SAMSUNG TECHWIN

8 CHANNEL/
16 CHANNEL DVR

User Manual

SRD-1680D/880D



CE

SAMSUNG

8 Channel/
16 Channel DVR
User Manual

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❖ **Design and specifications are subject to change without prior notice.**

❖ **The default administrator ID is "admin", and the password must be set when the user log in at the first time.**
Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
To prevent from your personal information being exposed, please change your password every 3 months. Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

IMPORTANT SAFETY INSTRUCTIONS

Read these operating instructions carefully before using the unit.
Follow all the safety instructions listed below.
Keep these operating instructions handy for future reference.

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding- type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. if the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

BEFORE START

This manual provides operational information necessary for using the product and contains a description about each component part and its function as well as menu or network settings.
You have to keep in mind the following notices :

- SAMSUNG retains the copyright on this manual.
- This manual cannot be copied without SAMSUNG's prior written approval.
- We are not liable for any or all losses to the product incurred by your use of non-standard product or violation of instructions mentioned in this manual.
- Prior to opening the case, please consult a qualified technician first. Whenever this is needed power must be removed from the unit.
- Before installing additional HDD or connecting the SATA device to this product, check if it is compatible with the product.

Warning

Battery

It is essential that when changing the battery in the unit, the replacement battery must be of the same type otherwise there may be a possibility of an explosion.
The following are the specifications of the battery you are using now.

- Normal voltage : 3V
- Normal capacity : 220mAh
- Discharge Current : 0.2mA
- Operating temperature : -20°C ~ +85°C (-4°F ~ +185°F)

CALIFORNIA USA ONLY

This Perchlorate warning applies only to primary CR (Manganese Dioxide) Lithium coin cells in the product sold or distributed ONLY in California USA.
"Perchlorate Material - special handling may apply,
See www.dtsc.ca.gov/hazardouswaste/perchlorate."

Caution

- Connect the power cord into a grounded outlet.
- The Mains plug is used as a disconnect device and shall stay readily operable at any time.
- Batteries shall not be exposed to excessive heat such as sunshine, fire or the like.
- Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions.

System Shutdown

Turning off the power while the product is in operation, or undertaking improper actions may cause damage or malfunction to the hard drive or the product.
To safely cut off power, press the front Power button on the product to display the confirmation message. Click <**OK**> and then unplug the power cable.
You may want to install a UPS system for safe operation in order to prevent damage caused by an unexpected power stoppage. (Any questions concerning UPS, consult your UPS retailer.)

Operating Temperature

The guaranteed operating temperature range of this product is 0°C ~ 40°C (32°F ~ 104°F).
This product may not work properly if you run right after a long period of storage at a temperature below the guaranteed one.
Prior to using a device that has been stored for a long period in low temperatures, allow the product to stand at room temperature for a period.
Especially for the built-in HDD in the product, its guaranteed temperature range is 5°C ~ 55°C (41°F ~ 131°F). Likewise, the hard drive may not work at a temperature below the guaranteed one.

Ethernet Port

This equipment is in door use and all the communication wirings are limited to inside of the building.

Security Precautions

The default administrator ID is “admin”, and the password must be set when the user log in at the first time.
Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
To prevent from your personal information being exposed, please change your password every 3 months.
Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

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FEATURES

This product can compress 8-channel or 16-channel camera input into a H.264 video clip, or compress 8-channel HD-SDI input or 8-channel composite input, and record in HDD and replay the video at the same time.
These DVRs also supports network connectivity, providing remote monitoring from a remote PC transferring video and audio data.

- Provides a convenient User Interface
- 8/16 CH Composite Input Connectors
- HD(CH1~8): Supports CIF/2CIF/4CIF/WD1/HD recording
- SD(CH1~8/9~16): Supports CIF/2CIF/4CIF/WD1 recording
    - You can only choose either HD or SD for CH1-8.
- With the network specific codec, network transfer enabled regardless of the recording conditions
- Display of HDD information and status by using HDD SMART
- HD CODEC performance: 8CH Full HD 240IPS(NTSC)/200IPS(PAL)
- SD CODEC performance: 8CH SD: 240IPS(NTSC)/200IPS(PAL)
  16CH SD: 480IPS(NTSC)/400IPS(PAL)
- HDD overwrite function
- Mass storage HDD backup through high-speed USB 2.0
- Simultaneous Record and Playback of 8/16-channel video data
- Various Search Modes (Time, Event, Backup, POS, Motion Detection)
- Various Recording Modes (Manual, Event, Scheduled Recording)
- Alarm Interface
- Remote Monitoring function by Network Viewer, Smart Viewer and Mobile Viewer
- Supports coaxial protocols(SD Channel only)
- Tampering Detection

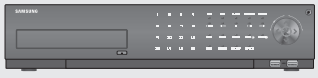
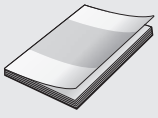
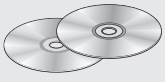
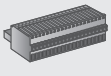
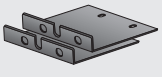
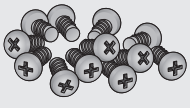
Standards Approvals

FC CE

- This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment.
  This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

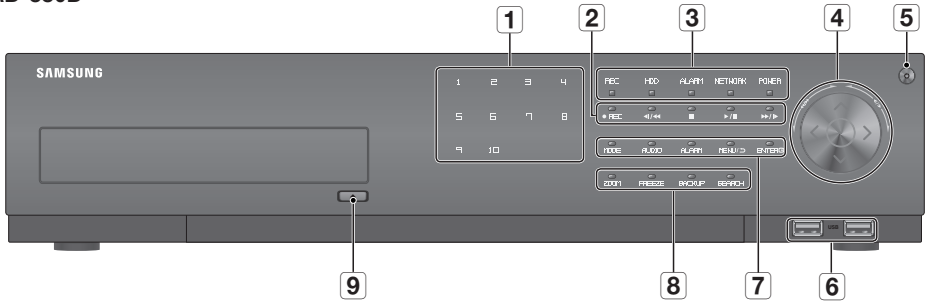
Package Contents

Please unwrap the product, and place the product on a flat place or in the place to be installed.
Please check the following contents are included in addition to the main unit.

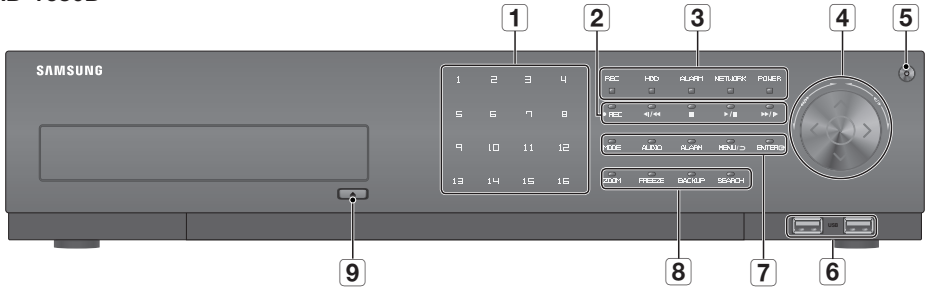
		
DVR	Power Cable	
		
Mouse	User Manual or Quick Manual	Remote Control / Remote Control Battery (AAA)
		
Network Viewer Software / User Manual CD	Terminal Block (15 pin)	Terminal Block (20 pin)
		
Bracket Fixing Screw	Bracket Rack	HDD Fixing Screw

PART NAMES AND FUNCTIONS (FRONT)

SRD-880D



SRD-1680D

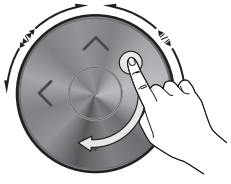
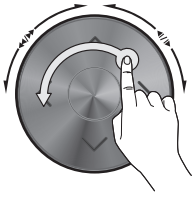
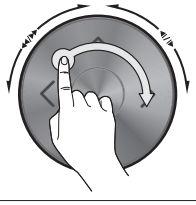
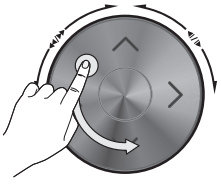


Part Names		Functions
1	Channel	Used to select channel numbers directly in the Live Mode, or numbers in the numeric input mode.
2	REC	Starts or ends the recording.
	◀I/◀◀	**Step Rewind (◀I)** : Used for backward frame-by-frame search while in PAUSE. **Fast Rewind (◀◀)** : Used for quick backward search while in Play. (2x-64x)
	■	**Stop** : Used to stop the playback.
	▶/II	**Play/Pause** : Used to pause or resume the screen.
	▶▶/I▶	**Fast Forward (▶▶)** : Used for quick forward playback. (2x-64x) **Step Forward (I▶)** : Used for forward frame-by-frame search while in PAUSE.
3	LED Indicator	**REC** : Lights on when recording is in progress.
		HDD : Displays the normal access to HDD. Upon access to HDD, LED repeats on and off.
		ALARM : Lights on when an event occurs.
		NETWORK : Displays both network connection and data transfer status.
		POWER : Displays the power ON/OFF status.
4	Direction / Select Button	Used to change a value or move the cursor up/down/left/right (▲▼◄ ►). Selects a menu item or executes the selected menu.
	Jog shuttle	When a scroll bar appears in each menu, acts as a scrolling. In Play mode, - Jog : Pauses the playback and steps backward or forward. - Shuttle : Fast playback forward or backward.

Part Names		Functions
5	Power	Used to turn the DVR ON/OFF. ■ Functions only if the button was held for 2 seconds.
6	USB Port 1 / 2	Connects the USB devices.
7	MODE	Each time you press the button in Live mode, the screen mode will be switched in sequence. Each time you press the button in play mode, the screen mode will be switched in sequence.
	AUDIO	Sets Audio ON/OFF.
	ALARM	Cancels the ALARM LED and the audible alarm when the alarm is going off, and to remove the icon.
	MENU/↩	Either goes to the system menu screen or moves to the upper menu from the lower menu.
	ENTER	Runs selected menu function.
8	Camera Control	**ZOOM** : Sets the screen to the x2 digital zoom.
		FREEZE : Runs the FREEZE function in the Live Mode.
		BACKUP : Runs the BACKUP function.
		SEARCH : Goes to the search screen.
9	OPEN/CLOSE	Used to open and close the DVR-RW disc tray.

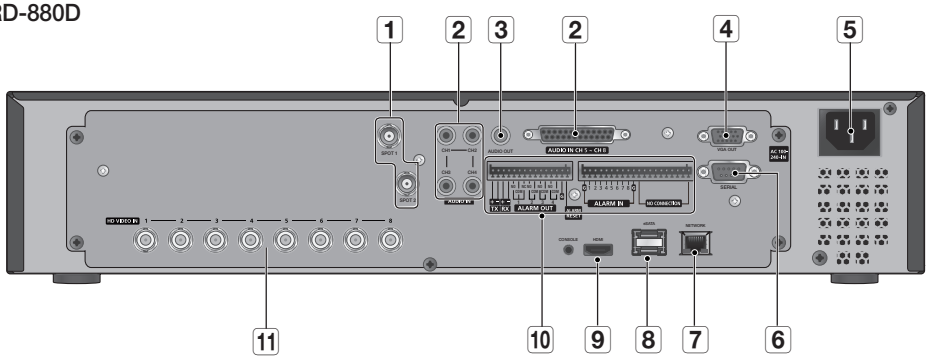
Using the jog shuttle

■ Jog starts from the right point and shuttle starts from the left point.

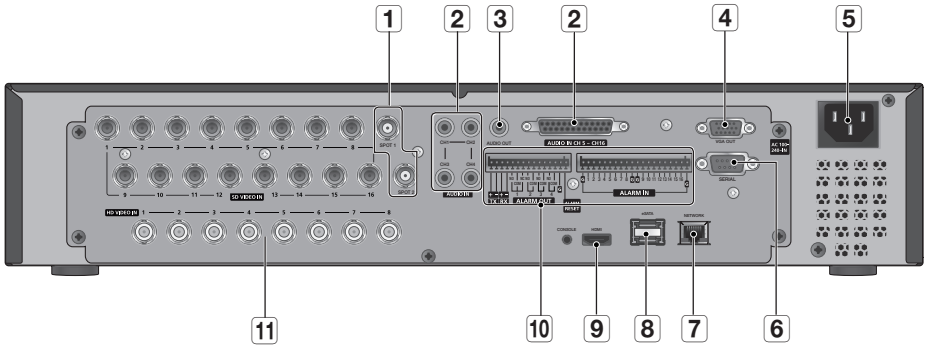
< Jog >	
	
In play mode, DVR playback steps forward video by 1 frame.	In play mode, DVR playback steps backward video by 1 frame.
< Shuttle >	
	
In play mode, DVR plays fast forward.	In play mode, DVR plays fast reverse.

PART NAMES AND FUNCTIONS (REAR)

SRD-880D



SRD-1680D

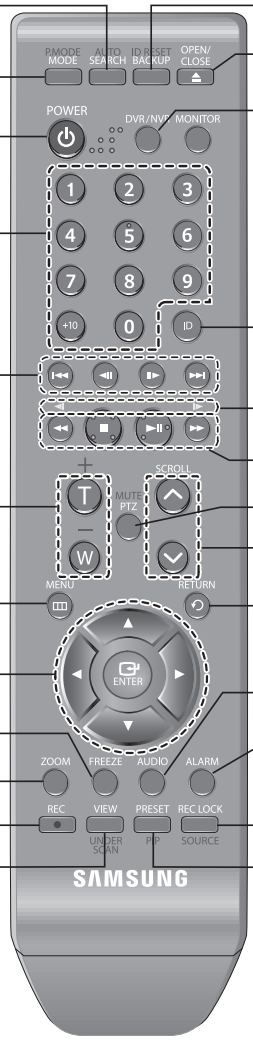


Part Names		Functions
1	SPOT1/2	BNC type of output port for the Spot signal.
2	AUDIO IN	Audio input signal port (RCA jack) and port for optional audio extension cable.
3	AUDIO OUT	Audio Signal Output Port (RCA jack).
4	VGA OUT	Composite Video Signal Output Port (VGA type connector).
5	Power	Power connection port.
6	SERIAL	Serial port for connecting to a POS device.
7	NETWORK	NETWORK connector port.
8	eSATA	Ports used for external storage device connections.
9	HDMI	HDMI connector port.

Part Names		Functions
10	ALARM	- ALARM IN : Alarm Input port. SRD-880D: 1~8 CH SRD-1680D : 1~16 CH - ALARM RESET : Alarm Reset port. - ALARM OUT 1~4 : Alarm Output port.
11	VIDEO IN	Video Signal Input Port (BNC type connector).

▪ [**CONSOLE**] is designed for the service repair purpose only.

REMOTE CONTROL



SEARCH
Displays the search menu.

MODE
Changes the screen mode.

POWER
Displays the Exit pop up screen.

NUMBER [0~+10]
Used as the numeric input keys, or displays a single channel.

Skip Backward (by unit time), Slow Rewind, Slow Forward, Skip Forward (by unit time)

T/W
Zooms in or out.

MENU
Goes to the system menu screen.

Up/Down/Left/Right(▲▼◄ ►)/ENTER
Moves the cursor up/down/left/right, and runs the Select Menu.

FREEZE
Freezes the screen temporarily.

ZOOM
Runs the digital zoom (x2) function.

REC
Starts or ends the live recording.

VIEW
Runs the View function in the PTZ mode.

BACKUP
Displays the Backup Menu.

OPEN/CLOSE
Opens or closes the DVD tray.

DVR
Activates the DVR function.

ID
Sets the ID of the system.
Select 2 digits from 0 ~ 9 while pressing the ID Key.

Move Frame
While paused, moves to the previous/next frame.

FR, STOP, PLAY/PAUSE, FF

PTZ
Displays or ends PTZ.

SCROLL ∧∨
Moves the menu scroll.

RETURN
Returns to the previous screen.

AUDIO
Turns Audio on/off.

ALARM
Cancels the Alarm.

REC LOCK
Selects the recording lock function.

PRESET
Displays the Preset Setup.

Using the Numeric buttons

CHANNEL 1–9	Press each button between 1 to 9.
CHANNEL 10	Press the [**+10**] button first, then press the 0 button again within 3 seconds.
CHANNEL 11–16	Press the [**+10**] button first, then press any number between 1 to 6 within 3 seconds.

Changing the Remote Control ID

Remote control's ID and DVR's ID should be matched for proper operation.

1. Press the [**ID**] button of the remote control and check the ID displayed on the DVR screen.
   The factory default ID of the remote control is 00.
2. Enter 2 digits of your selection in order, while pressing the [**ID**] button of the remote control.
3. When ID input is done, press the [**ID**] button of the remote control again to check the setting.



- If you want to change the remote control ID to 08: Press 0 and 8 in order while the [**ID**] button of the remote control is pressed.
  For changing the ID of remote device, refer to "**Remote Devices**". (Page 54)

installation

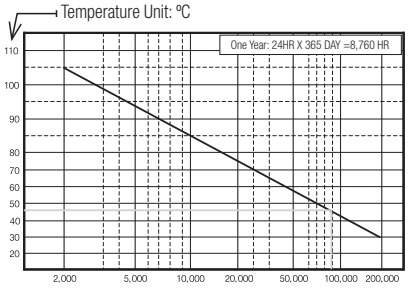
Please take note of the followings before using this product.

- Do not use the product outdoor.
- Do not spill water or liquid in the connection part of the product.
- Do not impose the system to excessive shock or force.
- Do not pull out the power plug forcefully.
- Do not disassemble the product on your own.
- Do not exceed the rated input/output range.
- Use a certified power cord only.
- For the product with an input ground, use a grounded power plug.

CHECKING THE INSTALLATION ENVIRONMENT

This product is a top-notch security device that is equipped with a high-capacity HDD and other key circuit boards.

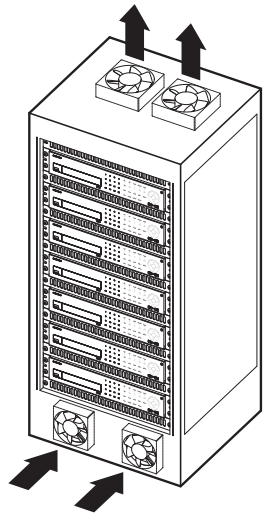
When the temperature rises inside the product, the product may breakdown and the product life be shortened. Please pay attention to the following recommendations before installation.

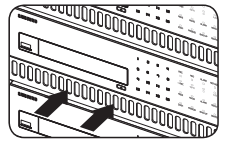


[Figure 1]

When mounting the product on a rack, comply with the following instructions.

1. Please ensure that the rack inside is not sealed.
2. Please ensure the air is circulated through the inlet/outlet as shown in the picture.
3. If you pile up the prudcts or other rack-mount devices as shown in figure 2, secure room for ventilation or install a vent.
4. For natural air convection, place the inlet at the bottom of the rack and the outlet on top.
5. It is strongly recommended that a fan motor is installed at the inlet and the outlet for air circulation. (Please fit a filter at the inlet to screen dust or foreign substances.)
6. Please maintain the temperature inside the rack or surrounding areas between 0°C ~ 40°C (32°F ~ 104°F) as shown in the figure 1.





[Figure 2]

Rack Mount Instructions - The following or similar rack-mount instructions are included with the installation instructions :

A) Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (Tma) specified by the manufacturer.

B) Reduced Air Flow - Installation of the equipment in a rack should be such that the amount of air flow required for safe operation of the equipment is not compromised.

C) Mechanical Loading - Mounting of the equipment in the rack should be such that a hazardous condition is not achieved due to uneven mechanical loading.

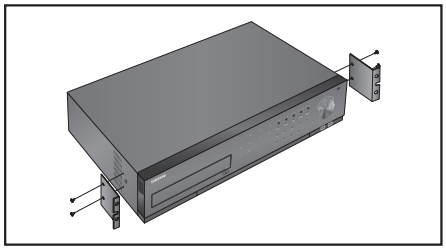
D) Circuit Overloading - Consideration should be given to the connection of the equipment to the supply circuit and the effect that overloading of the circuits might have on overcurrent protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

E) Reliable Earthing - Reliable earthing of rack-mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (e.g. use of power strips).

RACK INSTALLATION

Install the Bracket-Rack as shown in the figure, and then fasten the screws on both sides (2 screws on each side).

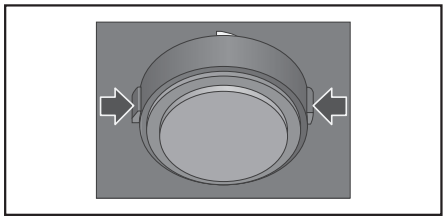
- Remove the screws on the left and right side of the DVR before installation.
- Fix the screws not to be loosened by vibrations.



