



User's Guide (Ver. 1.0)

Models: D8HS/D16HS

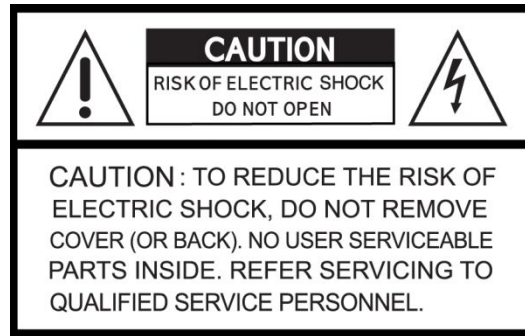
8/16 Channel IP & Analog 960H Hybrid DVR



About This User's Guide

Before operating the unit, please read this user's guide thoroughly and retain it for future reference.

Cautions



Explanation of Graphical Symbols



This symbol indicates the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



This symbol indicates the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electric shock, property damage, personal injury, or death.

WARNING

To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

CAUTION

Changes or modifications not approved by the manufacture will void the warranty of the product.

Using an incompatible battery may increase the risk of fire or explosion.

Replace only with the same or equivalent type battery recommended by the manufacture.

Discard used batteries according to manufacturer’s instructions.

These precautions **MUST** be followed for safety reasons




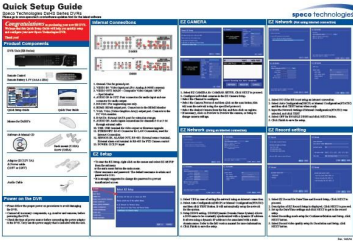



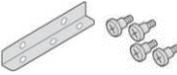
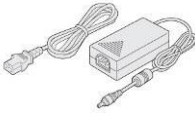



Warning

- Do not use if the unit emits smoke.
- Do not disassemble the unit.
- Do not place any heavy or sharp objects on the unit.
- Do not place on uneven surface.
- Do not expose to shock or vibration.
- Do not move the unit when the unit is powered on.
- Do not block, and allow dust to accumulate in the air vents.
- Do not restrict airflow of the unit; doing so can damage the unit.
- Only qualified and experienced personnel should perform installation and servicing.
- Turn off the power of the HS when connecting Cameras, Audio or Sensor Cables.
- The manufacturer is not responsible for any damage caused by improper use of the product or failure to follow instructions for the product.
- The manufacturer is not responsible for any problems caused by or resulting from the user physically opening the HS for examination or attempting to repair the unit.

Product Components

Please make sure the following components are included as specified below.

<p>DVR Unit Desktop: D8HS / D16HS</p>	
<p>Remote Control</p>	
<p>Battery 1.5V (AAA x2)</p>	
<p>Quick Setup Guide</p>	
<p>Quick User Guide</p>	
<p>USB Mouse</p>	
<p>Software & Manual CD</p>	
<p>Rack mount (x 2) & Screw (x 6)</p>	
<p>Adaptor (DC12V 5A) & AC Power cable (110V or 220V)</p>	
<p>Audio Cable</p>	

Specifications

MODEL			D8HS	D16HS
Operational Mode (Analog + IP)			Flexible for all channels	Flexible for all channels
Video	Input	IP Channels	Up to 8	Up to 16
		Analog Channels	Up to 8	Up to 16
	Output	Main Monitor	VGA and HDMI	VGA and HDMI
		Sub Monitor	CVBS and SPOT	CVBS and SPOT
	Loop Out		8	16
Audio	Input	Local Input (RCA)	8	16
		Remote Input from IP Camera	8	16
	Output	Local Output (RCA)	1	1
	Audio Codec		G.711	G.711
I/O	Sensor In	Local Input (Terminal Block)	4	4
		Remote Input from IP Camera	8	16
	Alarm Output		1	1
Serial	RS-232C		1	1
	RS-485		1	1
Recording	Compression		H.264	H.264
	IP Resolution & Frame Rate	1920x1080	240/200fps	480/400fps
	Local Resolution & Frame Rate	960H	240/200fps	480/400fps
		D1	240/200fps	480/400fps
		CIF	240/200fps	480/400fps
	Recording Quality Grade		5 Levels	5 Levels
	Recording Mode		Continuous / Motion / Sensor / Schedule / Manual/ Continuous + Sensor/ Continuous + Motion	Continuous / Motion / Sensor / Schedule / Manual/Continuous + Sensor/ Continuous + Motion
	Pre Recording		Max. 20 Minutes	Max. 20 Minutes
	Post Recording		Max. 60 Seconds	Max. 60 Seconds
Playback	Search		Quick Search, Date/Time, Event, Archive, Log	Quick Search, Date/Time, Event, Archive, Log
	Multi-Decoding		1, 4, 8	1, 4, 9, 16
	Playback Speed		x0.25, x0.5, x2, x4, x8, x16, x32, x64	x0.25, x0.5, x2, x4, x8, x16, x32, x64
Backup	Media		USB drive, External HDD,	USB drive, External HDD,

			Network	Network
		File Format	BMP, AVI, Proprietary Format	BMP, AVI, Proprietary Format
		Huge Backup	Yes (Max. 24 hours)	Yes (Max. 24 hours)
Storage	HDD	Capacity of 1 HDD	3TB	3TB
		Internal HDDs	3	3
		e-SATA	1	1
	USB	Front	2	2
		Rear	1	1
User I/F	Input Method		Front Buttons, IR, Mouse, Keyboard Controller	Front Buttons, IR, Mouse, Keyboard Controller
Network	Interface		10/100/1000 Base-T	10/100/1000 Base-T
	Dynamic DNS		Yes (Free Speco DDNS)	Yes (Free Speco DDNS)
	Dual Encoding for Network		Yes	Yes
	Max. Throughput		40Mbps	40 Mbps
Features	Digital Zoom		Yes	Yes
	DLS (Day Light Saving)		Yes	Yes
	NTP (Network Time Protocol)		Yes	Yes
	S.M.A.R.T		Yes	Yes
	Internal Beep		Yes	Yes
	Multi-Language		Yes	Yes
	e-mail Notification		Yes	Yes
Network Access	Mobile viewer		Speco Player (Live, Search, PTZ, 2-Way Audio)	Speco Player (Live, Search, PTZ, 2-Way Audio)
	PC Web Viewer		Windows (IE, Chrome, Firefox, Safari)	Windows (IE, Chrome, Firefox, Safari)
	PC Client		SecureGuard® CMS and SpecoTech Multi-Client Viewer	SecureGuard® CMS and SpecoTech Multi-Client Viewer
	Remote Setup and Upgrade		Yes	Yes
Power	Power Supply Voltage		12V 5A	12V 5A
Temperature	Operation Temperature		41F – 104F, During storage: 14F – 122F	41F – 104F, During storage: 14F – 122F
Weight	Unit Weight (Gross weight)		Approximately 11 lbs	Approximately 12 lbs
Dimension	Unit Dimension (W x H x D)		15"(W) x 2.83"(H) x 13.4"(D)	15"(W) x 2.83"(H) x 13.4"(D)

Please note that specifications and unit exterior designs are subject to change without notification.

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1. Main Features

- Easy Record, Copy and Setup
- Easy Search by Thumbnail Preview
- Easy Network
- Easy IP Camera Setup
- Recording Rate: D16HS: 480fps @ 960H, D8HS: 240fps @ 960H
- Digital Deterrent, audio message output upon event
- H.264 High Profile compression saves HDD space
- Simultaneous live view/playback while continuing to record/network transfer or backup
- Remote monitoring/recording/playback/configuration and control via internet
- Wi-Fi access point for remote viewing and configuration
- Audio Recording: D16HS:16 Channels; D8HS:8 Channels
- Switch between low and high quality stream during simultaneous Continuous + Motion or Continuous + Sensor recording modes for storage optimization

NOTE: Under federal law, The Fourth Amendment to the U.S. Constitution, Title III of the Omnibus Crime Control and Safe Streets Act of 1968, as amended by the Electronic Communications Privacy Act of 1986 (18 U.S.C. § 2510, *et seq.*), and the Foreign Intelligence Surveillance Act of 1978 (50 U.S.C. 1801, *et seq.*) permit government agents, acting with the consent of a party to a communication, to engage in warrantless interceptions of telephone communications, as well as oral and electronic communications.

- Automatic camera detection (Plug & Play)
- Covert camera operation provides enhanced security and administrator control
- Dynamically programmable recording priority, motion detection, alarms and scheduling
- Simple and Easy Graphic User Interface
- Simple Schedule Recording
- HDMI Output
- VGA Output
- LOOP Out
- Password to secure installation authorization
- Network software supports 10/100/1000Base-T
- USB 2.0 port for video clip exporting and easy firmware upgrade via USB Flash Drive
- Exclusive File Format Backup and Player
- Variety of Ways Network Access via SecureGuard® CMS, SpecoTech Multi-Client Software , Web-Viewer, and Mobile Viewer
- S.M.A.R.T. (**S**elf-**M**onitoring, **A**nalysis, and **R**eporting **T**echnology for HDD)

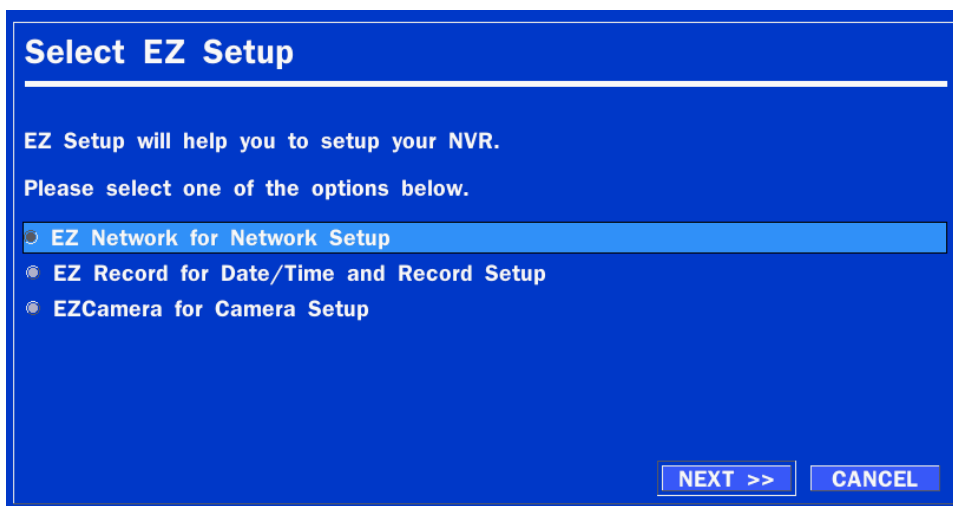
2. Initial Boot-up Process

2-1. Initial Boot up and Basic Time Setup

1. During the first boot up, the following logo will be displayed.



2. After the logo, select the language and set date and time as specified below.

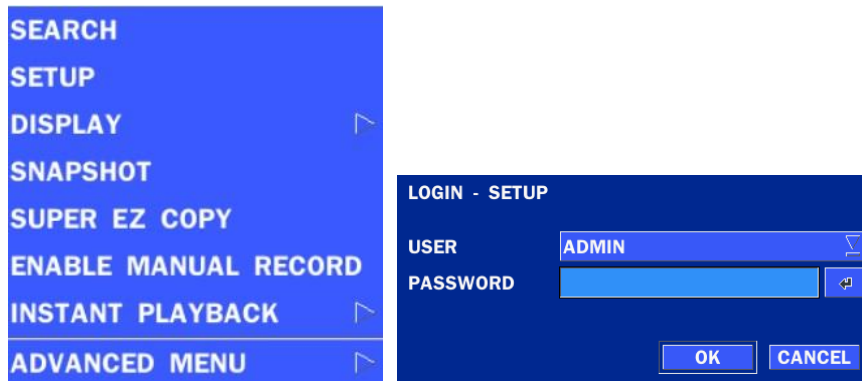


(EZ Setup Page Reference / Page: 16 ~ 19)

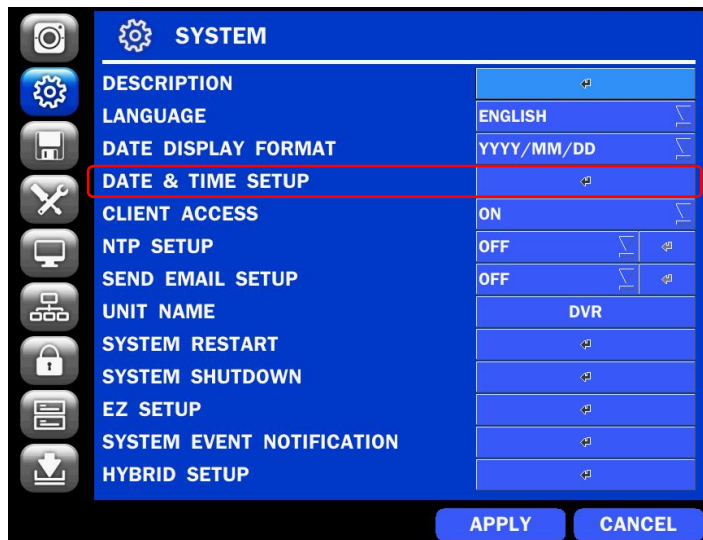
2-2. Setting up Daylight Savings Time

To enable Daylight Saving feature/NTP synchronization, take the following steps.

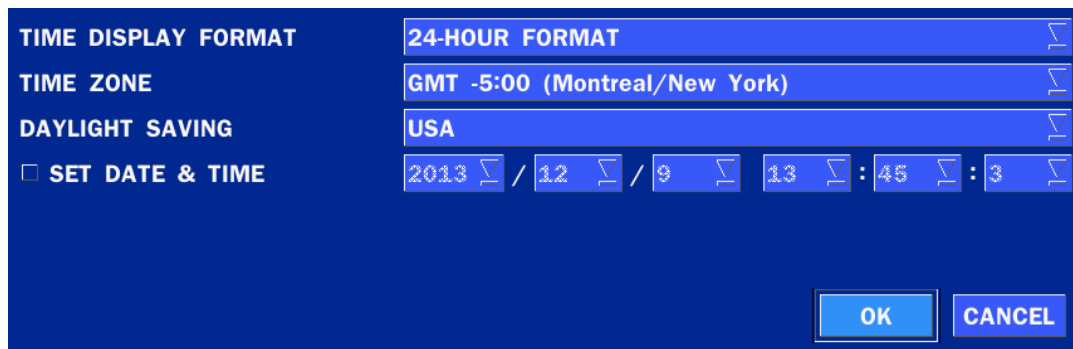
1. Enter the SETUP mode. The default Username is "ADMIN" and Password is "1111".



2. Go to SETUP > SYSTEM > DATE & TIME SETUP

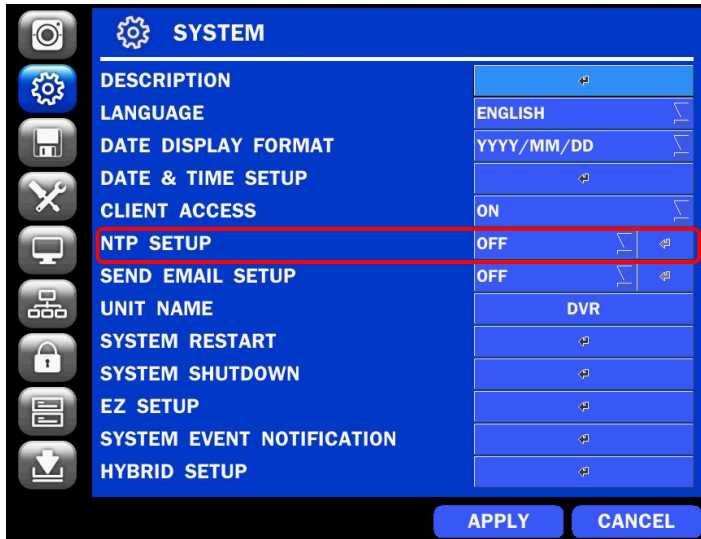


3. Select ON from the DAYLIGHT SAVING dropdown menu.



2-3. Setting NTP (Network Time Protocol)

1. SETUP > SYSTEM > NTP SETUP > ON



2. Select the proper TIME ZONE time.



Table2.3.1. GMT Time Zone

	State	Standard Time	Daylight-Saving Time
AL	Alabama	GMT-6	GMT-5
AK	Alaska	GMT-9	GMT-8
AK	Alaska (Aleutian Islands)	GMT-10	NA
AZ	Arizona	GMT-7	NA
AZ	Arizona (Navajo)	GMT-7	GMT-6
AR	Arkansas	GMT-6	GMT-5
CA	California	GMT-8	GMT-7
CO	Colorado	GMT-7	GMT-6
CT	Connecticut	GMT-5	GMT-4
DC	District of Columbia	GMT-5	GMT-4
DE	Delaware	GMT-5	GMT-4
FL	Florida	GMT-5	GMT-4
FL	Florida (W)	GMT-6	GMT-5
GA	Georgia	GMT-5	GMT-4

HI	Hawaii	GMT-10	NA
ID	Idaho (N)	GMT-8	GMT-7
ID	Idaho (S)	GMT-7	GMT-6
IL	Illinois	GMT-6	GMT-5
IN	Indiana	GMT-5	GMT-4
IN	Indiana (SW / NW)	GMT-6	GMT-5
IA	Iowa	GMT-6	GMT-5
KS	Kansas	GMT-6	GMT-5
KS	Kansas (W)	GMT-7	GMT-6
KY	Kentucky (E)	GMT-5	GMT-4
KY	Kentucky (W)	GMT-6	GMT-5
LA	Louisiana	GMT-6	GMT-5
ME	Maine	GMT-5	GMT-4
MD	Maryland	GMT-5	GMT-4
MA	Massachusetts	GMT-5	GMT-4
MI	Michigan	GMT-5	GMT-4
MI	Michigan (W)	GMT-6	GMT-5
MN	Minnesota	GMT-6	GMT-5
MS	Mississippi	GMT-6	GMT-5
MO	Missouri	GMT-6	GMT-5
MT	Montana	GMT-7	GMT-6
NE	Nebraska	GMT-6	GMT-5
NE	Nebraska (W)	GMT-7	GMT-6
NV	Nevada	GMT-8	GMT-7
NH	New Hampshire	GMT-5	GMT-4
NJ	New Jersey	GMT-5	GMT-4
NM	New Mexico	GMT-7	GMT-6
NY	New York	GMT-5	GMT-4
NC	North Carolina	GMT-5	GMT-4
ND	North Dakota	GMT-6	GMT-5
ND	North Dakota (W)	GMT-7	GMT-6
OH	Ohio	GMT-5	GMT-4
OK	Oklahoma	GMT-6	GMT-5
OR	Oregon	GMT-8	GMT-7
OR	Oregon (E)	GMT-7	GMT-6
PA	Pennsylvania	GMT-5	GMT-4
RI	Rhode Island	GMT-5	GMT-4
SC	South Carolina	GMT-5	GMT-4
SD	South Dakota (E)	GMT-6	GMT-5
SD	South Dakota (W)	GMT-7	GMT-6

TN	Tennessee (E)	GMT-5	GMT-4
TN	Tennessee (W)	GMT-6	GMT-5
TX	Texas	GMT-6	GMT-5
TX	Texas (W)	GMT-7	GMT-6
UT	Utah	GMT-7	GMT-6
VT	Vermont	GMT-5	GMT-4
VA	Virginia	GMT-5	GMT-4
WA	Washington	GMT-8	GMT-7
WV	West Virginia	GMT-5	GMT-4
WI	Wisconsin	GMT-6	GMT-5
WY	Wyoming	GMT-7	GMT-6



NOTE: If you want the unit to automatically synchronize the local time, the Time Zone must be properly set according to your local time zone.

2-4. EZ SETUP

Quick installation Menu for HS and IP Camera Easy installation(Right-Click on the Main Screen)

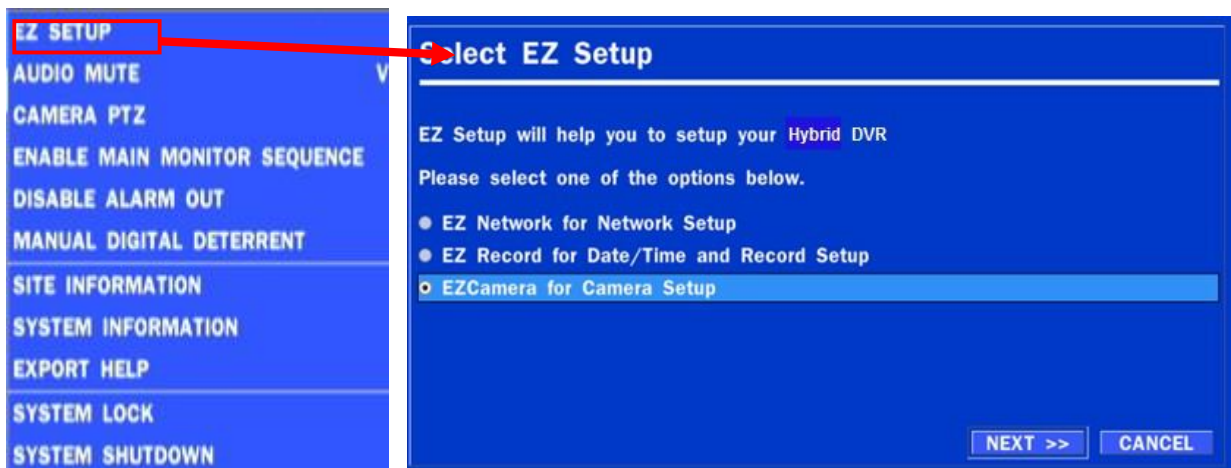


Figure 2.4. EZ Setup Screen

2.4.1. Setup DATE & TIME, IP CAMERA configurations.



Figure 2.4.1. EZ CAMERA Setup Procedure

- ① Select EZ Camera for Date/Time and Camera Setup, Click NEXT to proceed.
- ② Configure individual cameras in the EZ Camera Setup.
 - Select the Channel to configure.
 - Select the Camera Protocol and then click on the scan button; this will scan the network for any ip cameras using the specified protocol.
 - Select the desired Camera from the list, and then click on register.
 - If necessary, click on Preview to Preview the camera, or Setup to change camera settings.

2.4.2. EZ NETWORK (Using an internet connection)



The figure consists of five screenshots of the EZ NETWORK setup interface, numbered 1 through 5. Each screenshot is a blue window with white text and controls.

- Screenshot 1:** Titled "EZ NETWORK", it asks "Internet Connection" and "Is your DVR connected to the Internet?". It has two radio buttons: "Yes (I will use an Internet connection)" and "No (I will not use an Internet connection)". The "Yes" option is selected. There are "NEXT >>" and "CANCEL" buttons at the bottom right.
- Screenshot 2:** Titled "EZ NETWORK", it shows "LAN Setup". The "Auto Configuration (DHCP)" option is selected in a dropdown menu, and the "Test" button is highlighted. Below the dropdown are four checked items: "Get IP, Gateway, Subnet Mask", "Search DNS Server", "Check Internet connectivity", and "Search UPnP/PortForwarding - Support UPnP". At the bottom, it says "Your network has been configured successfully! Please press 'NEXT' to continue..." and has "<< PREV", "NEXT >>", and "CANCEL" buttons.
- Screenshot 3:** Titled "EZ NETWORK", it shows "LAN Setup". The "Manual Configuration (STATIC)" option is selected in a dropdown menu, and the "Test" button is highlighted. Below the dropdown are fields for "IP Address" (172.16.2.38), "Subnet Mask" (255.255.0.0), "Gateway" (172.16.1.254), "DNS (Primary)" (168.126.63.1), and "DNS (Secondary)" (168.126.63.2). Below these fields are two checked items: "Check Internet connectivity" and "Search UPnP/PortForwarding - Support UPnP". At the bottom, it says "Your network has been configured successfully! Please press 'NEXT' to continue..." and has "<< PREV", "NEXT >>", and "CANCEL" buttons.
- Screenshot 4:** Titled "EZ NETWORK", it shows "DDNS Setup". It has fields for "ENABLE DDNS" (OFF), "HOST NAME" (hostname), "HOST DOMAIN NAME" (hostname.ddns.specoddns.net), "SUBMIT/UPDATE" (OFF), and "ezDDNS" (OFF). At the bottom, it has "<< PREV", "NEXT >>", and "CANCEL" buttons.
- Screenshot 5:** Titled "EZ NETWORK", it says "You have now completed your network setup." and "Click the 'FINISH' button to finish EZ Network, or click the 'GO TO EZ CAMERA' button to start the Camera Setup". At the bottom, it has "GO TO EZ CAMERA", "FINISH", and "CANCEL" buttons.

Figure 2.4.2. EZ NETWORK Setup Procedure

- ① Select YES in case of setting the network using an internet connection.
- ② Select Auto Configuration(DHCP) or Manual Configuration(STATIC) and then click TEST Button. It will automatically setup the network for the system.
- ③ Setup DDNS setting. DDNS(Dynamic Domain Name System) allows a DNS name to be constantly synchronized with a dynamic IP address. It allows using a dynamic IP address to be associated with a static domain name. Refer to the full version manual for more information.
- ④ Click Finish to save the setup.

2.4.3. EZ NETWORK setting (Not using internet connection)



Figure 2.4.3. EZ NETWORK Setup – Manual Configuration Screen

- ① Select NO if the HS is not using an internet connection.
- ② Select Auto Configuration(DHCP) or Manual Configuration(STATIC) and then click TEST button when ready.
- ③ Input the Network Settings if Manual Configuration(STATIC) was selected, and click TEST
- ④ Select OFF for ENABLE DDNS and click NEXT button.
- ⑤ Click Finish to save the setup.

2.4.4. EZ Record setting

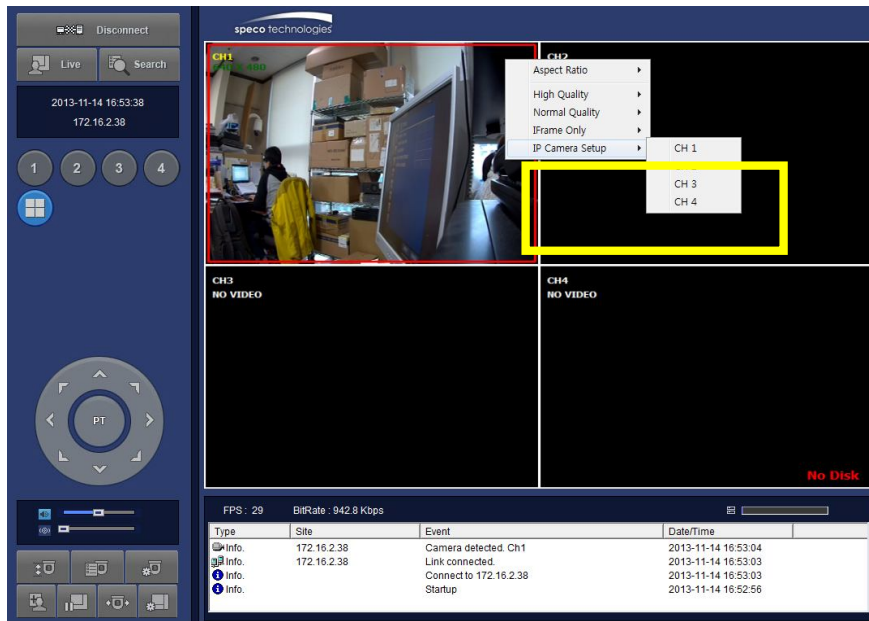


Figure 4.2.4. EZ RECORD Setup Procedure

- ① Select EZ Record for Date/Time and Record Setup, Click NEXT to proceed.
- ② Description of EZ Record Setup is displayed, Click NEXT to proceed.
- ③ Set up the Date/Time settings and click NEXT to get to the record setup.
- ④ Select Recording mode setup for Continuous/Motion and Setup, click NEXT button.
- ⑤ Select Record video quality setup for Resolution and Setup, click NEXT button.

2-5. IP Camera SETUP (through SpecoTech Web Viewer)

HS Series allows remote access to the IP Cameras through "IP Camera Setup" menu in SpecoTech Web Viewer.

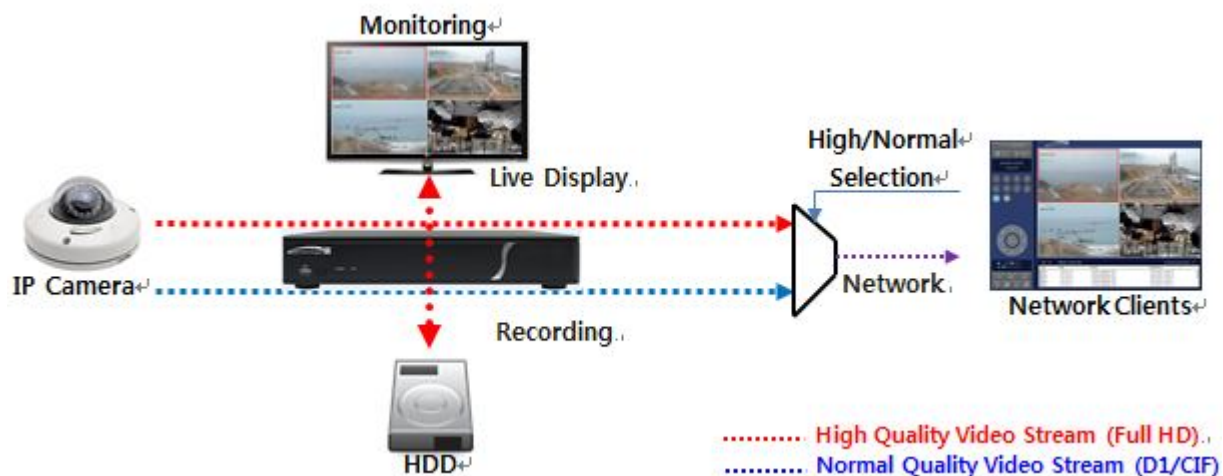


- ① Click the mouse right button
- ② Select "IP Camera Setup".
- ③ Select Channel Number.
- ④ It launches the camera's web setup page.

In order for the web pages to launch from the "IP Camera Setup" menu when accessed from the WAN, Ports 59011 to 59254 on the router must be port forwarded to the HS. The local address of the HS can be found in the system information.

2-6. Dual Streaming

- High Quality (Main Profile) Video Stream is used for both Recording and Live Display.
- High Quality (Main Profile) Video Stream can be viewed through the network, when selected.
- Normal (Secondary) Quality Video Stream is used by default when viewing through the network.



