Vista.
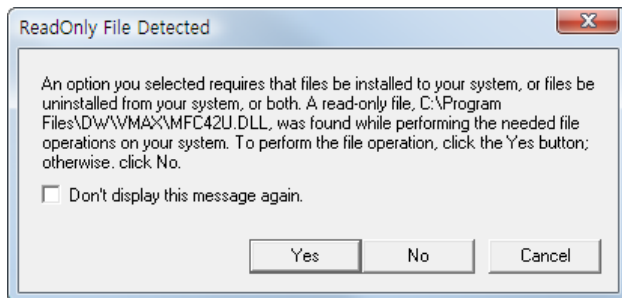
Press [YES] to begin uninstalling.

5.5   Basic Operation

Click on   icon on Desktop or click on link in the start menu.
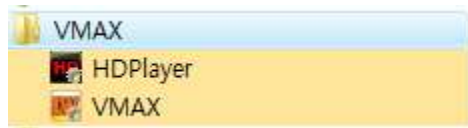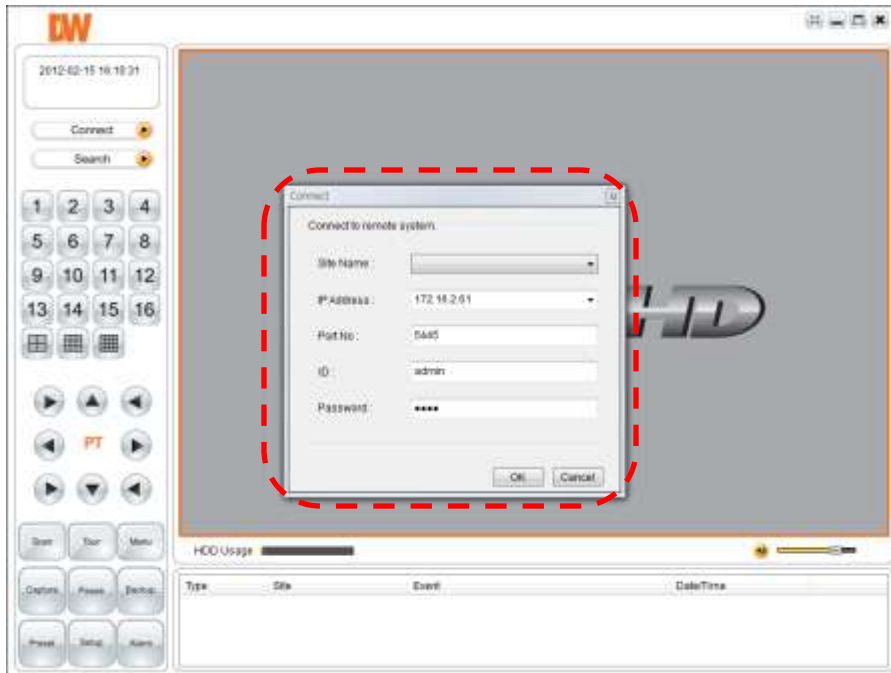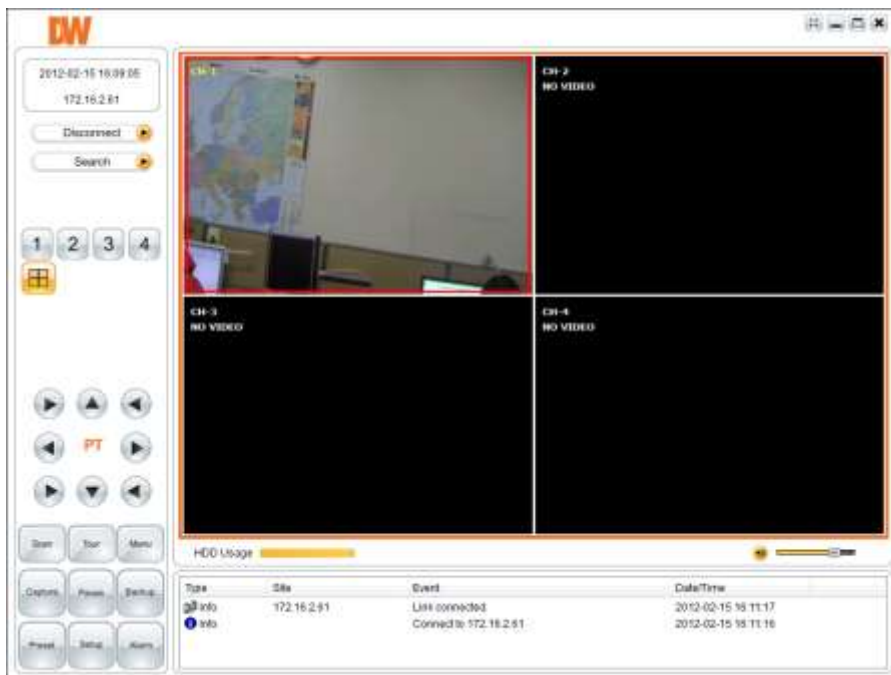