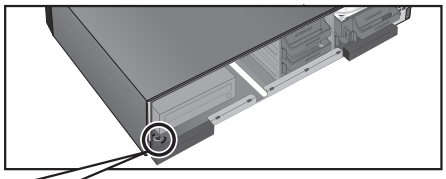
Cautions when Installing in the Rack

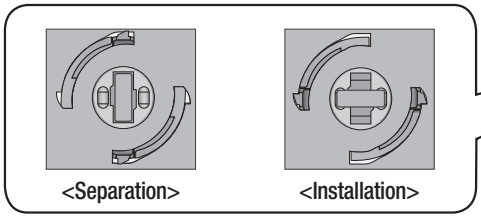
To install multiple DVRs in the rack, make sure to separate the FOOT at the bottom of each DVR.

1. There are four FOOTs at the bottom of a DVR.
   Press the projected parts at both-ends of each "**FOOT**" and turn it counterclockwise.



2. "**FOOT**" is separated from the main body when it is turned to the end of fastening groove.





INSTALLING THE HDD

Make sure to unplug the power cord from the wall outlet to prevent possible electric shock, injury or product damage.
Please consult your provider for further information on HDD installation since improper installation or settings may damage the product.

- Make sure to unplug the power cord from the wall outlet before proceeding with the installation.

- **Cautions for data loss (HDD care)**
  Please pay attention so that the data inside the HDD is not damaged.
  Before adding a HDD, please check the compatibility with this product.
  HDD is vulnerable to malfunction due to its sensitive nature especially against shock when operating.
  Please ensure that the HDD is free from such shock.
  We are not liable for any damage to the HDD incurred by user's carelessness or miss use.

- **Cases might cause damage to HDD or recorded data**
  To minimize the risk of data loss from a damaged HDD, please backup data as often as possible.
  If exposed to shock when disassembling or installing, data stored in the hard disk may be damaged.
  A sudden power failure or turning off the product while in HDD operation may damage the hard disk drive.
  HDD or files stored inside may be damaged if the main body is moved or impacted during the HDD operation.

Cautions on HDD installation

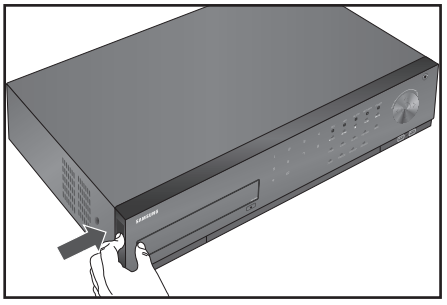
1. When adding a new HDD, make sure to fasten screws tightly and use appropriate parts if required to fix the HDD. Otherwise, the product may be damaged or does not operate properly.
2. Please check the HDD compatibility before adding a HDD.
   - Please contact your nearest dealer to obtain the list of compatible devices.

Installing the HDD

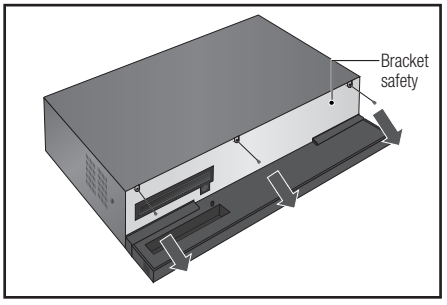
- If the installed HDD had been used with other devices, it will be automatically formatted.

• Installing HDD by opening the cover

1. Pulling the front cover from the unit.

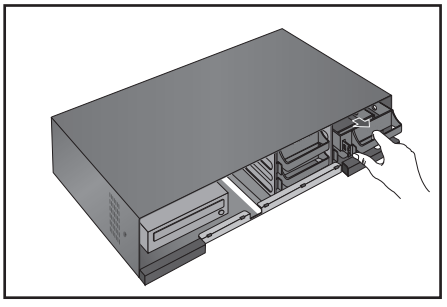


2. Remove the screws from the bracket safety.

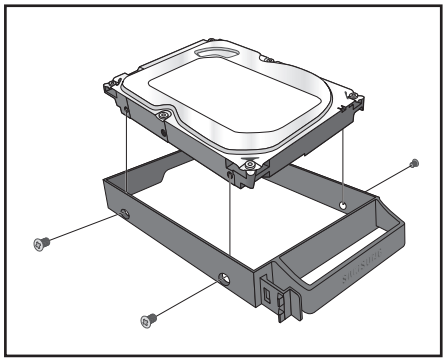


3. Separate the HDD bracket by pushing the lock on the left.

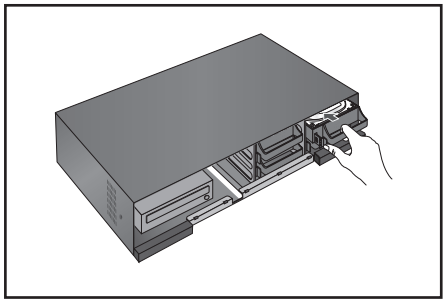
- Be careful not to scratch the hand while separating the HDD bracket.



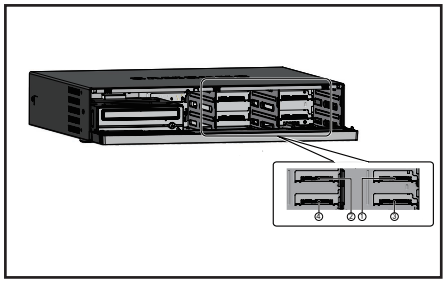
4. Attach the HDD onto the bracket, and fasten the screws on both sides to fix it.



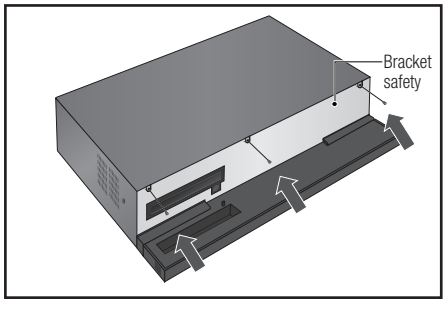
5. Align the bracket with installed HDD to the guide of the case, push it toward the board.



6. You can check the HDD map directly on the DVR. Refer to "**Storage Device** > **HDD Map**". (Page 51)



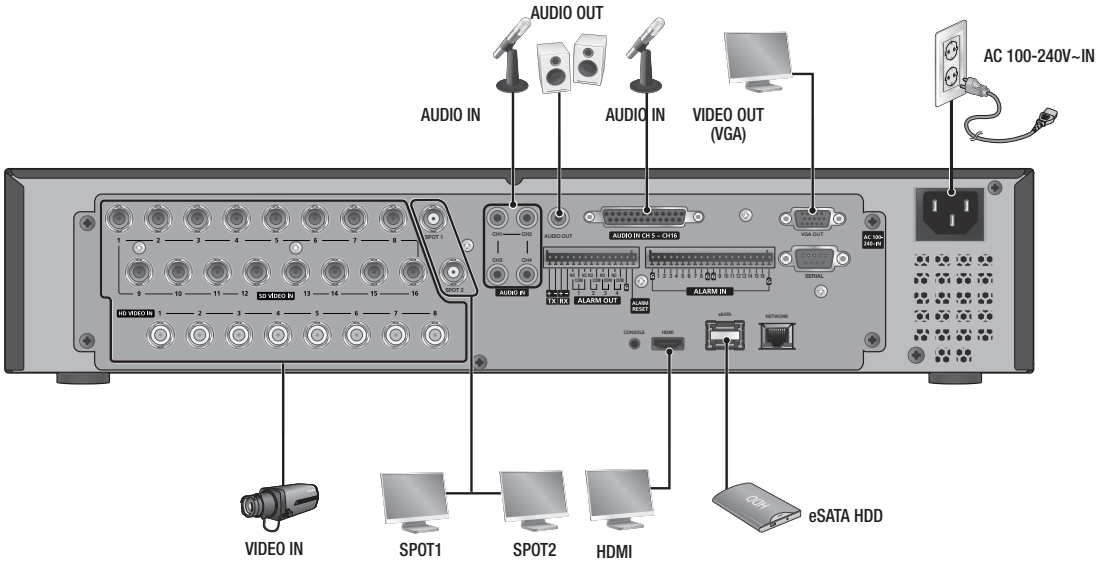
7. Attach the bracket safety and fasten the screws.



connecting with other device

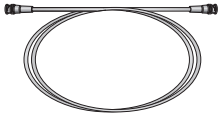
CONNECTING EXTERNAL DEVICES

■ The following figures are based on Model SRD-1680D.



HD-SDI Video Cable

The cable connecting the DVR's HD-SDI video input and a camera is a BNC coaxial cable as shown below.
If the distance between the DVR and the camera exceeds the recommended maximum,
please us an auxiliary video amp.



Maximum video transfer distance	Recommended cable specification
100~140m	5C2V(75ohm)
200m	L-6CHD(75ohm) (SDI-specific Cable)

Connecting the USB

1. By factory default, a USB port is provided for external connection.
2. You can connect a USB HDD, USB CD/DVD player, USB memory or mouse to the USB port.
3. If a USB HDD is connected to the system, recognition and settings are available in "**Main Menu** > **Device** > **Storage Device**". (Page 51)
4. The product supports hot plugging function that enables connecting/disconnecting USB devices while in operating the system.

■ If the USB storage media for backup is not formatted by the product, format it as FAT32 file system with a PC.
■ To prevent from USB ports being damaged, please unplug USB devices before openning the front cover.

Connecting External SATA HDD (eSATA)

External SATA port is provided on the rear panel.
If connected to the system, the external SATA HDD (eSATA) can be recognized and configured in "**Main Menu** > **Device** > **Storage Device**".

- Use a cable shorter than 1 m for the external external SATA HDD (eSATA) connections.
- Unexpected disconnection to a device in use which is connected via eSATA may restart the system. Check whether the device is in use before disconnecting it.

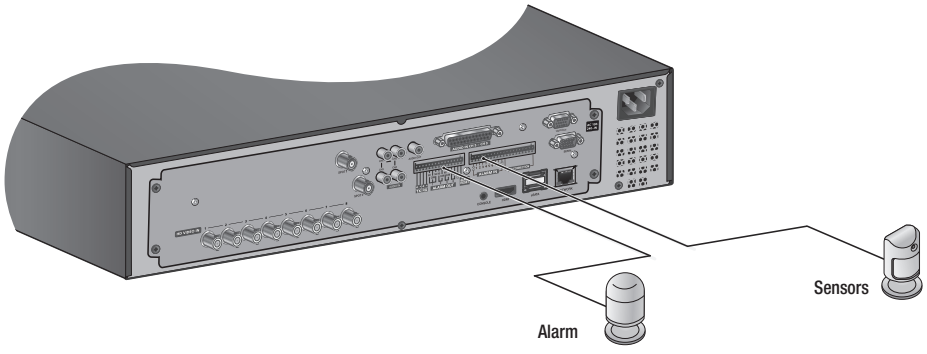
Connecting POS Device

You can connect a POS device to the RS-232C port on the product's rear side when you connect it directly with a RS-232C cable.
Connection setup for the RS-232C port is available in "**Main Menu** > **Device** > **POS Devices**", press the <**POS Device Setup**> button and set <**Baudrate, Parity, Data, Stop bit**>. (Page 55)

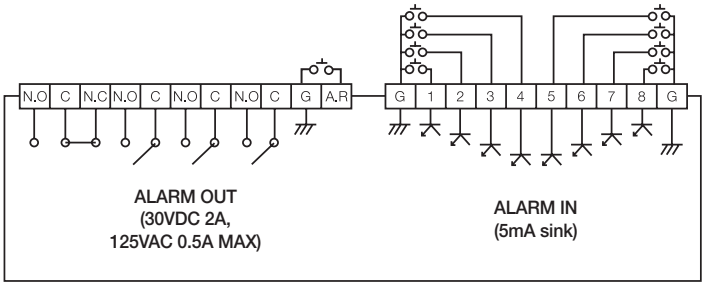
Connecting the Alarm Input/Output

The Alarm In/Out port at the back is composed of the following.

SRD-880D

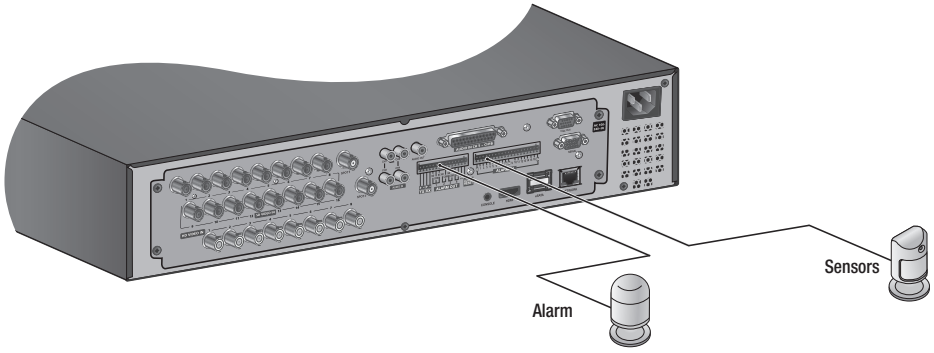


- ALARM IN 1 ~ 8 : Alarm Input Port
- ALARM RESET : On receiving an Alarm Reset signal, the system cancels the current Alarm Input and resumes sensing.
- ALARM OUT 1 ~ 4 : Alarm Output Port

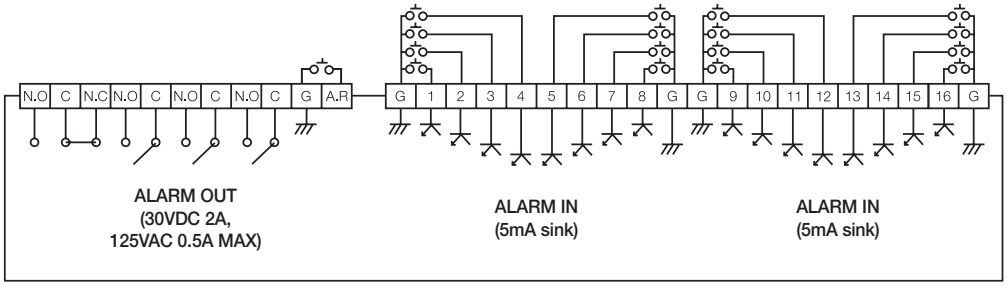


connecting with other device

SRD-1680D

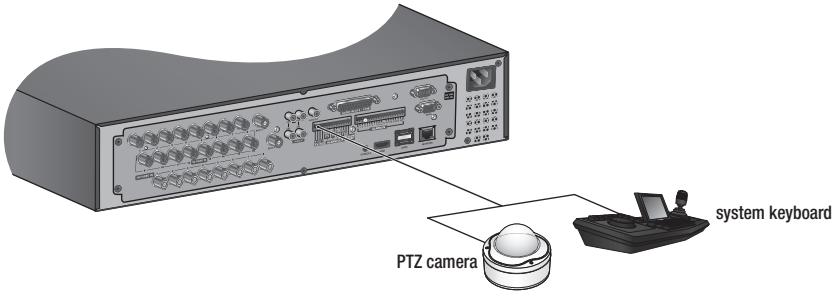


- ALARM IN 1 ~ 16 : Alarm Input Port
- ALARM RESET : On receiving an Alarm Reset signal, the system cancels the current Alarm Input and resumes sensing.
- ALARM OUT 1 ~ 4 : Alarm Output Port



Connecting the RS-485 Device

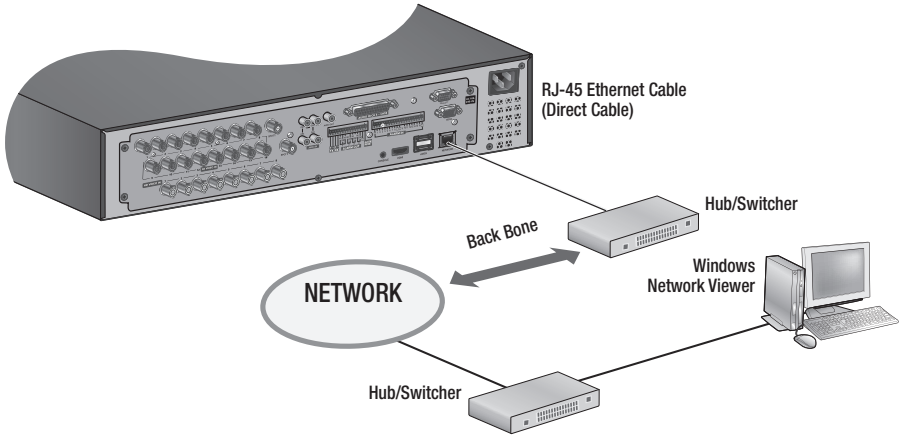
Connect the [**TX/RX +, –**] device through the back port.



- You can connect and control the PTZ camera which supports the RS-485 communication.
- Check if the RS-485 device is compatible with the product first.
- Pay attention not to change the polarity (+/-) of the RS-485 device when connecting it.
- Depending on camera's type, connection polarity can be different.
  For further information, refer to the respective PTZ Camera's documentation.

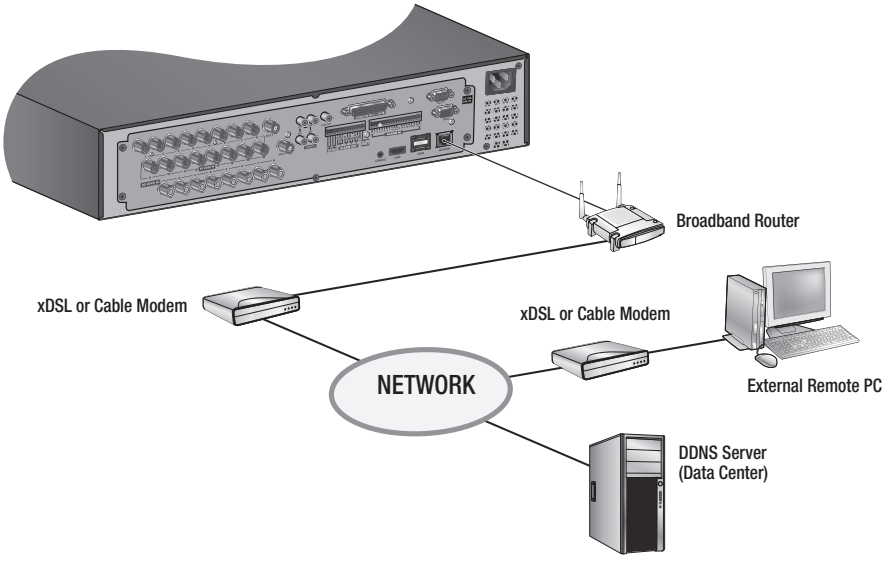
CONNECTING THE NETWORK

Connecting to Network through Ethernet (10/100/1000BaseT)

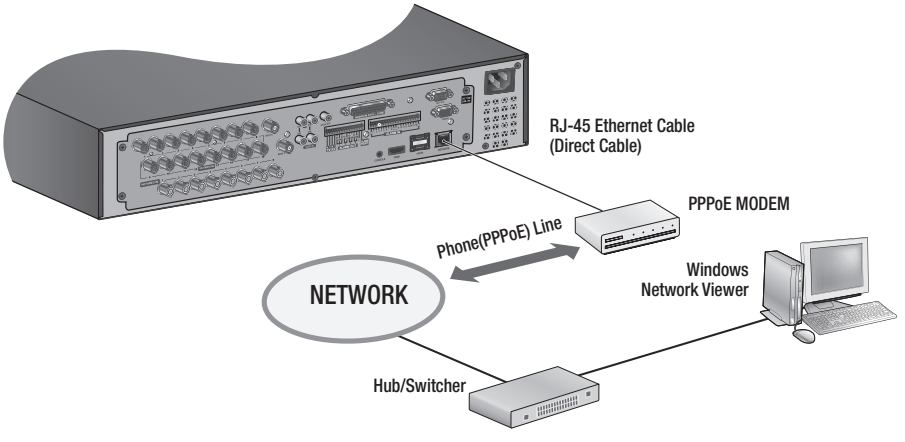


connecting with other device

Connecting to the Network using the router



Connecting to Network through PPPoE



GETTING STARTED

Starting the system

1. Connect power cable to the product's rear.

2. Touch and hold the front power button for over 3 seconds.



▪ It takes about 10 seconds to display the start screen after booting.

3. The boot up screen appears.
Booting up may take about 3 minute, as indicates progress with icons.
If a new HDD is installed, the initialization process may take longer.



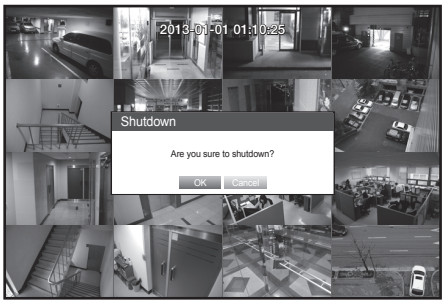
4. The live screen appears with a beep.



Shutting Down the System

You can shut down the system only if you have logged in to the DVR.
You require permission to shut down the system if you are not logged in as admin.