3. Front and Rear Panels

3-1. Front Panel









HS Desktop Front

Figure 3.1.1. DVR Front panels

Table 3.1.1. Front LED and Ports of Desktop Models (D16HS/D8HS)

Name	Description
POWER	LED light is on when power is applied to the system.
HDD	LED light is on when the system is recording video data.
USB Port	This USB port for archiving footage into a USB device. (USB 2.0 connector)

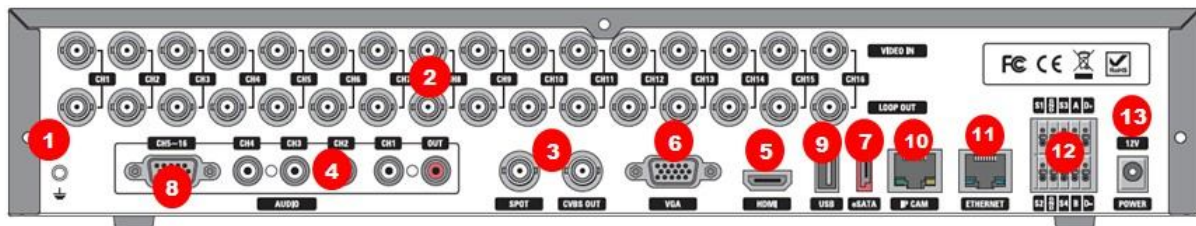
Table 3.1.2. Front Buttons (D16HS/D8HS)

Name	Description
Buttons 1~16	Select a channel from CH1 to CH16
	Buttons from 9 to 16 is used as function keys on PTZ control mode To escape out of PTZ mode, press the ESC button.
MENU	Goes into the Setup window
COPY	Takes a Screenshot on Live View and Goes into Backup during Playback
ALARM	Activates the external alarm device
SEQ	Enables the sequence mode on Live
ESC	Exit the current mode or cancels current operation
PLAYBACK	Goes into search mode
PTZ	Activates the Pan, Tilt and Zoom menu
MODE	Toggles between the available display modes (1x1, 2x2, 3x3, 4x4)
POWER	Will initiate system shut down
	LIVE mode – Moves Up SEARCH mode – Skips 1min ahead on playback and 1 frame ahead on pause
	LIVE mode – Moves Right SEARCH mode - Control the play speed (Fast Forward)
	LIVE mode – Moves Down SEARCH mode - Skips 1min back on playback and 1 frame back on pause
	LIVE mode – Moves Left SEARCH mode- Select the play speed (Rewind)
	LIVE mode – Select (Center) SEARCH mode - Play & Pause

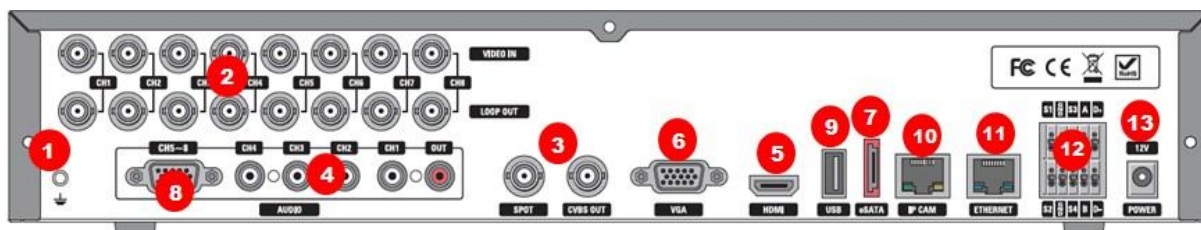
3-2. Rear Panel Connectors



- Do not power this system on before all the connections are attached.
- Make sure all the connections are properly secured. Faulty connection may result in the system being damaged.



D16HS

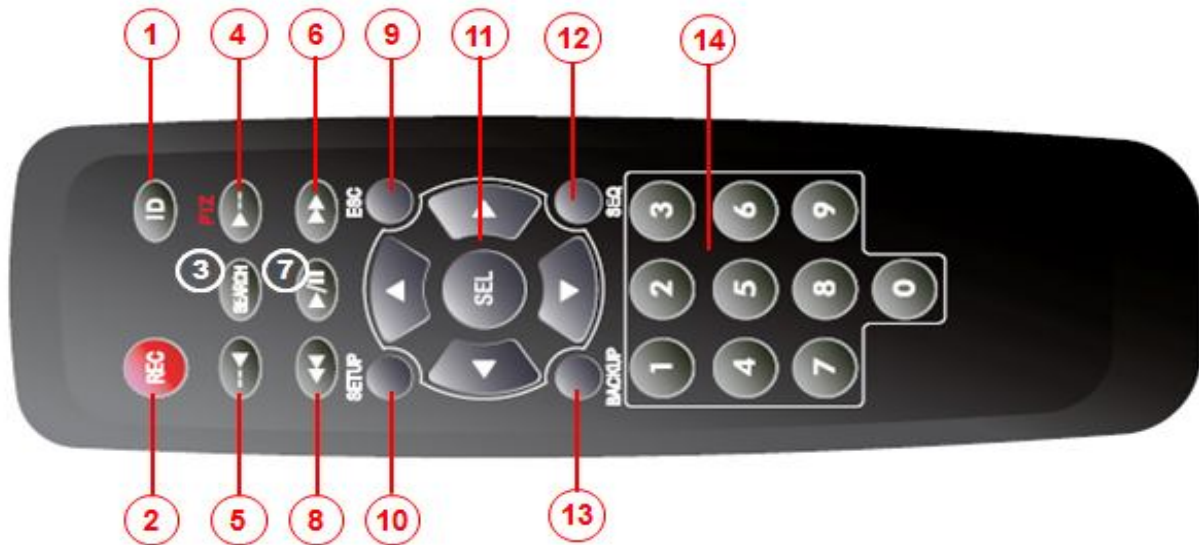


D8HS

Figure 3.2.1. Connectors

- ① Ground: Use for ground port.
- ② VIDEO IN: Video input port.(For Analog 960H cameras)
- ③ VIDEO OUT: MAIN – Composite Video Output / SPOT – Spot Monitor
- ④ AUDIO IN & OUT: Four connectors for audio input and one connector for audio output.
- ⑤ HDMI: HDMI output port. Connectors to the HDMI Monitor
- ⑥ VGA: VGA (Video Graphics Array) output port. Connects to the PC VGA monitor.
- ⑦ E-SATA: External SATA port for extension storage.
- ⑧ AUDIO IN: Audio inputs connections for channels 5-8 or 5-16 through external cable
- ⑨ USB: USB terminal for video export or firmware upgrade
- ⑩ IP CAM: Network Second Terminal. No Internet access.
- ⑪ ETHERNET: RJ-45 Connector for LAN Connection, used for Internet Connection
- ⑫ SENSOR IN, ALARM OUT, RS-485: External sensor terminal, External alarm out terminal & RS-485 for PTZ Camera control
- ⑬ POWER: DC12V input

3-3. Remote Control



Typical Remote Control

- ① ID: To set the remote control ID.
- ② REC: To start and stop manual recording
- ③ SEARCH: To go to SEARCH menu.
- ④ F/ADV:
 - During playback – To move the playback position 60 seconds forward .
 - During Pause – To move the playback position moves 1 frame forward
- ⑤ F/REW:
 - During playback – To move the playback position 60 seconds back.
 - During Pause – To move the playback postion 1 frame back.
- ⑥ FF: To fast forward the recording.
- ⑦ PLAY/PAUSE: To play or to pause the recording in playback mode
- ⑧ REW: To rewind the recording.
- ⑨ ESC:
 - During setup – To retun to the preivous menu screen.
 - During Playback – To exit playback mode
 - System lock – To lock a system when pressing ESC button for 5 seconds.
 - System unlock – To unlock a system when pressing ESC button for 5 seconds.
- ⑩ SETUP: To open the SETUP menu.
- ⑪ Direction buttons: To move menu items or select a channel.
- ⑫ SEQ: To start auto sequencing the screen in full screen mode. (Toggle)
- ⑬ BACKUP: To start a backup operations in live or playback mode
- ⑭ 0~9: To select channel (1,2,3,..) or to enter a DVR ID number or use as number key.

4. Setting up the DVR

The following sections detail the initial setup of the DVR.



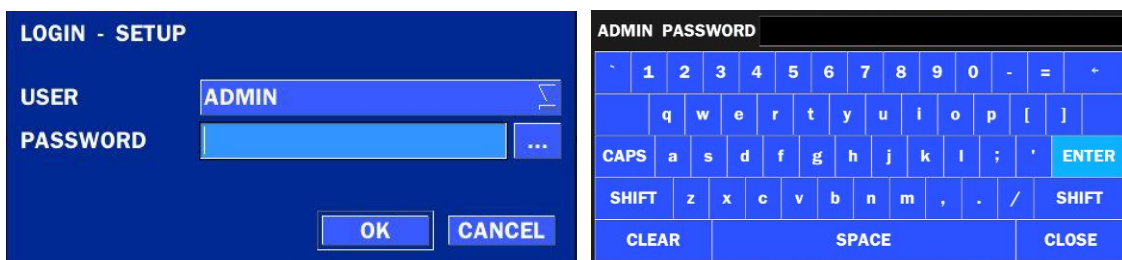
Menu screen will close if user response is not received in 5 minutes.

4-0. Setup – Main Live Screen

To enter the setup menu, right click on the mouse and select setup from the submenu or press the setup button on the remote control.



Table 4.1.1. Live Screen and Quick Operation Window



When the DVR prompts the LOG-IN window, enter the PASSWORD using the virtual keyboard, or the front panel, or the remote control. The factory default password is 1111. It is highly recommended to assign a new password to protect the system. User can assign a new password in SECURITY setup menu.

4-1. Setup – IP CAMERA

Press the SETUP button and enter the password. The setup menu is displayed as picture below. Select DISPLAY icon and press SEL button to enter the setup menu item.



Figure 4.1.1 IP Camera mode setup screen

Table 4.1.1. Menu items in IP CAMERA mode setup

Item	Description
------	-------------

CHANNEL

To manually connect each camera, click on the  to get this window:

	PROTOCOL	SCAN	IP	PORT	WEB PORT	OTHERS
9	SPECO	<input checked="" type="checkbox"/>	172.16.2.66	554	80	
10	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	
11	ONVIF	<input type="checkbox"/>	0.0.0.0	554	80	
12	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	
13	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	
14	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	
15	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	
16	SPECO	<input type="checkbox"/>	0.0.0.0	554	80	

Under the column labeled Type, Select IP Camera Protocol

	PROTOCOL	SCAN
9	SPECO	<input checked="" type="checkbox"/>
10	SPECO	<input type="checkbox"/>
11	ONVIF	<input type="checkbox"/>
	SPECO	<input type="checkbox"/>

← Double Click to Scan

SCAN: Double click the empty box to search IP camera on the local network.

IP	PORT	WEB PORT
192.168.78.11	554	80

Camera Scanning has been completed.

REFRESH REGISTER CANCEL

IP: Enter the address of IP camera to connect, or select from scanned list.

PORT: Enter the port number of IP camera to connect

WEB PORT: Enter the web port number of IP camera to connect

OTHERS: Change the IP camera setting. Double click the empty box and then Log-In box will be pop-up. (Enter ID and PASSWORD of IP Camera)

ID admin

PASSWORD ****

OK

PROTOCOL	Select the protocol for the IP Camera.
SCAN	Searches the network for IP Cameras using the specified protocol.
IP	Enter the IP Address of the desired IP Camera.
PORT	Enter the IP Camera stream Port Number (default: 554)
WEB PORT	Enter the IP Camera Web Port Number (default: 80)
OTHERS	IP Camera Video Setup(Resolution, Frame rate, and Bitrate)

4-1-1. SCAN Menu

Scan for IP Cameras on network using ONVIF/SPECO protocols.

IP CAMERA

CHANNEL 9

PROTOCOL ONVIF

SCAN

IP 0.0.0.0

WEB PORT 80

ID admin

PASSWORD ****

PROFILE Primary

ONVIF SETUP

APPLY CANCEL

IP CAMERA

CHANNEL 5

PROTOCOL SPECO

SCAN

IP 192.168.78.15

PORT 80

WEB PORT 80

ID admin

PASSWORD ****

SETUP

APPLY CANCEL

Figure 4.1.2 IP CAMERA Setup Screen



Figure 4.1.3 Left Image using ONVIF Protocol SCAN, Right Image using SPECO Protocol SCAN

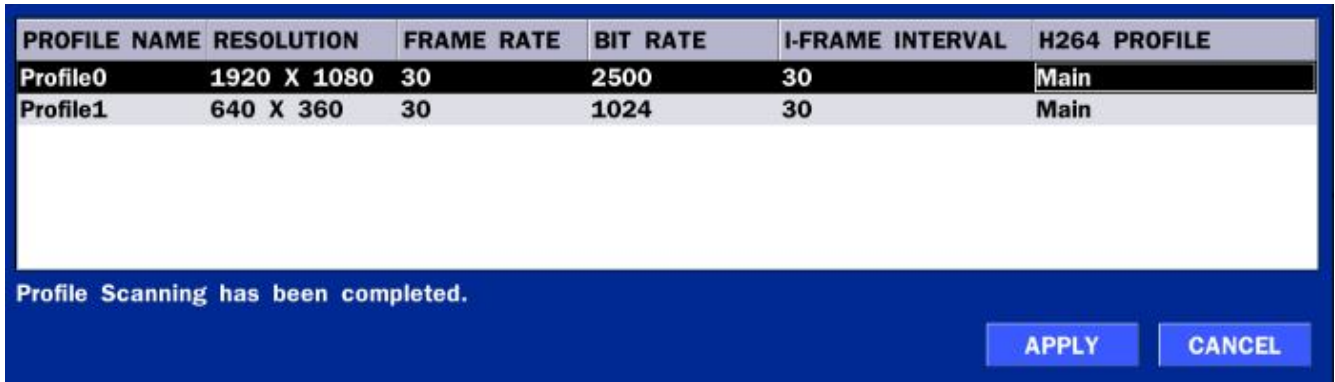


Figure 4.1.4 ONVIF Protocol Profile SCAN Image

- ① Select the protocol used by the IP Camera and then click the scan button.
- ② Select the IP Camera from the list and then click the register button.
- ③ After registering, the basic information is displayed.
- ④ IP cameras using ONVIF protocol require ID, Password and Profile to be correctly entered for proper operation.
- ⑤ SPECO protocols only require ID and Password to be correctly entered for proper operation. IP cameras using ONVIF protocol can have their Video, Network and System settings accessed and updated using the ONVIF setup menu.

(ONVIF Setup Menu may not be accessible depending on the ONVIF version used by the IP camera.

4-1-2. ONVIF SETUP Menu

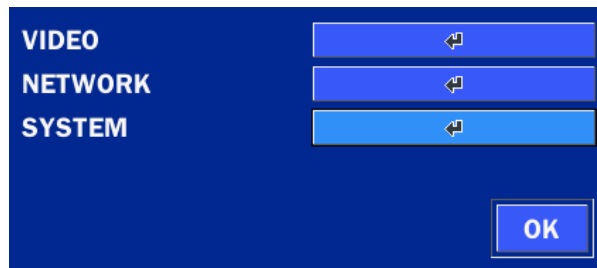


Table 4.1.2. Menu Items in ONVIF Setup Screen

Menu Item	Description
VIDEO	Video, Encoder to view and change to audio settings.

VIDEO

RESOLUTION

FRAMERATE

BITRATE (Kbps)

ENCODER

I-FRAME INTERVAL

H.264 PROFILE

AUDIO CODEC SUPPORTS ONLY G.711

NETWORK View and change Network settings.

NETWORK

INTERFACE NAME

INTERFACE TYPE

IP

SUBNET MASK

GATEWAY

RTSP PORT

WEB PORT

HTTPS

SYSTEM System information and change your password, factory reset and the camera is rebooting..

SYSTEM

DEVICE INFORMATION

USER PASSWORD

FACTORY DEFAULT

CAMERA REBOOT

INFORMATION

MANUFACTURER	Probe
MODEL	PIN-H2000A
FIRMWARE VERSION	1.00.04
SERIAL NUMBER	2000beff21
HARDWARE ID	PIN-H2000A

4-1-3. SCAN Menu



Figure 4.1.2 IP CAMERA Setup Screen

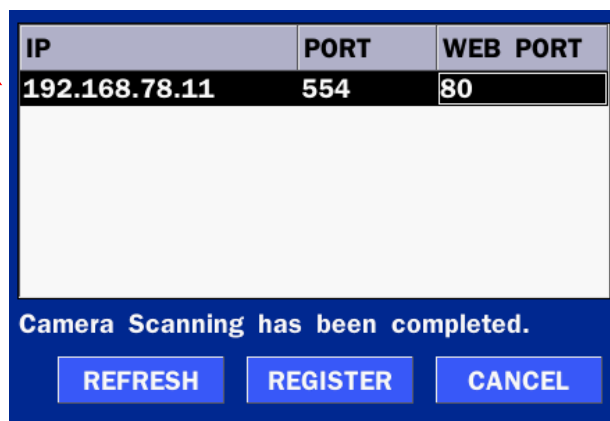


Figure 4.1.3 Search IP Camera Screen

- ① Select the IP Camera protocol and then click the scan button
- ② Select the ip camera on the list and then click the register button.
- ③ After the registration is completed, the basic information is to be displayed.

4-2. Setup – SYSTEM

In the SETUP menu, select the SYSTEM tab. Then, the SYSTEM menu is displayed as pictured below. Navigate through the menu items using the mouse or the remote control and change the value of the menu.

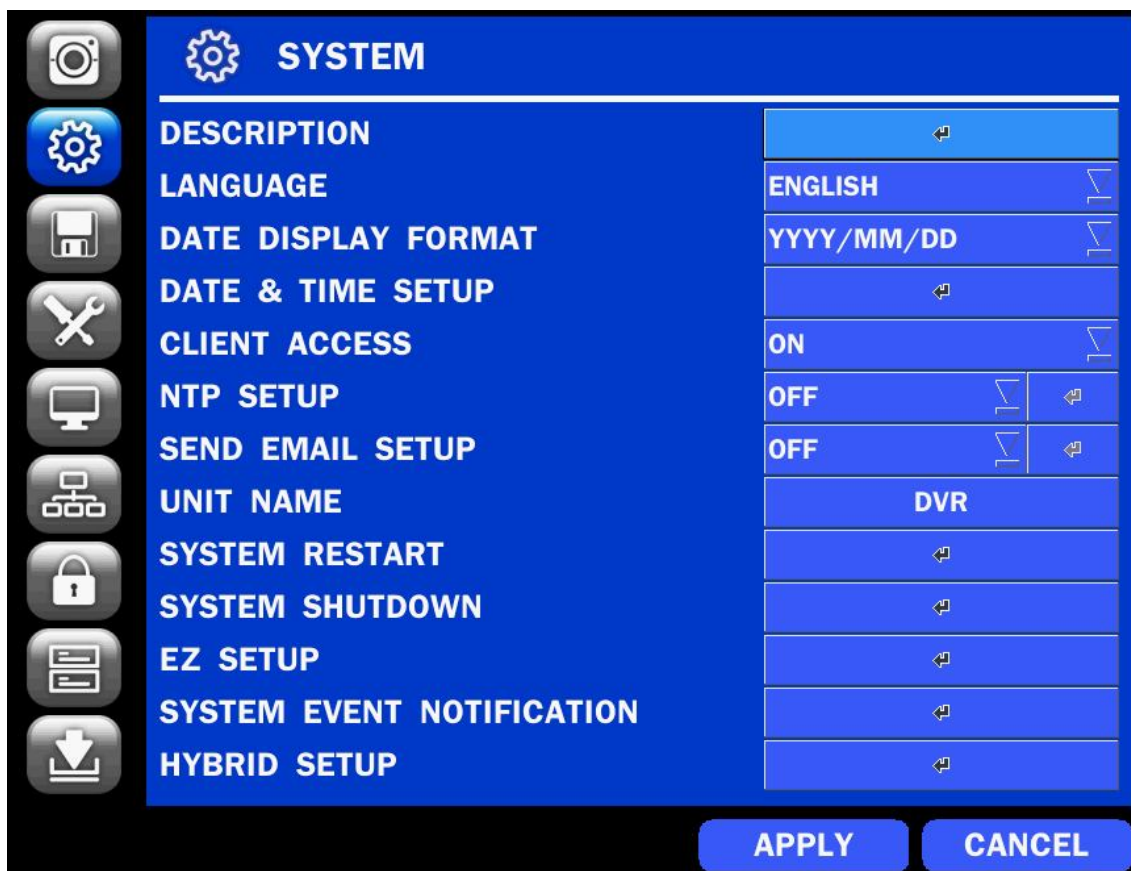

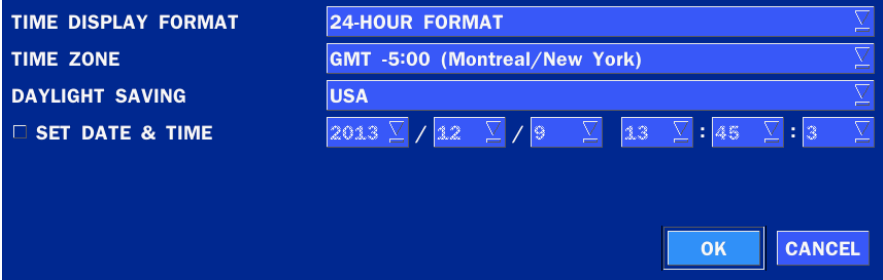


Figure 4.2.1. SYSTEM Setup Screen

Table 4.2.1. Menu Items in SYSTEM Setup Screen

Item	Description
DESCRIPTION	Press the button to view the system information. (Software Version, Storage Size, IP Address, MAC Address and DDNS Status)
	
LANGUAGE	Select the display language using the mouse or the remote control. Once a language is selected, the display language will change.
DATE DISPLAY FORMAT	Select the date display format using the mouse or the remote control. Options are: MM/DD/YYYY, YYYY/MM/DD, DD/MM/YYYY, YYYY-MM-DD, MM-DD-YYYY, DD-MM-YYYY
DATE&TIME TUP	Select the display date and time using the mouse or the remote control and press OK button to set the present date and time.
	
Select DAYLIGHT SAVING using the mouse or the remote control and select the appropriate daylight saving time zone. The available options are:	
OFF: Daylight saving is turned off.	
USA: Applies the USA daylight saving time.	
EU: Applies the EU daylight saving time.	
<ul style="list-style-type: none"> - Select the GMT AREA using the mouse or the remote control. - Set the time difference with the standard time using the mouse or the button. 	
OTHERS: If the time zone is neither USA nor EU, set the date and time of the daylight saving period.	
<ul style="list-style-type: none"> - Select BEGIN or END using the remote and press the SEL button. 	
Caution	
<ul style="list-style-type: none"> - 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. 	
CLIENT ACCESS	Enable/Disable remote access through the network.
NTP SETUP	NTP (Network Time Protocol) which synchronizes the time of the computer systems over variable-latency data networks.



PRIMARY SNTP SERVER	Pool.ntp.org	[↔]
SECONDARY SNTP SERVER	Time.nist.gov	[↔]
TIME ZONE	GMT -5:00 (Montreal/New York)	⌵
CONNECTION MODE	TIME	⌵
CONNECTION PERIOD	03:00 AM	⌵
		[OK] [CANCEL]

PRIMARY SNTP SERVER: Input the address of the primary NTP time-server.

SECONDARY SNTP SERVER: Input the address of the secondary NTP time-server.

TIME ZONE: NTP synchronizes with GMT (Greenwich Mean Time) regardless of geography, user must set their own time difference.

CONNECTON MODE: Select the NTP time-server connection mode from TIME, INTERVAL, and ONCE.

CONNECTION PERIOD

- **TIME** – Refresh the time at the designated time (e.g. 1AM)
- **INTERVAL** – Every 1 hour ~ 24 hours
- **ONCE** – Synchronizes time only once. NTP will not synchronize unless the Connection Mode is changed.

sends E-MAIL Notification when the NTP server time is faster than the system time with bellow message.

“NTP server time is faster than the system time.

In this case, NTP server time is ignored to protect the user data.

User must set the time manually.

SYSTEM TIME: Mon Oct 10 13:46:49 2011

SERVER TIME: Mon Oct 10 13:33:12 2011

DVR ID: DVR

IP ADDRESS: 172.16.2.46”



SEND EMAIL

SERVER TYPE	MANUAL	⌵
MAIL SERVER		[↔]
MAIL PORT	25	[↔]
SECURE OPTION	NONE	⌵
ID		[↔]
PASSWORD		[↔]
MAIL TO		[↔]
MAIL FROM	TEST	[↔]
		[OK] [CANCEL]

SERVER TYPE: Select **GMAIL, HOTMAIL, AOL, YAHOO** or **MANUAL**)

MAIL SERVER: Enter the appropriate mail server information.

MAIL PORT: Assign Mail Port number.

SECURE OPTION: Select the secure mail server connection method. (SSL or TLS)

ID: Enter the appropriate mail server ID.

PASSWORD: Enter the appropriate mail server PASSWORD

MAIL TO: Enter the appropriate email address to enable sending e-mail reports using a virtual keyboard.

MAIL FROM: To set the email address sent to the destination host.

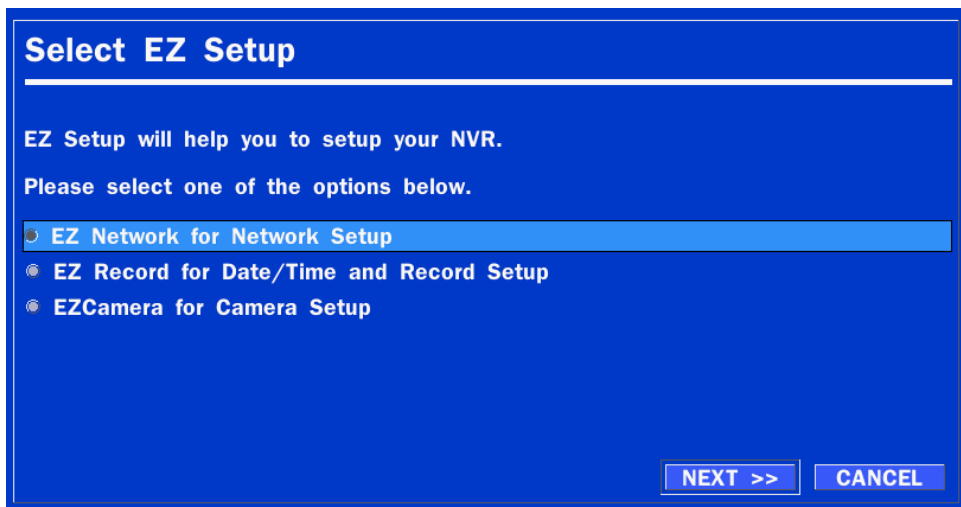
TEST : E-mail settings sent a test mail to the registered account

UNIT NAME Name the DVR (e.g. Factory, Library, Store, Location etc)
This is to used to identify the name of each DVR under the same network.

SYSTEM RESTART Restart the system

SYSTEM SHUTDOWN Shut down the system

EZ SETUP Helps user to easily setup NETWORK, RECORDING and IP CAMERA



SYSTEM EVENT NOTIFICATION



HEALTH CHECK – OFF, ON

(Allows the user to set MAIL STATUS periodically) : DAILY or WEELY or MONTHLY

VIDEO CLIP SETUP: Setup the duration of video clip for PRE RECORD and POST RECORD.

EVENT AND NOTIFICATION – OFF, ON

(Allows the user to set EVENT NOFICIATION ON or OFF)

HEALTH CHECK / RESTART / SHUTDOWN / PANIC RECORD

- Enable Email Notification in the event a problem occurs with the VS.

ALARM-IN – Enable Email Notification when the camera detects sensor.

MOTION DETECTION – Enable Email Notification when the camera detects motion.

VIDEO LOSS – Enable Email, Beep and Alarm output Notification when the camera signal is lost.

HDD TEMPERATURE – Enable Email, Beep and Alarm output Notification when the HDD temperature.

HDD BAD SECTORS – Enable Email Notification when the HDD has bad Sectors.

HDD ALMOST FULL – Enable Email Notification when the HDD is almost full

HDD FULL – Enable Email Notification when the HDD is full

HDD FAILURE – Enable Email, Beep and Alarm output Notification when the HDD fails.

HYBRID SETUP

Each channel can be configured to be Analog or IP Camera. However, Analog channels take priority to ip cameras when it comes to channel order.


4-3. Setup – RECORD Mode

In the SETUP menu, select the RECORD tab. Then, the RECORD menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.



Figure 4.3.1. RECORD Setup Screen

Table 4.3.1. Menu Items in RECORD Setup Screen

Menu Item	Description																																																																																																																																																
SITE	Select a channel for applying the following settings using the mouse or the remote control. To change the values of all channels, take the following steps. Select the button  to change the values of all channels.																																																																																																																																																
	<table border="1"> <thead> <tr> <th></th> <th>RESOLUTION</th> <th>FRAME RATE</th> <th>QUALITY</th> <th>RECORDING</th> <th>PRE RECORD</th> <th>POST EVENT REC</th> <th>AUDIO</th> </tr> </thead> <tbody> <tr> <td>ALL</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>1</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>2</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>3</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>4</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>5</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>6</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>7</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>8</td> <td>960H</td> <td>30</td> <td>LEVEL 5(H)</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>9</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>10</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>11</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>12</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>13</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>14</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>15</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> <tr> <td>16</td> <td>–</td> <td>–</td> <td>–</td> <td>CONTINUOUS</td> <td>1 MIN(S)</td> <td>10 SEC(S)</td> <td>OFF</td> </tr> </tbody> </table>		RESOLUTION	FRAME RATE	QUALITY	RECORDING	PRE RECORD	POST EVENT REC	AUDIO	ALL	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	1	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	2	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	3	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	4	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	5	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	6	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	7	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	8	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	9	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	10	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	11	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	12	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	13	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	14	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	15	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF	16	–	–	–	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF
	RESOLUTION	FRAME RATE	QUALITY	RECORDING	PRE RECORD	POST EVENT REC	AUDIO																																																																																																																																										
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3	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF																																																																																																																																										
4	960H	30	LEVEL 5(H)	CONTINUOUS	1 MIN(S)	10 SEC(S)	OFF																																																																																																																																										
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RESOLUTION Select 960H, D1 or CIF for analog cameras using the mouse or the remote control.

FRAME RATE Set the frame rate for the specified channel. The sum of the frame rate values from each channel cannot exceed the maximum frame rates for a specific recording resolution.

QUALITY	Select the recording quality for the selected channel. Options are: Level 1 (Low), Level 2, Level 3, Level 4, and Level 5 (High)
RECORDING MODE	Assign the recording mode for the selected channel. Options are: Continuous, Motion, Sensor, Schedule or Disable.
SENSOR RECORDING	Select the sensor setting for the selected channel.
PRE RECORD	Enable/disable pre-event recording. Pre-event recording is limited to 20 minutes.
POST EVENT RECORD	Set the post event recording time duration for the specified channel. (10~60 seconds)
AUDIO	Enable/disable audio recording for the specified channel.
SCHEDULE	To setup a recording schedule, select SCHEDULE in the RECORD menu. Navigate through the menu items or change the settings using the mouse or the remote control. Select CHANNEL > select NONE, CONTINUOUS, MOTION or SENSOR > Highlight area To copy a schedule to a different channel, select the channel from the COPY SCHEDULE menu.

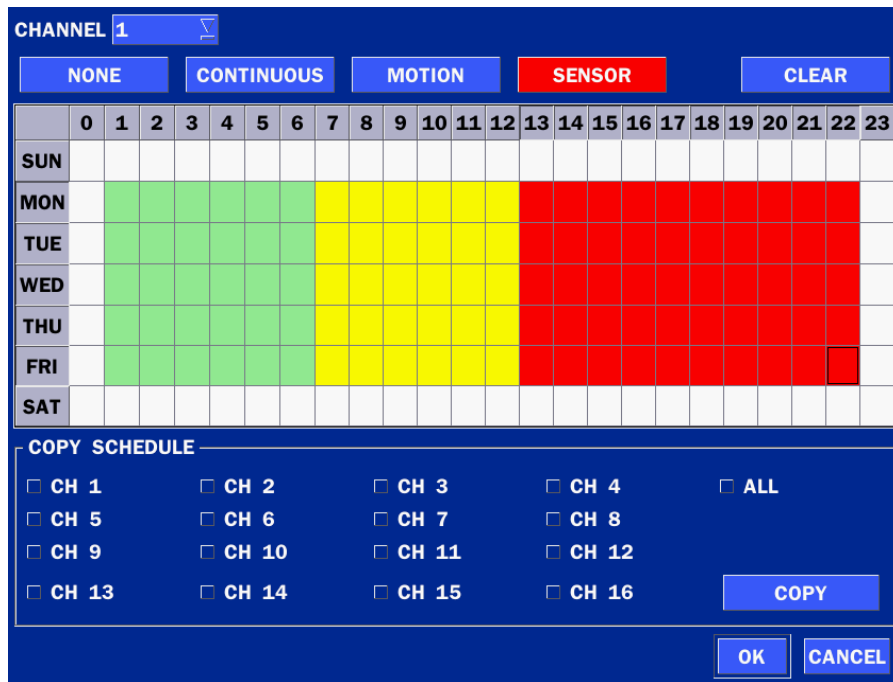


Figure 4.3.2. Schedule Recording Setup Screen

- **NONE:** Disable recording during selected timeframe (Highlighted in White)
- **CONTINUOUS:** CONTINUOUS recording (Highlighted in Green)
- **MOTION:** MOTION recording (Highlighted in Yellow)
- **SENSOR:** SENSOR recording (Highlighted in Red)

CLEAR : Clears the schedule

4-4. Setup – DEVICE Mode

In the SETUP menu, select the DEVICE tab. Then, the device menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.