5.5.1 Network Connect

1.   Click on [CONNECT] to add a device to the remote viewer software.
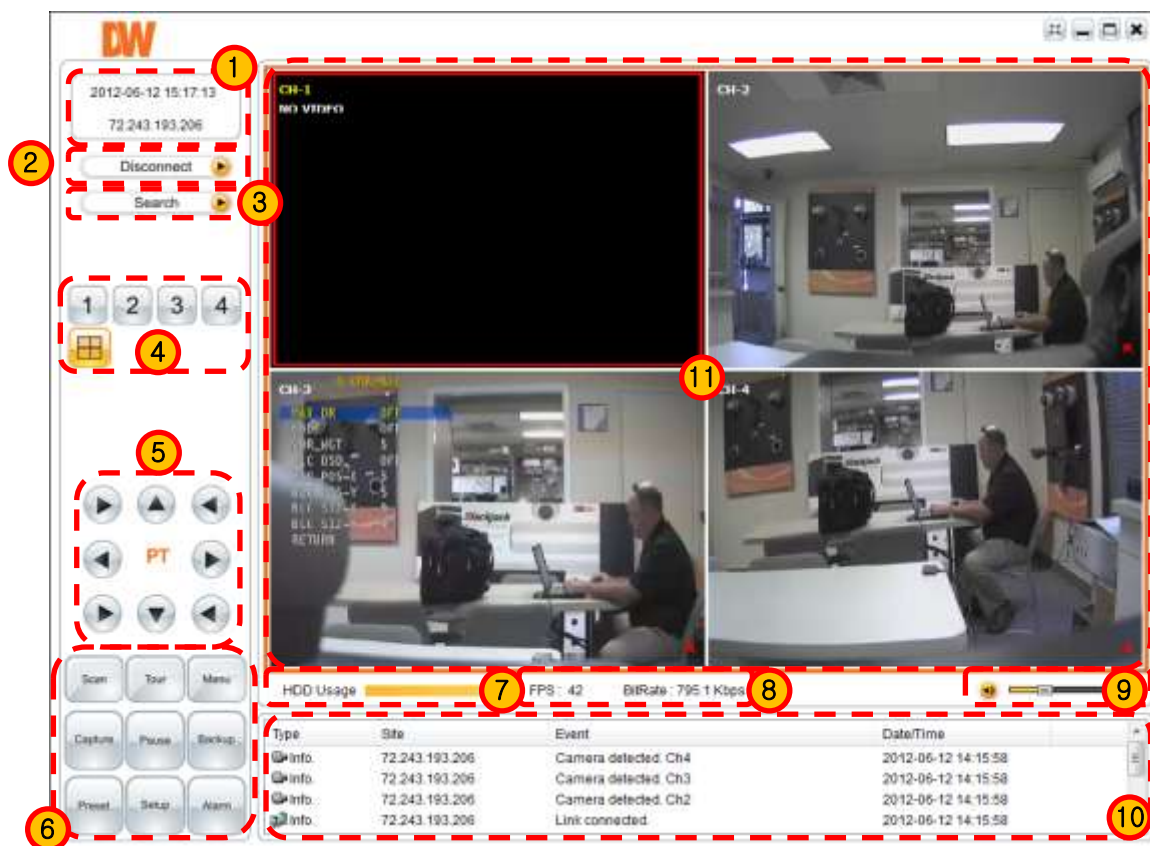
1. Enter all the corresponding information. When you are finished press OK to save.