1. Hold the [**POWER**] button on the front or the remote control for over 3 seconds, or right click and click <**Shutdown**>.
2. The "**Shutdown**" confirmation window appears.
3. Use the arrow keys on the remote control or the front panel to move to <**OK**> and press the [**ENTER**] button or click <**OK**>.
   The system will shut down.

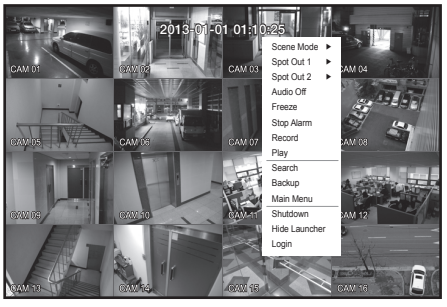


- For the permission management, refer to "**Permission Management** > **Setting Permissions**". (Page 43)

Login

To access a DVR or restricted menu, you should have logged in to the DVR.

1. In live mode, right-click any area of the screen.
   You will see the context sensitive menu as in the right figure.



2. Click <**Login**>.
   The login dialog appears.
   You can also see the login dialog to access a desired menu by pressing the [**MENU**] button on the remote control or the front panel.
   - The login dialog will also appear if you press a menu button on the remote control or the front panel of the DVR when the corresponding menu requires logging in.
   - After logged in, press [**RETURN**] on the remote control to display the logout dialog.



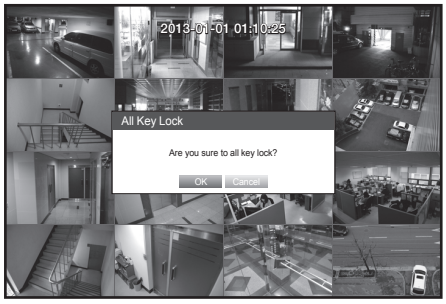
- For the restricted permission, refer to "**Permission Management** > **Setting Permissions**". (Page 43)

- The default administrator ID is “admin”, and the password must be set when the user log in at the first time.
- Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
- To prevent from your personal information being exposed, please change your password every 3 months.
- Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

Locking All Buttons

This will restrict access to all buttons available in the DVR.

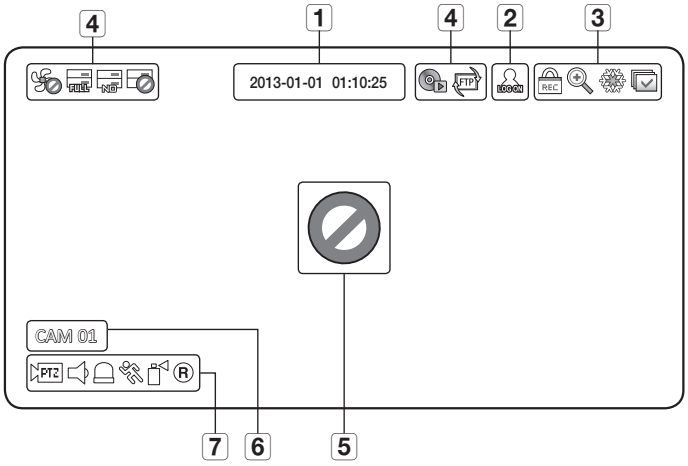
1. In Live mode, press buttons in the order of [**STOP (■)**]→[**FREEZE**]→[**STOP (■)**]→[**FREEZE**]→[**MENU**].
   <**All Key Lock**> confirmation window appears.
2. Select <**OK**>.
   All keys are locked.
3. In the lock condition, press any button to display a dialog where you are prompted to enter the password for unlocking the buttons.
   The button lock will be released if you enter the admin password.



LIVE SCREEN CONFIGURATION

Icons on the Live Screen

You can check the status or operation of the DVR with the icons on the live screen.



Part Names			Functions
1	Current Date, Time		Displays the current time and date.
2	Login Information		When you are logged in, the "**LOG ON**" icon will be displayed.
3	Screen Mode		Displayed if the recording is in process. ■ To cancel the recording, enter the password.
			Displayed if the zoom function is activated.
			Displayed if you press the Pause button.
			Displayed in Auto Sequence mode where all channels are switched at the specific time interval.
4	System Operation		Displayed if there is a problem with the cooling fan.
			Displayed if the HDD is full and the DVR has an insufficient space to record.
			Displayed if no HDD is installed or the existing HDD should be replaced.
			Displayed if the HDD needs a technical examination.
			Displayed while the backup is in process or if the backup data is played.
			Displayed if a new firmware is found from the network.

Part Names			Functions
5	Video Input Status		Displayed if no input is entered in the condition that the camera is set to <**ON**>.
			Nothing will be displayed on the screen if the camera is set to <**OFF**>.
6	Camera Name/ Channel		Displays the camera name and the changed channel, if any.
7	Camera Operation	PTZ	Displayed in PTZ setting, and highlighted yellow if PTZ is in operation.
			Displays AUDIO ON/MUTE. Not displayed in video mode if deactivated.
			If the sensor is set to <**ON**>, the input signal will be displayed on the screen of the connected channel.
			Displayed if a motion detected in the condition that the motion detection is set to <**ON**>.
			Appears when the Tampering Detection is set to <**ON**> and a tampering attempt is detected.
		Ⓡ / Ⓔ / Ⓢ	Displays the current record mode from Record/Event/Schedule.

Error Information

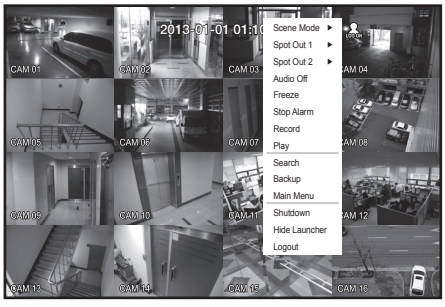
- If the internal HDD is not connected, the "NO HDD"( ) message will appear; if there occurs a problem, you will see the "HDD FAIL"( ) message in the top left corner. In this case, make sure you contact the service center for assistance as this may cause a failure of recording, playback or backup.
- If the cooling fan does not work properly or has a problem, the <**Fan Information**> window will appear and the fan error icon ( ) will be displayed on the top left corner. In this case, check to see if the internal fan works.
  As a fan error can shorten the product life, make sure you contact the service center for assistance.

▪ If you see the fan error icon or No HDD, HDD FAIL icons on the screen, contact the service center for more details.

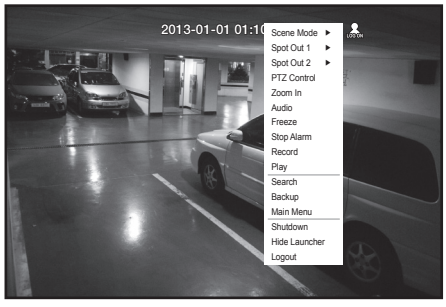
Live Screen Menu

In addition to the buttons on the front panel or the remote control, you can access a desired menu by right-clicking the mouse any area in live mode.
Right click opens the context menu which shows different menu items according to the situation, such as logged in/out state, split screen mode, and various operational conditions.

▪ Menu items of Search, Record, Backup, Shutdown and PTZ can be deactivated, depending on the user permission.



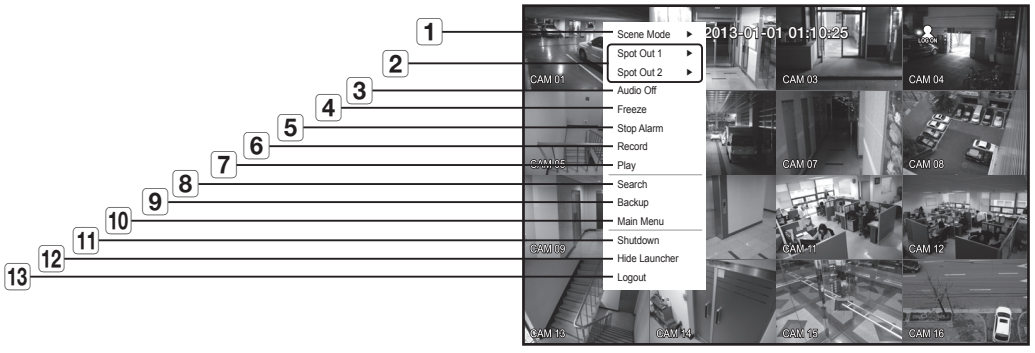
< Split Mode Menu >



< Single Mode Menu >

Split Mode Menu

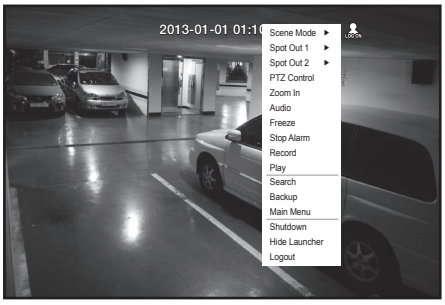
The context sensitive menu in split mode differs, depending on the login/logout status.



Menu		Functions
1	Scene Mode	Refer to "**Live Mode**". (Page 33)
2	Spot Out1/2	Refer to "**Spot Out**". (Page 35)
3	Audio On/Off	Refer to "**Audio ON/OFF**". (Page 36)
4	Freeze	Refer to "**Freeze**". (Page 36)
5	Stop Alarm	Stops the alarm output and the event monitoring. Refer to "**Event Monitoring**". (Page 37)
6	Record/Stop	Starts/stops the standard recording.
7	Play	Plays the search result (data). Refer to "**Search & Play** > **Play**". (Page 85)
8	Search	Refer to "**Search & Play** > **Search**". (Page 82)
9	Backup	Refer to "**Main Menu** > **Setting the Backup**". (Page 64)
10	Main Menu	Accesses the main menu. Refer to the Using the DVR section. (Page 38)
11	Shutdown	Turns down the DVR.
12	Show/Hide Launcher	Shows or hides the launcher. Refer to "**Show / Hide the Launcher Menu**". (Page 32)
13	Login/Logout	You can log in or out.

Single Mode Menu

The single mode menu is available only in Single Mode.
The menu, which appears as <**Screen Mode**> on a single screen, appears as <**Full Screen**> after selecting only one channel on a split screen.



< Single Mode Menu >



< Menu after selecting one channel on the split screen >

Menu		Functions
1	Full Screen	Select and click a desired channel in Split mode to switch to the full screen of the selected channel.
2	PTZ Control	Accesses the PTZ Control menu. The PTZ menu is activated only in One-Channel Live mode. (Page 79)
3	Zoom In	Enlarges the selected image. (Page 36)

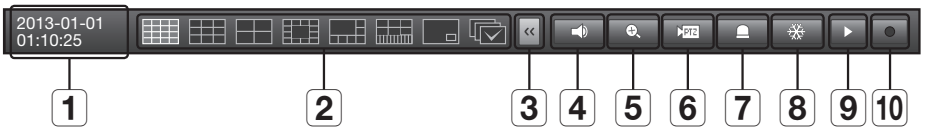
Show / Hide the Launcher Menu

The Launcher menu appears on the bottom of the live screen.

1. In Live mode, right-click to display the context menu and select <**Show Launcher**> or <**Hide Launcher**>. If selected <**Hide Launcher**>, the launcher menu disappears on the bottom of the live screen.
2. If <**Show Launcher**> is selected, the launcher menu appears at the bottom of the screen. If you click the launcher menu using the mouse, it directly goes into the menu.

- If no input is entered for 10 seconds, the menu will disappear.
- The Launcher menu can be accessed only by using the mouse.
- SRD-880D does not support the 16-split screen mode.





Menu		Functions
1	**Date/Time**	Displays the current time and date. The indication of AM/PM is displayed if you set 12 hours for the time format in "**System** > **Date/Time/Language** > **Time**". (Page 38)
2	**Screen Mode**	Press this button to switch the screen mode in sequence. The current mode is highlighted in white.
3	**Menu Expansion Button**	Click to display the hidden menu to the right.
4	**Audio**	Turns ON/OFF the sound of the selected channel.
5	**Zoom**	Enlarges the selected area. This is available only in Single Live mode.
6	**PTZ**	Runs the PTZ Control launcher. The PTZ control launcher will be active on the Live screen after you select a single channel.
7	**Alarm**	Stops the alarm if it's activated.
8	**Freeze**	Freezes the Live screen temporarily.
9	**Play**	Enters Play mode if a file to play exist, and if not, enters Search mode.
10	**Record**	Start/End recording the Live screen.

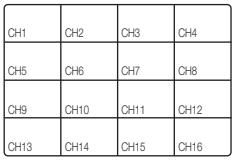
LIVE MODE

SRD-1680D display Live images from 16 channels in a total of 8 layout of split screens.

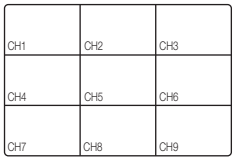
Switching the screen mode

To switch the split mode, select a screen mode in the launcher menu, or right-click to select a screen mode in the context menu.
Press the [**MODE**] button on the front panel or the remote control to switch the mode in the sequence of the launcher menu items.

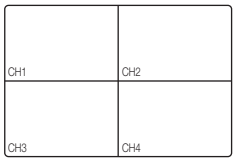
- SRD-880D does not support the 16-split screen mode.



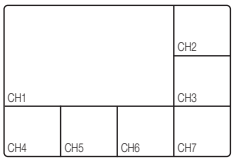
16-split mode



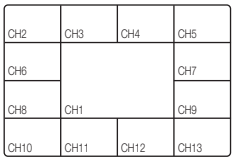
9-split mode



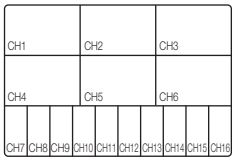
4-split mode



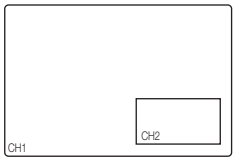
7-split mode



13-split mode



16(A)-split mode



PIP

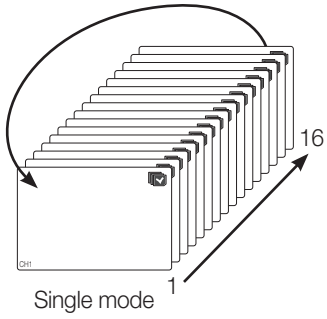


Auto Sequence

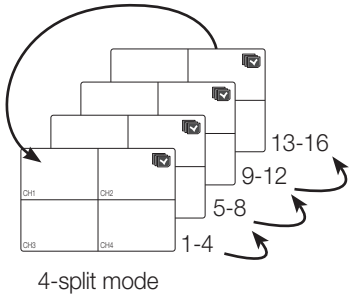
Switching the split mode

SRD-1680D display 16 Live images in the sequence of Single, 4-split and 9-split modes.

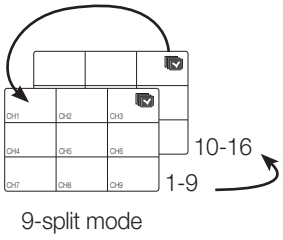
Auto Sequence



Single mode



4-split mode



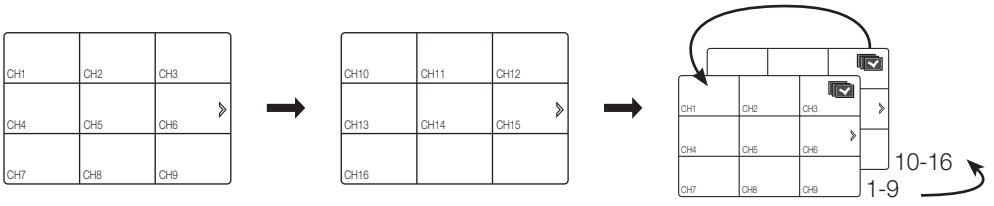
9-split mode

- In Single mode, If you have set <**SEQ-Dwell Time**> in "**Setting the Device** > **Camera**", Auto Sequence will be conducted at the set interval. (Page 48)
- In a split mode, If you have set <**Multi CH SEQ Time**> in "**Setting the Device** > **Monitor**", Auto Sequence will be conducted at the set interval. (Page 56)

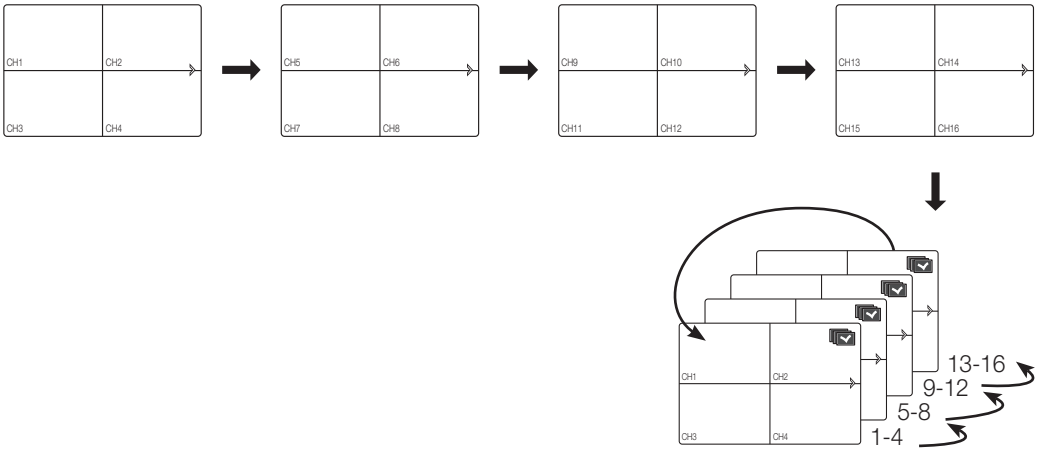
Manual Switching

Press the left/right button on the front panel or the remote control, or click the arrow <◄/►> key to move to the next split mode.

- If pressing the right [►] button in 9-split mode :
  9-split (CH 1~9) mode → 9-split (CH 10~16) mode → Auto Sequence



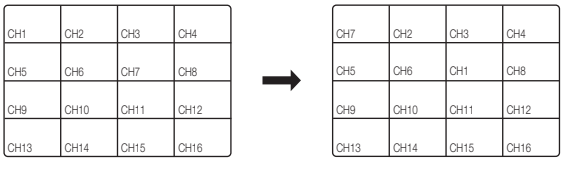
- If pressing the right [►] button in 4-split mode :
  Channel (CH 1~4) → Channel (CH 5~8) → Channel (CH 9~12) → Channel (CH 13~16) → Auto Sequence



Channel Setting

You can display the channel in a desired area of a split screen.

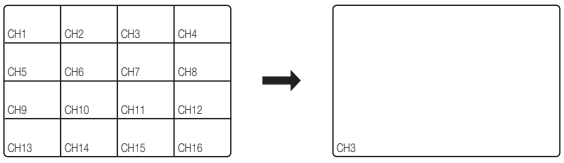
1. Place the cursor over the camera name of each channel to display the <▼> key to the right on the screen.
2. Click a camera name to display a channel list where you can select a different channel.
3. Select a desired channel and click it.
   The current channel will be switched to the selected one.
   Use the cursor to select a channel to move, and drag and drop it to a desired channel; this can also change the channel position.
   - Ex : if switching CH 1 to CH 7



Switching to Single Mode

When in split mode, select and double-click a desired channel to switch to its Single mode.
Press the number corresponding to a desired channel on the front panel or the remote control to switch to its Single mode.
Refer to "**Remote Control** > **Using the numeric buttons**". (Page 15)

- Ex : If double-clicking CH 3 or pressing the number "3" on the remote control or the front panel.



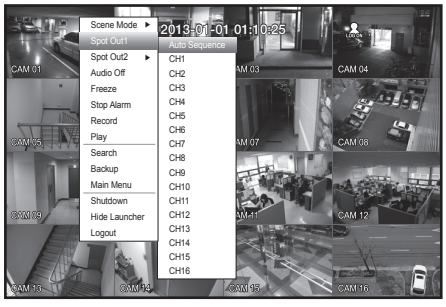
SPOT OUT

The Spot Out monitoring is independent of the Live mode, which monitors a specific channel through the Spot Out port.

Selecting a Spot Out mode

If an event occurs such as sensor, motion or alarm from the Spot Out port in connection with a monitor, you can select a output screen mode.

1. In Live mode, right-click any area on the screen.
   The Live menu appears.
2. Click Spot Out.
   The split screen appears according to the Spot Out source. (Page 57)
   - Spot Out 1: It supports auto sequence and single mode by default, and additionally supports 16-split, 9-split and 4-split modes if selected <**Multi Spot**> out.
   - Spot Out 2: It supports auto sequence and single mode.



ZOOM

This is available only in Single Live mode. In Single mode, select a desired area and use the Zoom function to enlarge it twice.