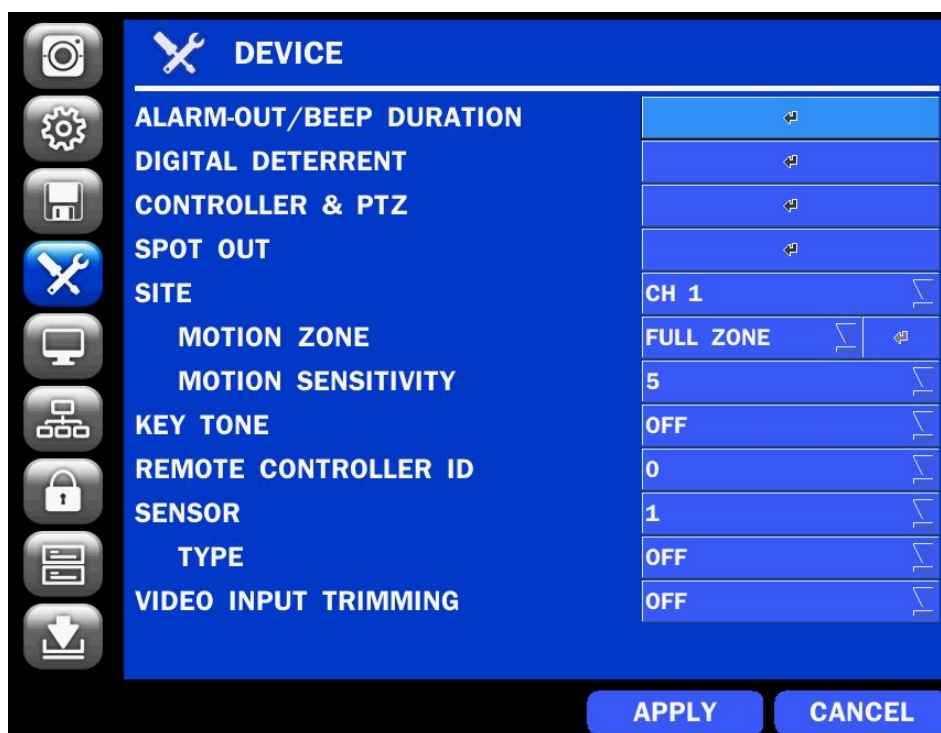


Figure 4.4. DEVICE Setup Screen

Table 4.4. Menu Items in DEVICE Setup Screen

Item	Description
ALARM OUT / BEEP DURATION	Only one Alarm-out is available. Set alarm dwell time from 5 to 60 seconds or infinite.
DIGITAL DETERRENT	Setup schedule and audio recordings for Digital Deterrent.
CONTROLLER & PTZ	Set the PTZ baud rate, protocol, and ID.
SPOT-OUT	Display the channels triggered by an event (Refer to 4.4.4)
SITE	Select specified channel for motion zone setup.
MOTION ZONE	Select either Full Zone or Partial Zone for motion detection.
MOTION SENSITIVITY	Set the motion sensitivity for the selected channel. Control the motion sensitivity from 1 to 9. (9 – Highest sensitivity, 1 – Lowest sensitivity)
KEY TONE	Enable/disable key tone from front panel usage.
REMOTE CONTROL ID	Set the remote control ID. 1. Select ID.

	2. Input the remote control ID number.
	3. An icon will indicate on the Live Screen if the remote control ID is synchronized.
	The options are from 0 to 99
SENSOR	Select the type of each sensor. Option is Off, Normal Open or Normal Close.
VIDEO INPUT	960H Resolution to support non-standard function
TRIMMING	(ON : Non-Standard / OFF : Default)

4-4-1. Digital Deterrent

Trigger audio message via motion detection or sensor.

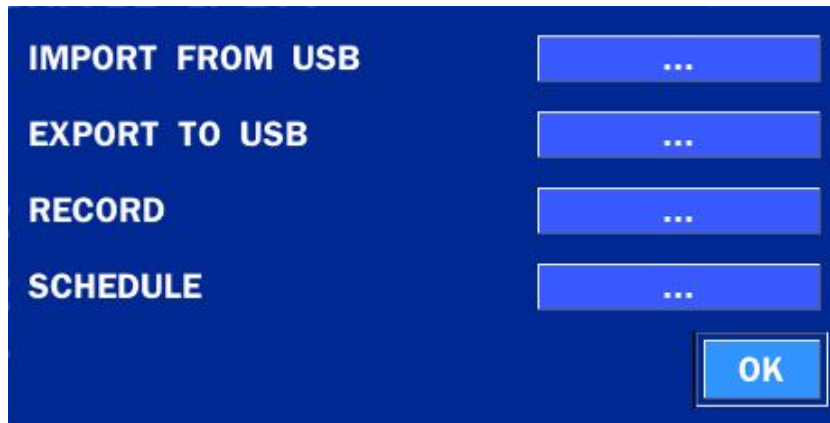


Figure 4.4.1. Digital Deterrent setup screen

Table 4.4.1. Item for Digital Deterrent Setup Screen

Item	Description
IMPORT FROM USB	Import up to 8 sound files from USB.
EXPORT TO USB	Export the sound file to USB
RECORD	Select a channel and set up the date and the duration. Select START to export audio to Digital Deterrent. Select the play button to hear message after export.



SCHEDULE

Schedule the sound file considering the expected situation.

CHANNEL 1

NONE DEFAULT SOUND_1 SOUND_2 SOUND_3 SOUND_4
 SOUND_5 SOUND_6 SOUND_7 SOUND_8 CLEAR

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
MON	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
TUE	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
WED	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
THU	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
FRI	D	D	1	1	1	2	2	2	3	3	3	4	4	4	4	5	5	6	6	6	7	7	8	8
SAT	D	D	1	1	1	2	2	2	3	3	3	4	4	4	D	5	5	6	6	6	7	7	8	8

COPY SCHEDULE

CH 1 CH 2 CH 3 CH 4 ALL
 CH 5 CH 6 CH 7 CH 8
 CH 9 CH 10 CH 11 CH 12
 CH 13 CH 14 CH 15 CH 16 COPY

OK CANCEL

4-4-2. Keyboard Controller & PTZ Setup

To control the PTZ functions of the camera, connect the PTZ controller to the RS-485 port on the back of the chassis with CAT5 (or equivalent) cable.

- ① Connect the RS-485 cables of PTZ camera to the RS-485 port on the rear panel.

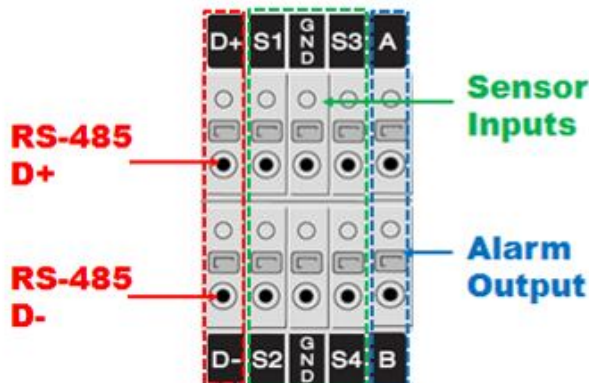


Figure 4.4.2.1. Device Mode Setup Screen

- ② Open the PTZ sub menu by selecting the submenu button.

The screenshot shows a PTZ Control Setup screen with the following settings:

CONTROLLER	---
SPEED	9600
ID	0
CHANNEL	1
CAMERA	---
SPEED	9600
ID	0

Buttons: OK, CANCEL

Figure 4.4.2.2. PTZ Control Setup Screen

Note: Connect PTZ cameras that support RS-485 directly to the RS-485 port. If the camera is controlled through an RS-232C interface, use an RS-232C to RS-485 to RS-232C signal converter.

Use the PTZ setup screen to select the following options for the camera PTZ controller:

- **CHANNEL:** Channel connected to a PTZ device
- **CAMERA:** Protocol Type
- **SPEED:** 19200, 14400, 9600, 4800, 2400 (Baud rate)
- **ID:** 0-63

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

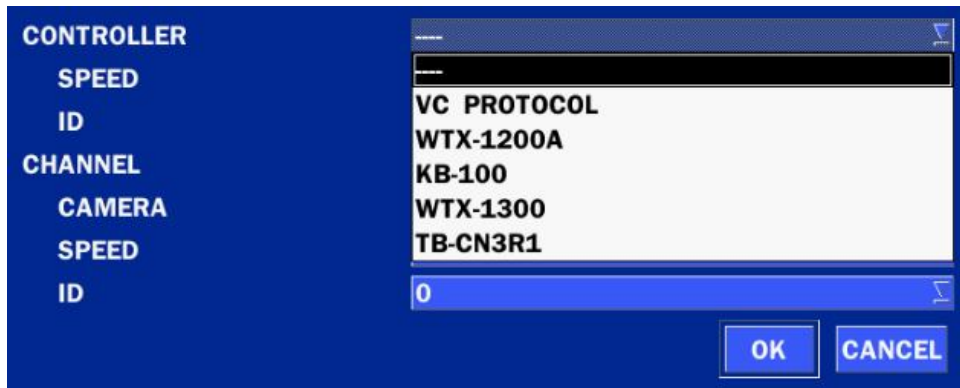


Figure 4.4.2.3. Controller Selection Screen

4-4-3. Spot Out



Figure 4.4.3. SPOT-OUT Setup Screen

Table 4.4.3. Menu Item in SPOT-OUT Setup Screen

Item	Description
SPOT ON EVENT	Enable/disable channel change if an event occurs on a channel.
SPOT EVENT DWELL TIME	Set the dwell time for the display of the event activated channel. (3-10sec)
SEQUENCE	Enable/disable sequential display of spot channel in full screen. If select ON, the selected channel will be displayed on the monitor periodically.
SEQUENCE DWELL TIME	Set the dwell time for the spot channel display. (3-10sec)
SPOT CHANNEL	Select a channel for spot monitoring using the mouse or the remote control and press OK button.

4-4-4. Motion Zone Setup

Select MOTION ZONE using the mouse or the remote control and select either PARTIAL ZONE or FULL ZONE using the mouse control. The default value is FULL ZONE.

If FULL ZONE is selected, the motion zone grid screen is not displayed. Only set the level of sensitivity for MOTION SENSITIVITY.

FULL ZONE: The motion sensor is active on the whole screen.

PARTIAL ZONE: The motion sensor is active in the set detection frame.

Select the motion detection position using the mouse or the remote control. Then left click on the mouse or left click and drag the mouse pointer to select or deselect the area. Highlighted area indicates the partial motion detection zone. Press the ESC button or right click on the mouse to return to the previous menu.

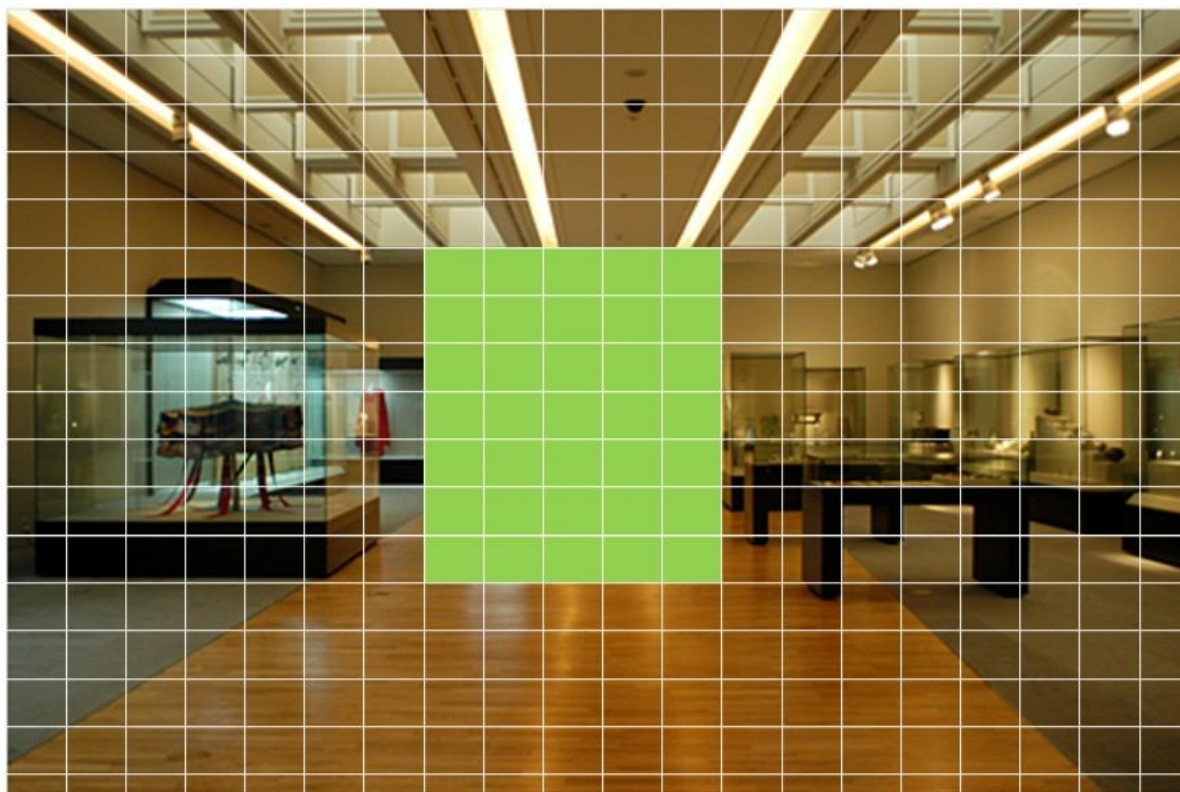


Figure 4.4.4. Motion Zone Grid Screen



4-5. Setup – DISPLAY Mode

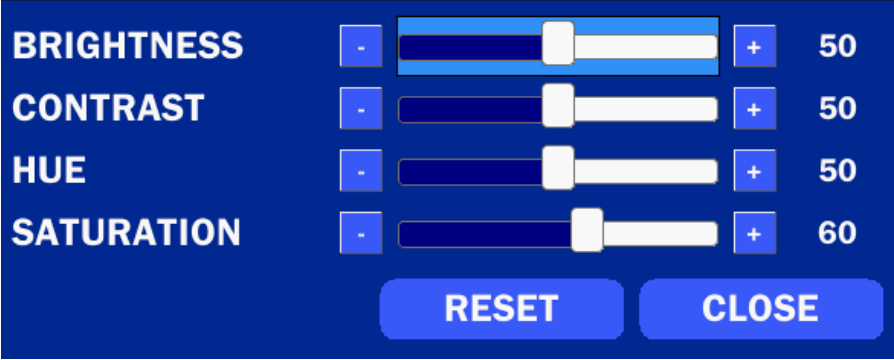
In the SETUP menu, select the DISPLAY tab. Then, the DISPLAY menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control. To return to the previous setup menu screen, press the ESC button.



Figure 4.5. DISPLAY Setup Screen

Table 4.5. Menu Items in DISPLAY Setup Screen

Item	Description
OSD	Enable/disable on-screen-display. 
OSD CONTRAST	Set the transparency level of the On Screen Display (OSD) (50~100)
MAIN MONITOR SEQUENCE	Enable/disable sequential display of video in full screen mode. 

SEQUENCE	Set the dwell time of each, single channel display in sequential display mode (3~60seconds)
DWELL TIME	
SITE	Select a channel to apply the name and covert settings change using the mouse or the remote control. Select a channel to apply the following settings using the mouse.
NAME	Set the channel name. Press the right square button and set the channel name and select OK using the mouse. The name can be made up to 36 characters.
COVERT	Enable/disable display of the specified video channel in live display.
COLOR TUNING	 <p>Brightness: Change the brightness value. (0~100) Contrast: Change the contrast value(0~100) Hue: Change the hue value(0~100) Saturation: Change the saturation value(0~100)</p>
VIDEO OUTPUT	Select 1280x720 or 1920x1080.

4-6. Setup – NETWORK Mode

Select the NETWORK tab. Then, the network menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.

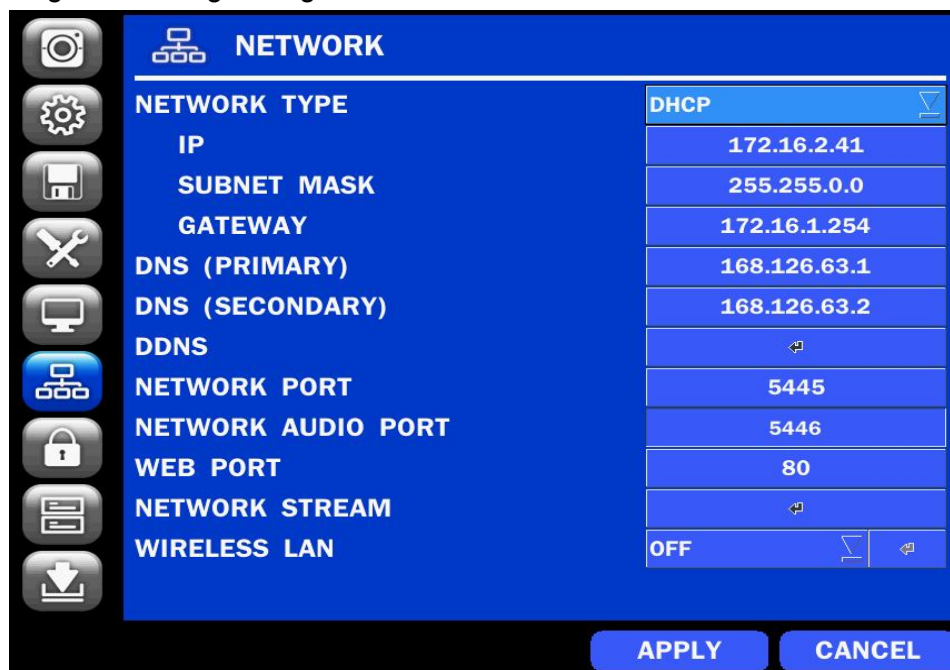
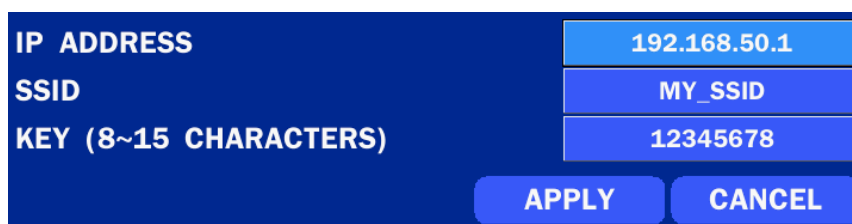


Figure 4.6. NETWORK Setup Screen

Table 4.6. Menu Items in NETWORK Setup Screen

Item	Description
NETWORK TYPE	DHCP: DVR will automatically retrieve an IP address. STATIC: Network information must be manually configured.
IP	Enter IP address that is assigned for the DVR
SUBNET MASK	Enter Subnet Mask that is assigned for the DVR
GATEWAY	Enter Gateway that is assigned for the DVR.
DNS (PRIMARY)	Enter Primary DNS address that is assigned for the DVR
DNS (SECONDARY)	Enter Secondary DNS address assigned for the DVR
DDNS	Dynamic Domain Name System (DDNS) allows a DNS name to be constantly synchronized with a dynamic IP address. In other words, it allows using a dynamic IP address to be associated with a static domain name so others can connect to it by the static name. Enable/disable using domain name address through DDNS server.
NETWORK PORT	Enter the port number. (Default 5445)
NETWORK AUDIO PORT	Display the network audio port (NETWORK PORT + 1).
WEB PORT	Enter the port number for connection using web.
NETWORK STREAM	Sets the camera display settings for network streaming.
WIRELESS LAN	<ol style="list-style-type: none"> 1. Connect USB Wifi Dongle to USB connector on DVR. 2. Load the application on your smart phone or PC and enter the WIFI IP ADDRESS. 3. Find the WIFI SSID and enter the password. (shown in image below) 4. Then, the remote viewing and configuration can be used.



* There is a distance limitation for the Wireless LAN.

4-6-1. Network Types

4-6-1-1. DHCP

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

4-6-1-2. STATIC

IP address, Subnet Mask, Gateway, and DNS are manually assigned by the user.

- IP ADDRESS: The fixed IP address of the DVR unit.

- SUBNET MASK: The subnet mask for the LAN.
- GATEWAY: The IP address of the Gateway.
- DNS (PRIMARY) The primary address of Domain Name Server
- DNS (SECINDARY): The secondary address of Domain Name Server



NOTE

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

4-6-2. DDNS

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

Once the setting is completed, the DDNS address will be:

<http://hostname.ddns.specoddns.net>

For example, if you enter the host name as "D16HS", then the address will be:

<http://D16HS.ddns.specoddns.net>

Select NETWORK>DDNS. The menu displays as below.



Figure 4.6.3. NETWORK Setup Screen – DDNS

Table 4.6.2. DDNS

Item	Description
ENABLE DDNS	Turn DDNS on/off
HOST NAME	This item allows the user to setup a domain name manually, using virtual keyboard displays as shown.
SUBMIT/UPDATE	When manual host name input is done, move the cursor to this item and select ON to submit the settings.
ezDDNS	Enable/disable ezDDNS to register the host name automatically.

4-6-3. Network Port and Web Port

Connecting DVR/DVRs through a common IP sharing device, each DVR must be assigned a unique TCP port number for access from outside the LAN. This port number is displayed on NETWORK>NETWORK PORT Setup MENU.



NOTE:

If you access the DVR only within the same LAN, the TCP port number does not need to be changed.

Network access beyond a router

To access DVR beyond a router (firewall), you must open the proper TCP ports for live/playback streaming, for commands, for remote backup, and for audio streaming. If these ports are not opened properly, you can't access the DVR beyond a router.



- **For live/playback streaming, for commands, for remote backup:** Open the port number on NETWORK>NETWORK PORT menu. The default port number is 5445.
- **For bi-directional audio:** Open the port number on NETWORK AUDIO PORT. The default port number is [NETWORK PORT number + 1].
- **For web-viewer downloading and remote firmware upgrading:** Open the port number on NETWORK>WEB PORT menu. The default port number is 80.

4-6-4. Network Stream

User can set the RESOLUTION, FRAME RATE, and the QUALITY for the network stream.

- D16HS: Up to 480 fps @CIF for 16 channels.
- D8HS: Up to 240 fps @CIF for 8 channels.

<Note> Individual Channels can be set with different RESOLUTION, FRAME RATE, and QUALITY.

	RESOLUTION	FRAME RATE	QUALITY
ALL	CIF	30	LEVEL 5(H)
1	CIF	30	LEVEL 5(H)
2	CIF	30	LEVEL 5(H)
3	CIF	30	LEVEL 5(H)
4	CIF	30	LEVEL 5(H)
5	CIF	30	LEVEL 5(H)
6	CIF	30	LEVEL 5(H)
7	CIF	30	LEVEL 5(H)
8	CIF	30	LEVEL 5(H)

USE MOBILE

OK CANCEL

Figure 4.6.4. NETWORK Setup Screen – Network Stream

<TIP> USE MOBILE: When this function is enabled, the frame rate is limited to 15fps@CIF and the video quality is limited to LEVEL 2 for better remote viewing on the mobile phone.

4-7. Setup – USER MANAGEMENT Mode

In the SETUP menu, select the USER MANAGEMENT tab. Then, the USER MANAGEMENT menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.



Figure 4.7. USER MANAGEMENT Setup Screen

Table 4.7. Menu Items in USER MANAGEMENT Setup Screen

Item	Description
AUTHORITY SETUP	Only the Admin will have access to the menu.
	PASSWORD CHECK: Select the Checkbox to enable the functions or leave the Checkbox blank to disable the functions.
	<ul style="list-style-type: none"> • SETUP: Enable/Disable of access to Setup • PB: Enable/Disable of access to Playback • PTZ: Enable/Disable of access to PTZ Control • REC OFF: Enable/Disable of manual Record • NETWORK: Enable/Disable of access to Network
	Selected Checkbox: The DVR will ask for a password when the given function is selected for all users.
	Blank Checkbox: The DVR will not ask for a password when the given function is selected for all users.

	PASSWORD	SETUP	PB	PTZ	REC OFF	NETWORK
PASSWORD CHECK		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ADMIN	1111	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER1	1111	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER2	1111	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER3	1111	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

ADMIN, USER1, USER2, USER3:

Selected Checkbox: The user can access the function.

Blank Checkbox: The user can not access the function.

USER NAME Change the name of USER1, USER2 and USER3.

SETUP ● Click "ENTER" after naming.

PASSWORD Options are ADMIN, USER1, USER2 and USER3.

SETUP Select USER PASSWORD using the mouse or the remote control and press SEL button. Select user type and enter the current password. And, enter a new password, enter the same password again to confirm and select OK. Then the message "PASSWORD CHANGED" is displayed.



The factory default password is **1111**.

It is highly recommended to assign a new password to protect the system.

AUTHORITY Set authority level of playback on each user.

OF PLAYBACK **Checked box:** authorized to playback. **Blank check box:** no authority.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ADMIN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

REMOTE Disconnect the remote playback after the specific time (Disable, 5min, 10min, 15 min,
PLAYBACK 30min, 60min.
TIMEOUT


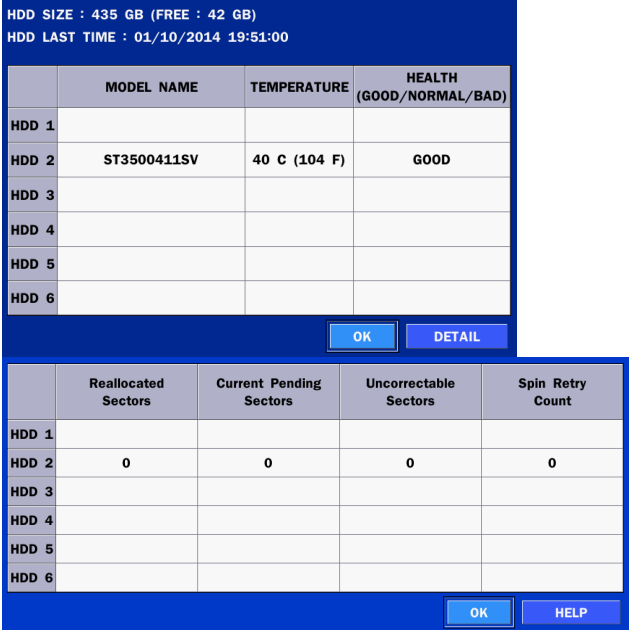
4-8. Setup – STORAGE Mode

In the SETUP menu, select the STORAGE tab. Then, the STORAGE menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.



Figure 4.8. STORAGE Setup Screen

Table 4.8. Menu Items in STORAGE Setup Screen

Item	Description																																																															
OVERWRITE	When enabled, the DVR will continue recording and overwrite the oldest existing recorded data once the hard drive is full. When disabled, recording will stop once the hard drive is full.																																																															
DISK FORMAT	<p data-bbox="395 349 1270 432">You will have an option of YES or NO for formatting the Hard Drive. After formatting HDD, the DVR will reboot.</p> <p data-bbox="395 450 1493 528">Caution: It is recommended to archive any data that you may need in the future before formatting the hard drive.</p>																																																															
																																																																
DISK INFO	<p data-bbox="395 591 695 620">Hard drive information.</p> <p data-bbox="395 638 842 674">Displays the following information;</p>																																																															
	 <p>The screenshot shows two tables. The top table lists HDD information:</p> <table border="1"> <thead> <tr> <th></th> <th>MODEL NAME</th> <th>TEMPERATURE</th> <th>HEALTH (GOOD/NORMAL/BAD)</th> </tr> </thead> <tbody> <tr> <td>HDD 1</td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 2</td> <td>ST3500411SV</td> <td>40 C (104 F)</td> <td>GOOD</td> </tr> <tr> <td>HDD 3</td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 4</td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 5</td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 6</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The bottom table shows error counts:</p> <table border="1"> <thead> <tr> <th></th> <th>Reallocated Sectors</th> <th>Current Pending Sectors</th> <th>Uncorrectable Sectors</th> <th>Spin Retry Count</th> </tr> </thead> <tbody> <tr> <td>HDD 1</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 2</td> <td>0</td> <td>0</td> <td>0</td> <td>0</td> </tr> <tr> <td>HDD 3</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 5</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>HDD 6</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table>		MODEL NAME	TEMPERATURE	HEALTH (GOOD/NORMAL/BAD)	HDD 1				HDD 2	ST3500411SV	40 C (104 F)	GOOD	HDD 3				HDD 4				HDD 5				HDD 6					Reallocated Sectors	Current Pending Sectors	Uncorrectable Sectors	Spin Retry Count	HDD 1					HDD 2	0	0	0	0	HDD 3					HDD 4					HDD 5					HDD 6				
	MODEL NAME	TEMPERATURE	HEALTH (GOOD/NORMAL/BAD)																																																													
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HDD 5																																																																
HDD 6																																																																
RECORDING LIMIT	Enable/disable recording limit.																																																															
RECORDING LIMIT DAYS	<p data-bbox="395 1447 927 1482">Set the recording limit days. (1- 90 days)</p> <p data-bbox="395 1496 1493 1576">If the RECORDING LIMIT DAYS are set to 1, the data will be overwritten after 24 hours.</p>																																																															

4-9. Setup - CONFIG Mode

In the SETUP menu, select the CONFIG tab. Then, the configuration menu is displayed as pictured below. Navigate through the menu items or change the settings using the mouse or the remote control.



Figure 4.9.1. CONFIGURATION Setup Screen

Table 4.9.1. CONFIGURATION Setup

Item	Description
EXPORT TO USB	User can save the current configuration (Setting values) of the DVR to the USB flash drive. Plug in the USB flash on the front panel and press the button to start the saving process.
IMPORT FROM USB	User can upload the configuration of the DVR to another DVR using the USB Flash drive. Plug in the USB flash drive on the front panel and press the button to start the loading process.
LOAD DEFAULT	Press the button to reset the system to the default settings. The following settings such as Language, DVR ID, Security User Authentication, Security User P/W, Date format, DLS settings, Network settings, HDD overwrite, Limit recording, HDD serial number, and HDD ERROR time will not be included.
LOADFACTORY DEFAULT	Press the button to reset the system to the factory default settings.
SOFTWARE UPGRADE	Upgrade software to the latest version. After connecting USB flash drive to USB port on the DVR, click SEARCH. It will automatically find the upgrade file.

4-9-1. Firmware Upgrade

1. Create a new folder named “upgrade” in the USB flash drive root directory.
2. Create sub-folder for each model under “upgrade” folder and copy each firmware.
 - For D16HS Models:
 - Folder name – “d16hs”
 - File name – “main_D16HS_speco_*.*)_201****”.bin
 - For D8HS Models:
 - Folder name – “d8hs”
 - File name – “main_D8HS_speco_*.*)_201****”.bin



3. Plug in the USB flash drive on the rear panel.
4. Navigate to CONFIG menu of SETUP.
5. Select SOFTWARE UPGRADE.
6. Follow the procedure from Figure 4.9.2 to Figure 4.9.4.