2. If all information was entered correctly, the main window will display the DVR's cameras in live view.

5.5.2 Screen Layout for Live Mode

No.	Item	Description
1	Information	Display current date and time with connected IP address.
2	Mode Status	Display current "connected" or "Disconnected" with Search.
3	Search/ Live	Display camera's image in live and search modes.
4	Screen Split	Select the viewing mode. Choose a specific channel or view all 4 channels in multi-channel mode.
5	PTZ Panel	PTZ Camera Control in Live Mode.
6	PTZ Menu	PTZ submenu and client software control menu.
7	HDD Status	DVR's HDD usage status.
8	Streaming Info	Display the Frames per second and Bitrate of the current view (In single channel mode, the fps and Bitrate is for that one channel. In multi-channel mode, the fps and Bitrate is for all four channels combined).
9	Volume	Adjust Volume (Available when audio recording is set in the DVR).
10	Monitoring	Event log for current monitoring (Connection, Event).
11	Main Display	Display one or four channels in live or playback mode.

5.5.3 Screen Layout for Search Mode

No.	Item	Description
1	Calendar	Days with video recorded on them will be displayed in color.
2	Backup and Setup	Capture image, Start & End time for Backup and Setup buttons.
3	Time Bar	Time bar shows recorded section.
4	Search Mode	Search from PC or DVR (PC must have a recorded data for this feature to be enabled).
5	Playback Speed	Control the playback speed.
6	Hour/Minute	[0 - 60] : Minute, [0 - 24] : Hour.

5.5.4 PTZ Control Panel

PTZ Camera Control in Live Mode

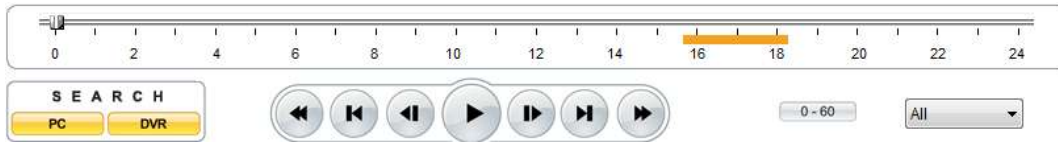| No.	Button	Description
1	Directional Arrows	Move PTZ Cameras in 8 directions.
2	ZOOM & FOCUS	Zoom In (+) & Zoom Out (-),Focus In (+) & Focus Out (-)
3	Scan & Tour	Scan and Tour Setting
4	PRESET	Select Preset

5.5.5 Calendar Panel

Calendar Panel is only available in search mode.

NOTE Days with recorded data will appear in Red..

5.5.6 Search Panel

Search Panel is only available in search mode.

The Search Panel shows recorded data for each channel. Record Mode is distinguished by color.

In the Search Panel, click the time or move the bar to the time you want to playback.

No.	Button	Description
1		1 Minute playback
2		Forward Playback: Decrease the Speed Reverse Playback : Increase the Speed
3		1 second playback
4		Forward Playback
5		1 second forward
6		Forward Playback: Increase the Speed Reverse Playback: Decrease the Speed
7		1 Minute forward

5.6 Setup

Select the Setup menu to control the DVR's settings as well as the remote software.
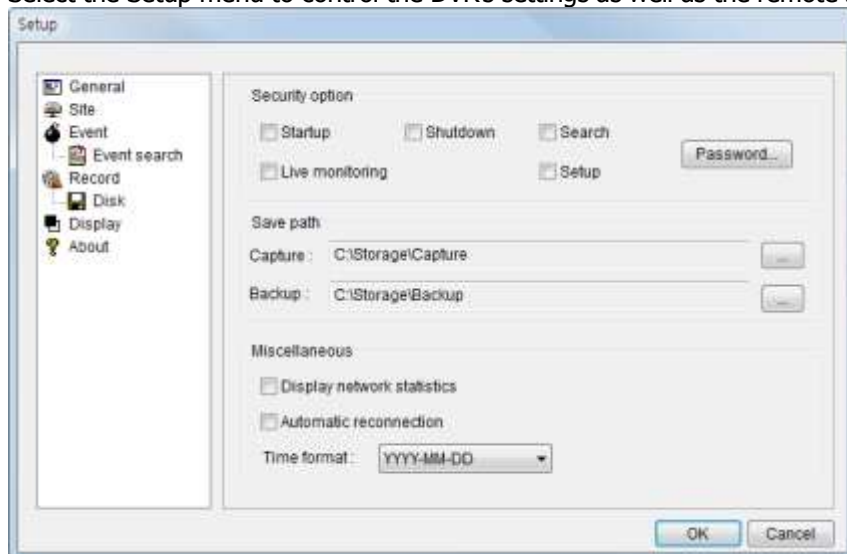
5.6.1 General

The General Setup tab provides you with general settings for the remote client software.