1. Select <**Zoom In**> in the right-click menu.
   Press the [**ZOOM**] button on the front panel or the remote control, or simply click < > in the launcher menu. The zoom box appears.
2. Use the direction keys, or drag and drop to specify an area to enlarge.
3. Press the [**ENTER**] button, or double-click the selected area to enlarge it twice.
   - In the enlarged image, use the direction buttons (▲▼◄ ►) on the remote control or the front panel to move the enlarged area.
4. Press the [**ZOOM**] button on the front panel or the remote control to release the zoom.



AUDIO ON/OFF

You can turn the sound on/off corresponding to the channel in Live mode.

AUDIO ON/OFF in Single mode

Click the audio icon ( ) on the screen, or press the [**AUDIO**] button on the front panel or the remote control to turn it on/off.

- Only the channel where <**Audio**> is set to <**ON**> in "**Device** > **Camera**" displays the audio icon ( ) in Live mode that you can use to turn the sound on/off.

FREEZE

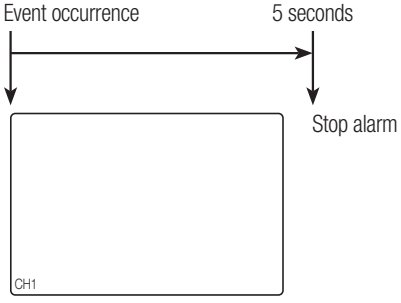
This is available only in Live mode, this pauses playing the Live image temporarily.

1. Press the [**FREEZE**] button on the front panel or the remote control, or click < > in the launcher menu.
   The playback of the image is stopped temporarily.
   - Sound continues to play during the pause.
2. Press the [**FREEZE**] button again, or click < >.
   This will release the freeze.

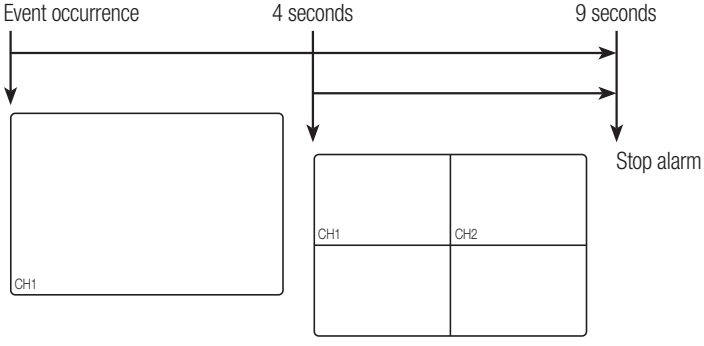
EVENT MONITORING

This will display the channel in sync with a specific event (Sensor/Motion/Video Loss/Tampering) if it occurs.
In "**Monitor** > **Event Display**", set the event monitoring to ON/OFF and specify the event display time. (Page 56)

- If multiple events occur simultaneously, the screen will switch to a split mode.
  - 2~4 events : 4-split mode
  - 5~9 events : 9-split mode
  - 10~16 events : 16-split mode
- If the second event occurs within the set time of <**Event Display**>, the first event will last until the second one is terminated. (Page 56)
  - Ex : If you set <**Event Display**> to 5 seconds, and only one event occurs in CH 1.



  - Ex : If you set <**Event Display**> to 5 seconds, and the second event occurs in CH 2 within the set time after the first event occurred in CH 1.



- Press the [**ALARM**] button to reset the alarm settings and to release the event mode.
- If an alarm activates in the condition you have set the event record, and pre/post alarm times, the event record will be performed.
- This will also apply to the Spot Out monitor.

- In case of continuous events such as motion detection, switching to another split mode display may not immediate if concatenating events follow, even when you stopped alarm of the event.

main menu

You can setup the system properties, devices, and options for recording, event, backup and network.

SYSTEM SETUP

You can setup Date/Time/Language, Permission, System Properties and Log.

Date/Time/Language

You can check and setup the current Date/Time and time related properties, as well as the language used for the interface on the screen.

Setting the Date/Time/Language

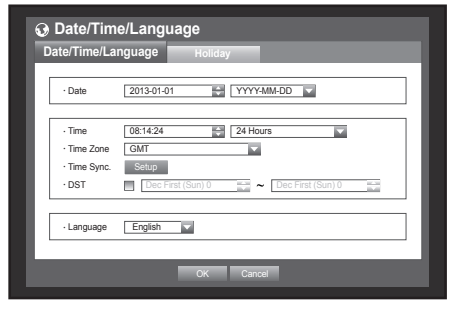
Set the Date/Time/Language

Using the mouse may help make setup easier.

1. Press the [**MENU**] button on the remote control or on the front panel.
   - If not logged in, it prompts with login window.
     Refer to "**Login**". (Page 26)
2. Use the left/right buttons (◄ ►) to select the <**System**>.
   System property setup menu is selected.
3. Use the up/down buttons (▲▼) to select <**Date/Time/Language**> and press the [**ENTER**] button.
4. Select <**Date/Time/Language**>.
   A dialog to setup Date, Time and Language.
5. Use direction buttons (▲▼◄ ►) to select an item to set and make your changes.

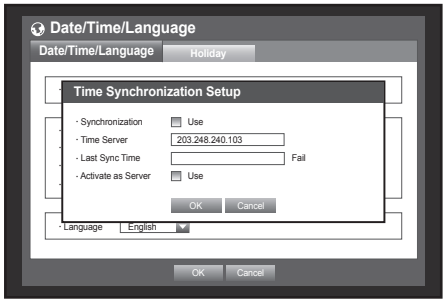


- Date : Sets the date that will appear on the screen.
  You can select the date format.
- Time : Sets the time and its format that will appear on the screen.
  Select either one from <**24 Hours, 12 Hours (AM/PM)**>.
- Time Zone : Sets the time zone of your area based on the Greenwich Mean Time (GMT).
  - GMT (Greenwich Mean Time) is standard World Time and the basis of world time zone.



- Time Sync. : You can set the DVR's current time synchronized to a selected <**Time Server**> regularly if you select to use <**Time Server**>.
  In this case, <**Date/Time/Language**> setup does not allow time adjustment.

- Time Server : Enter an IP or URL address of the time server.
- Last Sync Time : Displays the most recent synchronization time from the selected time server.
- Activate as Server : Set to <**Use**> to allow the DVR to act as a Time Server for other DVRs.



- DST : Set up Daylight Saving Time with its period to make the time earlier than the GMT of its time zone by 1 hour during the set period.
- Language : Select your language. Sets the language for the interface.
  English, French, German, Spanish, Italian, Chinese(Simplified), Russian, Korean, Polish, Japanese, Dutch, Portuguese, Turkish, Czech, Danish, Swedish, Thai, Romanian, Serbian, Croatian, Hungarian, Greek, Chinese (Traditional), Finnish and Norwegian are available.

6. When the Date/Time/Language setup is done, press <**OK**>.

■ You can also use numeric buttons on the remote control or front panel to enter values for Date, Time and other numeric fields.

Setting Holiday

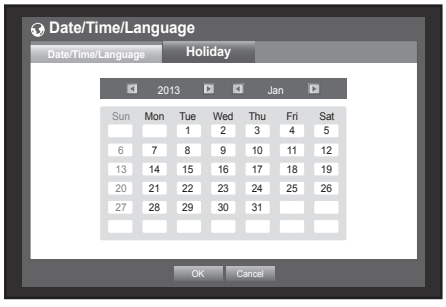
You can set specific dates to Holidays according to your preferences.
Holidays are applied to <**Recording Schedule**> and <**Alarm Schedule**> too.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Date/Time/Language**> window to select <**Date/Time/Language**>, and press the [**ENTER**] button.

2. Select <**Holiday**>.
A calendar for Holiday setup appears.

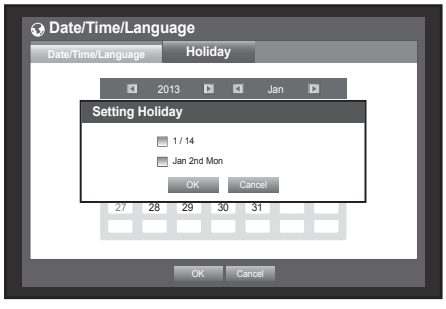
3. Use the left/right < ◀ ▶ > buttons to select year or month, and press the [**ENTER**] button.



4. Use direction buttons (▲▼◄ ►) to select a desired date, and press the [**ENTER**] button.
You will see the "**Setting Holiday**" screen.

■ Ex : Select January 14th and check on <**1/14**> only to make every January 14th a holiday. Check both on <**1/14**> and <**Jan 2nd Mon**> to make every January 14th and 2nd Monday of January holidays.

5. When the Holiday setup is done, press <**OK**>.



Using the Calendar

Using the mouse may help make setup easier.

① Select year and month.
Select the left/right < ◀ ▶ > key on the left/right side of year/month and press [**ENTER**] button to adjust by 1 year/month.

② Use direction buttons to select a date and press [**ENTER**] button.

■ A date with recorded data to be searched will appear in yellow in the System Log, Event Log, Time Search and Event Search.

Permission Management

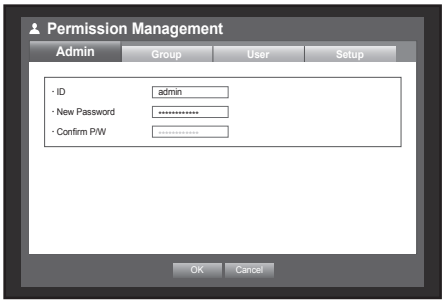
You can set permissions of each user over the DVR's specific function and settings.

Setting the Administrator

You can set and change Administrator's ID and password.
The administrator can use and set all menu items and functions.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Permission Management**>, and press [**ENTER**] button.
2. Select <**Admin**>.
   A dialog for Admin ID and Password input appears.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the ID and password.



- The default administrator ID is "admin", and the password must be set when the user log in at the first time.
- To prevent from your personal information being exposed, please change your password every 3 months.
- Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

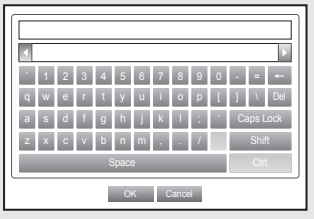
4. When the administrator setup is done, press <**OK**>.

Using Virtual Keyboard

① For alphanumeric inputs, the virtual keyboard window appears.

② Use direction buttons (▲▼◄ ►) to move to a desired character, and press the [**ENTER**] button.

③ In the upper text input box of the virtual keyboard, there displays a list of candidate words containing the selected character.



④ Select a word from the list, or use the keyboard to enter the whole word.

- If there are many of candidate words, use < , > buttons to move between them forward and backward.

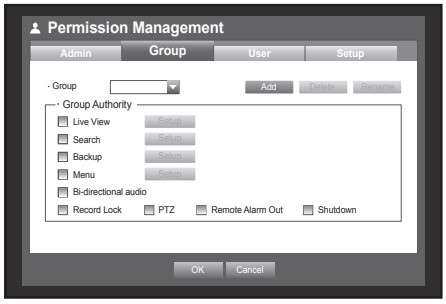
⑤ Select <**OK**>.
Entered word is applied.

- For upper case letters, use <**Caps Lock**> button.
- For special characters, use <**Shift**> button.
- Using the virtual keyboard is the same to a normal keyboard use in your region.
- You can enter the ID with case-insensitive alphanumeric characters only.
- For the password, use alphabets and special characters excluding < \ > and <">.
- You can use number buttons on the remote control or front panel.

Setting the Group

You can create user groups and setup permissions for those user groups.
You can register a user for each group in <**User**>.

Using the mouse may help make setup easier.



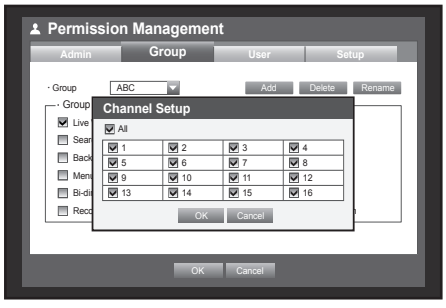
1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Permission Management**>, and press [**ENTER**] button.
2. Select <**Group**>.
   A window for <**Add**>, <**Delete**>, <**Rename**>, and <**Group Authority**> setup appears.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Add, Delete, Rename : You can add, delete, rename a group or modify the permissions given to the group.
  The virtual keyboard appears when <**Add**> or <**Rename**> was selected.
  - Add : When you first run the DVR with the admin account, only the admin account exists. Add has already been deactivated. Select <**Add**> to display the virtual keyboard. Enter a group name. You can add up to 10 groups.
  - Delete : Deletes a user group that is already registered. Selecting Delete will delete all user accounts belonging to that group.
  - Rename : Renames a group that is already registered. Select <**Rename**> to display the virtual keyboard.
  - For entering a group name, refer to "**Using Virtual Keyboard**". (Page 40)
- Group Authority : Sets permissions to access menu items of each group.
  Users of a group can access checked functions.

4. When the group setup is done, press <**OK**>.

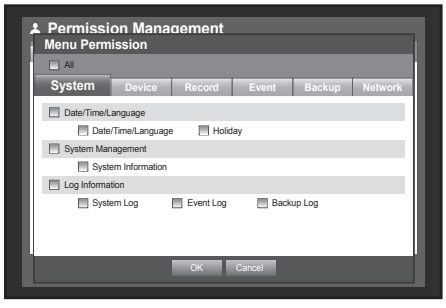
To set the group authority

You can set the permissions of the group users to access the menu according to the channel.



1. Select a menu to which the group permission is assigned.
   The menu where the group permission is assigned will be displayed in the Live menu when a group user logs in.

- Live View : You can set the permission to access the Live screen according to the channel.
- Search : You can set the permission to access the Search menu according to the channel.
- Backup : You can set the permission to access the Backup menu according to the channel.
- Menu : You can set menus accessible with a specific permission.
  Group users can access the permitted menus only.
  Select a menu to display the Menu Permission screen.
- Bi-directional audio: You will be given permission to use two-way audio features.
- Record Lock, PTZ, Remote Alarm Out, Shutdown : Select an item so that the item will be added to the permissions.



2. Select <**OK**>.
   Select and assign a group user so that the user can access the specified menu.

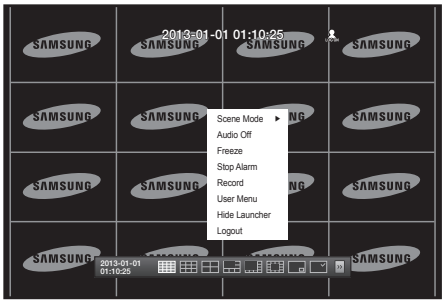
To restrict the user permissions

If the admin restricts all permissions of an added group, the users belonging to that group can access only the default minimum menus and can change the user's own password only.

1. Start the DVR.
   If all permissions are restricted, only the Login dialog should appear.
2. Log in with a registered user ID.



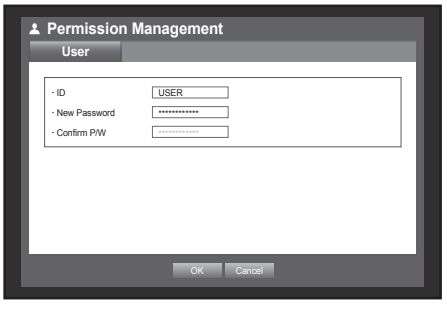
3. Right-click any area on the screen.
   If all permissions are restricted, only the accessible context menus should appear.



To change the user password

If you log in with a user account that is restricted to access the menu, you can change your own password only.

1. Log in with your account.
2. Select <**User Menu**>.
   The Permission Management setup screen appears.
3. Select <**Permission Management**>.
   The Password setup dialog appears.
4. Enter a new password.
5. Select <**OK**>.
   You change to the password will be applied.

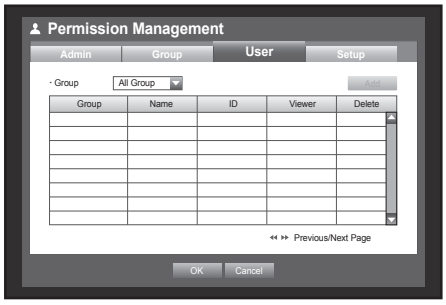


Setting the User

You can add a user and edit information of a registered user.
Users can be added only if a group was created in <**Group**> menu.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Permission Management**>, and press [**ENTER**] button.
2. Select <**User**>.
   A window for Add User appears.
3. Use direction buttons (▲▼◄ ►) to select <**Add**> from the window.
   A window for "**Add User**" appears.
4. You can configure the Network Viewer settings including name, ID, viewer, Select Group and password.
   Result of the user setup appears in the <**User**> window.
   To change the user property, use "**Edit User**".
   The "**Edit User**" window appears when you select a desired item to be changed in the <**User**> window.





- Viewer : If you select <**Use**>, you will be given access to the Web Viewer and Network Viewer.
  - Refer to "**Connecting Web Viewer**". (Page 88)
  - For more information about use of Network Viewer, refer to the Network Viewer's user guide.

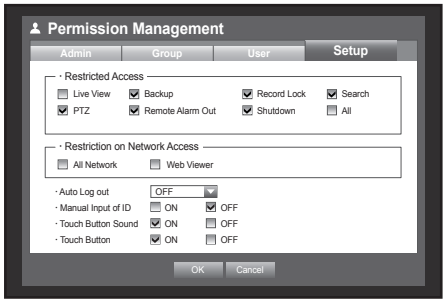
5. When the user setup is done, press <**OK**>.

Setting Permissions

You can set restricted access for all general users.
Items with restrictions will require logging in for use.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Permission Management**>, and press [**ENTER**] button.
2. Select <**Setup**>.
   The Restricted Access, Restriction on Network Access, Auto Log out, Manual Input of ID setup screen appear.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Restricted Access : All menu items allowed for a user can be set with restricted access.
  - Checked (☑) : Restricted
  - Not checked (☐) : Accessible
  - If it is not checked (☐) in <**Restricted Access**>, any user can access the item no matter what the <**Group Authority**> setting.
  - If it is checked (☑) in <**Restricted Access**>, a user can access the item only if the user has permission in <**Group Authority**> setting.
- Restriction on Network Access : Restricts remote access from a <**Restricted Access**> network.
  - All Network : Restricts all access instances via Network Viewer and Web Viewer.
  - Web Viewer : Restricts access via the Web Viewer.
- Auto Log out : A user will be automatically logged out if there is no operation on DVR for over set period of time.

- Manual Input of ID : Prompts you to enter the user ID manually for the login process.
  - Checked (☑) : Encloses the registered user IDs with the [∗] symbols.
    Use the virtual keyboard to enter the user ID.
- Touch Button Sound : You can set whether to sound beep on use of front touch buttons.
- Touch Button : You can set whether to use the front touch buttons or not.

4. When the permission setup is done, press <**OK**>.



System Management

You can check the system version, update to a newer version, as well as data backup and initialization.

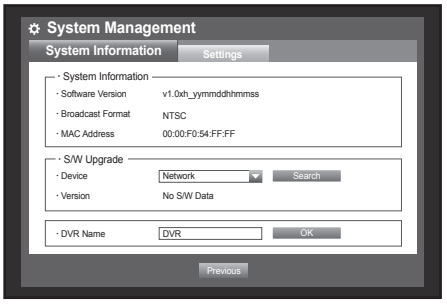
Checking the System Information

You can check the current system version, broadcasting system, MAC address. You can update the system.
Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**System Management**>, and press [**ENTER**] button.

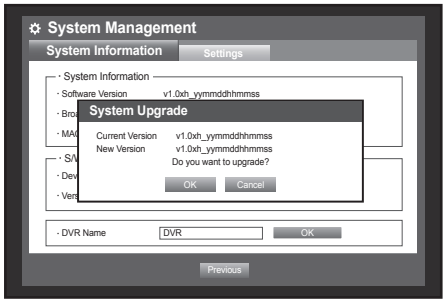
2. Check the Software Version, Broadcast Format and MAC Address.

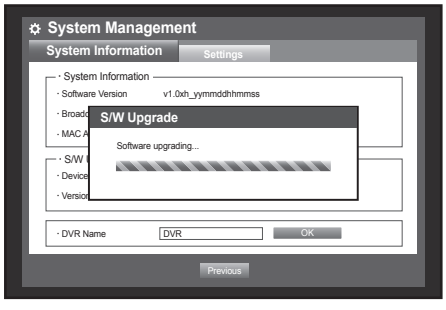
- System Information : Shows the current system's information.
  The values can not be changed by a user.
- S/W Upgrade : Updates the DVR's software up to date.
- DVR Name : Assigned name will be displayed in Network Viewer, when connected to the DVR.



• **Updating the Software**

1. Connect a device storing the software to be updated. (It may take about 30 seconds to recognize the device.)
   - Upgradeable devices include USB memory, CD/DVD and network device.
   - To update the network, the current DVR should have been connected to the network. Upgrade via the proxy server may not be enabled due to the restricted access.
2. Select <**System Management**> from <**System**> window.
3. Select <**System Information**>.
4. Press <**Search**> button to display updated image, then the <**Search**> button switches to <**Upgrade**>.
   - The <**Upgrade**> button will be activated only if the current <**Software Version**> of the <**System Information**> is same to or older than that of <**S/W Upgrade**>.
5. Press <**Upgrade**> button to display confirmation popup for upgrading.
   Press <**OK**> in the "**System Upgrade**" window.
   - While updating, it shows the progress.