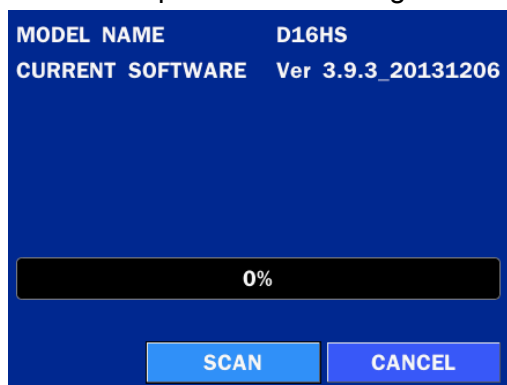


Figure 4.9.2

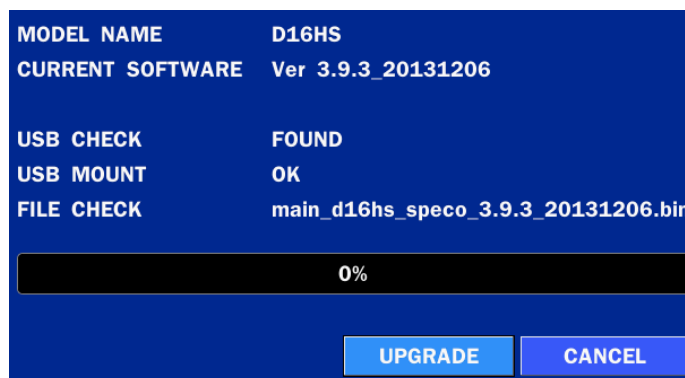


Figure 4.9.3

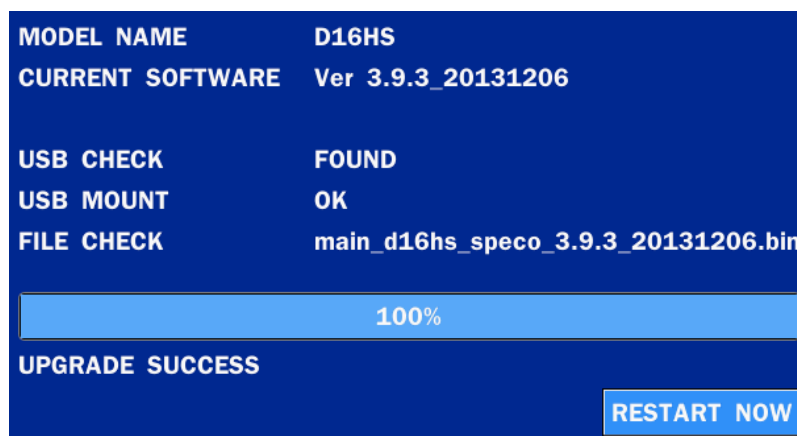


Figure 4.9.4



NOTICE

If selecting REBOOT NOW when the USB flash drive is plugged, the following message will pop up. Remove the USB flash drive and select OK.

5. Live, Search and Playback









5-1. Live View






In the Live screen, video inputs from the cameras are displayed as they are configured in the Display Setup screen. Various On-Screen Display (OSD) symbols, which indicate the status of the DVR, are described in Table 5.1.1.



Figure 5.1.1. Live Screen and Quick Operation Window

Table 5.1.1. Status Indicator Icons in Live Viewing Screen

Icon	Description
	Indicates the DVR is locked. Note) to unlock, right click on the live view screen and click on Unlock.
	Indicates audio is muted on all channels.
	Indicates that alarm is set. To set the alarm function, press the Alarm button on the front panel.
	Indicates that alarm output is activated.
	Event indicator. When there is an event (motion recording, video loss, HDD fail, S.M.A.R.T), this icon will be highlighted.
	Indicates that a network client is connected to the DVR.
	Indicates that sequencing mode is enabled.
	Displays the current date and time.

RC: ALL	Remote control ID display. If a remote ID is not set, the message "ALL" is displayed.
HDD: OVERWRITE	Displays the amount of recording on the hard disk from 0-99%.
	Indicates that HDD is recycled.
	Continuous recording in progress.
	Manual recording in progress. To set the Manual recording mode, press the Record button on the front panel.
	Motion alarm recording in progress.
	Sensor recording in progress.

Right click the mouse, and the quick operation window will be displayed as below.



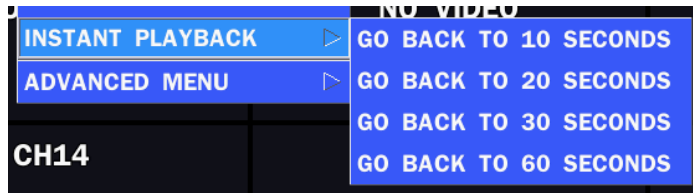
Figure 5.1.2. Quick Operation Window

Table 5.1.2. Menu Items in Quick Operation Window

Icon	Description
SEARCH	Search button. Click this button to enter the search menu.
SETUP	Select this option to enter the Setup menu.
DISPLAY	Select between different multi-view display formats.
SNAPSHOT	Capture pictures and store as BMP files
SUPER EZ COPY	Select this option to start EZ Copy Wizard.

ENABLE MANUAL RECORD Manual Record button. Click this button to enable manual recording.

INSTANT PLAYBACK Go back to the specific time and play the recording data.



It doesn't ask the password.

It does work without error while the recording mode is CONTINUOUS.

On other recording mode, it may not work normally.

ADVANCED MENU

EZ SETUP Select this option to start EZ Setup Wizard.

CONNECT Select this option to disconnect/connect from IP Camera.

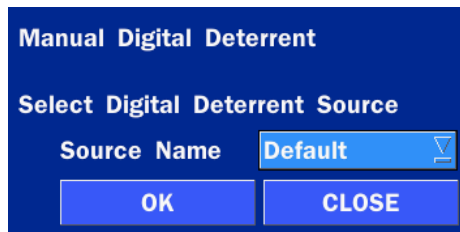
AUDIO MUTE Select this option to mute audio on all channels.

CAMERA PTZ Pop up the PTZ user interface.

ENABLE MAIN MONITOR SEQUENCE Sequence button. Click this button to use a sequence function.

DISABLE ALARM OUT Click this button to enable/disable Alarm outputs

MANUAL DIGITAL DETERRENT Select this option to manually trigger any of the saved Digital Deterrent messages.



SITE INFORMATION Press the button to view the record setting of a selected channel.

SYSTEM INFORMATION Press the button to view the system information.




EXPORT HELP Displays window with instructions for exporting video.

SYSTEM LOCK Locks the HS from unauthorized user access.

SYSTEM SHUTDOWN Select this option to shutdown system.

5-1-1. PTZ Control

Table 5.1.3. Menu Items in PTZ Control Window

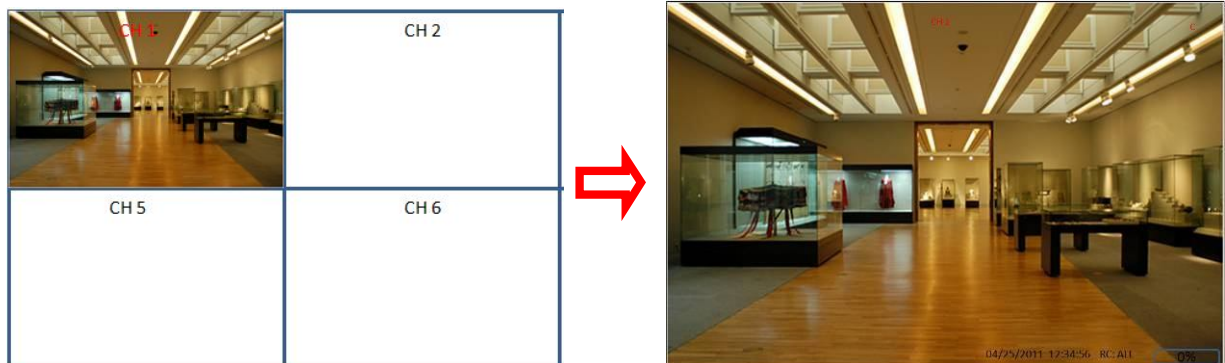
Item	Description
INITIALIZE	Initialize the PTZ settings of the selected camera
PAN/TILT	Select PAN/TILT using the ▲▼◀ and ▶ button, then press SEL . Adjust the tilt (UP/DOWN)/pan (LEFT/RIGHT) position using the ▲▼◀ and ▶ buttons.
ZOOM/FOCUS	Select ZOM/FOCUS using the▲▼◀ and ▶ buttons, then press SEL . Adjust the zoom (UP/DOWN)/ focus (LEFT/RIGHT)position using the ▲▼◀ and ▶ buttons.
OSD	Select OSD to enter the menu. Control keys are Right, Left, UP, Down, Select, Far (REW KEY), and Near (FF KEY). Press the ESC button to return to the previous menu. Press the PTZ button to close the OSD menu.
AUTOSCAN	Press the right key(▶) to start auto scan. Press the left key (◀) to stop auto scan.
PRESET	Select PRESET, then press the left key(◀). A number input window will appear. Set the number (3digits) using the number key, then press the SEL to confirm the preset number for the current position. Press the right key (▶) and enter the number (3digits) to go to the preset position.
TOUR	Select TOU and press the right (▶) key. A number input window will open. Select a number (1digit) using a number key, then press SEL to start the tour. Press the left (◀) key to stop the tour. Preset the number of the tour group in the OSD menu.
NUMBER	For the TOUR and PRESET menu.
	Press ESC to return to the main menu



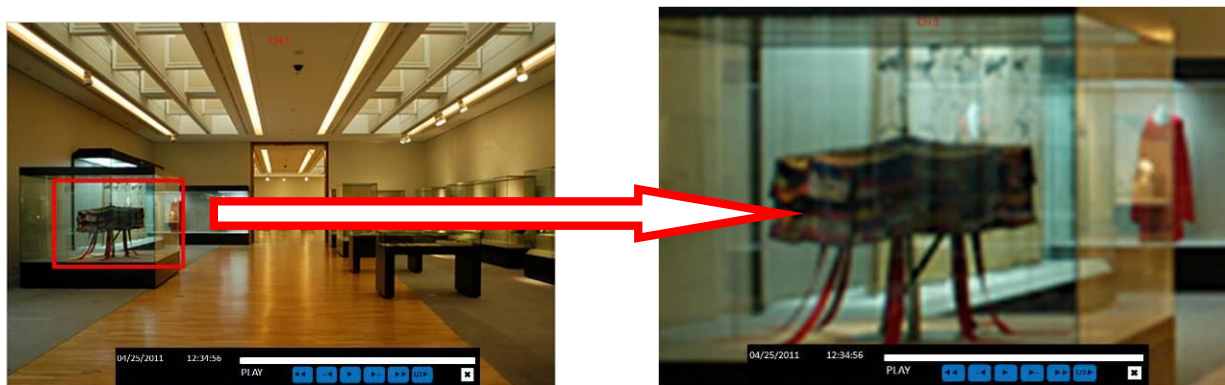
5-2. Digital Zoom in Live and Playback Screen

DS series 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.



5-3. SEARCH Screen

To enter the search screen menu, select SEARCH menu on the screen using the mouse or press SEARCH icon on live screen.

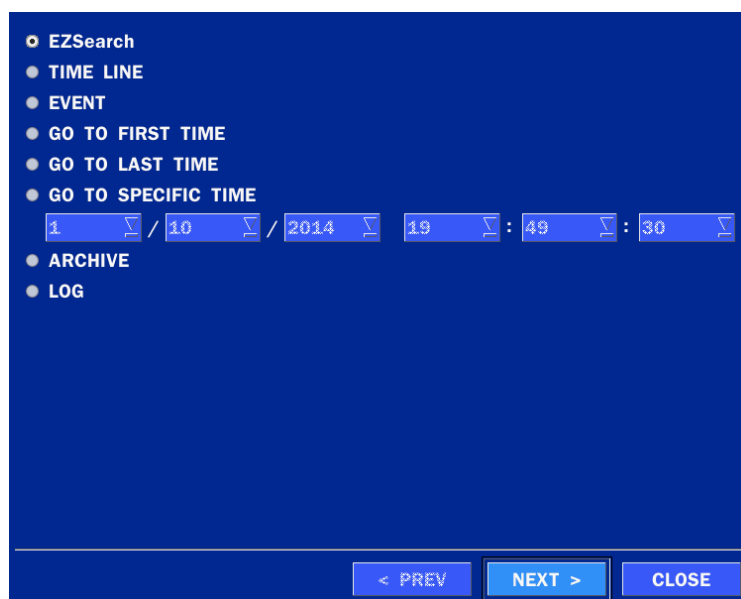


Figure 5.3. Search Screen

There are 8 search options available such as EZSEARCH, TIME LINE (Calendar), EVENT, GO TO FIRST TIME, GO TO LAST TIME, GO TO SPECIFIC TIME, ARCHIVE LIST, and LOG LIST on the screen.

5-3-1. EZSearch

The EZSearch window is used to find stored video with ease using the thumbnail playback screen.



Figure 5.3.1.1. Calendar Screen

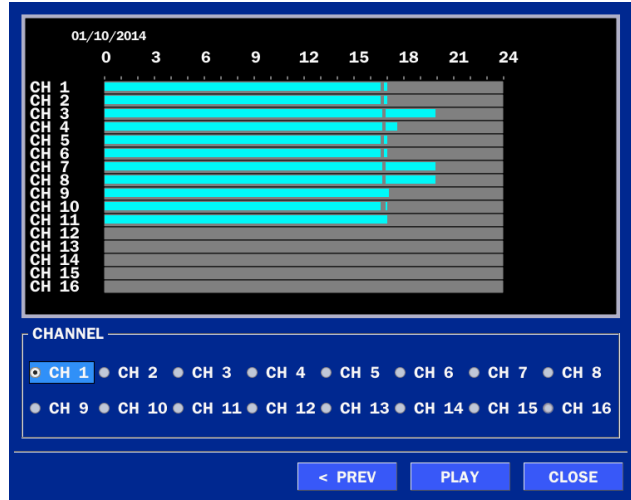


Figure 5.3.1.2. Channel Selection Screen



Figure 5.3.1.3. 24 Hourly Thumbnail Screen

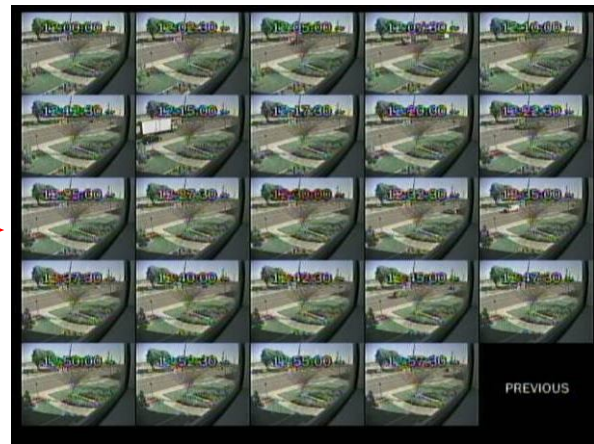


Figure 5.3.1.4. Minute Thumbnail Screen



Figure 5.3.1.5. Play Mode Screen

1. When the EZSearch menu is selected, the user can see a calendar, which displays recorded dates with highlights. Select a specific date on a calendar.
2. Select a channel from Channel Selection Screen. Then, 24 Hourly Thumbnail Search screen displays.
3. Select the hourly thumbnail. Then, Minute Thumbnail Search screen displays.
4. Select the thumbnail of seconds & minutes that you want to playback.

5-3-2. Time Line Search

The CALENDAR Search window is used to find the stored video by using the time line bar.



Figure 5.3.2.1. Calendar Screen

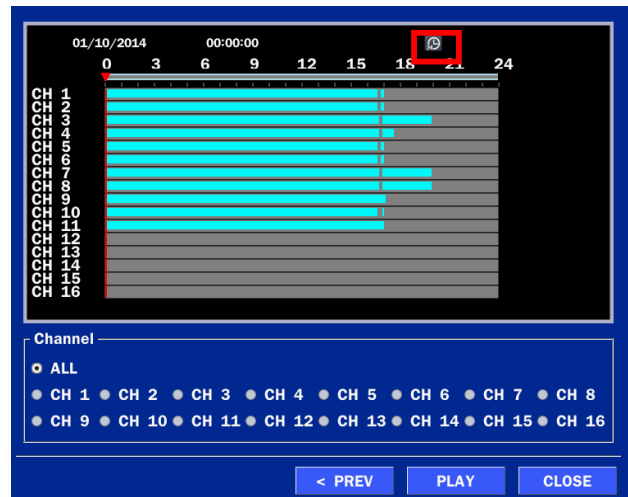


Figure 5.3.2.2. Time-Line Search Screen

When the Timeline menu is selected, the user can see a calendar, which displays recorded dates with highlights. Select a specific date and time. Click and drag the red time indicator bar to the desired hour. User can select a specific minutes using a button in the above red box. Press the PLAY button after selecting the specific time. Press the PREV to return to the SEARCH window.

5-3-3. Event Search

The Event Search window is used to find stored video.

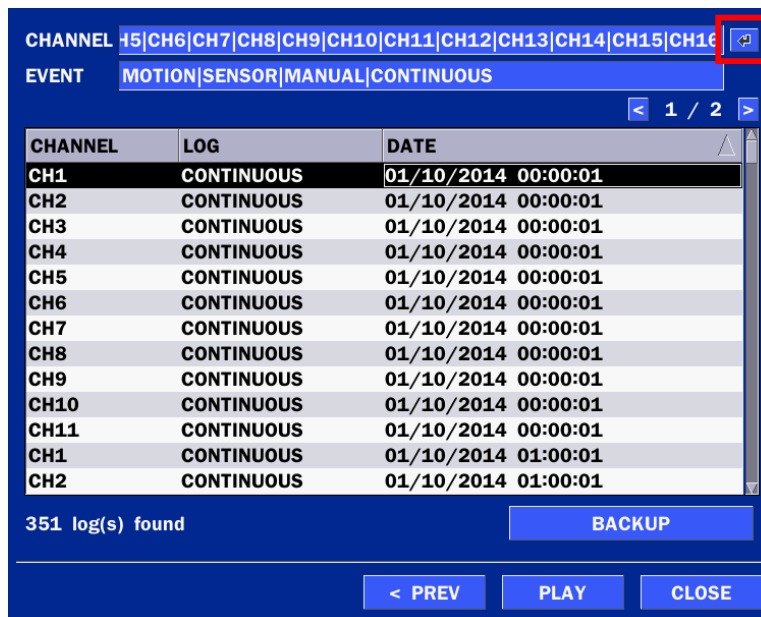


Figure 5.3.3.1. Event Search Screen

When the Event menu is selected, the user can see a calendar, which has recorded data. Select a specific date and the event log will be displayed. Press the PLAY button to playback the data or the SAVE button to save the data after selecting the specific data. User can find a data of the specific channel and event using a button in the above red box as following Figure 5.3.10. Press the PREV to return to the SEARCH window.

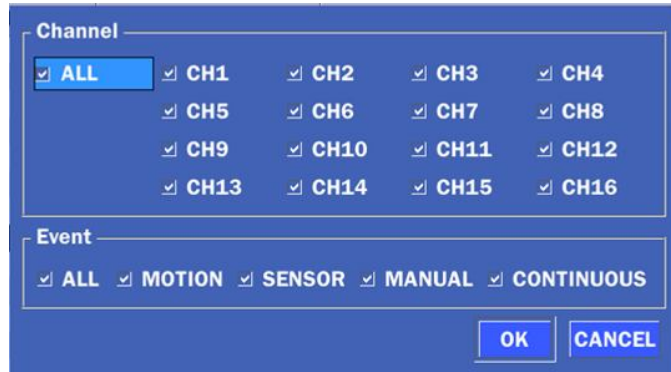


Figure 5.3.3.2. Event Search Screen

5-3-4. Go To First Time

You can access from the oldest recorded data on the DVR hard drive by selecting GO TO FIRST TIME on the SEARCH window. Press the PREV to return to the SEARCH window.

5-3-5. Go To Last Time

You can access from the last minute recorded data on the DVR hard drive by selecting GO TO LAST TME on the SEARCH window. Press the PREV to return to the SEARCH window.

5-3-6. Go To Specific Time

User can search for video data from a specific instance by setting the date and time in the GO TO SPECIFIC TIME menu. Use the mouse or the remote control to change the date and time value and press the PLAY button after setting. If there is no video data in the set date and time, No Data Exist message displays.

5-3-7. Archive List

The ARCHIVE Search window is used to find previously stored video or images.

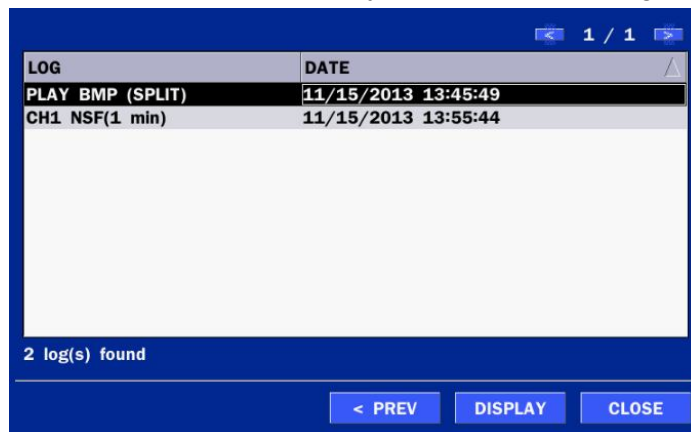


Figure 5.3.7. Archive Search Screen

When the Archive menu is selected, the user can see a calendar, which has recording data. Select a specific date and then the archived data will be displayed. Press the Display button to view the still image or the first frame of the selected video, then the user can save the selected data.

5-3-8. Log List

You can access the LOG list search screen by selecting LOG on the SEARCH window.

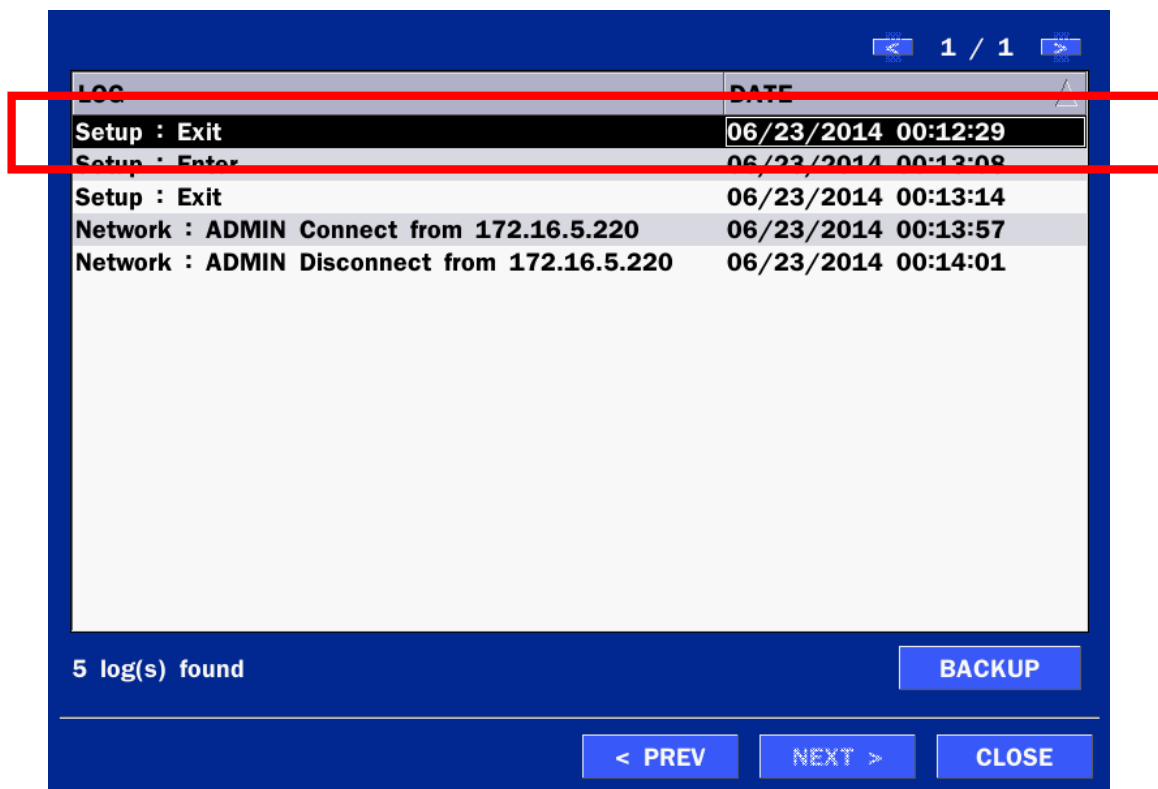


Figure 5.3.8. Log List Screen

When the Log menu is selected, the user can see a calendar, which has a log data. Select a specific date and press NEXT button, and then the log data will be displayed. Press the SAVE button to save the data and then the data is saved as a text file format.

5-4. Play Mode

During playback of a recorded event, the mode changes from SEARCH to PLAY. While in PLAY mode, you may return to the SEARCH screen by pressing the X button on the status bar.

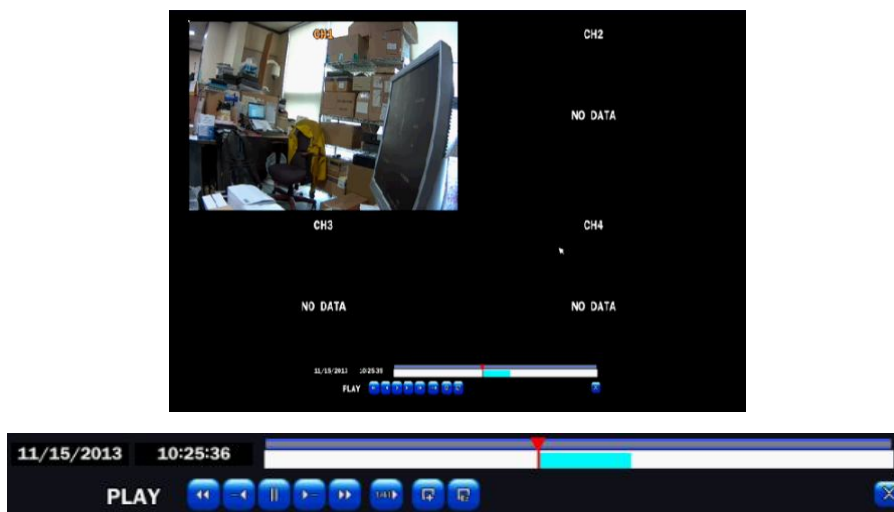











Figure 5.4.1. Play Mode Screen

The following status bar hides automatically and appears again if a mouse pointer is positioned to the bottom of the screen.

Table 5.4.1. Button Functions in PLAY Mode

Button	Description
	<ul style="list-style-type: none"> • 2x, 4x, 8x, 16x, 32x speeds at 4 split screen • 2x, 4x, 8x, 16x at 9 split screen • 2x, 4x, 8x at 16 split screen • Single Channel backward playback speed 1x, 2x, 4x, 8x, 16x, 32x, 64x
	Jump/Step backward. The playback position moves 60 seconds backward.
	Press to play or pause recorded video.
	Jump/Step forward. Playback position moves 60 seconds forward.
	<ul style="list-style-type: none"> • 2x, 4x, 8x, 16x, 32x speeds at 4 split screen • 2x, 4x, 8x, 16x at 9 split screen • 2x, 4x, 8x at 16 split screen Single Channel forward playback speed 1x, 2x, 4x, 8x, 16x, 32x, 64x
	Slow Mode play. Forward playback speed x1/4, x1/2
	Press to backup the video.
	EZCopy button.
	Return to the previous menu screen, search window, or exit from the Menu.

6. Back Up

6-1. Still Image Backup onto USB Flash Drive

Still images can be captured and archived onto a USB flash drive or an USB external hard drive in live mode or while playing back recorded video.

1. Select a specific channel, which wants to backup on live screen.
2. When you press SNAPSHOT button on Quick operation window, the media selection window screen will display.



3. Once you press START button, the system will capture a still image and archive onto a USB flash drive.




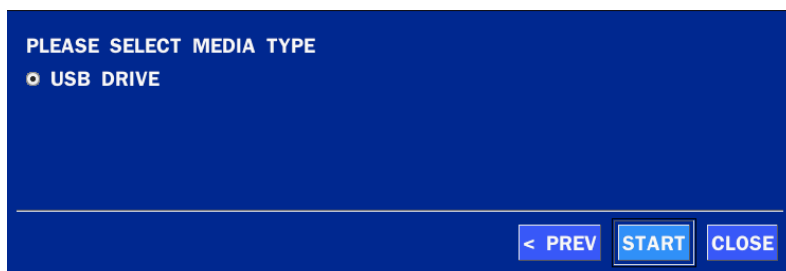
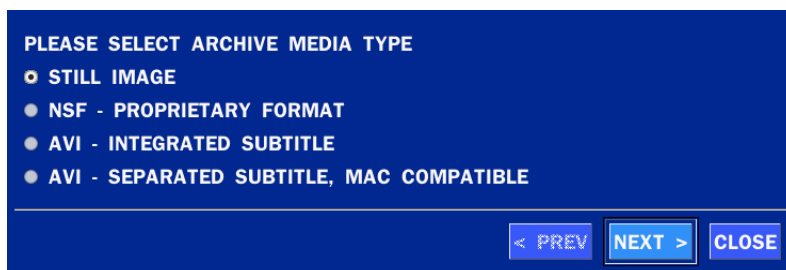
NOTICE

USB Flash Drive must be in FAT32 file format.

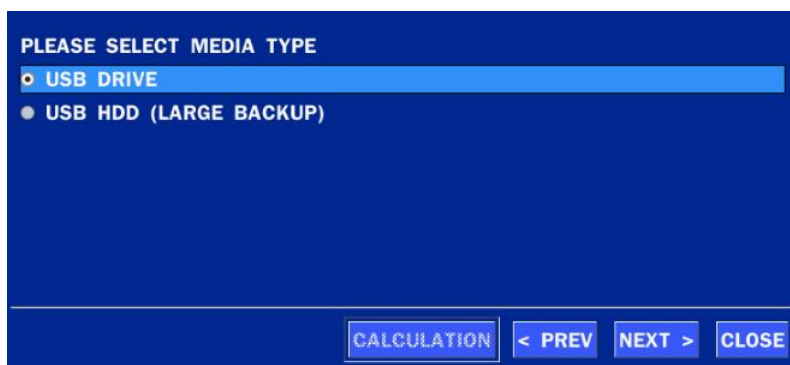
6-2. Video Backup onto USB Flash Drive during playback

Video can be captured and archived onto the USB flash drive or a hard drive while playing back the recorded video. In playback mode, press the  BACKUP button to launch the backup function.

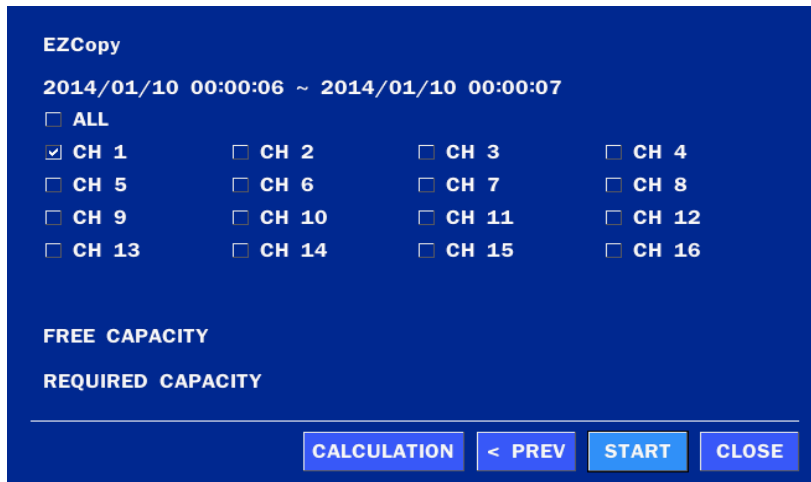
1. When you press  BACKUP button on the selected channel or all channels, the DVR will ask whether to archive a Still Image, a NSF or AVI and select the proper media type.