1. Security Option

    If selected, the remote client software will require a password for the following options:

    a. Startup- every time the software starts up.

    b. Shutdown- every time the software shuts down.

    c. Search- Every time a search is being performed.

    d. Live Monitoring- Every time live monitoring is being used.

    e. Setup- Every time a user is trying to access the setup menu.

2. Save Path

   Use this option to modify the location where backup files are saved on your computer.

3. Miscellaneous

    a. Display network statistics- If enabled, this option will continually display network information regarding the DVR at the bottom of the screen display.

    b. Automatic Reconnection- If enabled, this option will require the remote client software to continuously try to reconnect to the DVR in case of connection loss.

    c. Time format- This option allows you to modify the time format as shown in the remote client software.

5.6.2 Site

From this window you can add, modify or delete a site, or organize multiple sites. The remote viewer software supports up to 999 sites.

1. To add a site

   a. Click on Addition to add a site. A new window will appear.

   b. Enter the DVR's information and number of channels.

   c. Click OK.

   d. The site will appear in the Setup window.

2. To modify a site

   a. Select a site from the list.

   b. Click Modify.

   c. Change the DVR's settings as necessary.

   d. Click OK.

3. To delete a site

   a. Select a site from the list.

   b. Click on the Remove button.

   c. Select OK to delete or Cancel to exit.
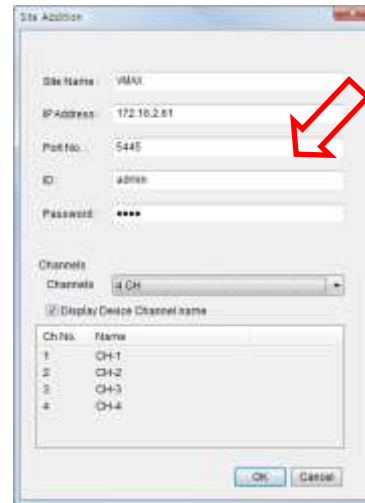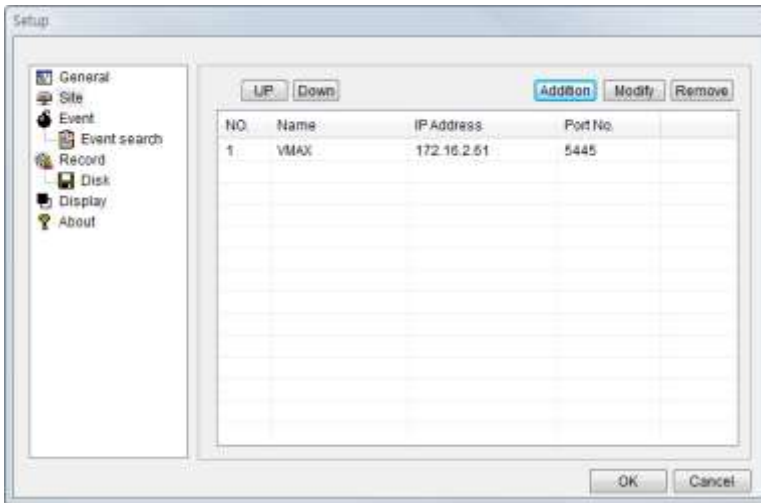
5.6.3 Event

Check the boxes of the events you wish to enable. Select whether they will be recorded in the event log, display an icon on the channel, and or be added to the event list.
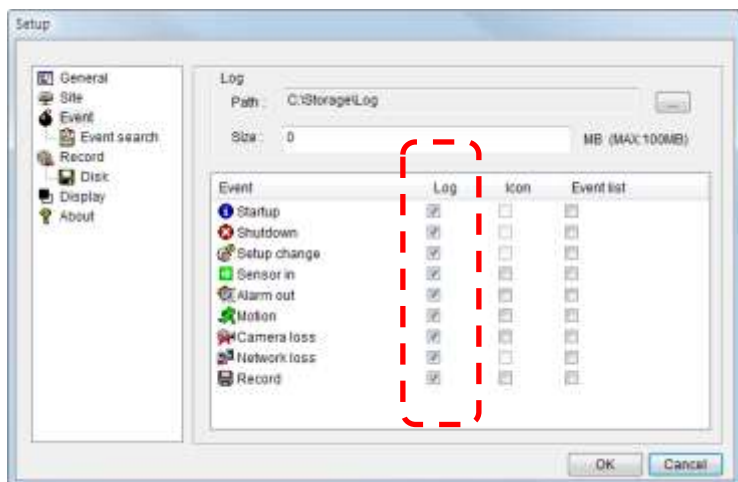

5.6.4 Event Search

Search for events by setting the beginning and ending time.