6. When the updating is done, it automatically restarts. Do not turn the power off until it finishes restarting.

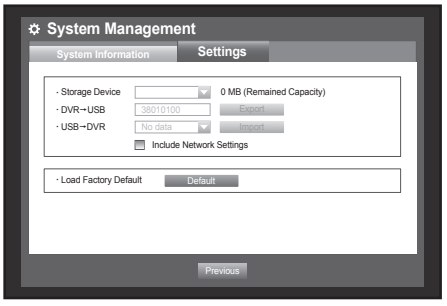


- If "**Upgrade Failed**" appears, retry from the step 4. When you experience continued failure, consult the service center for assistance.
- When you perform S/W update remotely using Smart Viewer, it may take a max of 3 minutes to complete the update since Smart Viewer popped up a confirmation message. This is to guarantee that the DVR set operates stably. For a faster update, use the USB cable to connect to the DVR set.

Settings

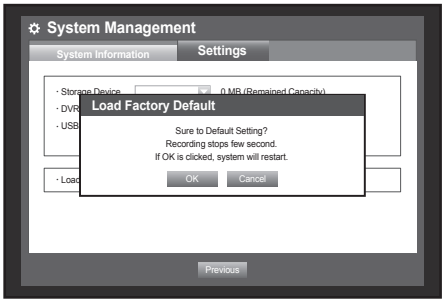
You can copy and import the DVR settings by using a storage media.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**System**> window to move to <**System Management**>, and press [**ENTER**] button.
2. Select <**Settings**>.
   A window of storage device and load factory default appears.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and export or import settings data to a storage device.

- Storage Device : Shows the connected storage device.
- Export : All logs recorded in the DVR are exported to the storage media.
- Import : Imports DVR settings from the storage device and applies to the DVR.
  - If <**Include Network Settings**> is checked, the network settings will be imported too.
  - After importing the configuration, please reboot DVR to take effect.
- Load Factory Default : If <**Default**> is selected, a confirmation dialog for "**Load Factory Default**" prompts. Press <**OK**> to initialize the system to the factory default.
  - DVR will restart after loading facotry default.



4. To move to the previous menu, press <**Previous**>.

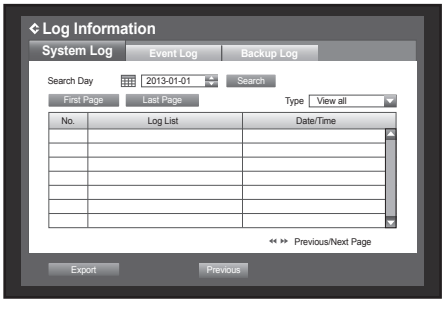
Log Information

You can browse logs on the system and events.

System Log

System Log shows log and timestamp on every system start up, system shutdown, and changes on system settings.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Log Information**>, and press [**ENTER**] button.
2. Select <**System Log**>.
   - Refer to "**Using the Calendar**". (Page 39)
     Click on the calendar <▦> to display the calendar window.

- Type : When there are too many logs, you can display logs of the desired format by selecting the type.
- Export : All logs recorded in the DVR are exported to the storage media.

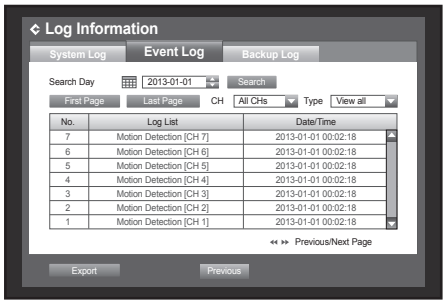
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and press <**Search**>.

Event Log

Event log shows recorded events on alarms, motion detections and video loss.
It also shows the log and its timestamp.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Log Information**>, and press [**ENTER**] button.
2. Select <**Event Log**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and select it.
4. Set Search Day, Channel and Type and the press <**Search**>.
   - Refer to "**Using the Calendar**". (Page 39)
     Click on the calendar <▦> to display the calendar window.

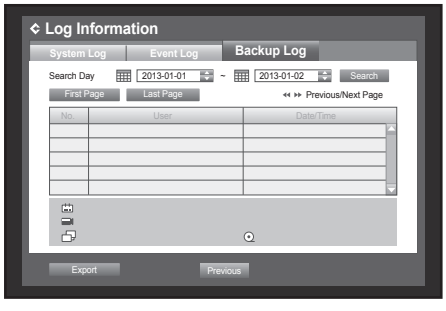


Backup Log

You can find out who backed up and the details (backup time, channel, device to use, file format, etc.).

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**System**> window to move to <**Log Information**>, and press [**ENTER**] button.
2. Select <**Backup Log**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and select it.
4. Specify a search term and select <**Search**> in the right corner.
   Backup details for the search term will be listed.



SETTING THE DEVICE

You can setup Camera, Storage Device, Remote Device, POS Device and Monitor.

Camera

Setting the Camera

You can set Video, Audio, Channel Name and Dwell Time of a Camera.

Using the mouse may help make setup easier.

1. Press the [**MENU**] button on the remote control or front panel.
2. Use the left/right button (◄ ►) to select <**Device**>. Device setting menu is selected.
3. Use the up/down buttons (▲▼) to move to <**Camera**>, and press [**ENTER**] button.



4. Select <**Camera**>. Displays settings window for Video, Audio, CH Name, SEQ-Dwell Time, Screen Setup and Privacy Region.
5. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



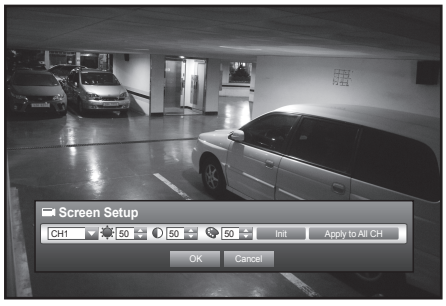
- Type: It displays the camera type which can be connected to the channel. According to the camera type displayed on the screen, you may connect either SD or HD camera to each corresponding connectors.
- Video
  - <**ON/OFF**> : You can turn ON/OFF the selected channel's camera.
  - <**Covert1**> : Shows information other than the video of the selected channel.
    - For privacy protection, it does not display the video while the recording continues.
  - <**Covert2**> : Shows nothing but an empty screen while the recording continues.



- If the channel is set to <**Covert1**> or <**Covert2**> mode, the channel's sound is not hearable. However, the channel's sound is recorded if its Audio setting is set to <**ON**>, even the sound is not heard in Live mode.

- Audio
  - If set to <**ON**>, you can turn the audio of the channel ON/OFF on the Live screen.
  - If set to <**OFF**>, the channel's audio is off on the Live screen and not recorded.
    - Audio output is available for only 1 channel.
- CH Name : Up to 15 characters including blanks are allowed.
  - Refer to "**Using Virtual Keyboard**". (Page 40)
  - The first character should not be empty.

- SEQ-Dwell Time : You can set the dwell time between channels for the Live screen and Spot Out.
  - If set to <**OFF**>, the channel is not listed in the Auto Sequence mode.
- Screen Setup : The video appeared on the screen may vary depending on the channel's camera, configure the DVR display to your preferences.
  Select a channel and adjust the <☀ **(Brightness)**>, <◐ **(Contrast)**>, and <🎨 **(Color)**> of the selected channel.
  - Press the <**Init**> to initialize settings back to the default 50.
  - You cannot adjust Brightness, Contrast or Color for HD-SDI Channel.



- Privacy Region : You can specify a certain area of the camera video to be protected for your privacy.
- HD/SD Switch: You may setup the numbers of HD channel based on your needs, after completing setup, please click OK on HD/SD Switch menu, and DVR would restart to take effect.(HD/SD Switch is available for SRD-1680D only.)

6. When the camera setup is done, press <**OK**>.

To set the privacy zone

① Select <**Privacy Region**>.

② When "**Privacy Region**" window appears, select a channel for detection and set the area of motion detection.

• To set the area in "**Privacy Region**" window

In the "**Privacy Region**" window, select desired region from <▛ ▜ ▙ ▟ ■ □>.



• **Privacy Region**

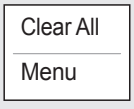
You can specify up to 4 privacy zones for each channel, which can be identified by the color.

1 ■ Purple 2 ■ Green 3 ■ Blue 4 □ Yellow

• To set the area using <**Individual**> selection

In the "**Privacy Region**" window, you can select cells individually by using <**Individual**>.
When selected <**Individual**>, "**Privacy Region**" window disappears and you can select cells one by one.
When the motion area setup is done, Right-click to select <**Menu**> in the context menu or the [**MENU**] button on the remote control to display the "**Privacy Region**" window again.

- Clear All : Selected cell is removed from the Privacy Region.
- Menu : After selecting individual motion areas, move to the "**Privacy Region**" window.
  - If selected <**Apply to All CH**>, selected motion area is applied to all channels.

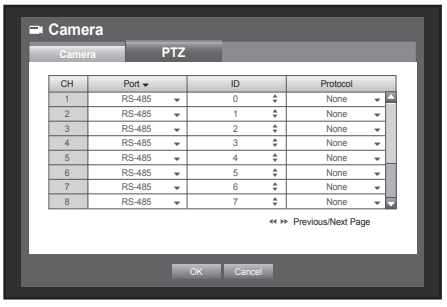


③ When completing the privacy zone settings, click <**OK**>.

Setting the PTZ

To use Camera's PTZ functions, ID and protocols of each camera and DVR should be matched.
For other settings, refer to the <**Remote Device**> settings. (Page 54)

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Camera**>, and press [**ENTER**] button.
2. Select <**PTZ**>.
   A window of PTZ settings appears.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and select it.

- Port : Select a port control method for the camera that is connected to a channel.
  - You have two choices : <**RS-485**> and <**Coaxial**>.
  - <**Coaxial**> type is only available for SRD-1680D SD channel.
- ID : Set the ID of the connected camera of each channel.
  You can easily setup by using the numeric buttons on the remote control or front panel.
- Protocol : Set the protocol of the connected camera of each channel.

- You can check the camera's ID and protocol if you turn the camera off and on after connecting it to the DVR.
- For the <**Coaxial**> type, CCVC and PELCO-C protocols are supported.
- <**Coaxial**> type is only available for SRD-1680D SD channel.
- Coaxial function doesn't work on HD-SDI Channels.

4. When the PTZ setup is done, press <**OK**>.

Storage Device

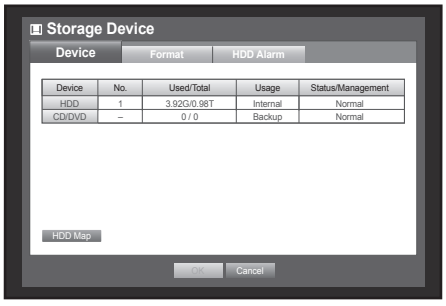
You can check information on storage devices.

Confirming Devices

You can check storage devices and their free space, usage as well as status.
Devices available are HDD, and USB devices (Memory, HDD, CD/DVD).

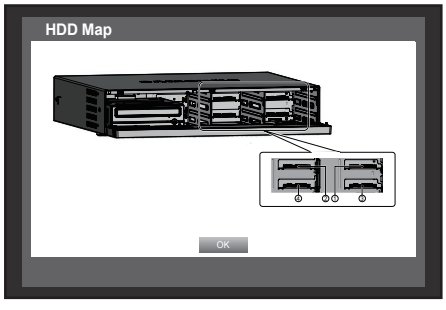
Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Storage Device**>, and press [**ENTER**] button.



2. Select <**Device**>.

- No. : Shows the assigned number of the internal HDD.
  - To see the detailed positioning of the HDD according to the number, refer to <**HDD Map**>.
- Used/Total : Shows the used/total capacity of the storage device.
- Usage : Sets the storage device's usage.
  - USB memory is used only for backups.
  - External USB HDD, SATA HDD are used for extension and backup.
  - A maximum of 2TB for each port is supported for backup on a high capacity SATA HDD such as RAID equipment (ex: SVS-5R), and a maximum of 4TB for extension purposes.
  - SVS-5R supports only RAID1 and RAID5.
  - If an eSATA HDD device is used for extended storage or backup purposes, disconnecting eSATA device may restart the system.
    For backup use, the device can be disconnected if it's not in use.
- Status/Management : Shows the current status of the HDD, as in Normal/Check/Replace.
  - Normal : Available to use
  - Check : Available to use but recommended to replace
  - Replace : Requires immediate replacement.
- HDD Map : Shows the internal HDD's locations according to assigned numbers.
  - Refer to this for servicing or additional HDD installation.



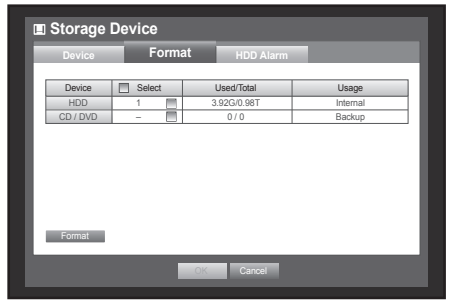
3. To move to the previous menu, press <**OK**>.

Formatting

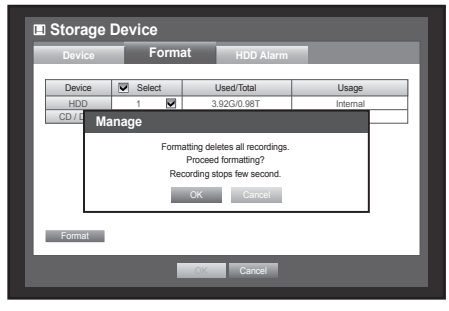
You can format a storage device.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Storage Device**>, and press [**ENTER**] button.
2. Select <**Format**>.
   A window for selection of device for formatting appears.
3. Use direction buttons (▲▼◄ ►) to select a device to be formatted.



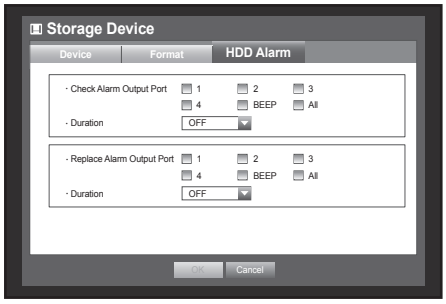
4. Select <**Format**> on the bottom of the screen.
   Press <**OK**> on the "**Manage**" confirmation window will start formatting the selected device.
5. When the formatting is done, press <**OK**>.



HDD Alarm

You can set alarm settings for HDD defects such as Check Alarm Output Port, Replace Alarm Output Port, and its duration.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Storage Device**>, and press [**ENTER**] button.
2. Select <**HDD Alarm**>.
   A window for setting HDD check and replace output ports and their durations appears.
3. Use direction buttons (▲▼◄ ►) to move to the desired item.

- Alarm
  - Alarm signal will output through the alarm out port on the rear side when selected <**1**>, <**2**>, <**3**>, and <**4**>.
  - If <**BEEP**> was selected, a beep will sound.
  - If <**All**> was selected, both beep sound and alarm signal through rear side ports will output.
- Check Alarm Output Port : If HDD generates check alarm, the alarm signal will output to the specified alarm output port.
- Replace Alarm Output Port : If HDD generates replace alarm, the alarm signal will output to the specified alarm output port.
- Duration : Sets the alarm duration for the alarm signal and beep sound.
  - Check Alarm, Replace Alarm signals will output through the selected alarm out ports (1, 2, 3, and 4).
  - If <**BEEP**> was selected, a beep will sound.
  - If <**All**> was selected, both beep sound and alarm signal through rear side ports will output.

- <**Check**> status means that the HDD is operating but it has problems that require technical examination. ( ) appears on the Live screen.
- <**Replace**> status means that the HDD has defect and requires immediate replacement. ( ) appears on the Live screen.
- If the installed HDD is not recognized properly, a confirmation popup will appear.

4. When the HDD Alarm setup is done, press <**OK**>.

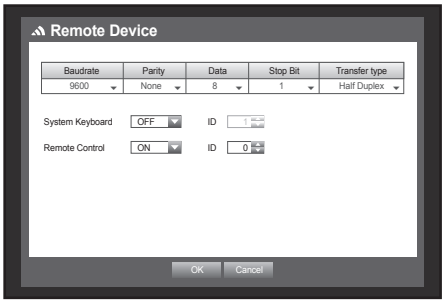
Remote Devices

You can set the RS-485 communication for use of PTZ Camera and system keyboard with the DVR.
Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Remote Device**>, and press [**ENTER**] button.
2. Use direction buttons (▲▼◄ ►) to move to the desired item, and press [**ENTER**] button.
3. Set the values of each communication setup of the remote device.

• Baudrate : Baud rate settings of the DVR, PTZ camera and system keyboard should be matched for proper operations.

4. Make sure to match IDs of the DVR, System Keyboard and Remote Control, and press <**OK**>.



▪ For changing the remote control's ID, refer to "**Changing the Remote Control ID**". (Page 15)

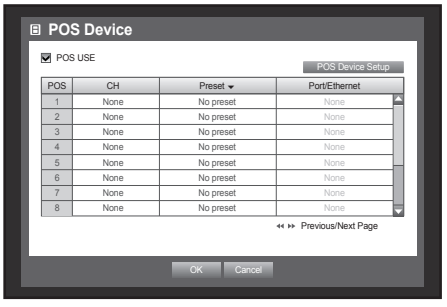
POS Devices

You can set properties of POS devices connected to the DVR.
A POS device connection requires channel, preset, and Port/Ethernet settings.
Using the mouse may help make setup easier.

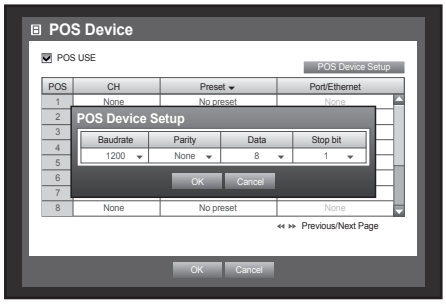
1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**POS Device**>, and press [**ENTER**] button.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

• POS USE : When selected <**POS USE**>, DVR and POS will be connected.

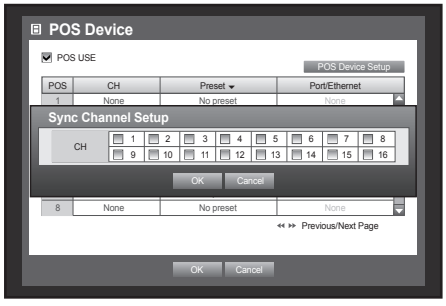
▪ If you change settings for the device and press <**OK**> while the <**POS USE**> is not checked, the changes for POS device will not be saved.

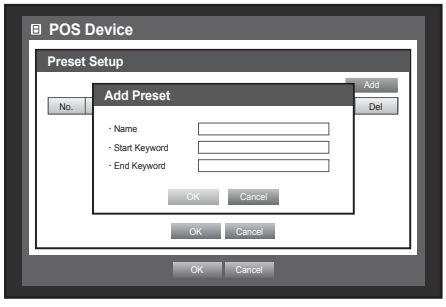


- POS Device Setup : Sets the communication setups for the POS device and DVR.
  - It is independent to the Remote Device setup.



- CH : Select the camera to be synchronized to the POS device.
  - If selected a channel input field, "**Sync Channel Setup**" window appears.
  - One POS device can be synchronized to up to 16 cameras (channels), however one channel cannot be synchronized to multiple POS devices.
  - Channels to be synchronized to a POS device should be set to "**Event**" in "**Main Menu** > **Record** > **Recording Schedule**". (Page 58)
- Preset : Sets the name, start and end strings of the receipt for the preset.
  - Preset name should be unique.
  - Use <**Add**> button to display "**Add Preset**" window, and set its name, start string, and end string.
- Port/Ethernet : Sets the port number for the DVR and POS device connection.
  - COM1 : For RS-232C connections
  - 7001~7016 : For Ethernet connections





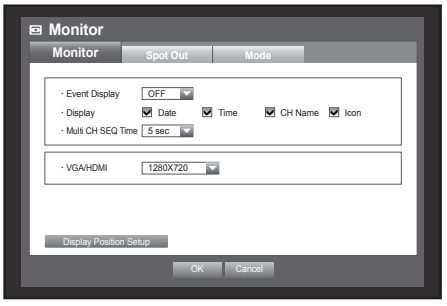
3. When the POS Device setup is done, press <**OK**>.

Monitor

You can configure information to be displayed and its format for Spot Out monitor.