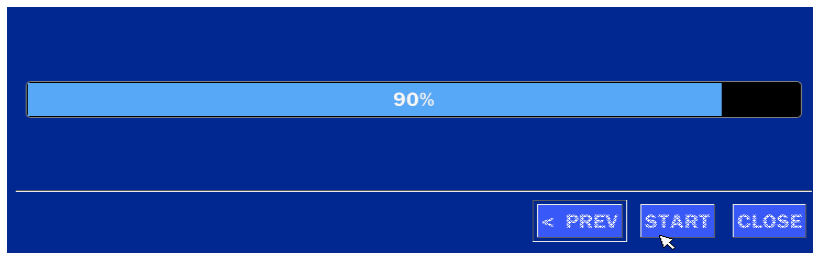
2. Select USB DRIVE (Flash Drive) to back up less than an hour.
Select USB HDD (Large Backup) to back up from 1 hour to 24 hours.



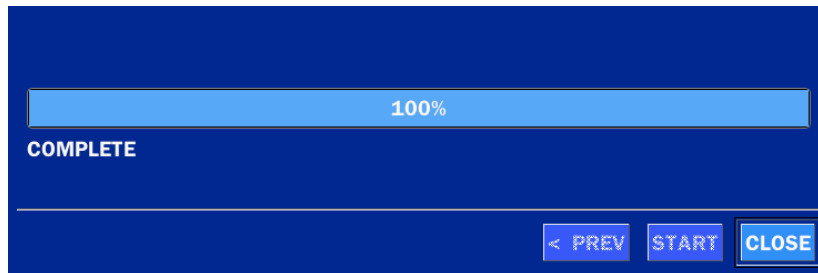
3. Once you select the channel and duration, the system will start to archive the data to the USB drive.



4. The following image shows the progress of archiving the data.



5. The following shows the image to complete the backup. Select lose to return to the previous screen.

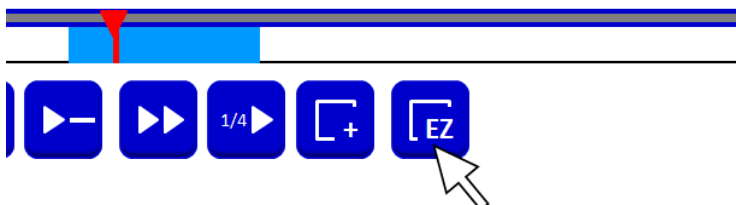


6-3. EZCopy: Video Backup onto USB Flash Drive during playback

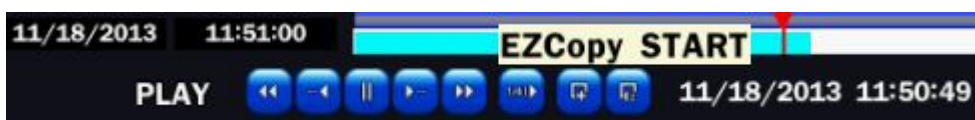
Using EZCopy feature, Video can be easily archived onto the USB flash drive or a hard drive.


In playback mode, press the  **EZCOPY** button to launch the backup function.

1. Press EZCOPY button on the selected channel or all channels.



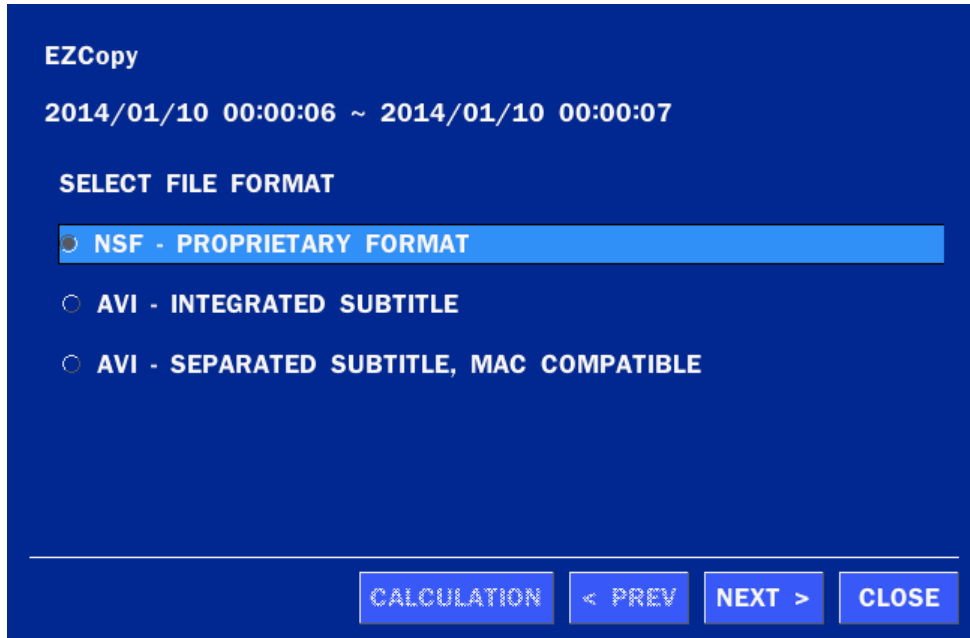
2. Then, EZCOPY START time will display.



3. Move  time bar cursor to the time of end of backup and press EZCOPY button. Then, EZCOPY STOP time will display.



4. EZCOPY window will display. The DVR will ask whether to archive a Still Image, a NSF or AVI.



5. After backup format is selected, also select media type and channel(s) to archive the data to the media.

6-4. Transferring Still Images or Video from the ARCHIVE List

The stored data in the hard drive can be found in the ARCHIVE list in the SEARCH window.

User can back up still images or video into the storage device from the ARCHIVE list.

1. Select the date to begin searching and navigate through the days using the mouse or the remote control.
2. Once you have selected the date, press the NEXT button to open the list of stored data.
3. Use the mouse or the remote control to scroll through the archive list.
4. Select a list of stored events in the archive list.
5. Once the desired event has been selected, press the DISPLAY button to view the still image or the first frame of the selected video.
6. Press the BACKUP button to launch the archiving function in playback mode.
7. Press the CLOSE button to return to the SEARCH window.

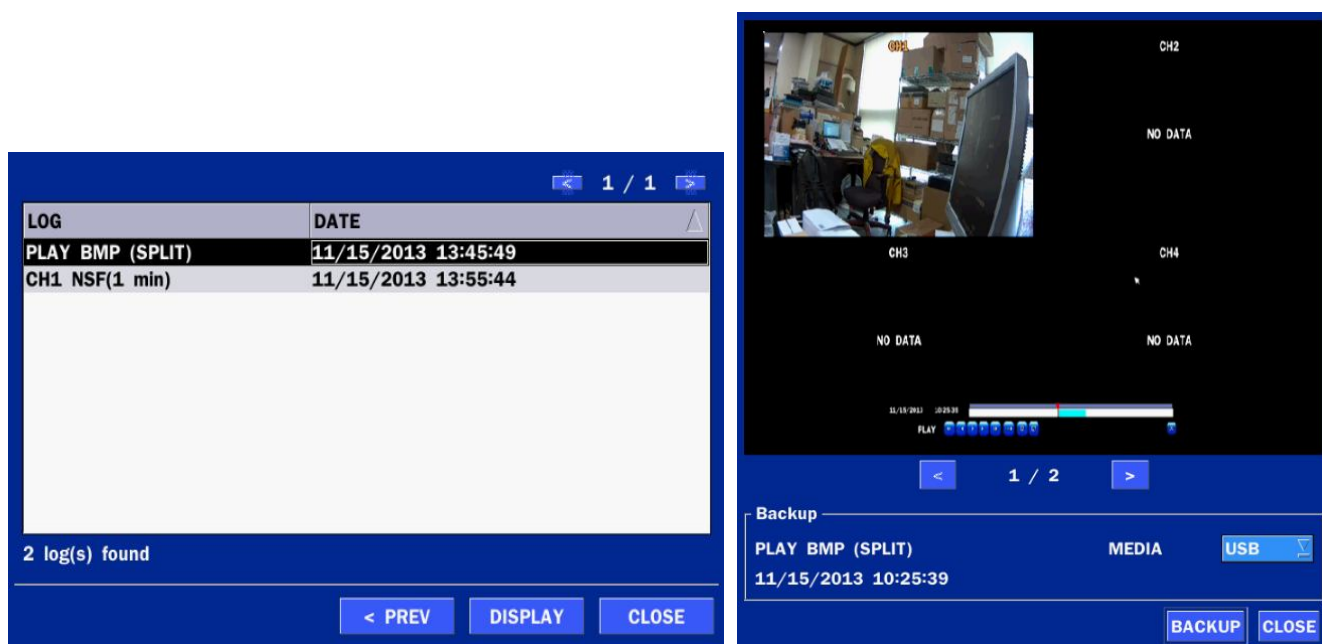


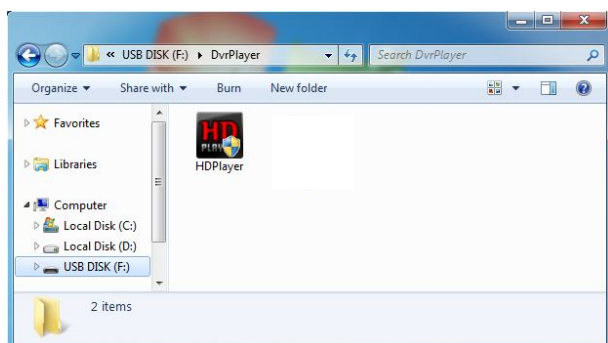
Figure 6.3.1. Archive Search Screen

6-5. Playback of Backup Video

6-5-1. AVI Format

AVI format: AVI format video can be played back by Window Media Player™ or other media player that is compatible with AVI format video.

1. Please install the HS copies “HDPlayer” folder on USB flash drive with the video.



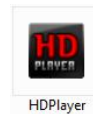
2. Otherwise, the video and time stamp over video can't be properly played back and displayed on Window Media Player™.



Timestamp On AVI. The subtitle is embedded to the video clip file.

The subtitle is embedded to the AVI file.

6-5-2. NSF Format



NSF format: NSF format video can be played back using the HDPlayer that the DVR copies to “DvrPlayer” folder on USB flash drive with video. Use the mouse scroll to use digital zoom in and out feature.



7. Network Access Using the Multi-Sites Network Viewer

7-1. Overview

The SpecoTech Multi Client is a multiple site monitoring client software with; video, audio, and alarm signals from the DVRs over networks. The SpecoTech Multi Client does not limit the number of DVR units to register.

The program displays up to 16 DVRs and supports dual monitors.

On the program, user may control PTZ cameras on the DVRs. By attaching a microphone and speaker system to devices on site, the user may make bi-directional audio communication over the network.

7-2. PC Requirements

Minimum PC Requirements

CPU	Intel Core i3
	1.8Ghz
Memory	2GB DDR2
VGA	512MB
Resolution	1280x720
Disk Space	1GB
OS	Windows 2000, XP Professional, XP Home, Vista, 7 (NOTE: Not all versions of Vista and 7 are supported)
Network	10/100Base T
Others	Direct X 9.0c or Higher

Recommended PC Requirements

CPU	Intel Core i5
	2Ghz or higher.
Memory	4GB DDR3 or higher.
VGA	512MB or higher.
Resolution	1920x1080
Disk Space	1GB
OS	Windows 2000, XP Professional, XP Home, Vista, 7 (NOTE: Not all versions of Vista and 7 are supported)
Network	10/100/1000Base T
Others	Direct X 10 or higher.

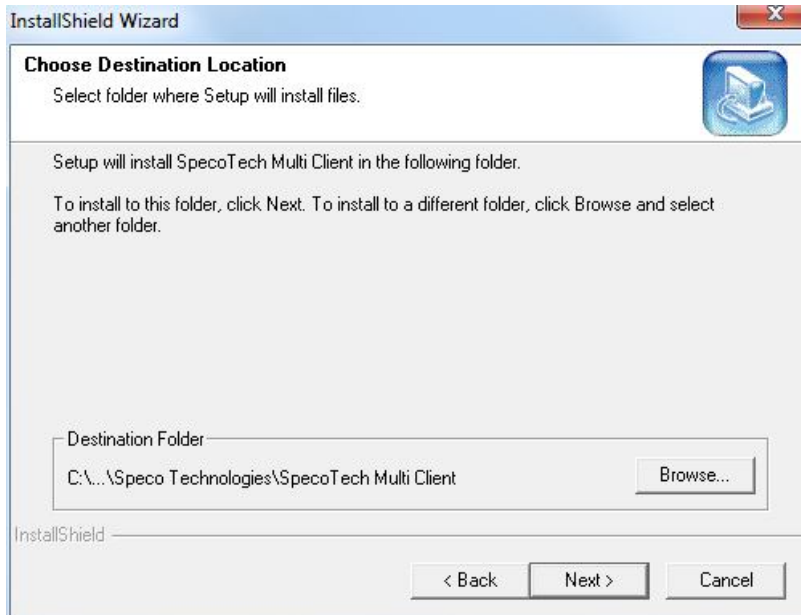
Before installing the program, check the PC specifications. The DVR remote software may not perform correctly if the PC does not meet the minimum requirements.

7-3. Installation of the Program

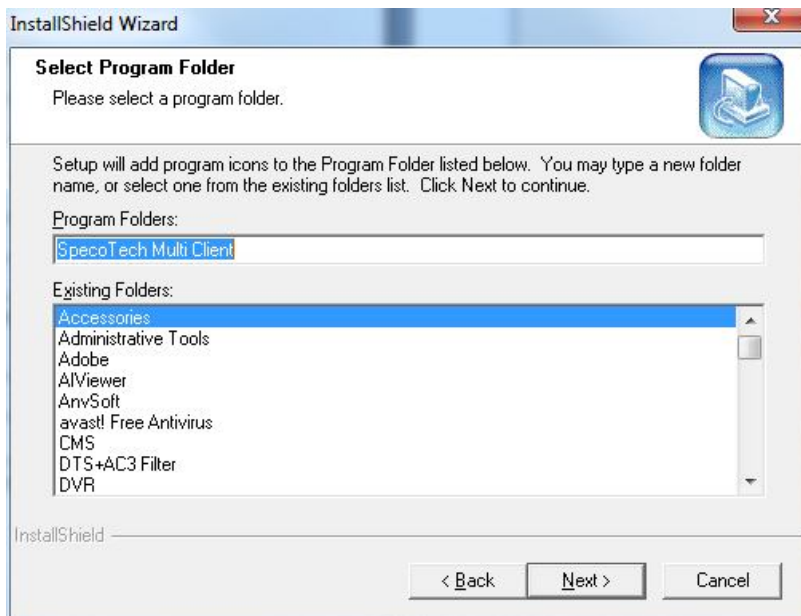
1. Insert the provided CD in the CD drive and double-click “SpecoTech Multi Client (XXXX).exe”



2. Select a destination folder and click “Next”.



3. Select the program folder and click “Next”.



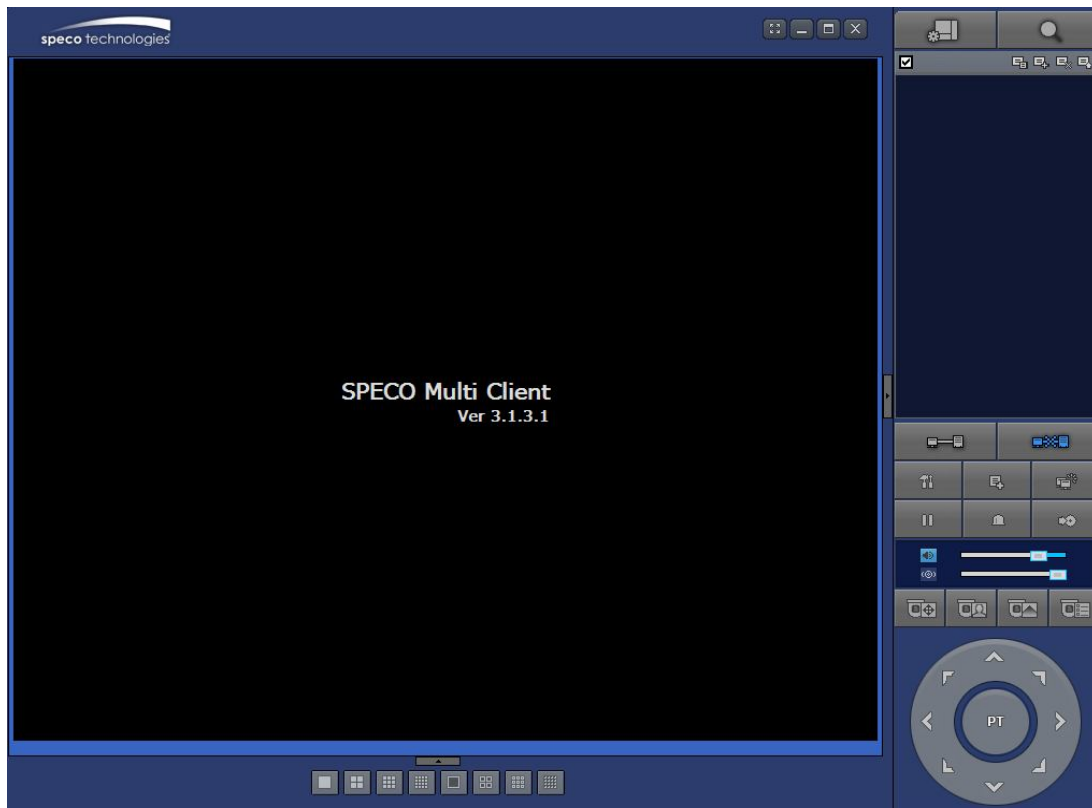
4. The installation status screen is displayed.
5. After the installation is completed, “SpecoTech Multi Client” icon displays on the desktop screen.





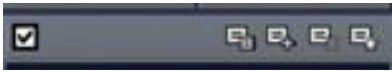





7-4. Live Window













When installation is completed, double click the “SpecoTech Multi Client” icon on your desktop to start the program.

7-4-1. Main User Interface



7-4-2. Control Buttons

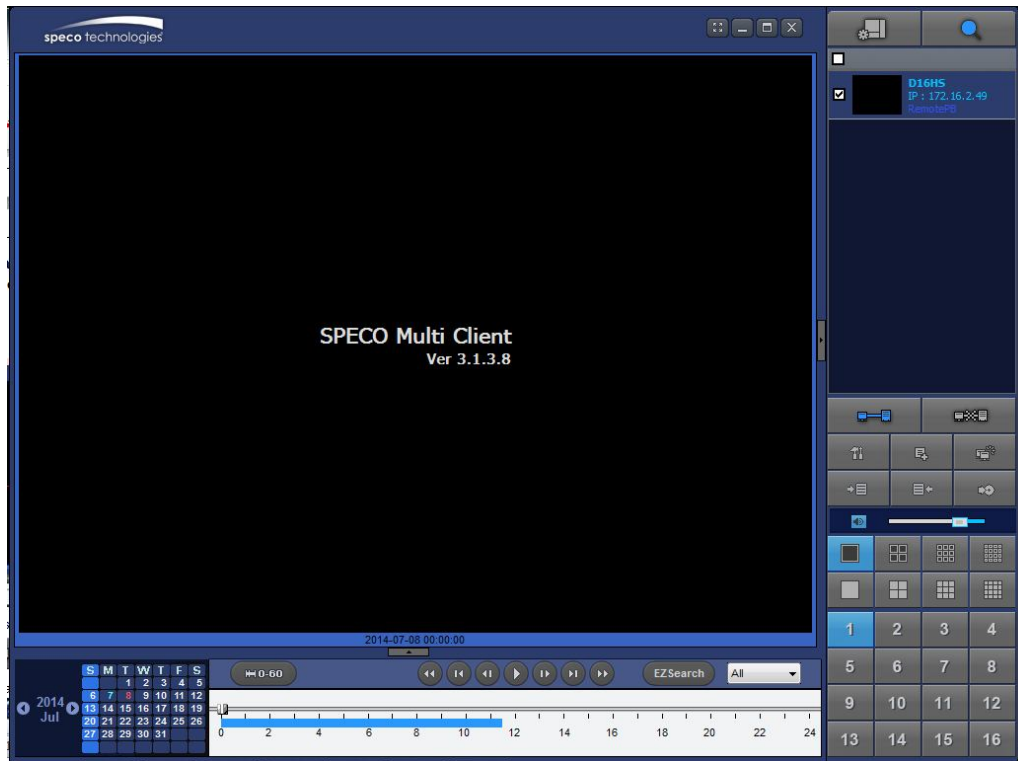
Button	Description
 LOCAL PLAYBACK	Click this icon to run a playback window to search and play videos that are recorded in the local PC.
 REMOTE PLAYBACK	Click this icon to run a playback window to search and play videos that are recorded in the remote DVR.
 SITE MANAGEMENT	<p> THUMBNAIL REFRESH: Click this icon to refresh and renew thumbnail image of the connected sites.</p> <p> SITE ADDITION: Click this icon to open 'Site Addition' window.</p> <p> SITE DELETE: Click this icon to delete site from the index window, after disconnect a site.</p> <p> NET FINDER: Select the site from the index window and click this icon to modify the information of specific site.</p>
 CONNECT	Click this icon to connect the selected site/sites.

 DISCONNECT	Click this icon to disconnect the selected site/sites.
 SETUP	Click this icon to setup configuration of MULTI CLIENT.
 CAPTURE	Click this icon to capture a still image.
 EVENT LIST	Opens list of events logged by the Multi Client.
 PAUSE	Click this icon to play/pause live video.
 ALARM ON	Click this icon to turn on/off alarm outputs.
 RECORD ON	Enable or disable recording of live video to local disk, which has set in setup menu.
 AUDIO	Use the volume control bar to set the audio level.
 MIC	Use the microphone volume control bar to set the micro phone level.
 PRESET/TOUR/SCAN/MENU	User can control PRESET/TOUR/SCAN/MENU
 CHANNEL SPLIT	To select the numbers of display channel/channels (Single, quad, 9 channels, and 16 channels) of highlighted site.
 DVR SITE SPLIT	To select the numbers of DVR/DVRs (1 DVR, 4 DVRs, 9 DVRs, 16 DVRs) on main display screen.



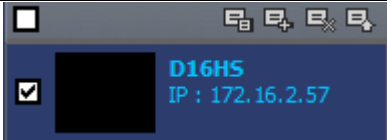






7-5. Search and Playback Window







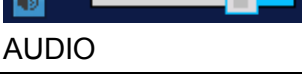



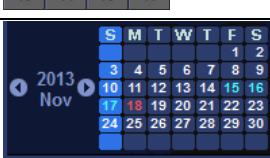
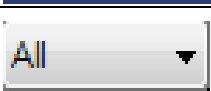
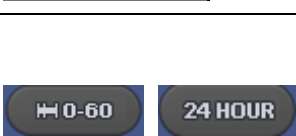

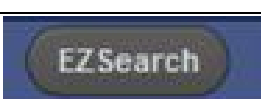
7-5-1. Main User Interface

You can access to search window by clicking the search icon (Local Playback / Remote Playback) on the upper right of the Live Window.



7-5-2. Main Control Panel


Button	Description
 LOCAL PLAYBACK	Click this icon to run a playback window to search and play videos that are recorded in the local PC.
 REMOTE PLAYBACK	Click this icon to run a playback window to search and play videos that are recorded in the remote DVR.
	<p> THUMBNAIL REFRESH: Click this icon to refresh and renew thumbnail image of the connected sites.</p> <p> SITE ADDITION: Click this icon to open 'Site Addition' window.</p> <p> SITE DELETE: Click this icon to delete site from the index window, after disconnect a site.</p> <p> NET FINDER: Select the site from the index window and click this icon to modify the information of specific site.</p>
 CONNECT	Click this icon to connect the selected site/sites.
 DISCONNECT	Click this icon to disconnect the selected site/sites.

 SETUP	Click this icon to setup configuration of SpecoTech Multi Client.
 CAPTURE	Click this icon to capture a still image.
 EVENT LIST	Opens list of events logged by the Multi Client.
 EZCopy Start	Click this icon to set the beginning time for backup of the recorded video in AVI format.
 EZCopy End	Click this icon to set the ending time for backup of the recorded video in AVI format.
 BACKUP	Click this icon to backup the recorded video in AVI format.
 AUDIO	Use the volume control bar to set the audio level.
	To select the numbers of DVR/DVRs (1 DVR, 4 DVRs, 9 DVRs, 16 DVRs) on main display screen.
	To select the numbers of display channel/channels (Single, quad, 9 channels, and 16 channels) of highlighted site.
	To select the channel to playback.
	The calendar shows dates with recorded video in color.
	To display the recorded data of selected channel or all channels on a time line scale.
	To change a timeline scale from 24 hours to 60 minutes. The timeline shows recorded data in color on the bar. You can adjust the timeline scale and move it to the time you wish to playback. Then click the play icon to display the recorded video.
	Playback buttons.
	Thumbnail search over the network. - List the thumbnail 24images from 00:00 to 23:00. - Select one of 24 images every 150sec for an hour. - Then play the tile * Click the "PREVIOUS" button to go the previous step.



Digital Zoom Window in Live and Playback. (Only available in Single Channel Viewing)

7-6. Setup of SpecoTech Multi Client

Click the setup icon  to setup the configuration of Multi Client software. The SETUP window is displayed as below.

7-6-1. General

Security Option: Set a password for security options. Select security options and set a password.

Then when you access any of selected functions, you need to enter the password.

You can also set the save path for capturing and backup.

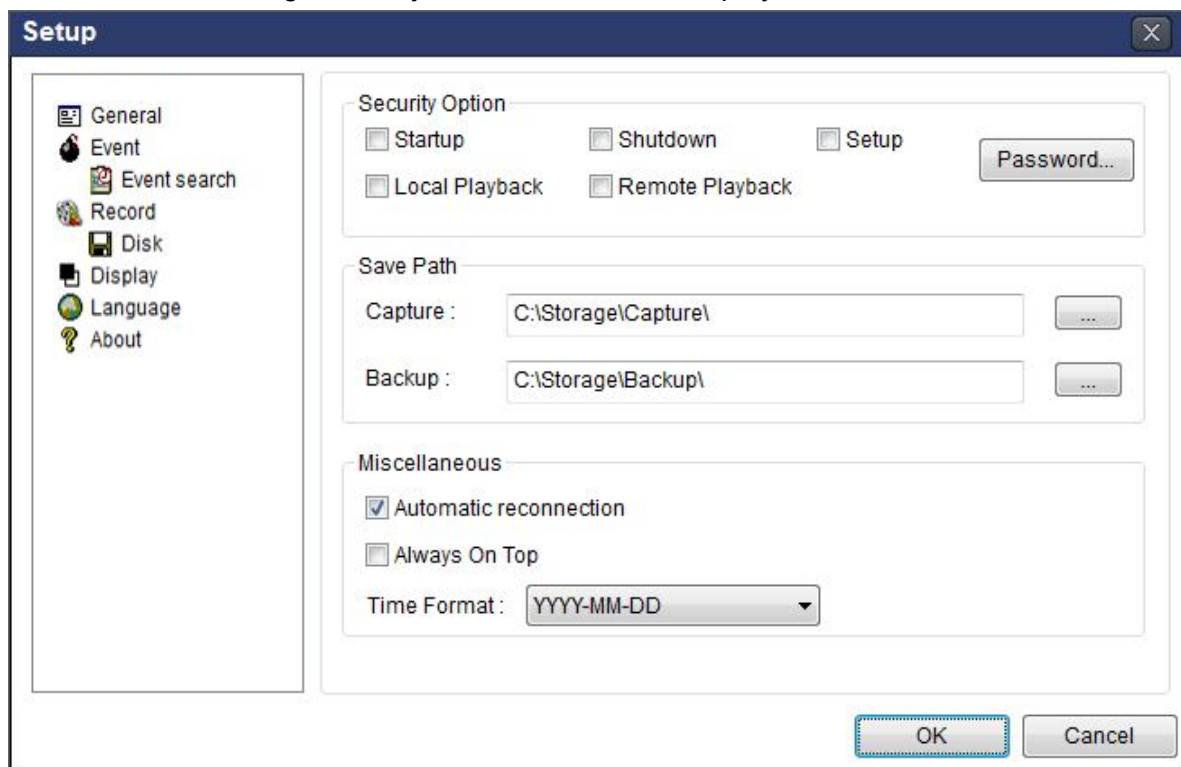
Save Path: Specify the location to save captured still image for Capture and Backup data.

Miscellaneous

Automatic Reconnection: If enabled, the software will automatically try to reconnect to the last successful IP address. But, when CLIENT ACCESS is OFF on the DVR, the software will not try to reconnect even if it is enabled.

Always On Top: If enabled, the software display will be continuously on the top of other windows.

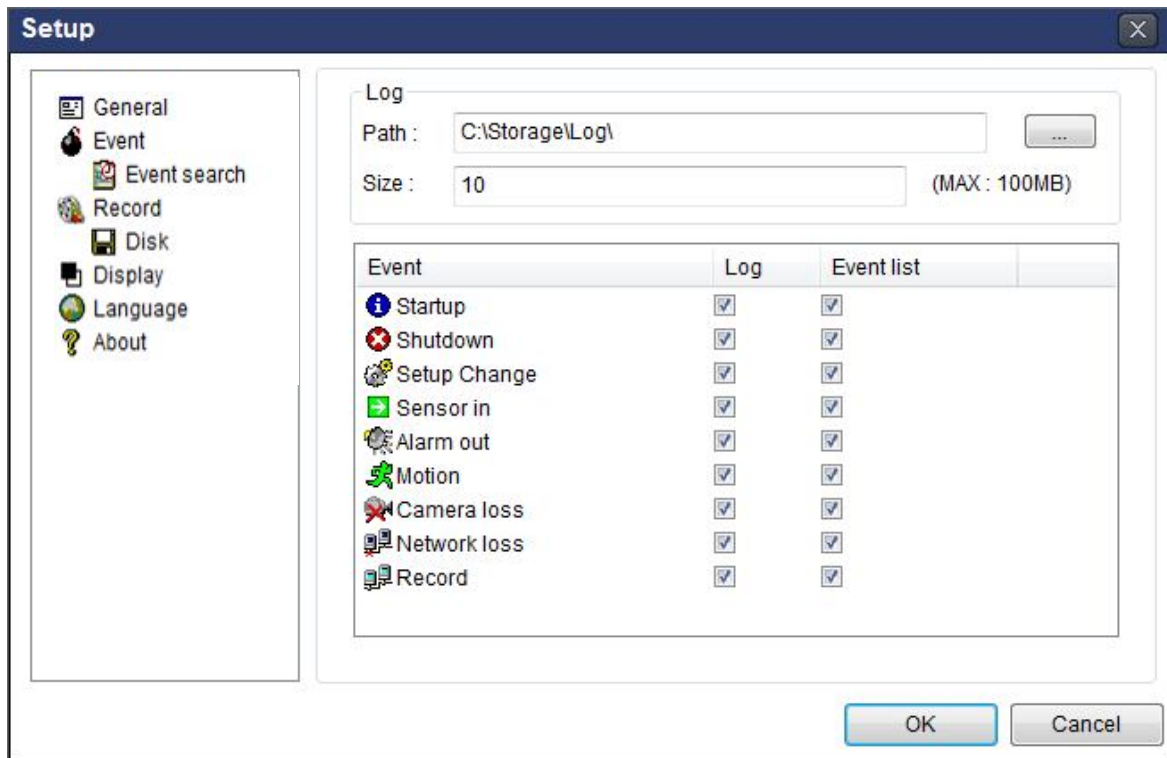
Time Format: Change the way the Client software displays the time.