1. Select the period you wish to search by entering the From and To dates and time.

2. You can also select to view search results from the first and or last recorded data.

3. Click Find to start the search.

4. You can save the generated Event log on your computer by selecting [SAVE].
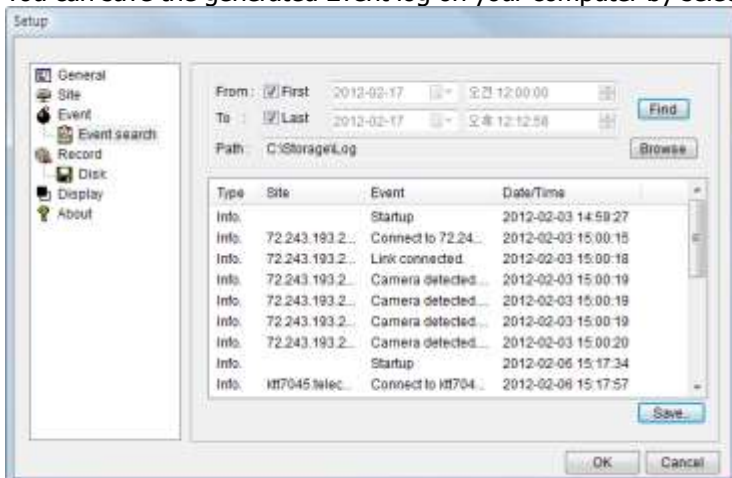
5.6.5 Record

You can setup the recording settings for the DVR remotely from the client software.
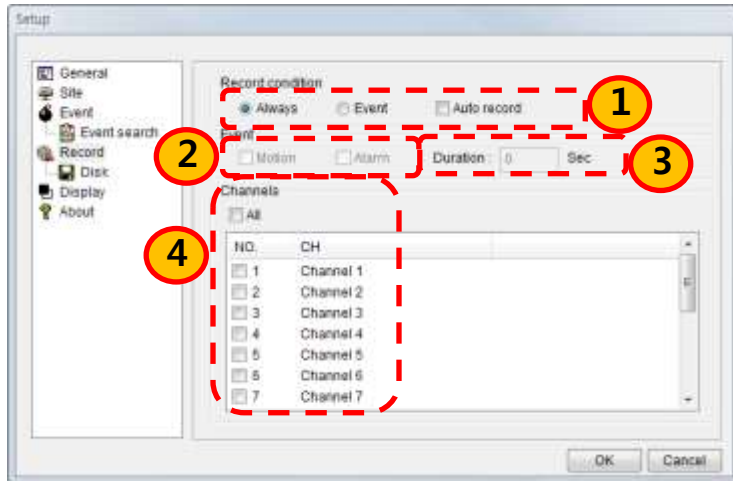
1. Recording Conditions

    Select the record mode from:

    Always- Continuous Recording.

    Event- Record when an event is detected.

    Auto Record- Local Recording. If selected, the video streaming from the DVR will be recorded to a directory on your PC based on the recording mode you select.

    For example:
    Auto Record & Always→ Continuous recording to your PC.
    Auto Record & Event→ video triggered by an Event will be recorded remotely to your PC.

2. Event

    If Event is selected as recording mode, select which events will trigger the DVR's recording. Select motion detection and or when an alarm is triggered.

3. If alarm is selected, set the duration of an alarm recording.

4. Channels

    Select which channels these settings apply to.