Setting the Monitor

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Monitor**>, and press [**ENTER**] button.
2. Select <**Monitor**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

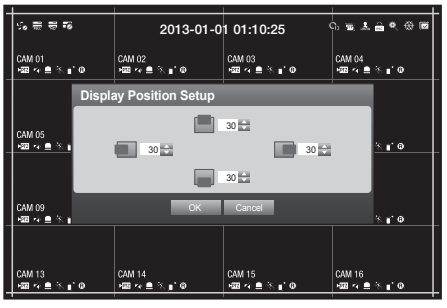
- Event Display : Sets the dwell time of the event channel display on the monitor when an event occurs.
  If selected <**Continuous**>, it displays the channel until you press [**ALARM**] button to release it.
- Display : Displays only checked items on the monitor screen.
- Multi CH SEQ Time : Sets the interval between automatic display switching in 4-split and 9-split mode of the Live screen.
- VGA/HDMI : Set your preferred screen resolution to <**VGA**> or <**HDMI**>.
  If the monitor does not support selected resolution of <**VGA**> or <**HDMI**>, it may not display video properly.

4. When the monitor setup is done, press <**OK**>.

Screen Setup

Some monitors many not display information (camera name, icon, time information, etc.) about the DVR, depending on the condition. Then, you can change the display position of the data.

1. In the <**Device**> window, press the up/down (▲▼) button to move to <**Monitor**> and press the [**ENTER**] button.
2. Select the <**Monitor**> item.
3. Select <**Display Position Setup**> in the bottom.
   You will move to the <**Display Position Setup**> window.
4. Use the four direction buttons or the number buttons on the front panel or the remote control to adjust the data position.

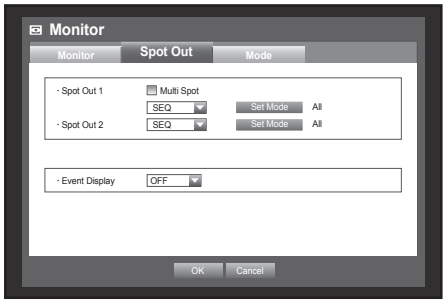


Setting the Spot Out

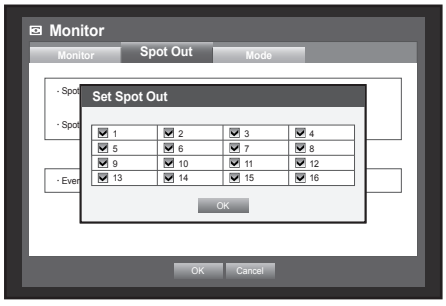
You can set the DVR to output information / video apart from the monitor out.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Monitor**>, and press [**ENTER**] button.
2. Select <**Spot Out**>.
   - The number of Spot Out terminals differs according to the model.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Spot Out 1 : It supports auto sequence and single mode by default, and additionally supports 16-split, 9-split and 4-split modes if selected <**Multi Spot**> out.
- Spot Out 2 : It supports auto sequence and single mode.
- Set Mode : A window for "**Set Spot Out**" appears and you can set the channel for it.
  You can set the dwell time between the screen switching in "**Setting the Device** > **Camera** > **SEQ-Dwell Time**". (Page 49)
- Event Display : Sets the duration for the Spot Out on an event.
  If selected <**OFF**>, an event will not output to the Spot Out.



- You can setup using the mouse right button in Live screen. Refer to "**Spot Out**". (Page 35)
- If selected <**Multi Spot**> double frame function is deactivated.

4. When the Spot Out is done, press <**OK**>.

Setting the Screen Mode

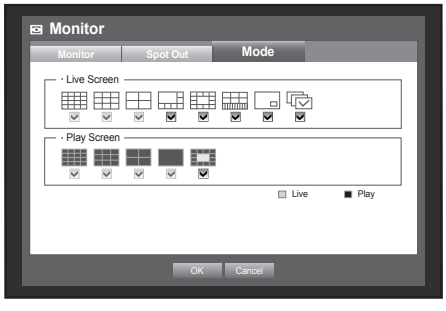
You can configure the Live screen and Split Screens.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Device**> window to move to <**Monitor**>, and press [**ENTER**] button.
2. Select <**Mode**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Live Screen : Select split modes for the Live screen. 16-, 9-, and 4-split screens are included by default.
- Play Screen : Select split modes for the playback screen. Only the 13-split screen is optional. Black shows the playback while white shows the Live screen.

4. When the screen mode setup is done, press <**OK**>.



SETTING THE RECORDING

You can setup scheduled recording, event recording and other recording related settings.

Recording Schedule

Make your reservation on a date and time to schedule the recording on specified time.

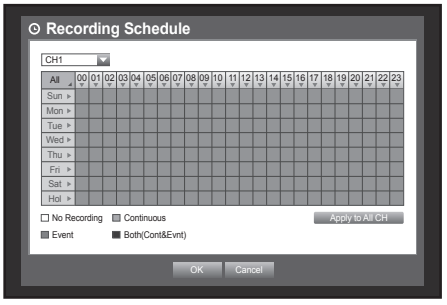
Using the mouse may help make setup easier.

1. Press the [**MENU**] button on the remote control or front panel.
2. Use the left/right button (◄ ►) to select <**Record**>. Record menu is selected.
3. Use the up/down buttons (▲▼) to move to <**Recording Schedule**>, and press [**ENTER**] button.



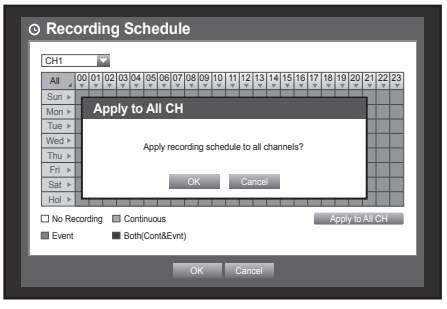
4. Select <**Recording Schedule**>. A window of scheduled recording setup appears.
5. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Channel : Select a channel to set the recording schedule time and date format.
- Recording type : Select each time cell, and then select a type to start recording.



- Apply to All CH : If selected <**Apply to All CH**>, "**Apply to All CH**" window appears. Press <**OK**> to apply the setup to all channels.

6. When the recording schedule setup is done, press <**OK**>.



- Event recording and scheduled recording starts about 3 seconds prior to the event/schedule for guaranteed recording.

Recording Color Tags

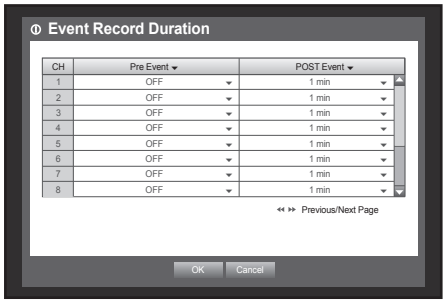
Color	Part Names	Functions
White	No Recording	No schedule / event recording
Orange	Continuous	Scheduled recording only
Blue	Event	Event recording only
Green	Both(Cont&Evnt)	Both scheduled / event recordings

Each press of a selected cell will cycle through <**No Recording**>-<**Continuous**>-<**Event**>-<**Both(Cont&Evnt)**>.

Event Record Duration

You can set the beginning and ending point of a recording on an event.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Record**> window to move to <**Event Record Duration**>, and press [**ENTER**] button.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Pre Event : The recording of an event will start at a pre-determined time prior to the actual occurrence of the event. If it is set to 5 seconds, the recording begins from 5 seconds before the event.
- POST Event : The recording will continue for a pre-determined time after the actual end of an event. If it is set to 5 seconds, the recording ends in 5 seconds after an event.

3. When the event recording duration setup is done, press <**OK**>.

REC Quality / Resolution

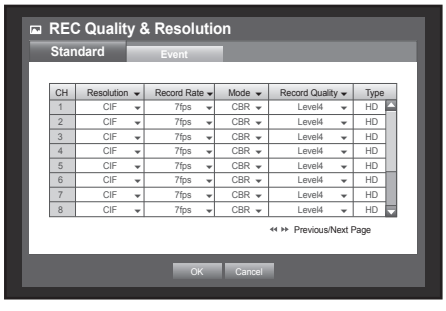
You can set resolution, FPS, and quality of recordings by channel, and by recording type of standard / event.

For more information about the resolution, refer to the "**Product Specification**" section. (Page 119)

Setting Standard Recording Properties

You can set each channel's resolution, quality and FPS for normal recordings.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Record**> window to move to <**REC Quality & Resolution**>, and press [**ENTER**] button.
2. Select <**Standard**>.
3. When the recording setup is done, press <**OK**>.

Setting Event Recording Properties

You can set each channel's resolution, quality and FPS for event recordings.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Record**> window to move to <**REC Quality & Resolution**>, and press [**ENTER**] button.
2. Select <**Event**>.
   Event recording setup window appears.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and select it.

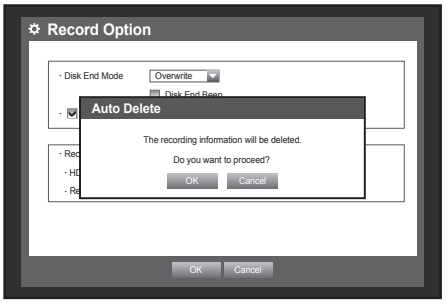
- Resolution : Sets the resolution of the recorded screen.
- Record Rate : Image Per Second, means the frames recorded per a second.
- Mode: Bitrate control, you may select either CBR or CVBR.
- Record Quality : Sets the recording quality.
- Type: It displays the camera type which can be connected to the channel.

4. When the Event recording setup is done, press <**OK**>.

Record Option

You can set the recording to stop or overwrite when the HDD is full.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Record**> window to move to <**Record Option**>, and press [**ENTER**] button.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Disk End Mode : If selected <**Overwrite**>, recording will continue despite the HDD full while overwriting the oldest. If selected <**Stop**>, the recording will stop when the HDD is full.
- Disk End Beep : If selected <**Stop**>, the button is activated. If you check it, the beep will sound on the disk full and the recording stops.
- Auto Delete : If you check it, Record Period setup is activated. If you specify the auto deletion period, the recording data before the period will be deleted automatically.
  - This option will be enabled only if Disk End Mode is set to <**Overwrite**>.
- HDD Free Space : Shows remaining free space available on the HDD.
- Recordable (days/hours) : Shows estimation of remaining days and hours for recording, based on the remaining free space.

3. When the recording option setup is done, press <**OK**>.

SETTING THE EVENT

You can set recording options when sensor, motion, image loss detection or tampering event occurs.

Sensor Detection

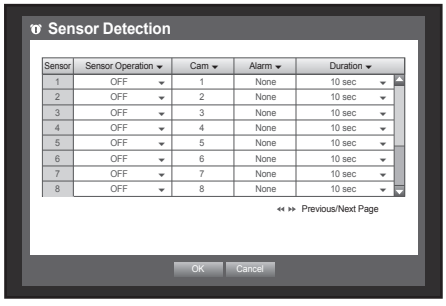
You can set the sensor's operating condition and connected camera, as well as alarm output and its duration.

Using the mouse may help make setup easier.

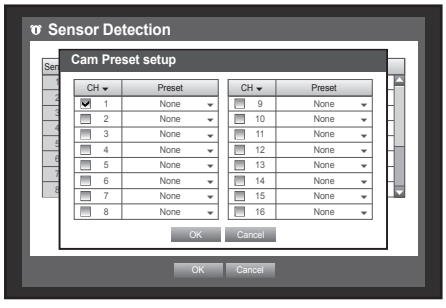
1. Press the [**MENU**] button on the remote control or front panel.
2. Use the left/right button (◄ ►) to select <**Event**>.
   Event setting menu is selected.



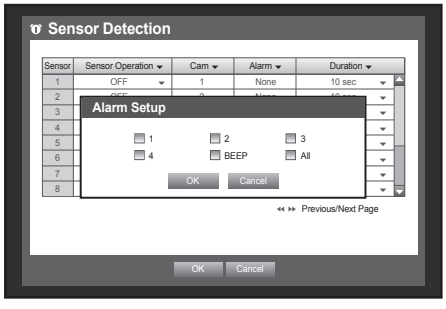
3. Use the up/down buttons (▲▼) to move to <**Sensor Detection**>, and press [**ENTER**] button.
   A window of sensor detection setup appears.
4. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Sensor Operation : Sets the operation mode of sensors.
  - <**OFF**> : Sensor does not operate.
  - <**N.O**> : Sensor is opened.
    If the sensor is closed, it generates alarm.
  - <**N.C**> : Sensor is closed.
    If the sensor is open by interruption, it generates alarm.
- Cam : Select a channel to be connected to the sensor.
  If selected camera, "**Cam Preset setup**" window appears.
  Select a channel and setup the preset.
  - Preset setup can be done in PTZ mode.
    Refer to "**Preset Setting**". (page 81)



- Alarm : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm** > **Alarm**". (Page 53)
- Duration : Sets the duration of alarm signal and alarm sound.

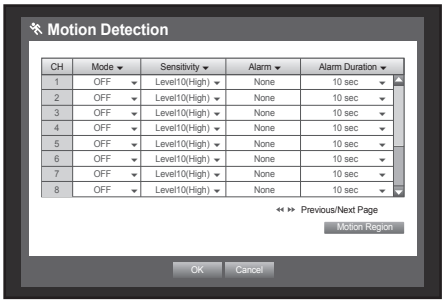


5. When the sensor detection setup is done, press <**OK**>.

Motion Detection

You can set target detection region and motion, as well as the alarm signal output.
When the motion detection region is set, it detects motion within the area.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Event**> window to move to <**Motion Detection**>, and press [**ENTER**] button. A window of motion detection area setup appears.

2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Mode : Sets whether to activate motion detection.
- Sensitivity : Sets the sensitivity level of the motion detection.
- Alarm : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm** > **Alarm**". (Page 53)
- Alarm Duration : Sets the duration of alarm signal and alarm sound.

3. When the motion detection setup is done, press <**OK**>.

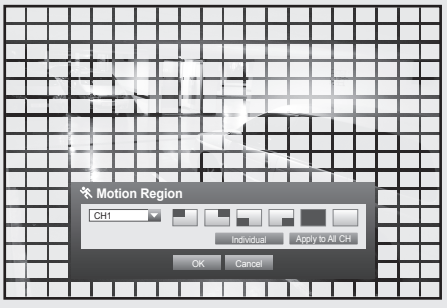
Setting the Motion Detection Area

① Select <**Motion Region**>.

② When "**Motion Region**" window appears, select a channel for detection and set the area of motion detection.

- To set the area in "**Motion Region**" window

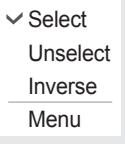
In the "**Motion Region**" window, select desired region from <>.



- To set the area using <**Individual**> selection

In the "**Motion Region**" window, you can select cells individually by using <**Individual**>.
When selected <**Individual**>, "**Motion Region**" window disappears and you can select cells one by one.
When the motion area setup is done, press the <**Menu**> on the screen or the [**MENU**] button on the remote control or front panel to display the "**Motion Region**" window again.

- Select : Selected cell is set to be a part of motion detection area.
- Unselect : Selected cell is removed from the motion detection area.
- Inverse : Unselected cells are set to be the motion detection area.
- Menu : After selecting individual motion areas, move to the "**Motion Region**" window.
  - If selected <**Apply to All CH**>, selected motion area is applied to all channels.



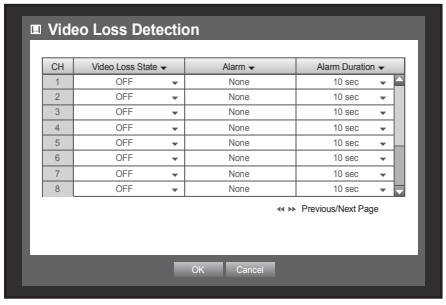
③ When the motion detection setup is done, press <**OK**>.

Video Loss Detection

You can set the alarm to be generated on a camera disconnection, which causes a video loss.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Event**> window to move to <**Video Loss Detection**>, and press [**ENTER**] button.
   A window of video loss detection area setup appears.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Video Loss State : Sets whether to activate video loss detection.
- Alarm : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm** > **Alarm**". (Page 53)
- Alarm Duration : Sets the duration of alarm signal and alarm sound.

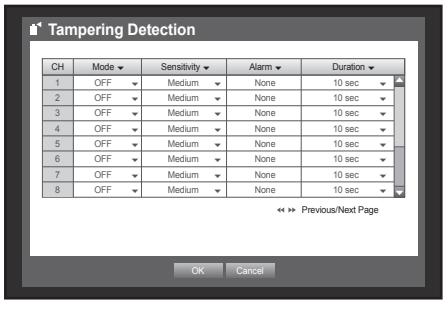
3. When the video loss detection setup is done, press <**OK**>.

Tampering Detection

You can set to detect tampering attempts and trigger events, such as sudden change of camera's framing direction, blocked lens and other overall change of scenes from the video.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Event**> window to move to <**Tampering Detection**>, and press [**ENTER**] button.
   Tampering detection settings screen appears.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Mode : Set whether to use Tampering Detection or not.
- Sensitivity : Set the sensitivity level of tampering detection.
- Alarm : Set the alarm output method.
- Duration : Set the alarm signal output and its dwell time.

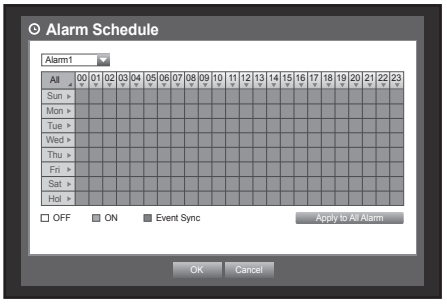
3. When the tampering detection setup is done, press <**OK**>.

- Since the tampering detection is designed and optimized to function in accordance with the user defined sensitivity level, it may not render a significant difference in detection with varied sensitivity in general monitoring situations.
- When the tampering detection mode is set <**ON**>, it is recommended that the pre event recording time of the corresponding channel should be set to 10 seconds or longer.

Alarm Schedule

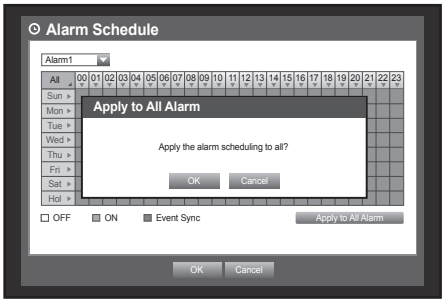
You can set the conditions and operating hours for scheduled alarms.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Event**> window to move to <**Alarm Schedule**>, and press [**ENTER**] button.
2. Use direction buttons (▲▼◄►) to move to a desired item, and set the value.

- Alarm : Sets the alarm output method.
  - For further information on alarm output, refer to "**HDD Alarm** > **Alarm**". (Page 53)
- ON : Marked in orange, and always generates alarm on scheduled time.
- OFF : Marked in white, no alarm is generated even if an event occurs.
- Event Sync : Marked in Blue, generates alarm only when an event occurs.
- Apply to All Alarm : Applies the configured schedule to all alarms.



- When the alarm is generated on the scheduled time, you can stop the alarm by canceling the schedule.

3. When the Alarm Schedule setup is done, press <**OK**>.

BACKUP

You can check the backup device and set the backup schedule by channel or by time.
The product only supports external HDD of USB memory, CD/DVD and USB/SATA type. (Page 120)

Setting the Backup

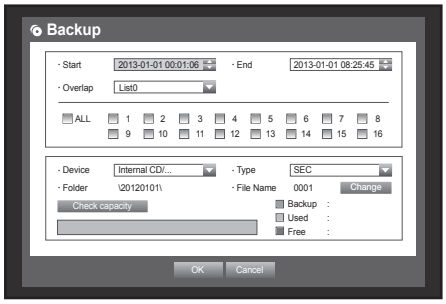
You can backup the desired data to a connected device.

Using the mouse may help make setup easier.



1. Press the [**MENU**] button on the remote control or front panel.
2. Use the left/right button (◄ ►) to select <**Backup**>. Backup menu is selected.

3. Press the [**ENTER**] button.
   A backup window appears.
   You can directly access it from the "**Live screen menu**". (Page 29)



4. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Backup Range : Sets the <**Start**> and <**End**> time for the backup.
- Channel : Sets the channel to backup.
  You can select multiple channels.
- Device : Select a backup device from the recognized devices.
- Type : Sets the backup data format.
  - DVR : Saved data can be played back only by the DVR.
  - AVI : You can set recording options when sensor, motion, image loss detection or tampering event occurs.
    - If you need to install a codec in Windows, run the x264_dvr.exe file in the codec folder that is created when you back up an AVI file.
  - SEC : Saves data in the Samsung's proprietary format with built-in viewer, which supports immediate playback on a PC.
- File Name : You can set the back file name.
  - Refer to "**Using Virtual Keyboard**". (Page 40)
- Check capacity : Shows the size of the selected backup data, used and available capacity of the selected backup device.
- Overlap : Shows a list of overlapping data on a same time according to the number of data.
  It appears when one channel has multiple data on a certain time point due to changing of time or time zone settings, etc.
  - Refer to time and time zone of "**Setting the Date/Time/Language**". (Page 38)

5. When the backup setup is done, press <**OK**>.
   - If no available device is recognized for backup, <**OK**> button is not activated.