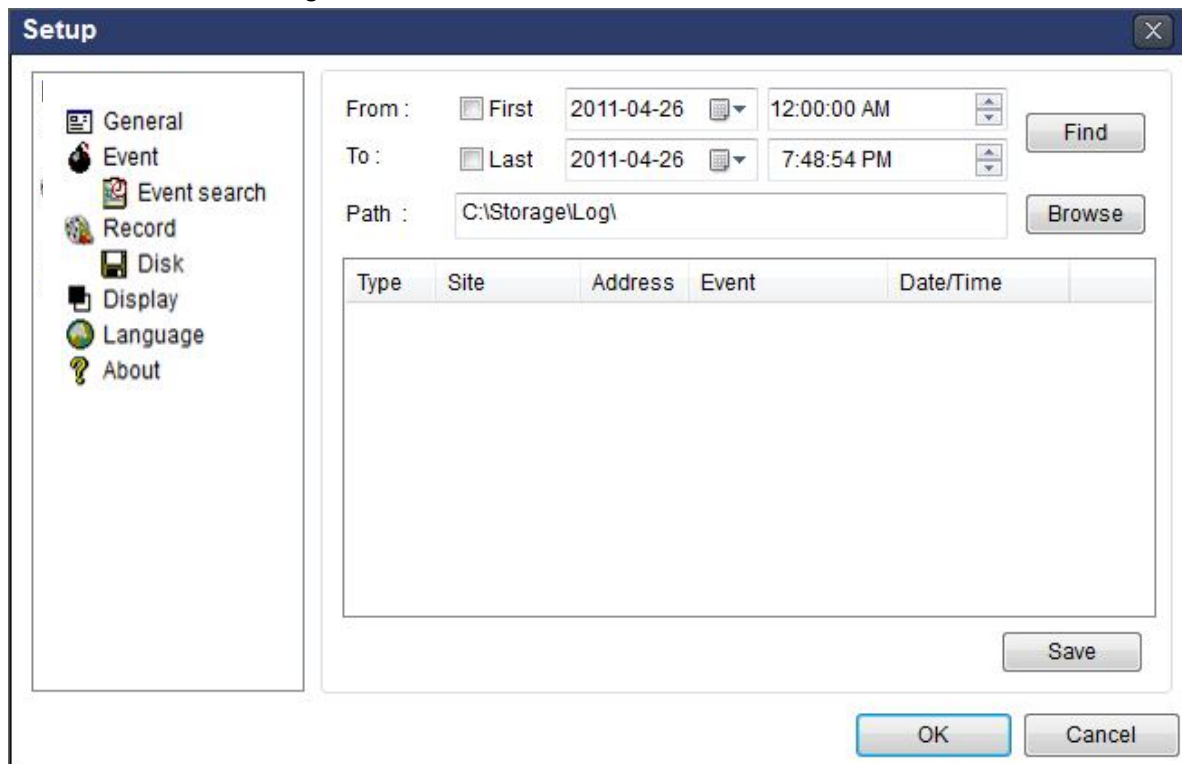
7-6-2. Event

Event log can be archived and searched.

Event Log: Specify the location to save event logs and select event to archive.

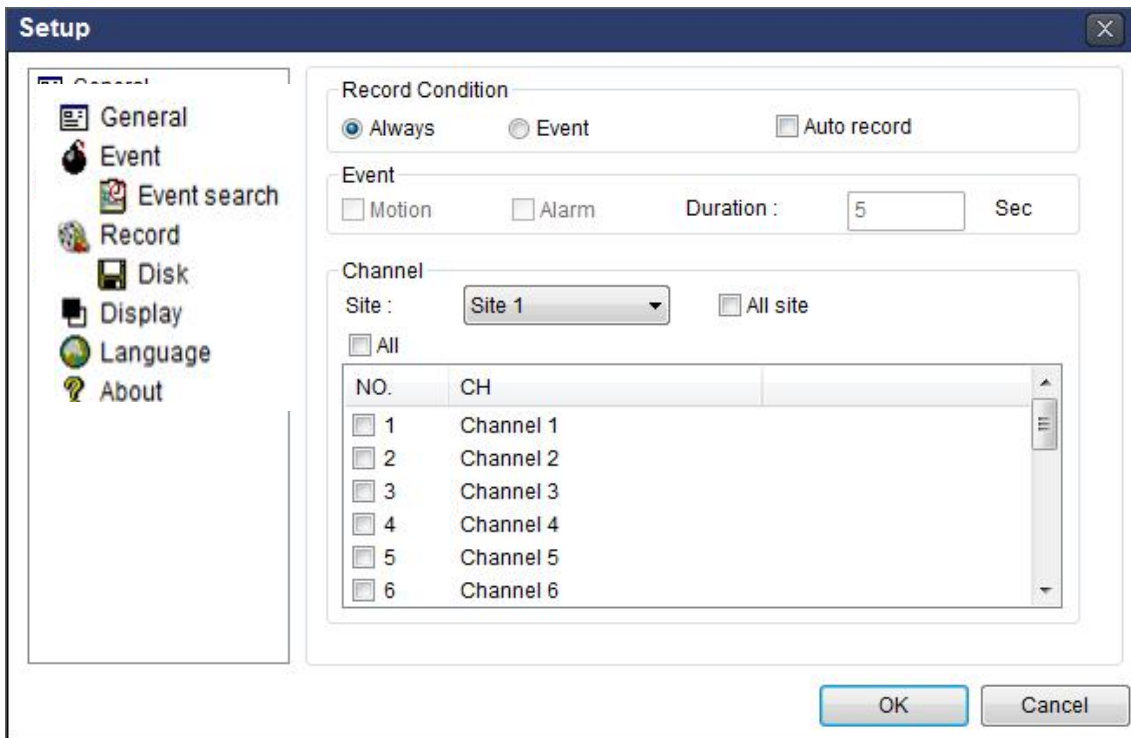


Event Search: Event log can be searched from the selected time.

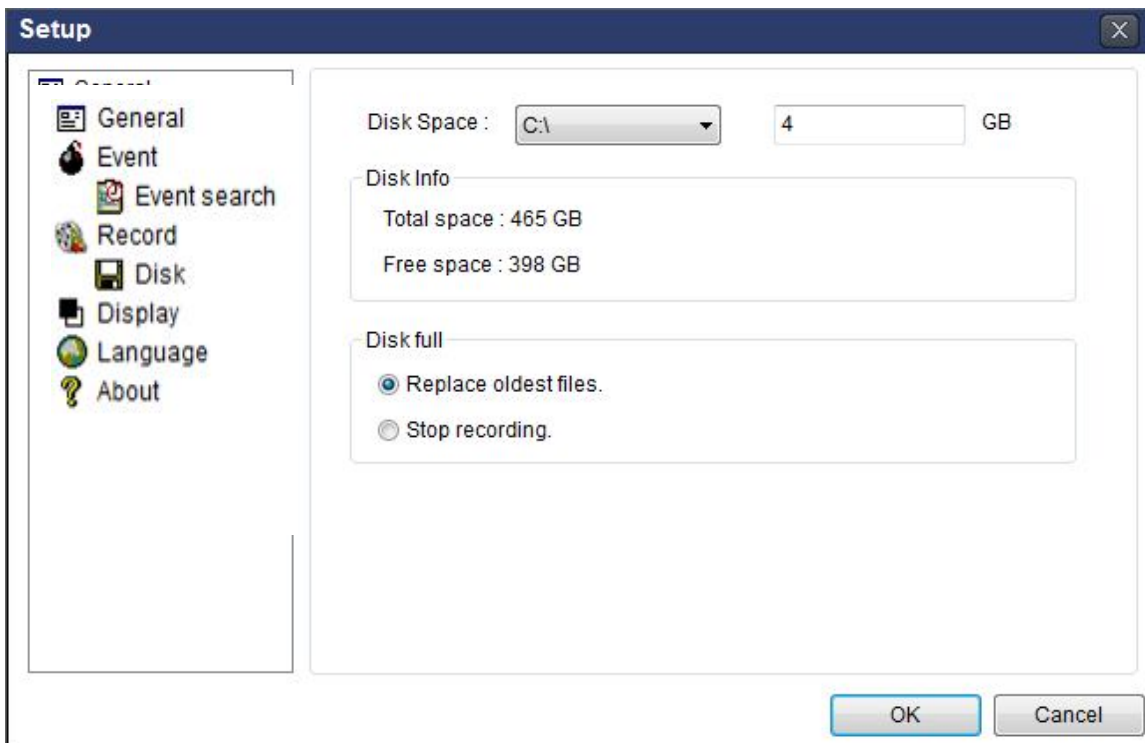


7-6-3. Record

Record Setup: You can set the recording conditions as the following; Always, Event, or Auto record. And you can also select target DVR/DVRs and channel/channels. When you set the recording condition to event, you can set event for motion or alarm with duration.

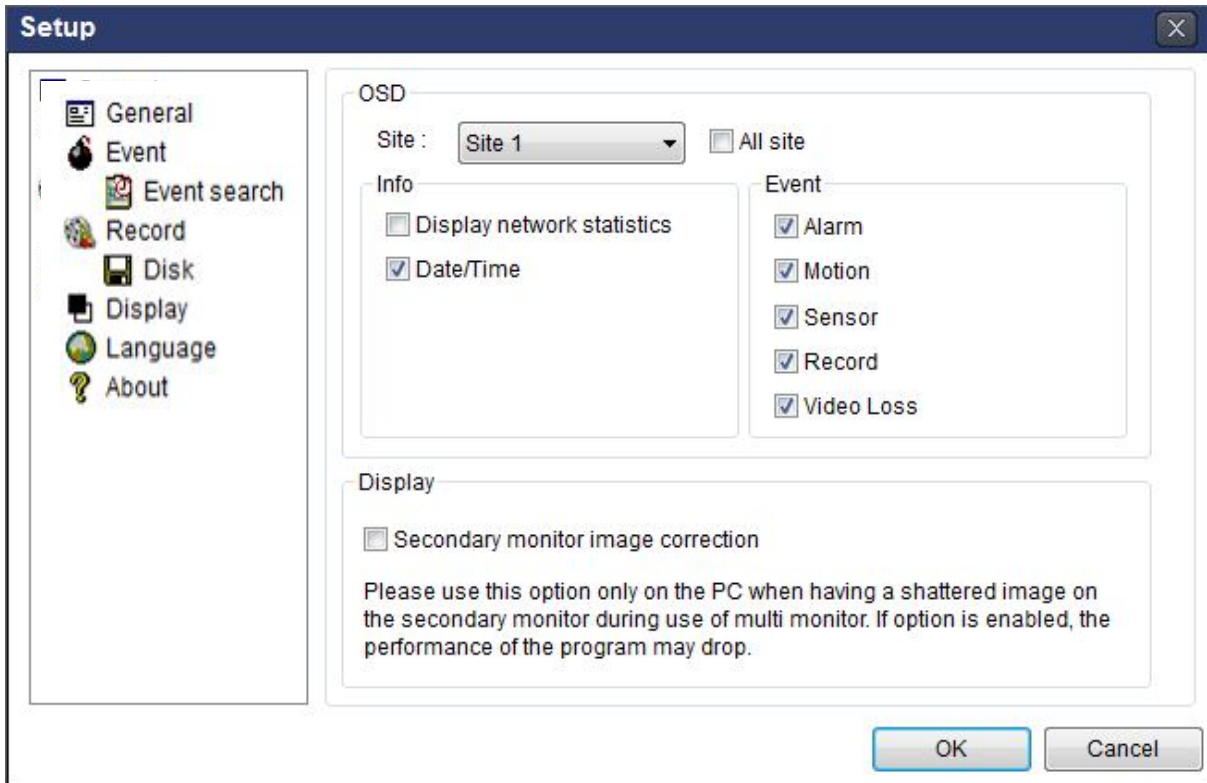


Record Local Storage Setup: You can select the local disk to record and the amount of disk space you want to allow the program to use for recording. You can also select the option to overwrite data or stop recording when the maximum amount of disk space is full.



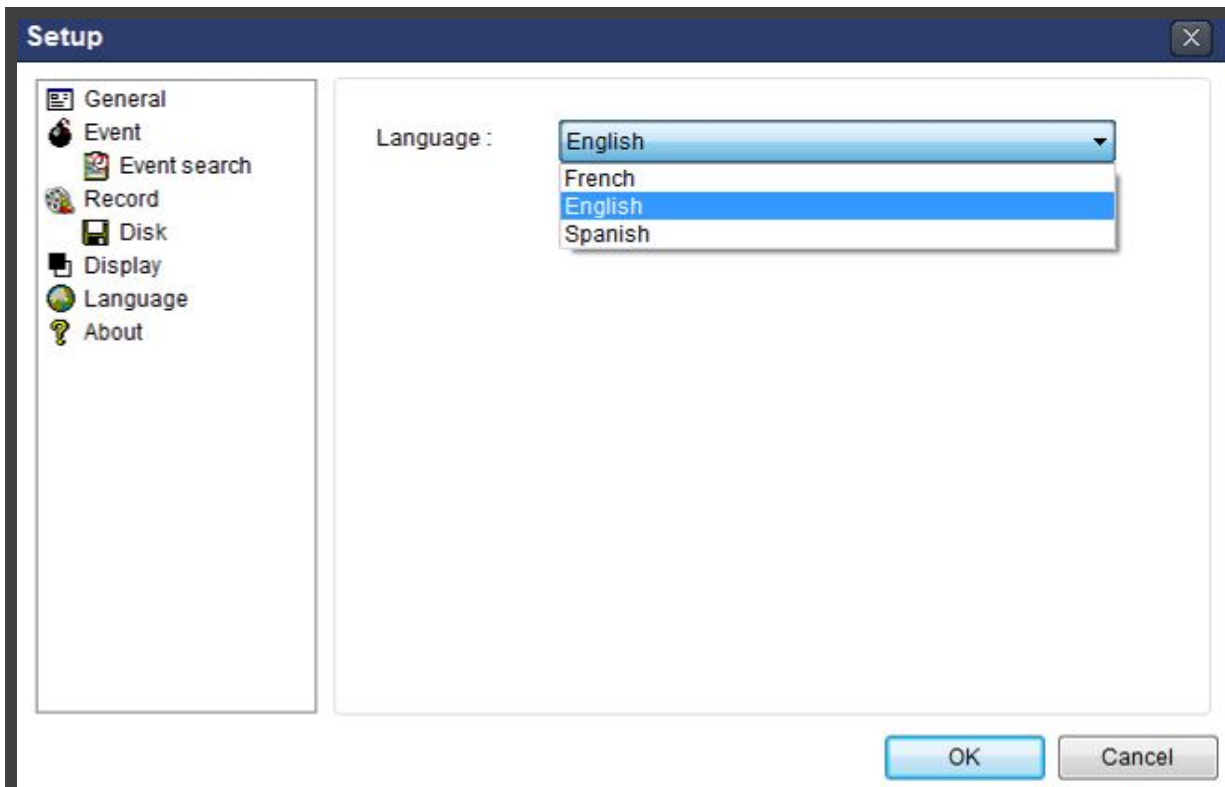
7-6-4. Display

You can select the OSD (On Screen Display) to be displayed.



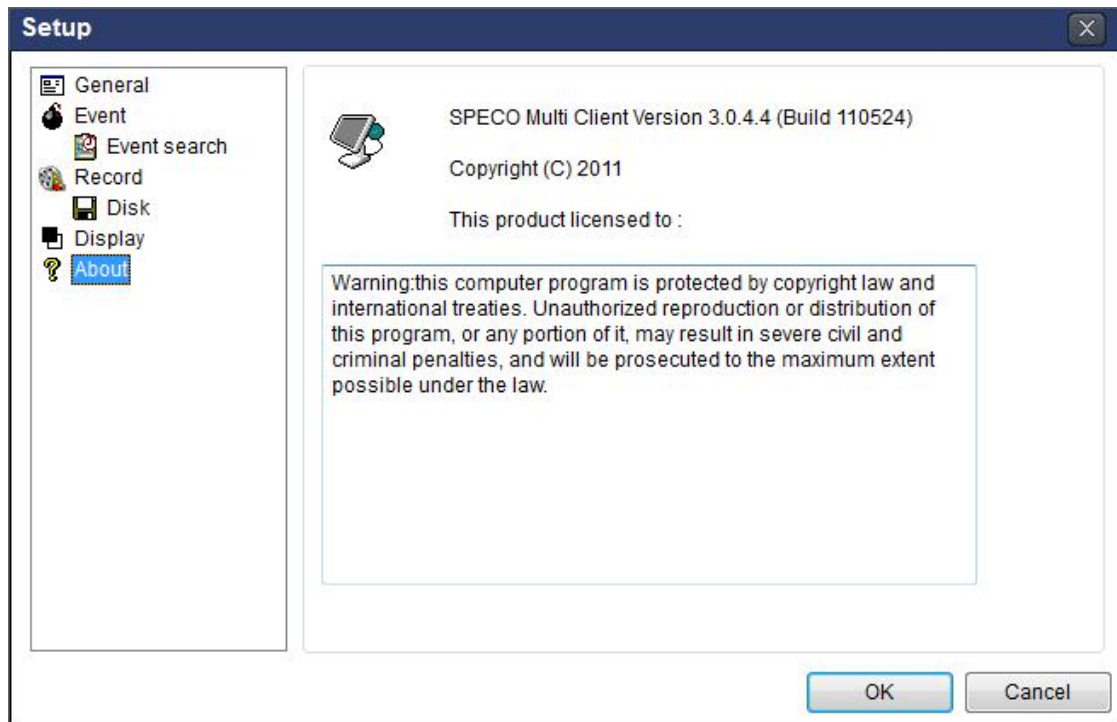
7-6-5. Language

English, French and Spanish is selectable.



7-6-6. About

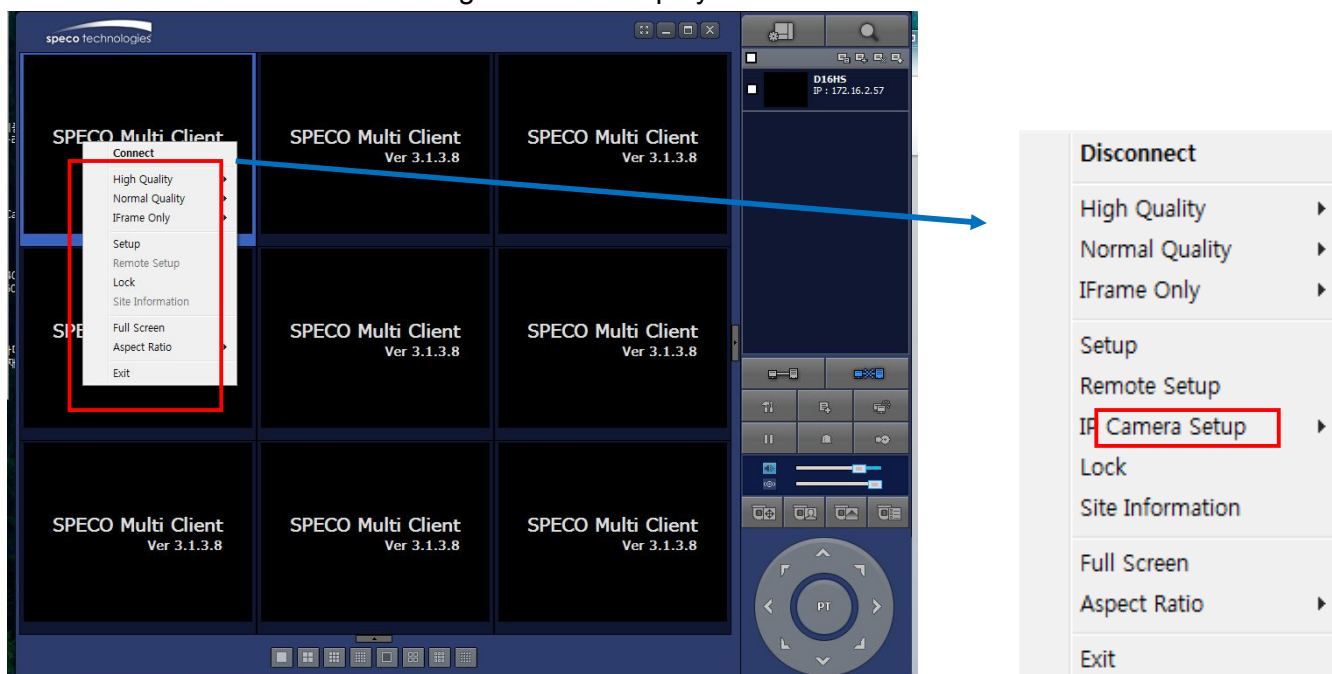
“About” provides network client version information.



7-7. Remote Setup

The menu settings for the DVR unit can be set over network.

Put the cursor of the mouse on the channel, which is connected to the site and right click on the mouse to open the submenu. Then the following window is displayed as below. Select the **REMOTE SETUP**.



Then the setup window is displayed. The specified menu screen is displayed on the upper left of the screen.

Enter the password of the DVR when prompted. (NOTE: The default password is 1111)

Setting is the same as with the DVR menu setting. Refer to the corresponding pages for details on the setting items.



NOTICE

Web Setup is prohibited when DVR is in local Setup Menu.



7-7-1. IP Camera

Select **IP Camera** to set system and time settings

SPECO WEB SETUP (ver 1.10.9)

IP CAMERA	SYSTEM	RECORD	DEVICE	DISPLAY	NETWORK	USER MANAGEMENT	STORAGE	UPGRADE
INFORMATION								
CHANNEL	CH9							
PROTOCOL	ONSIP							
IP	0.0.0.0							
PORT	554							
WEB PORT	80							
ID	admin							
PASSWORD	1234							

- **CHANNEL:** Select the Channel to setup an IP Camera.
 - **Protocol :** Select the Brand of the IP Camera
 - **IP :** Enter the IP Address of the desired Camera
 - **Port :** Enter the Camera stream Port Number (default : 554).
 - **Web Port:** Enter the Camera Web Port Number (default : 80).
 - **ID :** Enter the User ID for access to the IP Camera
 - **PASSWORD :** Enter the Password for the associated ID

7-7-2. System

Select **System** to set system and time settings.

The screenshot shows a web-based configuration interface with a dark theme. The top navigation bar includes tabs for: IP CAMERA, SYSTEM, RECORD, DEVICE, DISPLAY, NETWORK, USER MANAGEMENT, STORAGE, UPGRADE, and INFORMATION. The 'SYSTEM' tab is active.

The main configuration area is divided into several sections:

- DATE & TIME:** Includes fields for DATE DISPLAY FORMAT (MM/DD/YYYY), TIME DISPLAY FORMAT (24-HOUR FORMAT), TIME ZONE (GMT -5:00 (Montreal/New York)), DAYLIGHT SAVING (USA), and a SET DATE & TIME button.
- CLIENT ACCESS:** A radio button to toggle ON/OFF.
- NTP SETUP:** Includes fields for PRIMARY NTP SERVER (Pool.ntp.org), SECONDARY NTP SERVER (Time.nist.gov), TIME ZONE (GMT -5:00 (Montreal/New York)), CONNECTION MODE (TIME), CONNECTION PERIOD (02:00 AM), and SEND EMAIL SETUP (OFF).
- MAIL SETUP:** Includes fields for SERVER TYPE (MANUAL), MAIL SERVER, MAIL PORT (25), SECURE OPTION (NONE), ID, PASSWORD, MAIL TO, MAIL FROM, and SEND MAIL TEST. An APPLY MAIL SETTING & TEST button is present.
- DISK EVENT SETUP:** Includes a HEALTH CHECK section with PERIOD (DAILY), and fields for HDD TEMPERATURE (80°C 140°F), HDD BAD SECTORS (10%), and HDD ALMOST FULL (90%).
- VIDEO CLIP SETUP:** Includes PRE RECORD (2 SECOND(S)) and POST RECORD (1 SECOND(S)).
- EVENTS AND NOTIFICATION:** A table with columns for ALARM/OUT, BEEP, and E-MAIL.

	ALARM/OUT	BEEP	E-MAIL
HEALTH CHECK	-	-	YES
RESTART	-	-	YES
SHUTDOWN	-	-	YES
PANIC RECORD	-	-	YES
ALARM-IN	NO	-	NO
MOTION DETECTION	NO	-	NO
VIDEO LOSS	NO	NO	NO
HDD TEMPERATURE	1	YES	NO
HDD BAD SECTORS	-	-	YES
HDD ALMOST FULL	-	-	YES
HDD FULL	-	-	YES
HDD FAILURE	NO	YES	YES

At the bottom right, there are RELOAD and APPLY buttons.

- **DATE DISPLAY FORMAT:** Select the date display format.

This close-up shows the Date & Time configuration section with the following settings:

- DATE DISPLAY FORMAT: MM/DD/YYYY
- TIME DISPLAY FORMAT: 12-HOUR FORMAT
- TIME ZONE: GMT +5:00 (Islamabad)
- DAYLIGHT SAVING: EU
- GMT AREA: +04:00
- SET DATE & TIME button

In case setting the date & time, the changed date & time will be applied to the system. And, the system will reboot.

When the user make the time back to the past, it does not show "TIME MISMATCH" message unlike the local system. The data on the duplicated period time will be deleted without WARNING.

- **CLIENT ACCESS:** Enable/Disable remote access through network client software.
- **NTP SETUP:** Sets whether to synchronize the time using NTP server or not.

- **Primary SNTP Server:** Input the NTP primary server address.
- **Secondary SNTP Server:** Input the NTP secondary server address.
- **Time Zone:** Select the time zone.
- **Connection Mode:** Select the connection mode to NTP time server.
- **SEND E-Mail SETUP:** Sets whether to enable/disable e-mail sending function.
 - **SEVER TYPE:** Select GMAIL, HOTMAIL, AOL, YAHOO or MANUAL)
 - **MAIL SERVER:** Input the SMTP server name as well as the user ID and password.
 - **MAIL PORT:** Mail port setting.
 - **SEURE OPTION:** Select a secure mail server connection. **(SSL or TLS)**
 - **ID :** Email User ID
 - **PASSWORD :** Email User Password
 - **MAIL TO:** Input the appropriate email address to enable sending e-mail reports
 - **MAIL FROM (Return Mail Address):** Set the source e-mail address to be notified to the destination.
- **SEND MAIL TEST :** E-mail settings sent a test mail to the registered account
- **UNIT NAME:** Name the HS
- **SYSTEM RESTART :** Restart the system
- **SYSTEM EVENT NOTIFICATION**

Allows the user to set EVENT NOFICIATION ON or OFF

- **HEALTH CHECK**
(Allows the user to set MAIL STATUS periodically) : DAILY or WEELY or MONTHLY
- HDD TEMPERATURE
- HDD BAD SECTOR
- HDD ALMOST FULL
- **VIDEO CLIP SETUP: Setting the duration for pre and post recording.**
- **EVENTS AND NOTIFICATION**
- HEALTH CHECK / RESTART / SHUTDOWN / PANIC RECORD
Enable Email Notification in the event a problem occurs with the VS.
- ALARM-IN : Enable Email Notification when the camera detects sensor
- MOTION DETECTION : Enable Email Notification when the camera detects motion
- VIDEO LOSS : Enable Email, Beep and Alarm output Notification when the camera signal is lost.
- HDD TEMPERATURE : Enable Email Beep and Alarm output Notification when the HDD reaches the maximum temperature
- HDD BAD SECTOR : Enable Email Notification when the HDD has bad sectors.
- HDD ALMOST FULL : Enable Email Notification when the HDD is almost full.
- HDD FULL : Enable Email Notification when the HDD is full.
- HDD FAILURE : Enable Email, Beep and Alarm output Notification when the HDD fails.

7-7-3. Record

Select **RECORD** tab to set the recording conditions.

SPECO WEB SETUP (ver 1.10.9)

IP CAMERA SYSTEM **RECORD** DEVICE DISPLAY NETWORK USER MANAGEMENT STORAGE UPGRADE

INFORMATION

SITE CH1

RESOLUTION 960H

FRAME RATE 30 FPS

QUALITY LEVEL 5(H)

RECORDING MODE CONTINUOUS

SENSOR RECORDING - - -

PRE RECORD 1 MINUTE(S)

POST EVENT RECORD 10 SECOND(S)

AUDIO ON OFF

SCHEDULE NONE

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

These settings apply to the specified channel only.

- Recording Setup
 - **RESOLUTION:** Sets the resolution for the recordings. The set value applies to an individual channel.
 - **FRAME RATE:** Sets the recording rate.
 - **QUALITY:** Sets the image quality in 5 levels.
 - **RECORDING:** Sets the recording mode.
 - **RECORDING MODE:** CONTINUOUS, SCHEDULE, MOTION, SENSOR
 - **PRE RECORD:** Sets whether to perform or not pre recording.
 - **POSE EVENT RECORD:** Sets the duration of the event recording.
 - **AUDIO:** Sets whether to perform or not audio recording.
 - **SECHDULE:** Sets the schedule recording.

These settings apply to all channels.

- **EZRECORD**
 - **RESOLUTION:** Sets the resolution for the recordings. The set value applies to an individual channel.
 - **FRAME RATE:** Sets the recording rate.
 - **QUALITY:** Sets the image quality in 5 levels.
 - **RECORDING MODE:** Sets the recording mode.
 - **RECORD DAYS:** By the setting value, the Recording Days will change accordingly.

7-7-4. Device

Select **Device** to set Spot Out, Enable/Disable CVBS Out, motion zone.

SPECO WEB SETUP (ver 1.10.14)

SYSTEM RECORD **DEVICES** DISPLAY NETWORK USER MANAGEMENT STORAGE UPGRADE INFORMATION

ALARM-OUT
ALARM DURATION: INFINITE
DIGITAL DETERRENT: FILE UPLOAD

CHANNEL: CH1
SOUND TYPE: NONE

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
SUN																								
MON																								
TUE																								
WED																								
THU																								
FRI																								
SAT																								

CONTROLLER
SPEED: 9600
ID: 0

PTZ
CHANNEL: CH1
CAMERA: ---
SPEED: 9600
ID: 0

SPOT OUT
SPOT ON EVENT: OFF
SPOT EVENT DWELL TIME: 1 SECONDS
SEQUENCE: OFF
SEQUENCE DWELL TIME: 1 SECONDS

SPOT CHANNEL

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MOTION
SITE: CH1
MOTION ZONE: FULL_ZONE
MOTION SENSITIVITY: 5
KEY TONE: ON OFF

REMOTE CONTROLLER ID: 0
SENSOR: 1
TYPE: OFF

RELOAD APPLY

- **ALARM OUT:** Set the sensor, motion, and video loss for triggering alarm relay.
HDD Error and Video Loss can be set for triggering a beeping sound
The following settings can be changed to trigger an alarm output.
 - **ALARM DURATION**
- **DIGITAL DETERRENT:** The schedule of digital deterrent can be set and a sound file can be uploaded to the HS.
To set up schedule, select **CHANNEL** > select **SOUND TYPE** > select Area.
- **CONTROLLER:** Set the controller baud rate and ID.
- **PTZ:** Set the PTZ baud rate, protocol, and ID.
- **SPOT OUT:**
 - **SPOT ON EVENT:** Enable/disable channel change if an event occurs on a channel
 - **SEQUENCE:** Enable/disable sequential display of spot channel in full screen
 - **SPOT CHANNEL:** Select a channel for spot monitoring using the mouse or the remote control and press OK button
- **MOTION: Setup the motion detection area and the sensitivity.**
 - **SITE:** Select the channel
 - **MOTION ZONE:** FULL Zone or PARTIAL Zone
 - **MOTION SENSITIVITY:** 1~9 (High sensitivity level)
- **CHANNEL:** Select the Channel to configure audio input
 - **AUDIO SOURCE:** Local Audio (RCA) or IP CAM Audio
- **KEYTONE:** Sets On or Off of Key Tone.
- **REMOTE CONTROLLER ID:** Sets an ID number of which remote control to receive commands.
- **SENSOR:** Select the type of sensor.