5.6.6 Disk

You can modify the location where backup files will be automatically saved in your computer.
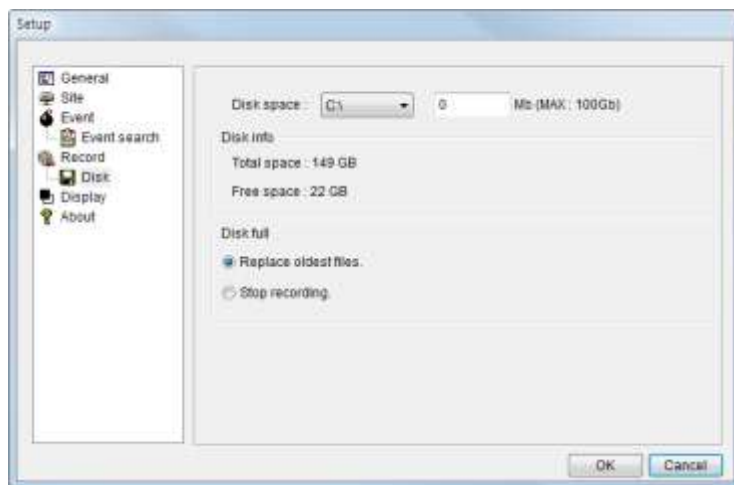
1. Disk Space

   Select the destination for backup files.

2. Disk Info

   The system will display how much free space you have in your selected directory. If necessary, you can adjust your memory before backing up.
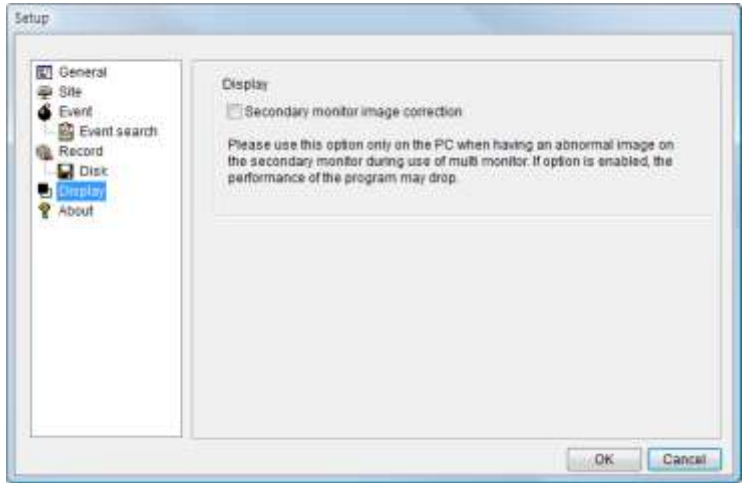
3. Disk Full
   Select whether the system will start recording over old data when the disk is full or stop recording.
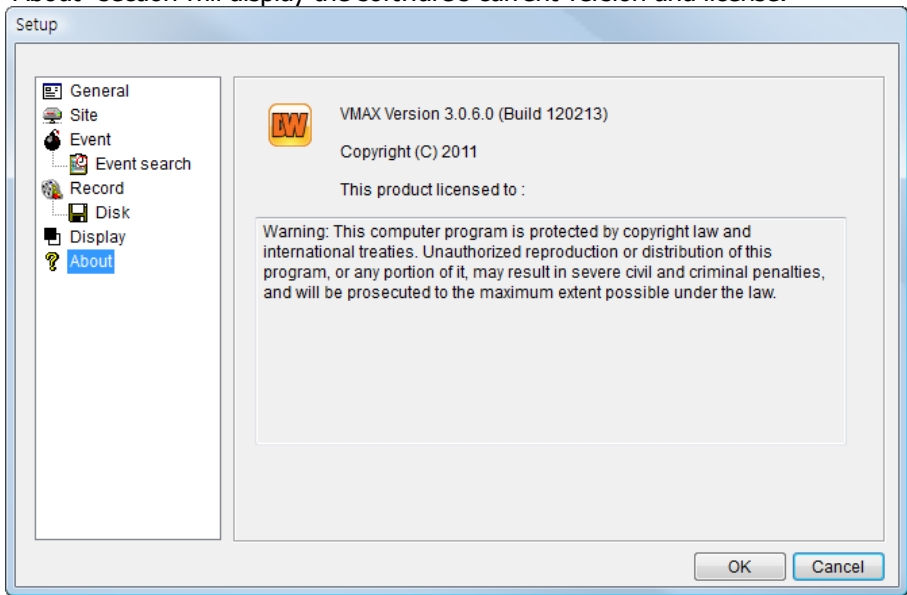
5.6.7 Display

Use this option only when you are using multi-monitors and have an abnormal image on the secondary monitor.

5.6.8 About

"About" section will display the software's current version and license.