- The application may slow down during the backup.
- You can switch to the menu screen during the backup in operation, but playback of data is not available.
- The data can be played back on a Webviewer while the backup is in progress but audio does not function.
- When a CD/DVD or memory device is used for backup, it is not available to use the full capacity of the media since the system consumes a part of its capacity.
- If a CD or DVD media causes errors, the disc tray opens and closes a several times, and eventually backup process will fail. In this case, replace the CD/DVD media and try again.
- If backup has failed, select "**Device** > **Storage Device**" and check the free space of the HDD and check also if the HDD is properly connected.

- Pressing the <**Exit**> during the backup will return to the previous menu, while the backup progresses.

NETWORK CONFIGURATION

It provides networked monitoring of Live screen from a remote place, and supports mail forwarding function with events. You can configure the network environment which enables such functions.

Connection Mode

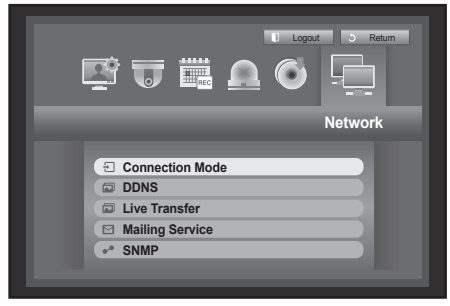
You can set the network connection route and protocol.

Setting the Connection

Sets the protocol and environment of the network.

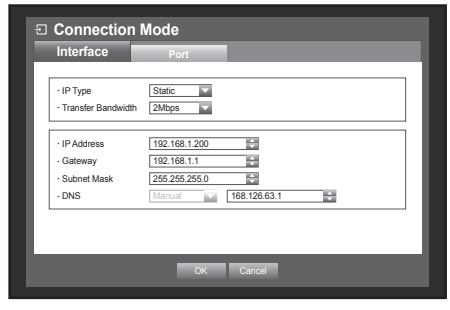
Using the mouse may help make setup easier.

1. Press the [**MENU**] button on the remote control or front panel.
2. Use the left/right button (◄ ►) to select <**Network**>. Network menu is selected.
3. Use the up/down buttons (▲▼) to move to <**Connection Mode**>, and press [**ENTER**] button.

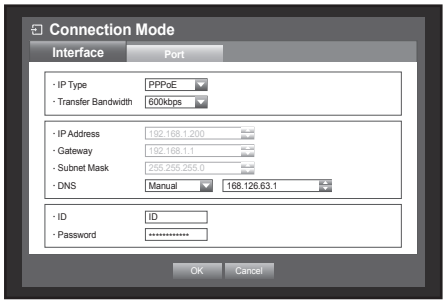


4. Select <**Interface**>.
   A window of connection mode setup appears.
5. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- IP Type : Sets the network connection mode.
- Transfer Bandwidth : Sets the maximum data flow to be transferred. (Upload speed)
  Options will vary depending on the selected connection mode.
  - For <**Static**>, <**DHCP**> : Select one from 50 kbps ~ 2Mbps, and Unlimited.
  - For <**PPPoE**>, select one from 50 kbps ~ 600 kbps.



- IP Address, Gateway, Subnet Mask, and DNS
  - For <**Static**> : You can directly input IP Address, Gateway, Subnet Mask and DNS.
  - For <**DHCP**> : IP Address, Gateway, and Subnet Mask are set automatically.
  - For <**PPPoE**> : IP Address, Gateway, and Subnet Mask are set automatically.
- ID, Password : In case you selected PPPoE, provide the "**ID**" and its "**Password**".



■ DNS server for <**DHCP**> and <**PPPoE**> can be set by user only if you selected <**Manual**>.

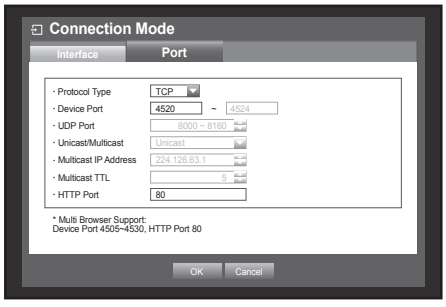
6. When the connection setup is done, press <**OK**>.

Setting the Port

1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Connection Mode**>, and press [**ENTER**] button.

2. Select <**Port**>.

3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Protocol Type : Select the protocol type between TCP and UDP.
  - TCP : If compared to UDP, TCP connection is more stable but slow. Recommended for Internet connection.
  - UDP : If compared to TCP, UDP connection is less stable but fast. Recommended for use in LAN environment.

  ■ If selected UDP, selections of Device Port, UDP Port and Unicast/Multicast are activated.

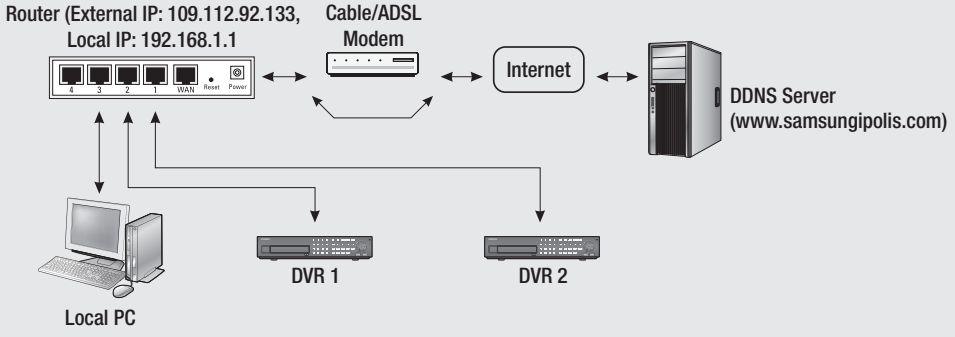
  ■ If setting the connection mode to PPPoE, you cannot select UDP for the protocol type.
- Device Port : Initially, <**4520~4524**> is set. It increases / decreases by 5.
  - TCP: It has better stability and lower speed when compared to UDP, and recommended for internet environments.
- UDP Port : Initially, <**8000~8160**> is set. It increases / decreases by 160.
- Unicast/Multicast : Select one between UDP-Unicast and UDP-Multicast. If selected Multicast, Multicast IP and TTL are activated.
  - UDP- Unicast : Transfers data packet to an individual client.
  - UDP-Multicast : Allows data communication to multiple clients causing no additional traffic to the network.
- Multicast IP Address : User can directly input.
- Multicast TTL : Select from 0 ~ 255. Initial value for the TTL is set to <**5**>.
- HTTP Port : Enter the port number for the Web Viewer. Initially, it is set to <**80**>.
- Multi Browser Support : The Web Viewer can be used with a browser that supports the Silverlight. The multi viewer can be used only if the HTTP port is set to 80, protocol type is TCP and device ports range within 4505-4530. This is for the Siliverlight's security purposes.

4. When the protocol setup is done, press <**OK**>.

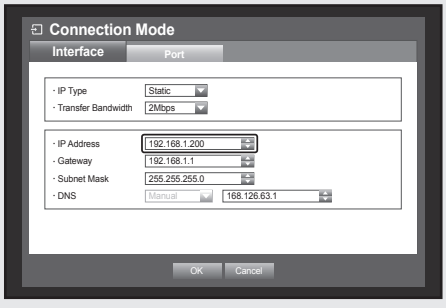
Notification

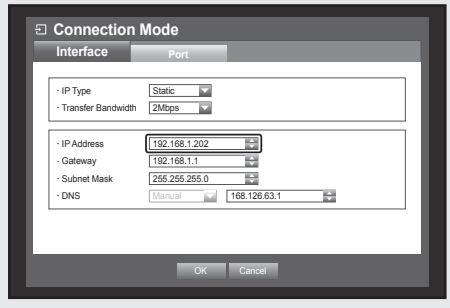
- In a multi-browser environment, the <**HTTP Port**> should be set to 80 (private port). Select one between 4505 and 4530 for RTSP

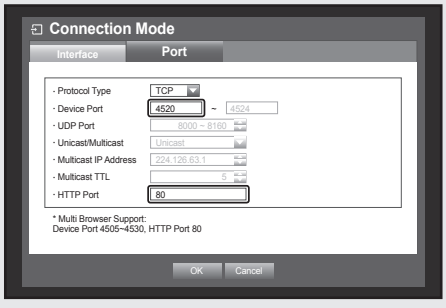
• Network Overview

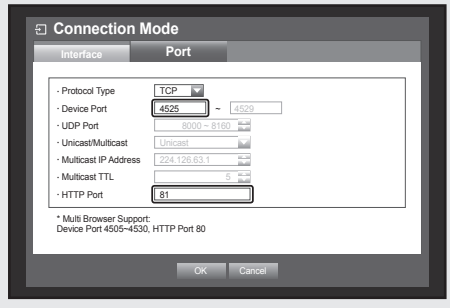


System	DVR 1		DVR 2	
	WEB	RTSP	WEB	RTSP
IP	192.168.1.200	192.168.1.200	192.168.1.202	192.168.1.202
Protocol	TCP	TCP	TCP	TCP
Private Port	80	4520~4524	81	4525~4529
Public Port	80	4520~4524	81	4525~4529



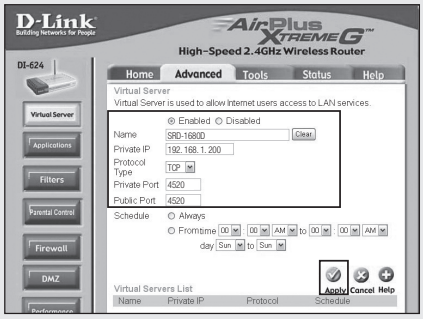




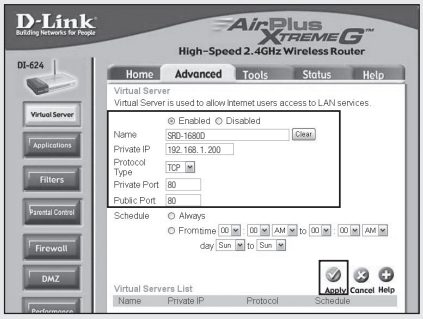


• 1st Set Port Forwarding Setting

Port Forwarding is 4520~4524
(4520, 4521, 4522, 4523, 4524)

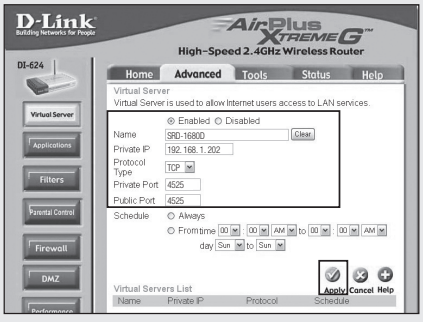


Port Forwarding is 80

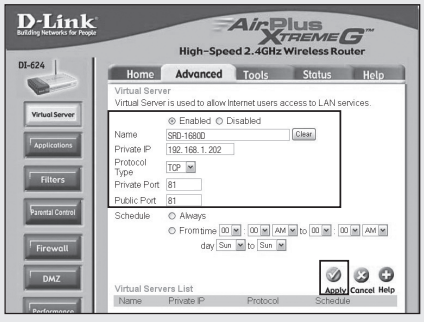


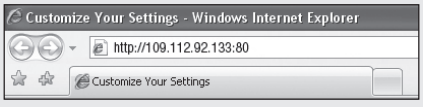
• 2nd Set Port Forwarding Setting

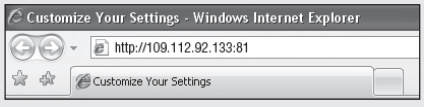
Port Forwarding is 4525~4529
(4525, 4526, 4527, 4528, 4529)



Port Forwarding is 81







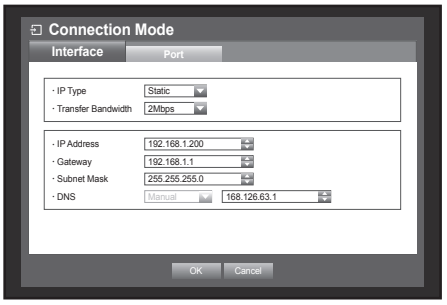
Connecting and Setting the Network

Networking may differ from the connection method, check your environment before setting the connection mode.

When no router is used

• Static mode

- Internet connection : Static PPPoE, leased line, and LAN environments allows connection between the DVR and remote user.
- DVR Network Settings : Set the <**Connection Mode**> in <**Interface**> menu of the connected DVR to <**Static**>.
  - Consult your network manager for IP Address, Gateway and Subnet Mask.

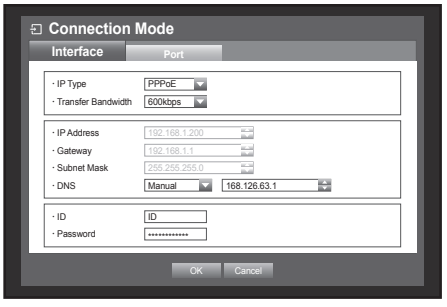


• DHCP mode

- Internet connection : Connect the DVR directly to a cable modem, DHCP PPPoE modem or FTTH network.
- DVR Network Settings : Set the <**Connection Mode**> in <**Interface**> menu of the connected DVR to <**DHCP**>.

• PPPoE mode

- Internet connection : An PPPoE modem is directly connected to the DVR, where the PPPoE connection requires user ID and password.
- DVR Network Settings : Set the <**Connection Mode**> in <**Interface**> menu of the connected DVR to <**PPPoE**>.
  - <**ID**> and <**Password**> should be the same to the PPPoE user information.
    If you don't know the ID and password, consult your PPPoE service provider.



When a router is used

▪ To avoid IP address conflict with the DVR's static IP, check followings :

• **Setting the DVR with a static IP**

- Internet connection : You can connect the DVR to a router which is connected to an ADSL/Cable modem or a router in a Local Area Network (LAN) environment.

• **Setting the DVR Network**

1. Set the <**Connection Mode**> in <**Interface**> menu of the connected DVR to <**Static**>.
2. Check whether the set IP address is in the static IP range provided by the Broadband Router.
   IP Address, Gateway, and Subnet Mask : Consult your network manager.
   ▪ Check whether the set IP address is in the static IP range provided by the Broadband Router.

▪ If a DHCP server is configured with starting address (192.168.0.100) and end address (192.168.0.200), you should set the IP address out of the configured DHCP range (192.168.0.2 ~ 192.168.0.99 and 192.168.0.201 ~ 192.168.0.254).

3. Check the Gateway address and subnet mask are equal to those set in the Broadband Router.

• **Setting the DHCP IP Address of the Broadband Router**

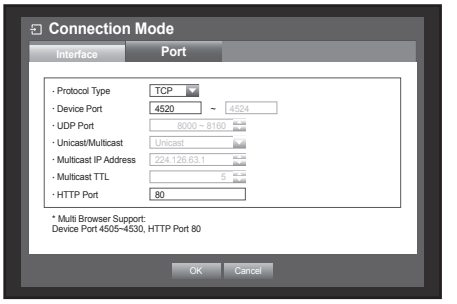
1. To access the Broadband Router's configurations, open a web browser on the local PC that is connected to the Broadband Router and enter the router's address (ex : http://192.168.1.1).
2. At this stage, make the local PC's windows network configurations to the below example :
   Ex) IP Address : 192.168.1.2
   Subnet Mask : 255.255.255.0
   Gateway : 192.168.1.1

- Once connected to the Broadband Router, it prompts with password. While entering nothing to the User Name field, enter "**admin**" into the password field and press <**OK**> to access the router configurations.
- Access the router's DHCP configuration menu and set its DHCP server activation, and provide the start and end address.
  Set the start address (192.168.0.100) and end address (192.168.0.200).

▪ Above steps may differ from the router devices depending on the manufacturer.

• **Setting Router's Port Forwarding**

1. Set the protocol to <**TCP**>.
2. External Port Range : Enter the TCP Port set in the <**Device Port**> in <**Port**> menu of the connected DVR. If more than one DVRs are connected to the router, the TCP port can be different.
3. Internal PC IP Address : Enter the IP address set to the <**IP Address**> in <**Interface**> menu of the connected DVR.
4. Internal Port Range : Set the same to the "**External Port Range**".



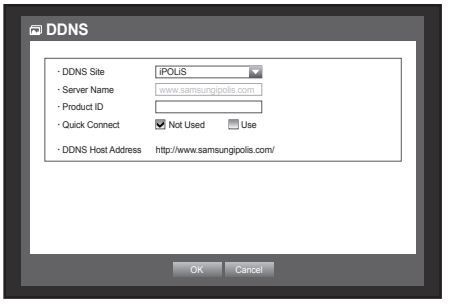
▪ Above steps may differ from the router devices depending on the manufacturer.
Port forwarding is required when you want to access the DVR connected to the router from outside of the router's network.

DDNS

You can set the DDNS site for a remote user's network connection.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**DDNS**>, and press [**ENTER**] button. DDNS Setup screen appears.
2. Use the virtual keyboard to enter the <**Product ID**>.
   - ▪ Refer to "**Using Virtual Keyboard**". (Page 40)
   - ▪ If selected <**OFF**> input fields are deactivated.
   - ▪ If selected <**iPOLiS**>, the server name field is disabled.



- DDNS Site : Set whether to use DDNS or not, and select the DDNS site if enabled.
- Server Name : Enter the server name of the selected DDNS site.
- Product ID : Enter the product ID which was registered to the DDNS site.
- Quick Connect : Appears if the <**DDNS Site**> is set to <**iPOLiS**>. To use this feature, connect the DVR to a UPnP router and set to <**Use**>.

▪ If the quick connect setup has been cancelled while progressing, it is automatically set to <**Not Used**>.

3. When the DDNS setup is done, press <**OK**>.

DDNS Setting

DDNS is a short form of Dynamic Domain Naming System.
DNS (Domain Name System) is a service that routes a domain name consisting of user friendly characters (ex : www.google.com) to an IP address consisting of numbers (64.233.189.104).
DDNS (Dynamic DNS) is a service that registers a domain name and the floating IP address with the DDNS server so that the domain name can be routed to the IP address even if the IP is changed in a dynamic IP system.

- **Setting DDNS in the DVR**

  Set <**Protocol Type**> in the <**Port**> menu of the connected DVR to the following :

  Ex) Protocol Type : TCP
  Device Port : 4520~4524
  DDNS Site : iPOLiS

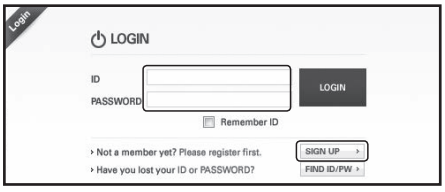
- **DDNS Settings of the Router**

  Select the corresponding menu for the network transfer protocol of the router.

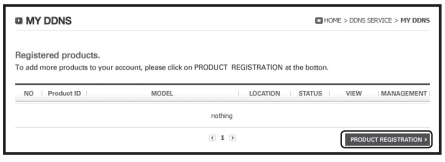
- **SETTING UP SAMSUNG iPOLiS DDNS**

Go to Your PC

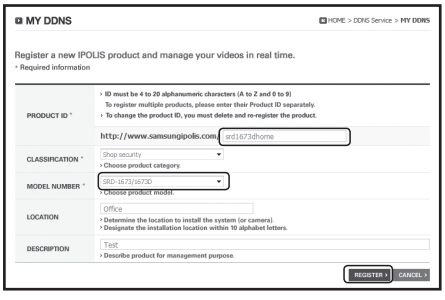
1. Open your browser and go to http://www.samsungipolis.com and click <**LOGIN**>.
2. You first need to create an account.
   Click <**SIGN UP**>.
3. Follow the account registration instructions on the website.
4. After completing the account registration, login to your account.



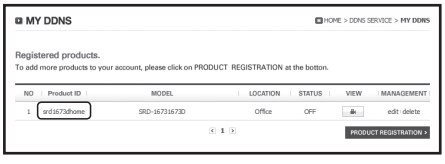
5. Add your DVR to your account. Click <**PRODUCT REGISTRATION**>.



6. Create a name(Product ID) for your DVR. Use 4 to 20 alphanumeric characters without spaces. Select classification, model number of the DVR and click <**REGISTER**>.