7-7-5. Display

Select the **DISPLAY** tab to set the DISPLAY conditions.

SPECO WEB SETUP (ver 1.10.9)

IP CAMERA SYSTEM RECORD DEVICE **DISPLAY** NETWORK USER MANAGEMENT STORAGE UPGRADE

INFORMATION

OSD	
CHANNEL NAME	<input checked="" type="radio"/> ON <input type="radio"/> OFF
VIDEO LOSS	<input checked="" type="radio"/> ON <input type="radio"/> OFF
STATUS BAR / ICON	<input checked="" type="radio"/> ON <input type="radio"/> OFF
IP ADDRESS / FPS	IP <input type="text"/>
OSD CONTRAST	100 <input type="text"/>
MAIN MONITOR SEQUENCE	<input checked="" type="radio"/> ON <input type="radio"/> OFF
SEQUENCE-DWELL TIME	3 SECOND(S) <input type="text"/>
SITE	CH1 <input type="text"/>
NAME	CH1 <input type="text"/>
COVERT	OFF <input type="text"/>
BRIGHTNESS	50 <input type="text"/>
CONTRAST	50 <input type="text"/>
HUE	50 <input type="text"/>
SATURATION	60 <input type="text"/>

These settings apply to all channels.

- **OSD**: Sets whether to display or not date and time as well as channel number on the screen.
- **OSD CONTRAST**: Adjust the character contrast on the screen.
- **MAIN MONITOR SEQUENCE**: Setting for automatically switching the displayed video.
- **SEQUENCE DWELL TIME**: Sets the interval for automatically switching the screens.
- **SITE**: Name, Covert, Brightness, Contrast, Hue, Saturation

These settings apply to the specified channel only.

7-7-6. Network

SPECO WEB SETUP

(ver 1.10.9)

IP CAMERA	SYSTEM	RECORD	DEVICE	DISPLAY	NETWORK	USER MANAGEMENT	STORAGE	UPGRADE
INFORMATION								
NETWORK TYPE						DHCP		
IP						172.16.2.41		
SUBNET MASK						255.255.0.0		
GATEWAY						172.16.1.254		
DNS (PRIMARY)						168.126.63.1		
DNS (SECONDARY)						168.126.63.2		
DDNS								
ENABLE DDNS						OFF		
HOST NAME						hostname		
SUBMIT/UPDATE						OFF		
ezDDNS						OFF		
NETWORK PORT						5445		
NETWORK AUDIO PORT						5446		
WEB PORT						80		
NETWORK STREAM						CH1		
RESOLUTION						CIF		
FRAME RATE						30 FPS		
QUALITY						LEVEL 5(H)		
USE MOBILE						OFF		
WIRELESS LAN						ON		
IP ADDRESS						192.168.50.1		
SSID						MY_SSID		
KEY (8~15 CHARACTERS)						12345678		

- **NETWORK TYPE (Cannot be altered remotely)**
 - **STATIC:** The address setting mode is manual. Input IP, Gateway, Subnet Mask, and DNS IP.
 - **DHCP:** The address setting mode is automatic.
- **DDNS:** Set whether to use DDNS service or not
 - **HOST NAME:** Allows the user to setup a domain name manually
 - **SUBMIT/UPDATE:** Select ON to submit the settings
 - **ezDDNS:** Enable ezDDNS to register the host name automatically
- **NETWORK PORT:** When connecting multiple DVRs to the network, set a unique port number.
- **NETWORK AUDIO PORT:** Display the network audio port (NETWORK PORT + 1).
- **WEB PORT:** Set a web server port number.
- **NETWORK STREAM:** Set the Resolution, Frame Rate, and the Quality.
- **WIRELESS LAN :** Wireless networks can be configured(option)
 - **IP ADDRESS:** Wireless IP Address
 - **SSID(Service set identifier):** Wireless Network ID
 - **KEY(8~15 Characters):** Wireless Network Password

7-7-7. User Management

Select the **USER MANAGEMENT** tab to set the DISPLAY conditions.

SPECO WEB SETUP

(ver 1.10.9)

The screenshot shows the 'USER MANAGEMENT' tab selected in the 'SPECO WEB SETUP' interface. The 'AUTHORITY SETUP' table lists users and their access to various functions. The 'USER NAME SETUP' section allows changing a user's name and password. The 'PLAYBACK AUTHORITY' table shows which users have access to 16 channels.

	PASSWORD	SETUP	PB	PTZ	REC OFF	NETWORK
PASSWORD CHECK		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
ADMIN	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER1	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER2	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER3	****	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
ADMIN	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
USER3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

- **AUTHORITY SETUP:** Select which users have access to each function, password check can be implemented for each function accessed.
- **USER NAME SETUP:** Select which Username to change
 - **NEW USER NAME:** Input the new username
- **PASSWORD SETUP:** Select Username to change Password
 - A. **CHANGE:** Select whether to KEEP or CHANGE the current password.
 - B. **NEW PASSWORD:** Input NEW Password if CHANGE was selected.
 - C. **CONFIRM PASSWORD:** Input NEW Password again to confirm.
- **PLAYBACK AUTHORITY:** User can select which users have access to which channels.

7-7-8. Storage

Select **Storage** to configure continued recording settings by overwriting the hard disk and the storage period for the recording data.

SPECO WEB SETUP (ver 1.10.9)

IP CAMERA SYSTEM RECORD DEVICE DISPLAY NETWORK USER MANAGEMENT STORAGE UPGRADE

INFORMATION

OVERWRITE	<input checked="" type="radio"/> ON <input type="radio"/> OFF
DISK INFO	
HDD SIZE :	435 GB (FREE : 42 GB)
HDD LAST TIME :	01/10/2014 20:51:00
HDD 2	
MODEL NAME	ST3500411SV
TEMPERATURE	41 Celsius (105 Fahrenheit)
HEALTH (GOOD/NORMAL/BAD)	GOOD
REALLOCATED SECTORS	0
CURRENT PENDING SECTORS	0
UNCORRECTABLE SECTORS	0
SPIN RETRY SECTORS	0
RECORDING LIMIT	OFF
RECORDING LIMIT DAYS	30 DAY(S)

- **OVERWRITE:** Select on to continue recording by overwriting when the hard disk becomes full.
- **DISK INFO :** Hard drive information.
- **RECORD LIMIT:** Sets whether to limit or not the recording data storage period.

7-7-9. Remote Upgrade

IP CAMERA SYSTEM RECORD DEVICE DISPLAY NETWORK USER MANAGEMENT STORAGE UPGRADE

INFORMATION

Model Name : D16HS
Current Software : Ver 4.1.0_20140811

UPGRADE

RELOAD APPLY

Shows the current Firmware version installed on DVR.

- **Browse:** Select BROWSE to locate the firmware file.
- **Upgrade:** Select UPGRADE to upgrade the firmware of the DVR.

7-7-10. Information

SPECO WEB SETUP (ver 1.10.9)

IP CAMERA SYSTEM RECORD DEVICE DISPLAY NETWORK USER MANAGEMENT STORAGE UPGRADE

INFORMATION


MODEL NAME	D16HS
SOFTWARE VERSION	Ver 3.9.3_20131206
STORAGE SIZE	435 GB
NETWORK TYPE	DHCP
IP ADDRESS	172.16.2.41
MAC ADDRESS	00:02:69:FF:F0:9E
DVR ID	HYBRID
REMOTE CONTROLLER ID	0

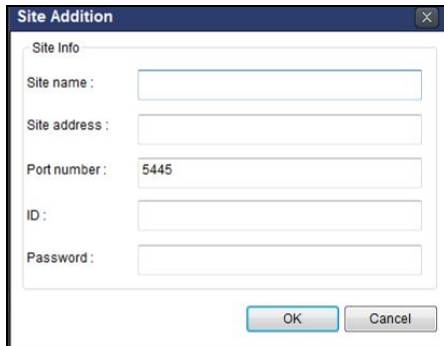
Displays general information about the HS.

7-8. Operation

7-8-1. Addition, Delete, and Modify of DVR Sites

7-8-1-1. Addition of Sites

1. Click  SITE ADDITION button. And then the following window will be displayed as below.

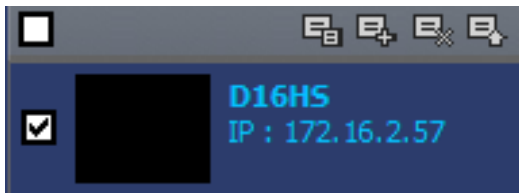


The 'Site Addition' dialog box contains the following fields:

- Site name :
- Site address :
- Port number :
- ID :
- Password :

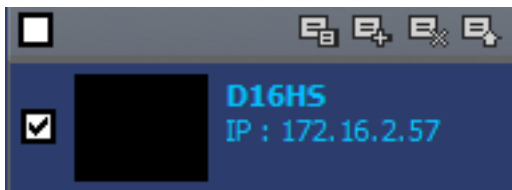
Buttons: OK, Cancel


- **Site Name:** Input a name that properly describes a site.
 - **IP Address:** Input IP address (Public IP address of a router that DVR is connected.) or Domain name
 - **Port Number: Default Port Number is “5445”.**
 - **ID:** Input ID of DVR. **Default ID is “admin”.**
 - **Password:** Input network password of DVR. **Default Password is “1111”.**
2. Click OK button. And then the registered site is added on the directory window.



7-8-1-2. Deleting a Site

1. Select the site/sites to delete from the directory window.




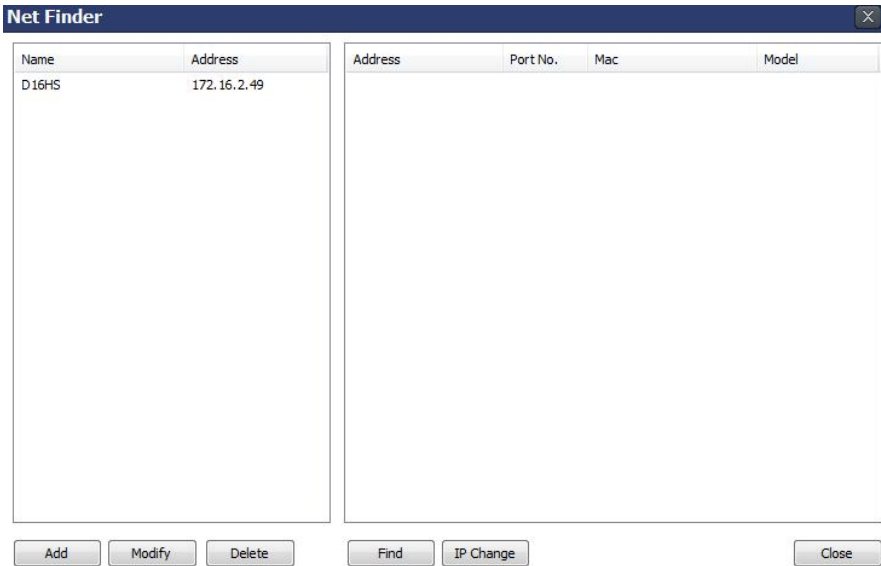
2. Click  SITE DELETE button. And then the selected site/sites is/are deleted.

7-8-1-3. Modify of Sites

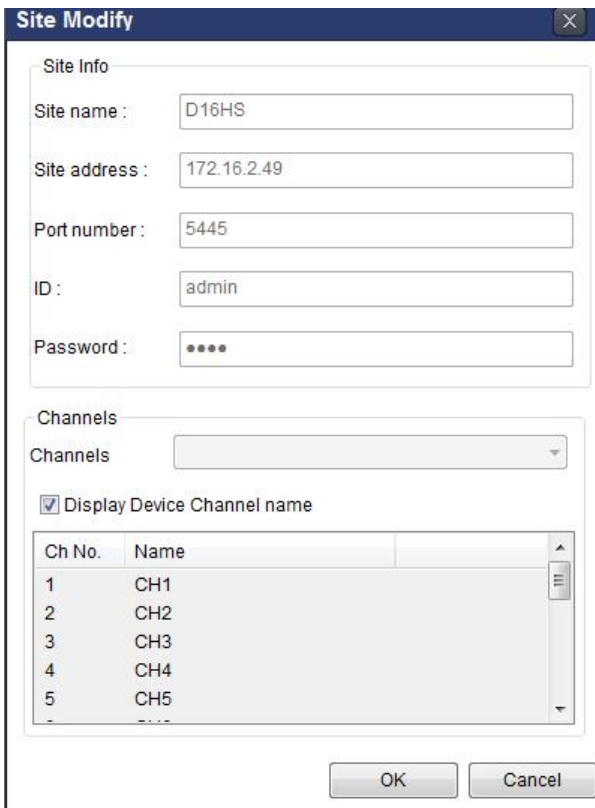
1. Select the site/sites to modify from the directory window.



2. Click  NET FINDER button. And then the following window will be displayed as below.



3. Click MODIFY button. And then the modified information is displayed as below.




7-8-2. Connect and Disconnect

7-8-2-1. Connect

1. Select site/sites to connect from the directory window.



2. Click  CONNECT button, and then site/sites displays/display as connected.

7-8-2-2. Disconnect

1. Select site/sites to disconnect from the directory window.




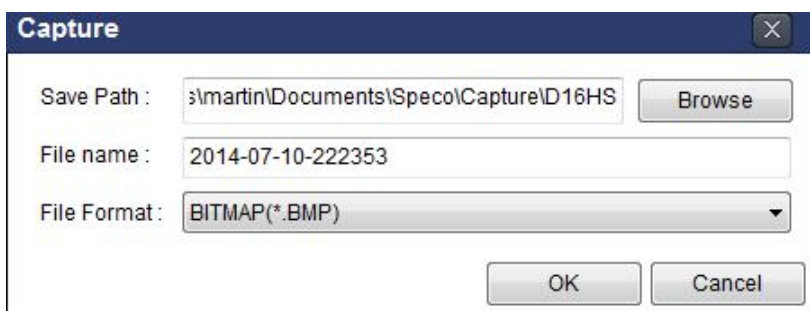
2. Click  DISCONNECT button, and then selected site/sites disconnected.

7-8-3. Still-image Capture During Live

1. Double-click a channel to capture from the display screen. (Otherwise all channels will be captured.)




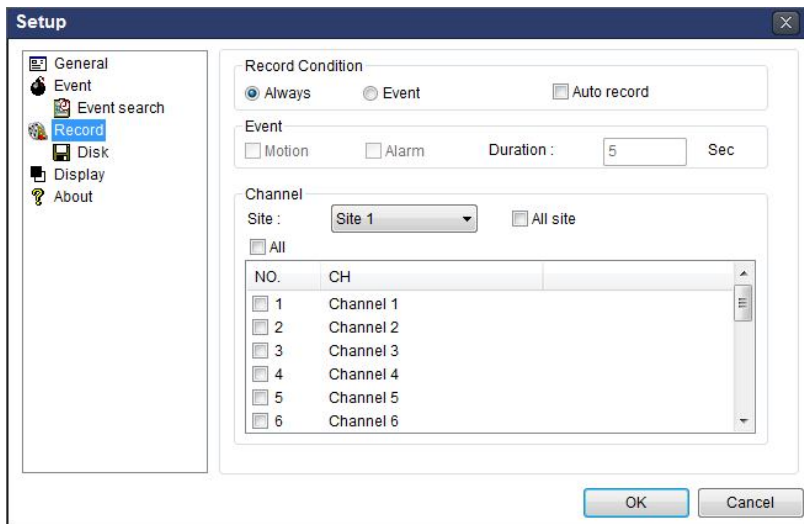
2. Click  CAPTURE button. And then a Capture window will be displayed as below.



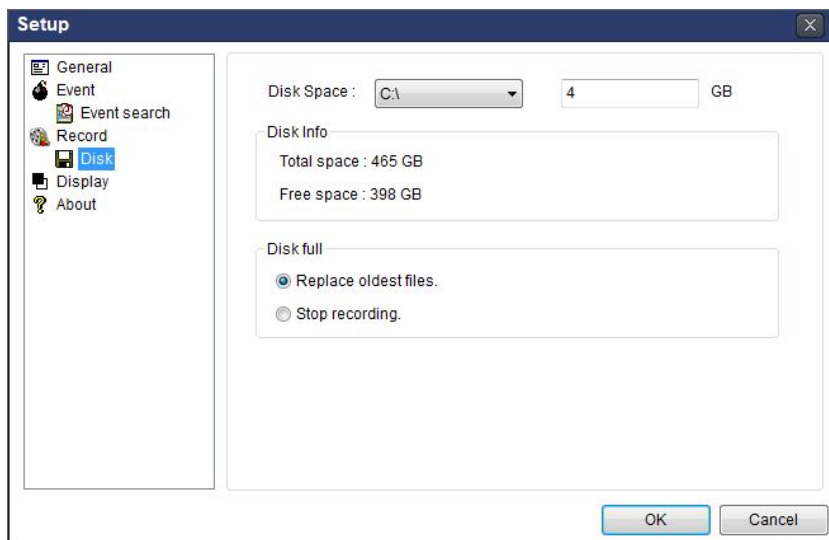
3. Set Save Path, File Name, and File Format. And then click OK button.
4. Still image is saved as set in Capture window.


7-8-4. Recording Video on Local PC During Live

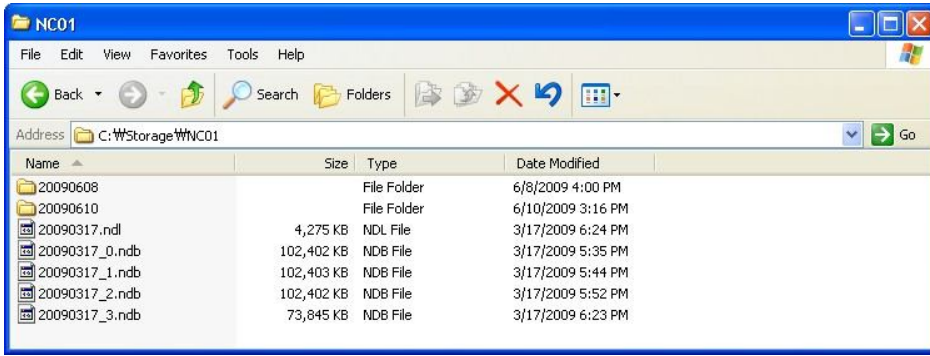
1. Click  SETUP button. And then a setup window will be displayed as below.
2. Select Record and set the values.



3. Select Disk and set the values.




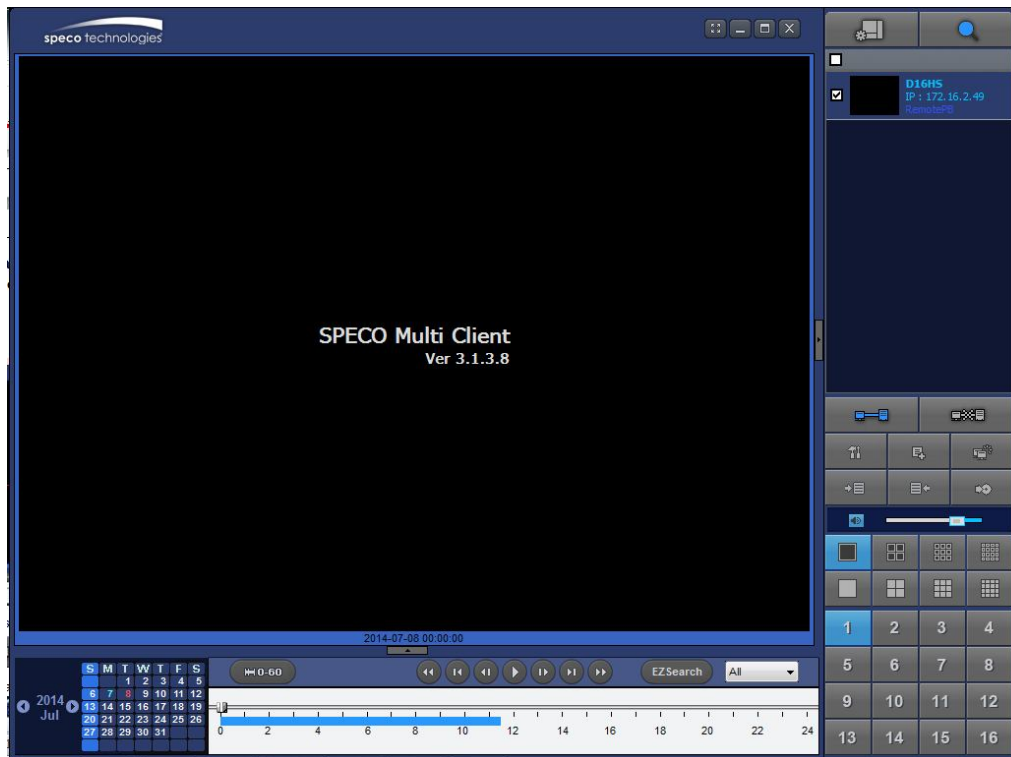
4. Click  RECORD ON button. And the color of button is changed.
5. Live video data is recorded as set in Record and Disk setup. These video data can be searched and play-backed with Local Playback.




7-8-5. Local Playback and Remote Playback

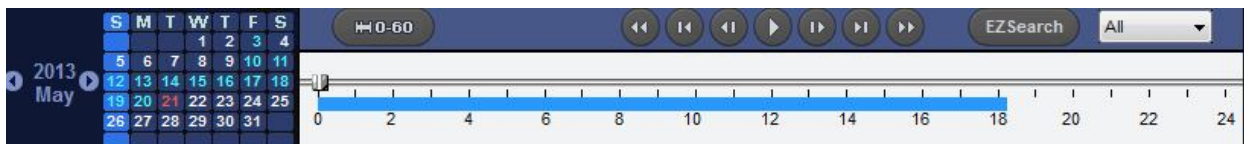
7-8-5-1. Playback of Recorded Video on a Local PC

1. Click  LOCAL PLAYBACK. And then Playback Window will be displayed over the Live Window.

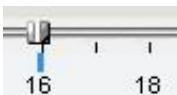


2. Select site/sites to connect from the directory window.

3. Click  CONNECT button. And then Green bar displays on Search calendar and timeline scale window.



6. Move the marker on the timeline scale to where there is video data and press the PLAY button.




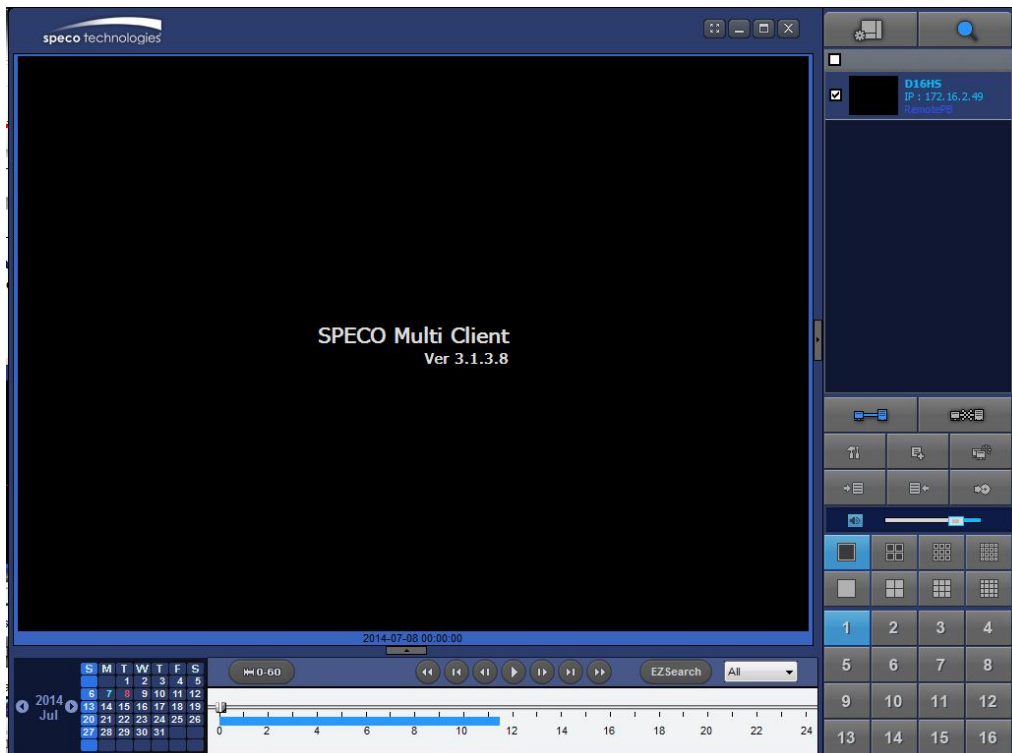
7. Video data that is recorded on local PC will be play-backed.



8. Use the mouse scroll to digitally zoom in and out from a single channel display.

7-8-5-2. Playback of Recorded Video on Remote DVR

1. Click  REMOTE PLAYBACK. And then Playback Window will be displayed over the Live Window.



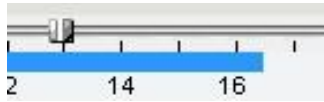
2. Select the site to connect from the directory window.

3. Click  CONNECT.

And then Green bar displays on Search calendar and timeline scale window.



4. Move the marker on the timeline scale to where there is video data and press the PLAY button.



5. Video data that is recorded on the remote DVR is play-backed.



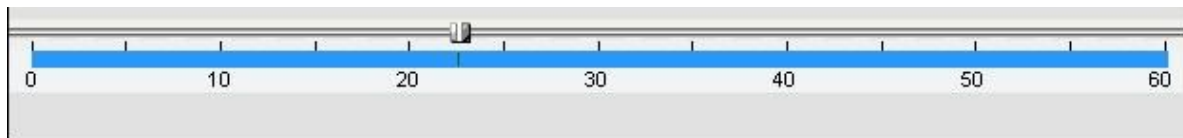
7-8-6. AVI Backup during Playback


You can back up the recorded videos in AVI format during playback.

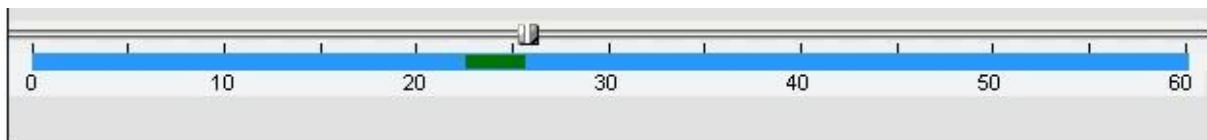
1. Double-click the target channel to backup.
2. Select the beginning time by using the search calendar and timeline scale bar.



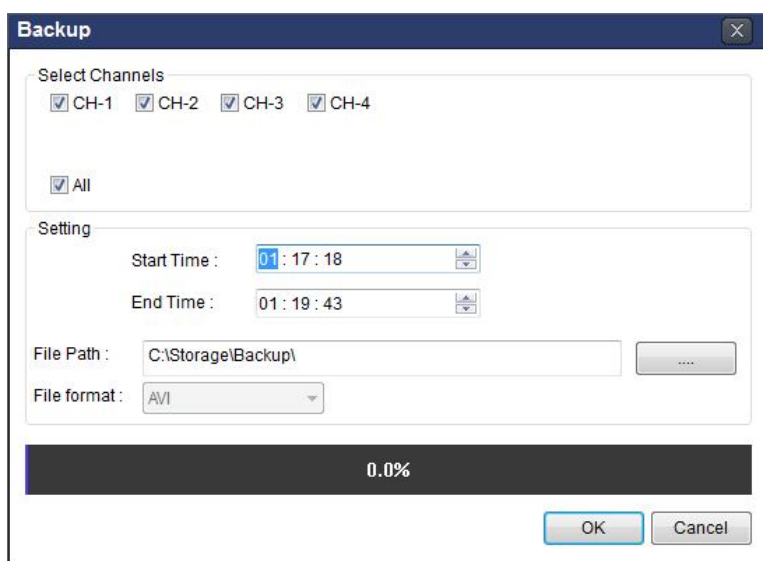
3. Click  EZCOPY START button on the timeline scale to select the beginning point of the backup.



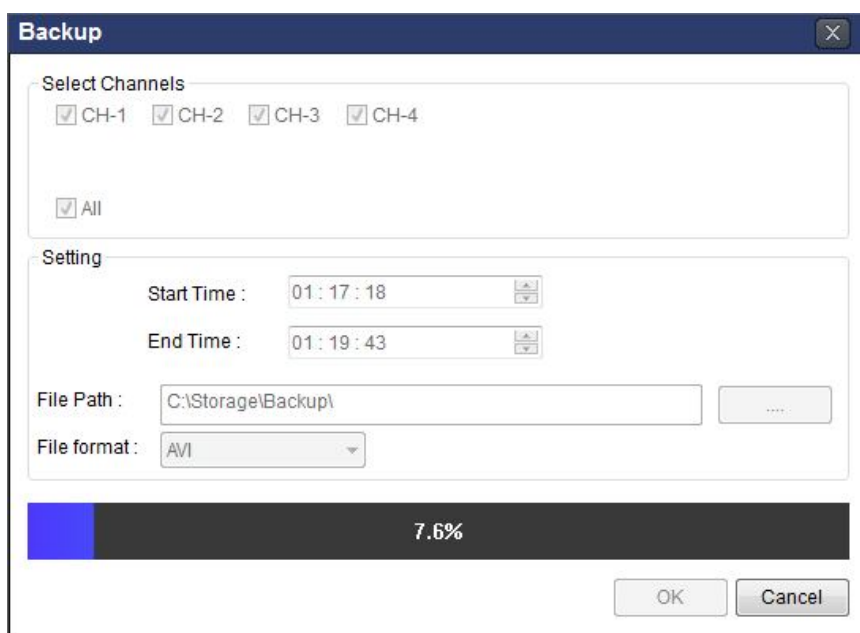
4. Click  EZCOPY END button on the timeline scale to select the ending point of the backup. Then, the selected starting point and the ending point on the timeline scale bar will be marked in green.