Chapter 4

MOBILE PHONE SOFTWARE USER MANUAL

6. **Mobile Phone Software User Guide**
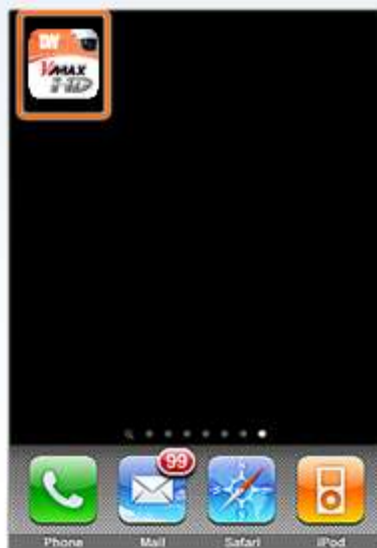
6.1   iPhone Application Software

1 Installation VMAXHD 2 3

3 Now you can view detailed information about the 'VMAX HD' application.
Click 'FREE' button. It will change to 'INSTALL' button. Select it to proceed.

4 Input your User ID and Password. The 'VMAX HD' icon will appear on your Apple Device.
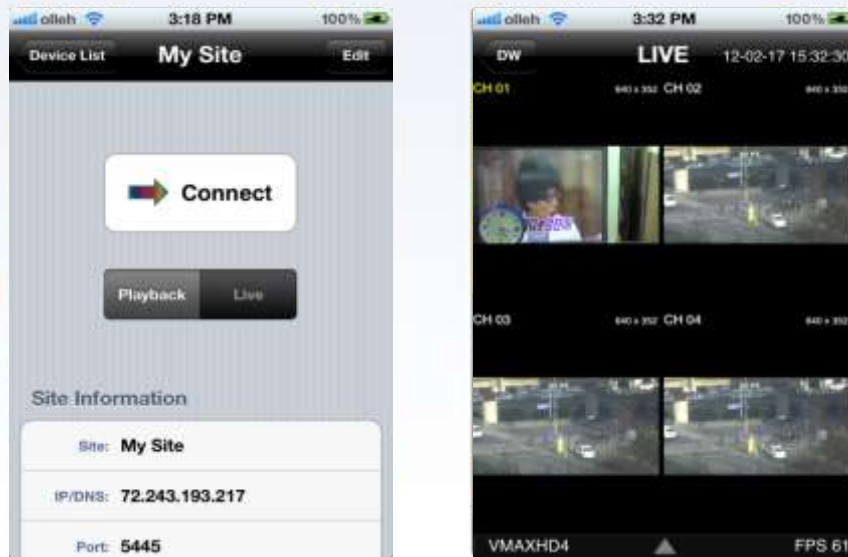
② How to connect and view. ③

① VMAX HD application displays as below. Press the 'ｷ' button.
Input the site information that you want to connect and press the 'Save' button.

② Select 'Live' mode and press 'Connect' to view the split live image.

1 2 How to connect and view. 3

1 VMAX HD application display as below and press '+' button .
Input the site information that you want to connect and press 'Save' button.

2 Select 'Live' mode and press 'Connect' then .you can see split live image.

1 2 3 How to search and PTZ control.

1 Select 'Playback' mode and press 'Connect'.
Select the date that you want to search and press 'Play'.

2 Select time and playback speed.
Pan and Tilt control is possible when Live mode and Digital Zoom are available in Live and Playback.

6.2 Android Application Software

1 Installation VMAXHD **2** **3**

1 Click 'Market' and click 'search' to locate the 'VMAX HD' application in the Google Play Store.

2 Type in 'VMAXHD' and click 'Search' to locate the 'VMAXHD' application icon on the screen.

vmaxhd

vmaxhd

VMAX HD

1 Installation VMAXHD **2** **3**

3 Now you can view detailed information about the 'VMAX HD' application. Click the 'Install' button. When the installation is complete, the DW App will appear in your main menu.

4 Once you open the application for the first time, please create a user account. You will be directed to the main menu screen when you have completed registration.

2 **How to connect and view.**

1 To add a device, type in all the required information and press the ˊADDˋ button. The site you have added will appear on the device list page.
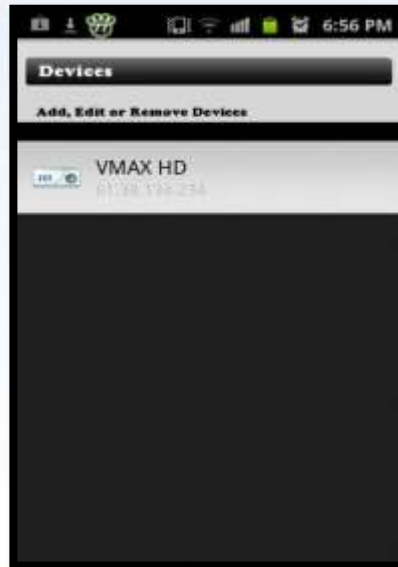
2 Select up to four (4) channels to view simultaneously and press "Live View".

1 2 3 How to PTZ control and Capture

1 Select a single channel to use the PTZ options. If you are using DW's HD-SDI cameras, use the zoom and focus buttons to adjust the camera remotely. Use the 'Capture' button to save a screenshot of your current view. View the captured images through 'Screenshot Viewer' in the main menu page.

2 View the VMAX HD firmware version through the ʿHelpʾ button at the main menu page.

7. **Appendix : Specification**

ITEM			VMAXHD4
Video	Input	Channel Input Level	4CH HD-SDI (720p25/30/50/60, 1080p25/30, 1080i50/60)
	Output	Main Monitor	HDMI (1280x720)
		Sub Monitor	VGA (1280x1024)
		CVBS	1
Audio	Input		4CH Line Input
	Output		1CH Line Output
	Audio Codec		G.711
Alarm	Sensor Input		4CH, NC/NO Selectable
	Alarm Out		1CH out by Sensor, Motion and Video Loss
Operation	PentaPlex		Live/Record/Playback/Backup/Network
Live	Digital Zoom		Zoom-in of specific area
	Channel Sequence		3 ~ 60 seconds
Recording	Compression		H.264
	Resolution		Up to 1920x1080
	Recoding Quality Grade		5 Levels
	Recording Mode		Continuous, Schedule, Motion, Sensor, Manual
	Motion Detection		Setup by Grid
	Pre Recording		Min. 15 seconds and Max. 20 minutes
	Post Recording		10 ~ 60 seconds
Playback	Digital Zoom		Zoom-in of specific area
	Speed	FF	x1/4, x1/2, x2, x4, x8, x16 and x32
		FR	X1, x2, x4, x8, x16 and x32
	Search Mode		Timeline, Event, Archive, Log, Specific Time
Backup	File Format		JPEG/Proprietary Format
	Media		USB/External HDD/Network
	Built-in Viewer		Yes
Network	Dual Streaming for Live		1280x720/640x360 120/100fps
	Playback		H.264 HD 120/100fps
	Streaming		RTP/RTSP/RTCP
	Protocols		HTTP, DDNS, NTP, SMTP
Storage	HDD	Interface	SATA, e-SATA
		Max. Capacity of HDD	2TB
		Max. Internal HDDs	4EA
	External Storage		1 e-SATA for RAID
	File system		Self-developed, Reliable and Stable File system
	S.M.A.R.T		HDD Error Check and Reporting
User	Menu Display		Graphic User Interface

Interface	Input Method	Front Buttons, IR Remote Control, Mouse, Keyboard Controller
Serial	POS	1 RS-232C
	PTZ & Controller	2 RS-485
Network	Ethernet	RJ-45, 10/100/1000Base-T, Auto MDI/MDIX
Network Access	Web Viewer	Live, Search/Playback, Backup, PTZ, Remote Setup/Upgrade
	Single-site monitoring software	Live, Search/Playback, Backup, PTZ, Remote Setup/Upgrade
	Multi-sites monitoring software	Live, Search/Playback, Backup, PTZ, Remote Setup/Upgrade
Features	DST (Daylight Saving Time)	Yes
	Internal Beep	By Video Loss, HDD Error
	Software Upgrade	By USB, Network Remote Upgrade
	NTP	Yes
	Watermarking	Yes
	3G Mobile	iPhone, Android
General	Operation Temperature	0~104 F
	Operating Humidity	20%~80%
	Power	AC 100~120V/200~240V, 50/60Hz, 280W
	Net Weight (Gross Weight)	14.6 lbs (19.4 lbs)/ 6.6 kg (8.8 kg)
	Unit Dimension (W x D x H)	17.00" x 16.92" x 3.86" (432mm x 430mm x 98mm)

NOTE The specifications are subject to change without notice.