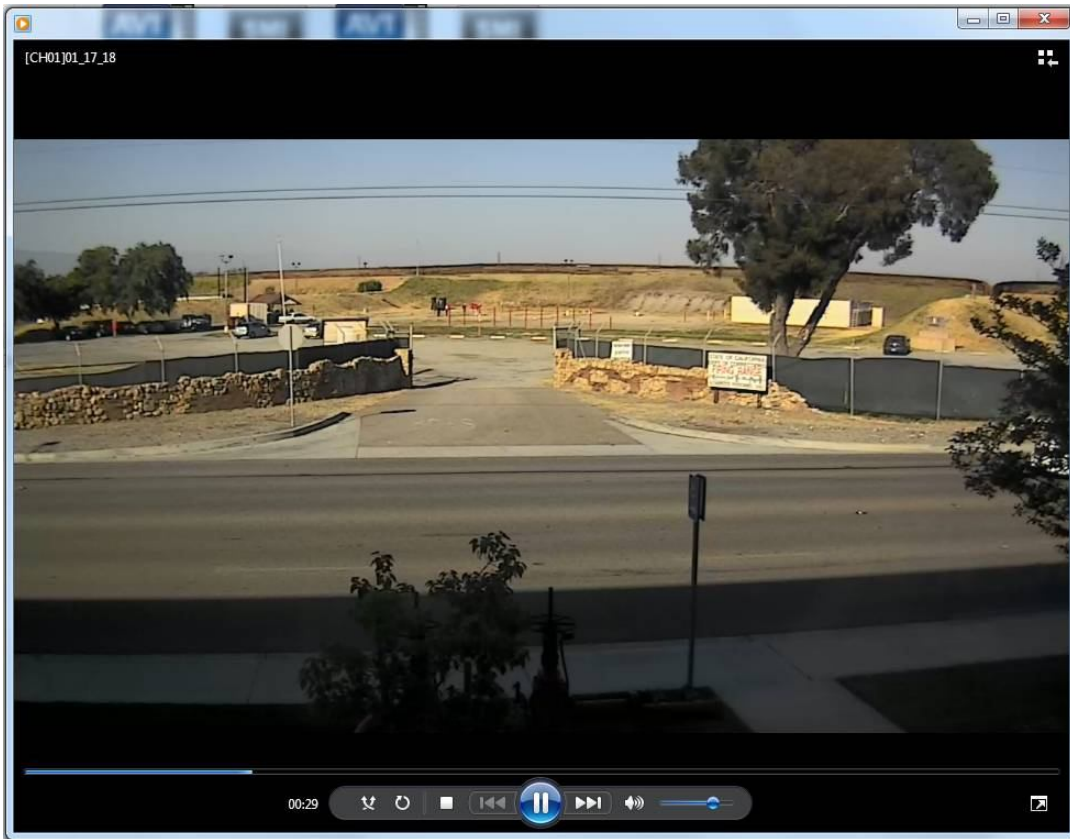
5. Click  BACKUP. And then the BACKUP window will be displayed as below.



6. You can also set the beginning time and ending time on this window. After selecting a channel for backup, click the OK button. The backup will begin.



7. AVI video data is recorded as set in AVI Backup window. AVI format video can be played back by using Window Media Player™ or other media player that is compatible with AVI format video.



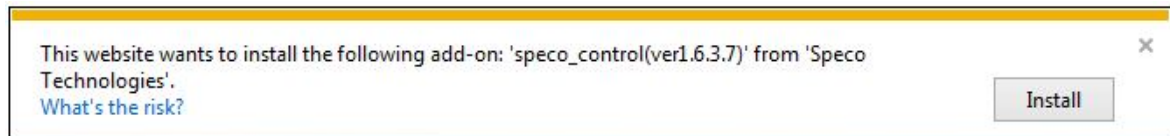
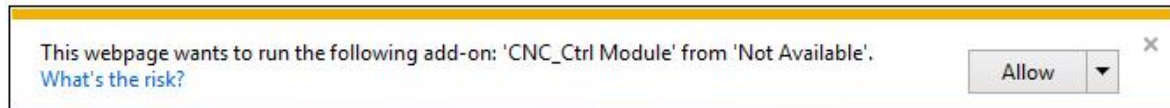
8. Network Access Using the Web-Browser Viewer

The DVR provides a live remote monitoring feature by web-browser viewer. (NOTE: Web-Browser is only available for Internet Explorer)

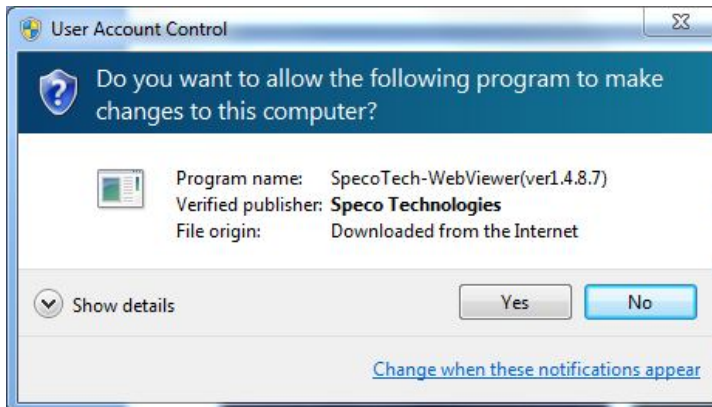
1. Check the IP address of the DVR from SETUP>SYSTEM>DESCRIPTION>IP ADDRESS or
2. Input the IP address or Domain name address that you pre-registered.



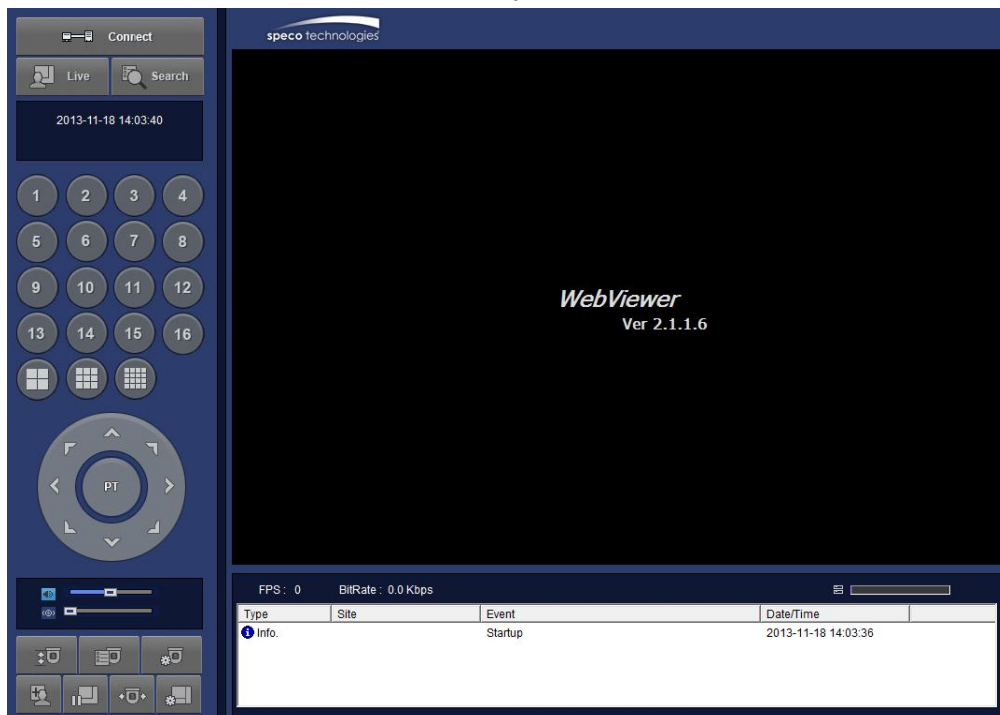
3. Click this bar. Then the dialog box is displayed.



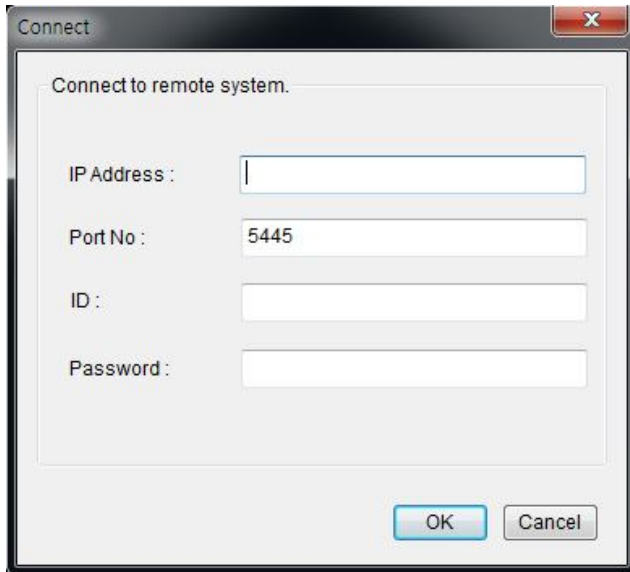
4. Click "Install" to download and install the ActiveX control.



5. The Web Browser Viewer will be displayed as below after the ActiveX installation



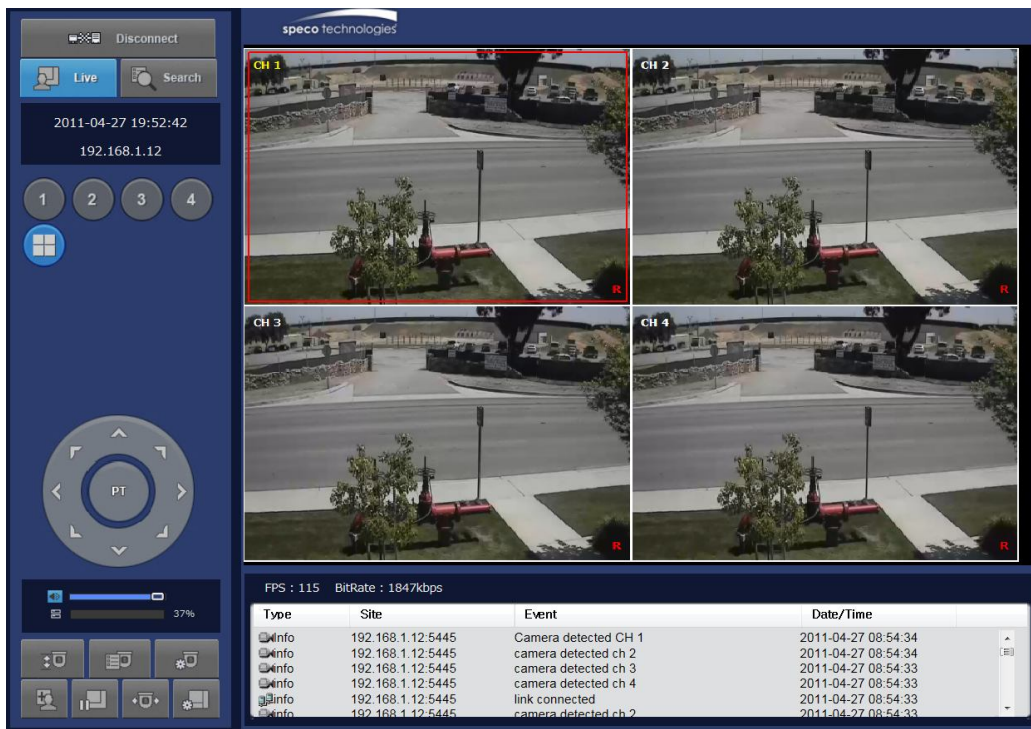
6. Click the CONNECT button on the Left upper corner of web-viewer. Then “Connect” dialog is displayed.



- **Site Name:** Input a name that properly describes a site.
- **IP Address:** Input IP address (Public IP address of a router that DVR is connected.) or Domain name
- **Port Number: Default Port Number is “5445”.**
- **ID:** Input ID of DVR. **Default ID is “admin”.**
- **Password:** Input network password of DVR. **Default Password is “1111”.**

7. Then the cameras connected to the DVR are displayed on the screen.

8. Use mouse scroll to digitally zoom in and out from a single channel display.



9. Network Access Using the Smart Phone Viewer



Notice

Data Usage applied without Wi-Fi connection. Please check with your Phone Carrier.

9-1. App Viewer for iPhone

1. Enter the Apple App Store.




2. Search “Speco Player” in the App Store.



Notice

SPECO Player is for the **HS**, ZS, NS, DS, RS, WRS and HD series DVRs. SPECO VIEWER is not compatible with the T Series DVR’s (TH, TN or TL) or the PC Series

9-1-1. Live

1. Open the installed “Speco Player” App and click  button to add a remote device.
2. Enter the site name, IP or DDNS address, Network Port number (default 5445), ID(default admin) and Password (default 1111). Then, click “Save” button.

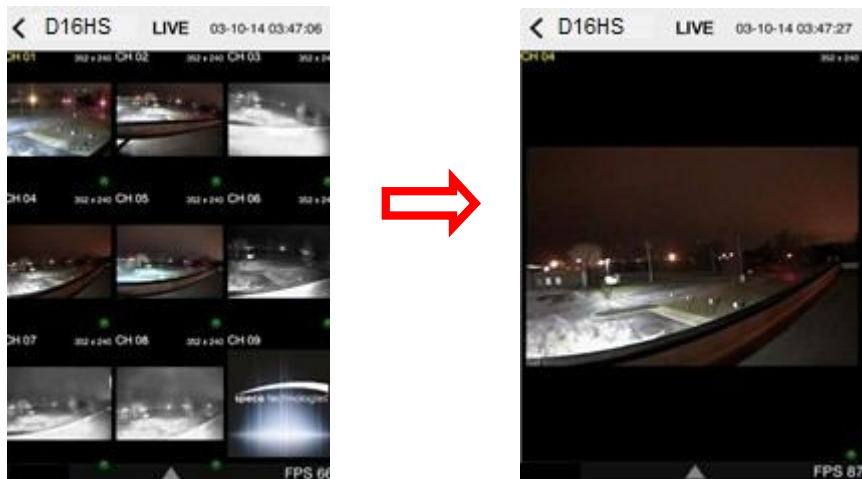


* Note: Network Port and Web Port must be forwarded before adding a new site.

3. Select a registered device and select LIVE. Then click “CONNECT” button.



- The app will display the selected channel(s). Double tap the channel screen to switch 1 channel display to 4, 8, 10, 16 channels split display depending on the DVR.



- To select the display mode(1, 4, 9, 10 or 16 split display), tap the arrow menus button




- Drag and drop channels
Touch and drag one channel to the other channel to swap the channel location. To swap the channel, drag a channel to another channel.
- Digital Zoom In-Out
Double tap on the desired channel to view in 1channel mode. Then use the iPhone zoom feature using two fingers to pinch the screen to zoom in or out on the video image. User can also move the zoomed image around by touching the desired spot and dragging the zoom image.

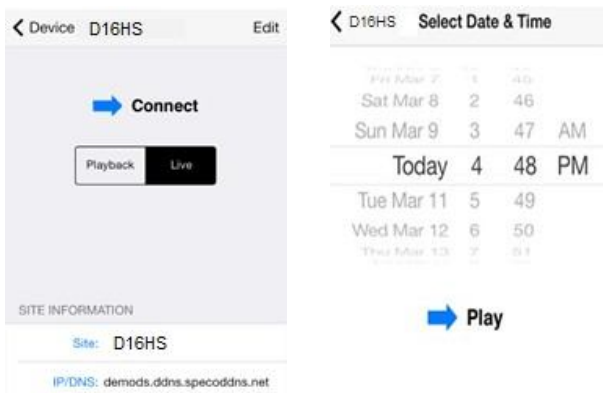
9-1-2.PTZ Control

To control the PTZ functions of the camera, tap the menu button. Then PTZ menu icons will display. Using the PTZ icon on the screen, control PTZF control.

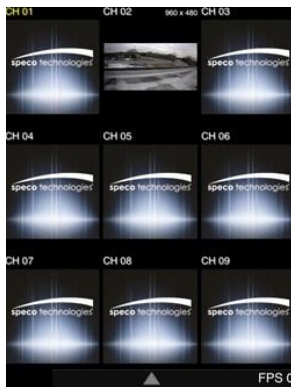


9-1-3. Playback

1. Select Mode as 'Playback'  and click 'CONNECT' button. Then select Date & Time and click PLAY button.



2. The app will display the selected channel(s). Double tap the channel screen to switch 1 channel display to 4, 8, 10, 16 channels split display depending on the DVR.



3. Tap the menu button. Then Playback menu icons will display.



9-2. App Viewer for Android Phone

1. Enter the Android Play Store.



2. Search “Speco Player” in the Android Market and install the “Speco Player” app.

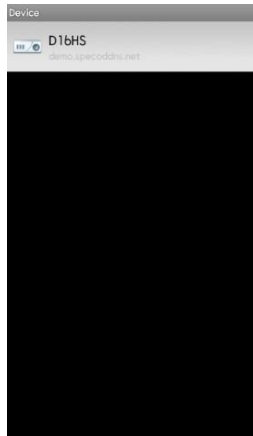
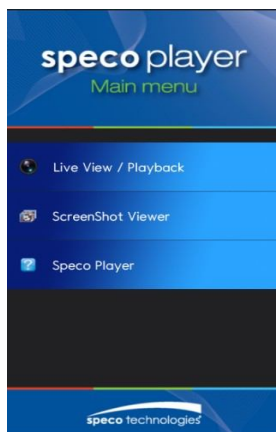


Notice

SPECO Player is for the VS, HS, DS, RS, WRS and HD series DVRs. SPECO VIEWER is not compatible with the T Series DVR’s (TH, TN or TL) or the PC Series

9-2-1. Live

1. Open the installed “Speco Player” App and select the Live Preview. Then click the menu button of the phone to add a remote device.
2. Select the registered device and select LIVE VIEW and select up to 4 channels to monitor. Then click START button.



3. The app will display the selected channel(s). Double tap the channel screen to switch 1 channel display to 4 channels split display.



9-2-2. Playback

1. Select the registered device and select PLAYBACK and select up to 4 channels to search. Then click START button. As soon as setting the date and time to search, the app will start the playback.



2. The app will display the selected channel(s). Double tap the channel screen to switch 1 channel display to 4 channels split display.

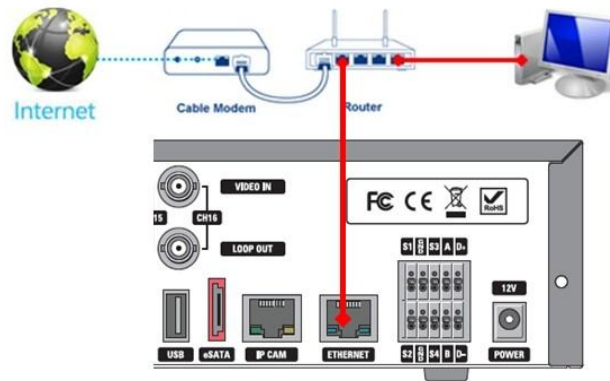


9-2-3. PTZ Control

To control the PTZ function of the camera, tap the channel screen, then the channel name will be highlighted in Yellow. Using the PTZ menu icons on the screen, control PTZF.



APPENDIX: Network Connection - LAN

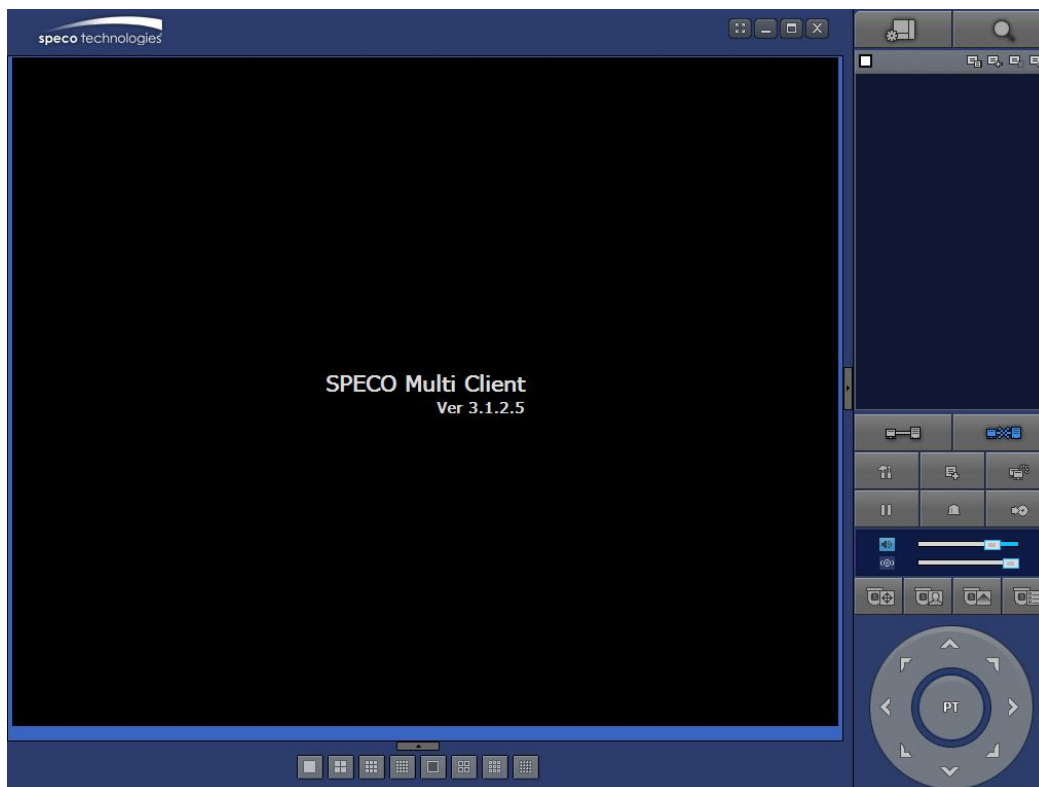


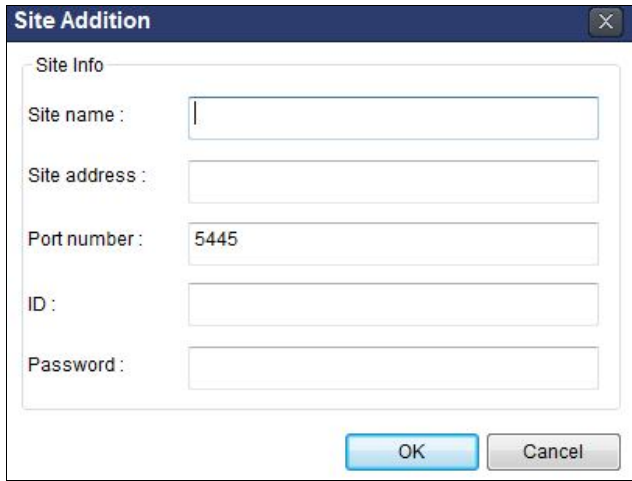
1. Install the network client software from the supplied CD.
2. Check the IP address from SETUP > SYSTEM > DESCRIPTION or SETUP>NETWORK of DVR.

MODEL NAME	D16HS
SOFTWARE VERSION	Ver 3.9.3_20131206
STORAGE SIZE	435 GB
NETWORK TYPE	DHCP
IP ADDRESS	172.16.2.41
MAC ADDRESS	00:02:69:FF:F0:9E
DDNS STATUS	DDNS OFF
UNIT NAME	HYBRID
REMOTE CONTROLLER ID	0

OK

3. Run the network client software.



A screenshot of a 'Site Addition' dialog box. The dialog has a title bar with 'Site Addition' and a close button. Below the title bar is a section labeled 'Site Info' containing five input fields: 'Site name', 'Site address', 'Port number' (with the value '5445'), 'ID', and 'Password'. At the bottom of the dialog are 'OK' and 'Cancel' buttons.

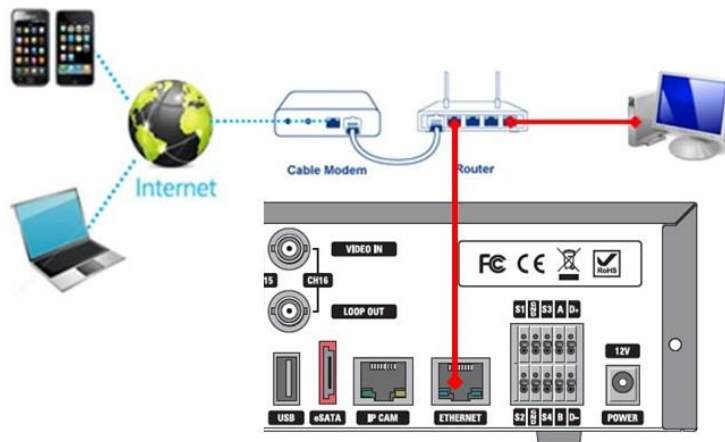
4. Input Site Name, Site Address (IP address), Port Number, and Password on the connect window.

- **Site Name:** Input a name that properly describes a site.
- **IP Address:** Input IP address
- **Port Number: Default Port Number is “5445”.**
- **ID:** Input ID of DVR. **Default ID is “admin”.**
- **Password:** Input network password of DVR. **Default Password is “1111”.**

5. Select a site by checking the box, and Press  button to connect to the site.

APPENDIX: Network Connection – Internet and DDNS

Dynamic Domain Name System (DDNS) allows a domain name to be constantly synchronized with a dynamic IP address. A current dynamic IP address is being associated with a static domain name.



1. Go to SETUP>NETWORK>DDNS and set the DDNS SERVER to ON.

ENABLE DDNS	ON
HOST NAME	hostname
SUBMIT/UPDATE	OFF
ezDDNS	OFF
<input type="button" value="APPLY"/> <input type="button" value="CLOSE"/>	

If you set **ezDDNS** to ON, the host name is automatically generated and registered.

2. Go to SETUP>NETWORK>DDNS>HOST NAME. Manually enter a domain name using the virtual keyboard and click ENTER button.

HOST NAME	hostname												
~	1	2	3	4	5	6	7	8	9	0	-	=	←
	q	w	e	r	t	y	u	i	o	p	[]	
CAPS	a	s	d	f	g	h	j	k	l	;			ENTER
SHIFT	z	x	c	v	b	n	m	,	.	/			SHIFT
CLEAR	SPACE											CLOSE	

- When a manual host name is completed, Go to SETUP>NETWORK>DDNS>SUBMIT/UPDATE and select ON to submit the settings on the SPECOD DDNS.

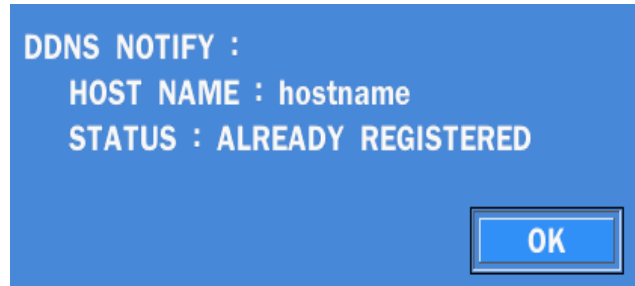
Once the setting is completed, the DDNS address will be:

<http://hostname.ddns.specoddns.net>

For example, if you enter the host name as "D16HS", then the address will be:

<http://d16hs.ddns.specoddns.net>

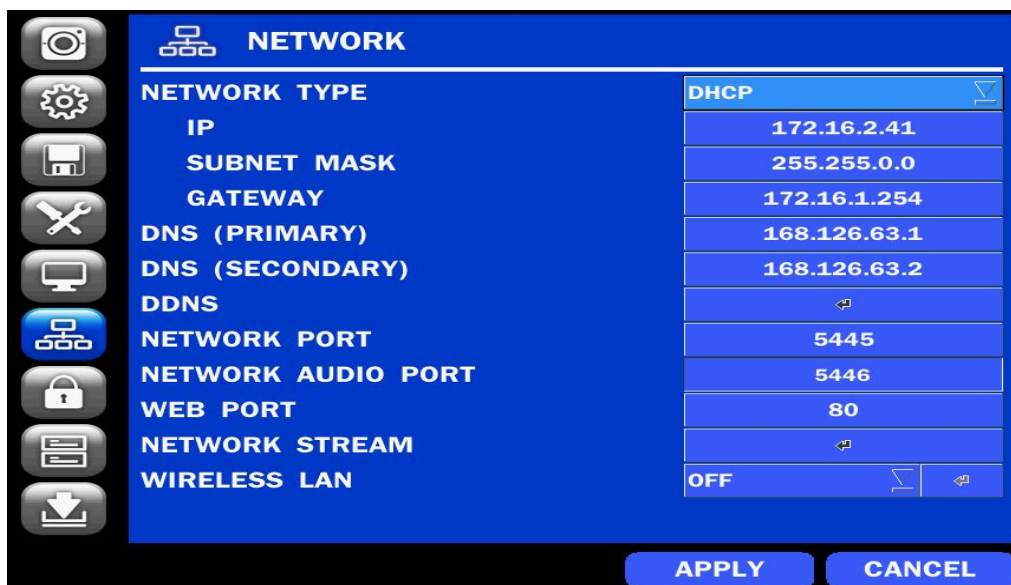
- When DDNS setting is done, click the APPLY button. Otherwise DDNS setting will not be applied.
- When you exit SETUP menu, DDNS NOTIFY window will pop up.



- DDNS registration status can be checked from SYSTEM INFORMATION or SETUP>SYSTEM>DESCRIPTION>DDNS STATUS



- Check the NETWORK PORT (Default: 5445), WEB PORT (Default: 80), and the IP Address of the DVR from SETUP>NETWORK.

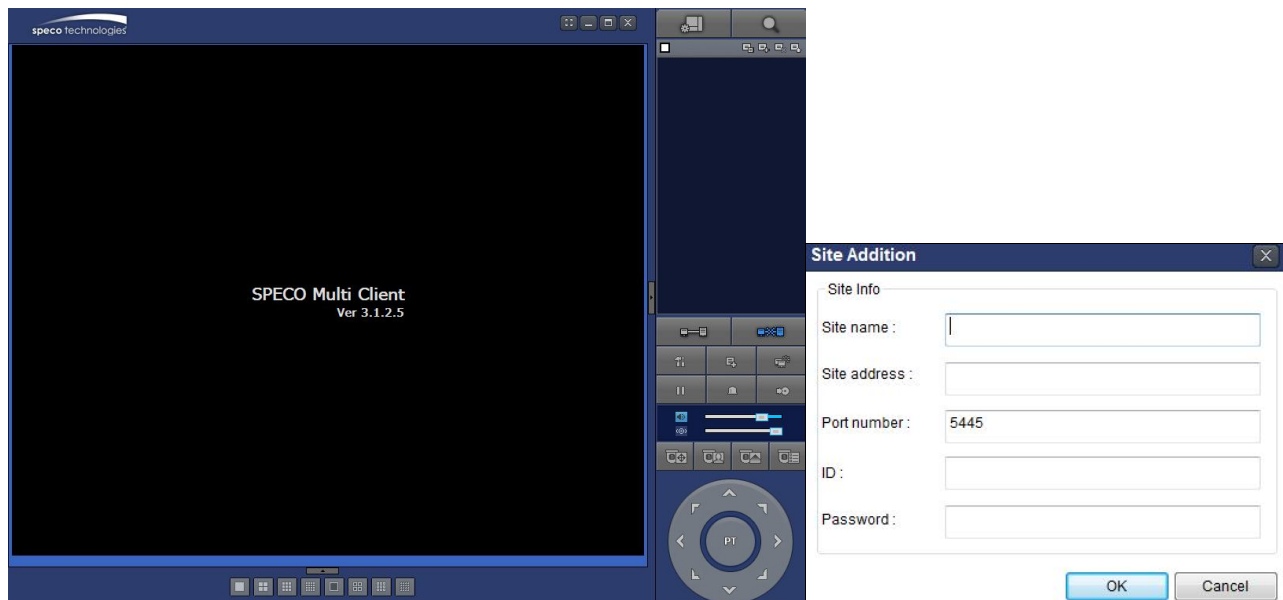


8. Port forward the NETWORK PORT (Default: 5445) and WEB PORT (Default: 80) of the private IP Address of the DVR on the network router.



Please refer to the user manual and guide for the detailed steps for port forwarding for specific router model.

6. Run the network client software.



7. Input Site Name, Site Address (IP address), Port No., and Password on the connect window.

- **Site Name:** Input a name that properly describes a site.
- **IP Address:** Domain name or Public IP address of a router that DVR is connected.
- **Port Number:** Default Port Number is “5445”.
- **ID:** Input ID of DVR. Default ID is “admin”.
- **Password:** Input network password of DVR. Default Password is “1111”.

8. And select the OK button. Then, press  button after checking the left check box.

APPENDIX: E-SATA CONNECTION



Please read the following instructions before using the E-SATA port.
Failure to do so may cause serious damage to the recorded video.
SPECO is not responsible for data loss caused by improper usage.

- Use ONLY a new HDD or a HDD that is approved for the unit.
- Turn off the DVR before plugging the E-SATA HDD.
- DO NOT disconnect the E-SATA port while the DVR power is on.
- The purpose of the E-SATA port is to extend recording capacity.
- Once connected, DO NOT Remove or disconnect the E-SATA port from the DVR.
- The E-SATA port is does not support the hot swappable function.