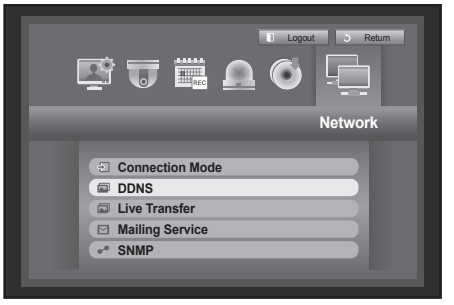


7. After registration, you should see your product in the list.

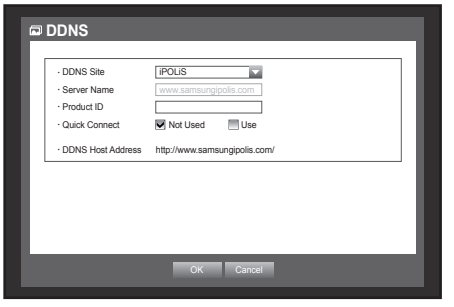


Go back to DVR

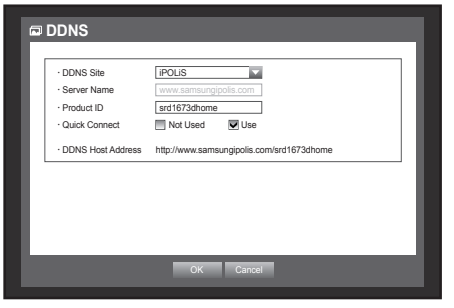
1. From network tab, click on <**DDNS**>.



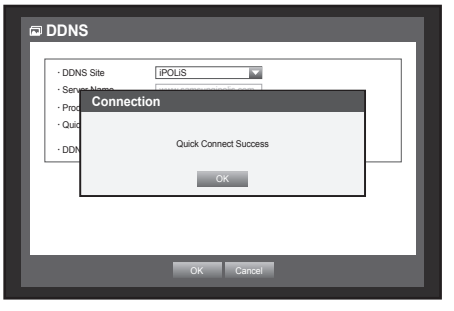
2. Under DDNS Site, select <**iPOLiS**>.



3. Under Product ID, enter the product ID you created on the Samsung iPOLiS website.
Under Quick Connect, select <**Use**> and click <**OK**>.



- If the connection was not successful, your router may not be supporting UPNP.
  For more information on enabling UPNP on your router, please see Router manual.



Live Transfer

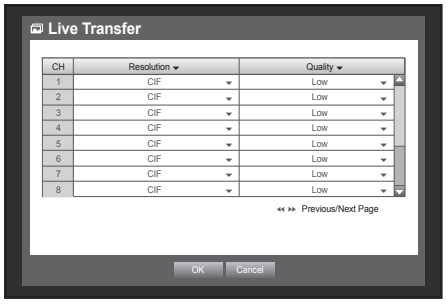
Sets the quality of the image that is transferred from the DVR to the network.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Live Transfer**>, and press [**ENTER**] button. The Live Transfer window appears.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Resolution: Shows the selected network profile's resolution setting.
- Quality: Shows the selected network profile's image quality setting.

3. When the live transfer is done, press <**OK**>.



Mailing Service

You can send an e-mail to a DVR-registered user at a specific time interval, or if an event occurs.

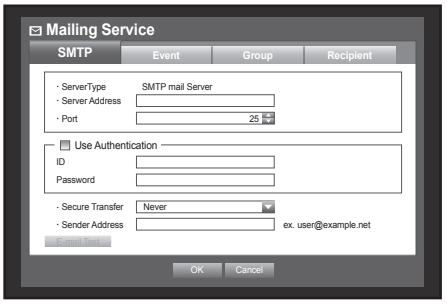
- If an event occurs with a channel where the camera's video is set to <**OFF**> or the remaining recording count is set to <**OFF**>, only the text notification will be sent to the applicable email address.

- If you set the interval of the e-mail notice too short, the e-mail server may consider it as spam that will not be transferred normally.

SMTP Setting

Sets the SMTP mail server.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Mailing Service**>, and press [**ENTER**] button.
2. Select <**SMTP**>.
   You will see the SMTP setting window.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

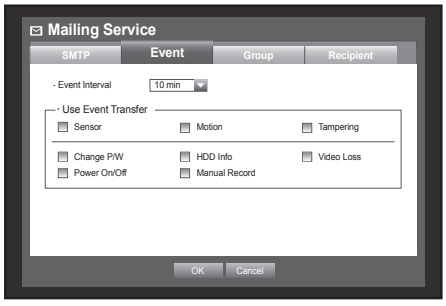
- ServerType : Displays the connected server type.
- Server Address : Enter a server to connect to.
- Port : Sets the communication port.
- Use Authentication : Check this if the SMTP server uses user authentication. The account input box will be activated.
- ID : Enter a user to use authentication when connecting to the SMTP server.
- Password : Enter the password of the SMTP server user.
- Secure Transfer : Select one from <**Never**> and <**TLS (if available)**>.
- Sender Address : Use the virtual keyboard to enter the sender's e-mail address.
  - Refer to "**Using Virtual Keyboard**". (Page 40)
- E-mail Test : Conducts the test on the server settings.

4. When the SMTP setup is done, press <**OK**>.

Event Setting

You can set the interval and type of the event that will be sent to the user.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Mailing Service**>, and press [**ENTER**] button.
2. Select <**Event**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

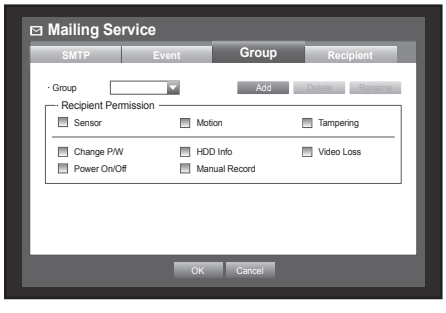
- Event Interval : Set the event interval.
  - If a series of events occurs, the e-mail will be sent at the specified interval, not on each event.
- Use Event Transfer : Select an event type to send if an event occurs.
  If the selected event occurs, the e-mail will be sent to the group that has the recipient authority.

4. When the event setup is done, press <**OK**>.

Group Setting

You can set the group to whom the e-mail is sent, and specify the permission for each group.
You can add recipients for each group in the <**Recipient**> menu item.
The recipient is set separately from the DVR user group.

Using the mouse may help make setup easier.



1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Mailing Service**>, and press [**ENTER**] button.
2. Select <**Group**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Add : Select <**Add**> and use the virtual keyboard to add a group.
  - Refer to "**Using Virtual Keyboard**". (Page 40)
- Delete : Deletes the selected group.
- Rename : You can reset the recipient permission of an existing group.
- Recipient Permission : Set the permission of the recipient group.

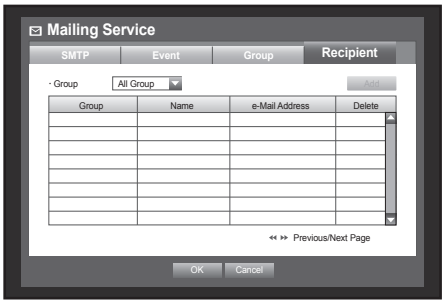
4. When the group setup is done, press <**OK**>.

Recipient Setting

You can add/remove a recipient(s) to/from the specified group and edit the group if necessary.

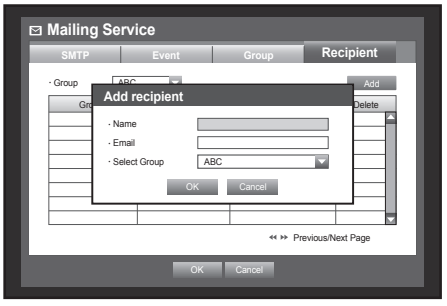
Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**Mailing Service**>, and press [**ENTER**] button.
2. Select <**Recipient**>.
3. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.



- Add : You can select a recipient name, e-mail address or group.
  You should have created a group in the <**Group**> menu item before you can add a user to the group.
  - For inputting the recipient name and email address, refer to "**Using Virtual Keyboard**". (Page 40)

4. When the recipient setup is done, press <**OK**>.



SNMP

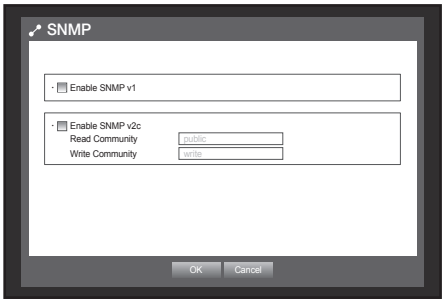
You can configure the settings for the SNMP protocol.

Using the mouse may help make setup easier.

1. Use the up/down buttons (▲▼) in <**Network**> window to move to <**SNMP**>, and press [**ENTER**] button.
   The SNMP setup screen appears.
2. Use direction buttons (▲▼◄ ►) to move to a desired item, and set the value.

- Enable SNMP v1 : SNMP version 1 will be active.
- Enable SNMP v2c : SNMP version 2 will be active.
  - Read Community : Read community where you can access objects that support the SNMP protocols.
  - Write Community : Write community where you can access objects that support the SNMP protocols.

3. When the SNMP setup is done, press <**OK**>.



CONTROLLING A PTZ DEVICE

The DVR enables you to adjust the settings of a PTZ camera as well as an ordinary one to your preference.

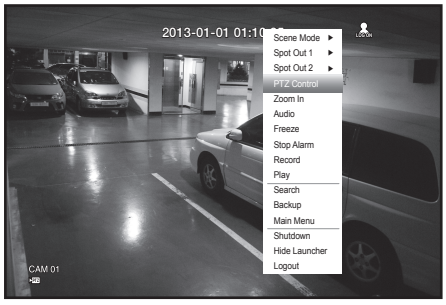
PTZ Device

The PTZ device can be activated only if a channel in connection with the PTZ camera is selected.

Getting started with PTZ

The PTZ camera is available, only if a channel is selected, in the following way :

- Using the remote control buttons
  Press the [**PTZ**] button on the remote control.
- Using the launcher menu
  Click < PTZ > to display the live launcher.
- Using the right-click menu in Live mode
  Right-click any area on the screen to display the context menu, and select <**PTZ Control**>.



- Using icons on the live screen
  Click the < PTZ > icon on the live screen.



- The PTZ function is available only if the PTZ camera is connected so that the < PTZ > icon is displayed on the screen.

Using the PTZ camera

You can use one camera to perform all functions of PAN, TILT and ZOOM for monitoring multiple places and set the preset to your preference in a desired mode.

1. Launch the <**PTZ Control**> menu.
   As the < PTZ > icon on the bottom right corner turns yellow, you access the "**PTZ Control**" mode to display the "**PTZ Control**" menu.



- Be sure to configure PTZ working environments before operation, since the PTZ Working(Active) mark can be appeared to be activated even when PTZ is not operative.

2. Use the PTZ wheel in the launcher menu to adjust the monitoring area, or use the direction buttons (▲▼◄ ►) on the remote control to move the camera to a desired place.

- PTZ Wheel : Clicking a nearer point to the center will move in that direction slowly; clicking a farther point from the center will move fast.
  - Keep clicking left to rotate the lens counter clockwise; keep clicking right to rotate the lens clockwise.
- Zoom ( ) : You can use the Zoom function of the PTZ camera.
- IRIS ( ) : Adjusts the intensity of radiation incoming to the iris.
- Focus ( ) : Enables you to adjust the focus manually.
- Swing : Moves between the preset start point and end point.
- Group : Moves in the path specified by combining the preset, pattern and auto pan.
- Trace : Moves camera's framing in the predefined path.
- Preset : Sets the preset position for camera framing and moves to designated preset position when selecting a desired preset.
- Tour : Moves in the path specified by combining multiple groups.
  - For the coaxial communications, the operation may differ depending on the protocol.
  - For the <**Coaxial**> type, only SRD-1680D is supported.

- Before entering the PTZ device control mode, set the values of the PTZ device in the <**Setting the PTZ**> menu. (Page 50)
- For camera specifications that supports PTZ comtrol depending on communication method, refer to our web site.

Preset Setting

A preset is a set of specific target points of a PTZ camera, and up to 127 presets per a camera can be stored.
Using the mouse may help make setup easier.

1. In PTZ Control mode, use the direction buttons to adjust the camera in a desired direction.
2. Select the <**Save**> key.
   The virtual keyboard for inputting the preset will appear.
   - Refer to "**Using Virtual Keyboard**". (Page 40)

- Save : You can add and save the preset.
- Rename : You can change the settings of the existing presets.
- Delete : Deletes the selected preset.
- Delete All : Deletes all existing presets.

- If you replace the camera of the channel that stores the preset list with a new one, you should reset the preset accordingly.

3. Press <**OK**>.
   The preset will be saved as a name that you entered.

Camera Setting

A PTZ camera has its own menu system. Optimize the PTZ camera according to the DVR.
Using the mouse may help make setup easier.

- Select <**Camera Setup**> in the PTZ Control menu.
  The camera-specific menu appears.
  - You can configure the settings of only those cameras that support the protocols of Samsung, Pelco D/P, AD and Panasonic.
  - If you are setting Auto Pan or Pattern in the camera menu, press and hold the appropriate button for a certain time so that the button operation can be different from that in normal PTZ setting.



SEARCH

You can perform the search for recorded data by the time or by the search criteria such as an event.
You can access the <**Search**> menu directly in Live mode.

1. In Live mode, right-click any area of the screen.
   The Live menu appears.
2. Select <**Search**>.
   Or, press the [**SEARCH**] button on the remote control or the front panel.



3. The Search menu appears.
   - If you have not checked <**POS USE**> in the "**Main Menu** > **Device** > **POS Device**" menu, the Search menu does not include the <**POS Search**> item. (Page 54)
4. The search can be restricted by the Auto Delete function.
   Refer to "**Setting the Recording** > **Record Option**". (Page 60)



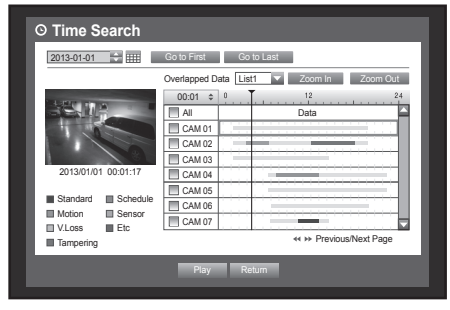
- Overlapped data : It only appears if there exists overlapped data on a certain time, produced due to the change of DVR's time setup. The latest data comes first, from <**List0**>.
  It does not appear in <**Backup Search**>.

Time Search

You can search for recorded data of a desired time.
As the time to display may be different depending on the time zone and the DST standard time, the time of data recorded in the same time can be displayed differently depending on time zone and DST settings.

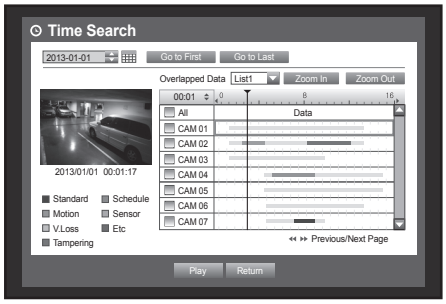
Using the mouse may help make setup easier.

1. Select <**Time Search**> in the <**Search**> menu.
2. Select a date to search.
   - Refer to "**Using the Calendar**". (Page 39)
3. The record data on the specific date will be listed.
   The display bar is different according to the data type.
   So check the data type for the color in the left pane.
4. Use direction buttons (▲▼◄ ►) to set the search criteria and press the [**ENTER**] button.



- Go to First : Moves to the earliest date.
- Go to Last : Moves to the most recent date.
- Time : Enter a time to perform the search or use the up/down button <▲▼> to select one.
- Previous/Next Page : Moves to the previous / next page. (Use the remote control or the buttons on the front panel.)

- Zoom In : The map enlarges in detail.
  It will switch in the sequence of 24 hours - 16 hours - 8 hours - 4 hours.
- Zoom Out : The map will switch in the reverse order of the detailed mode above.
  It will switch in the sequence of 4 hours - 8 hours - 16 hours - 24 hours.



▪ Double-click a desired time to zoom it in/out.

- Preview : Click <**Channel**> and select (click, drag) a time in <**Duration**> to display a still image for the portion.
  - If the selected channel does not contain any recorded data, it will be marked black.

5. Select a data item and click <**Play**>.
The screen switches to the data playback mode.

Event Search

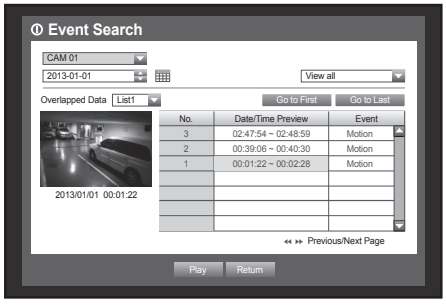
You can search for events by the channel and play them.

Using the mouse may help make setup easier.

1. Select <**Event Search**> in the <**Search**> menu.

2. Use direction buttons (▲▼◄ ►) to set the search criteria and press the [**ENTER**] button.

▪ All record events on a specific date will be found. (Normal/Schedule recording included)



- Date/Time Preview : If you select a data item in the list, the still image of the selected data will be displayed in the left preview pane.
- Event : Displays the type of the event that occurred.

3. Select a data item and click <**Play**>.
The screen switches to the event data playback mode.

Backup Search

Searches for backup data in the connected backup device.
Only data in the format of DVR is included in the search.
Refer to <**Type**> in "**Backup** > **Setting the Backup**". (Page 64)

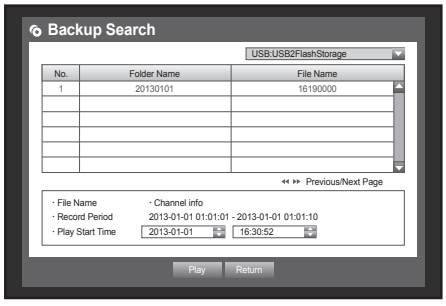
Using the mouse may help make setup easier.

1. Select <**Backup Search**> in the <**Search**> menu.

2. Use direction buttons (▲▼◄ ►) to set the search criteria and press the [**ENTER**] button.

- Record Period : Displays the record period.
- Channel info : Displays the recorded channel.
- Play Start Time : Select a time that you start playing.

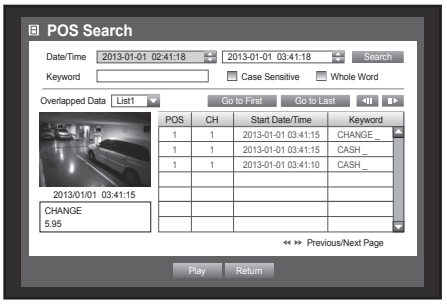
3. Select a data item and click <**Play**>.
The screen switches to the backup data playback mode.



POS Search

You can search for data in the POS device that is connected to the DVR.

You can use the mouse to select the related items.



1. Select <**POS Search**> in the <**Search**> menu.
2. Use direction buttons (▲▼◄ ►) to set the search criteria and press the [**ENTER**] button.
   - You can enter specific text to refine your search.

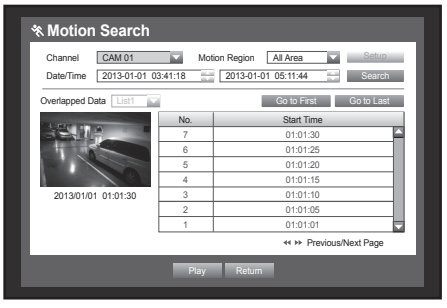
- Keyword : Use the virtual keyboard to enter a keyword.
- Search Criteria :
  - <**Case Sensitive**> : If selected, search will be performed case-sensitively.
  - <**Whole Word**> : If selected, only the exact matches with the keyword will be found.
- Preview : Select a data item in the list to display the preview image. Information about the image will be displayed on the bottom of the screen.
- ◄II II► : You can use these buttons to accelerate your search if you have a huge list of search results.

3. Select a data item and click <**Play**>.
   The screen switches to the POS data playback mode.

Motion Search

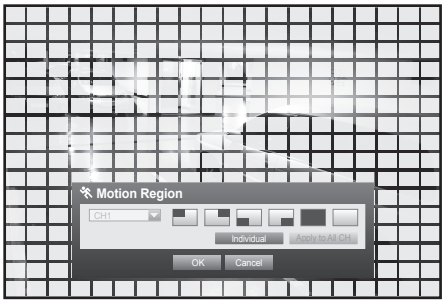
If a motion is detected in each channel, you can set a desired area to perform the search.

You can use the mouse to select the related items.



1. Select <**Motion Search**> in the <**Search**> menu.
2. Use direction buttons (▲▼◄ ►) to set the search criteria and press the [**ENTER**] button.
   - If you set the motion area to <**Manual Area**>, the <**Setup**> button will be activated.

- Motion Region : Select an area to perform the search.
  - All Area : Searches for all areas of the selected channel.
  - Current Area : Searches for the motion area for each channel specified in "**Motion Detection** > **Setting the Motion Detection Area**". (Page 62)
  - Manual Area : You can set the motion area manually.
- Setup : The Setup button will be activated only if you have set the motion area to Manual. Press this button to display the area setting window.
- Date/Time : The Date/Time will be automatically set by the hour, and the end time will be automatically set to one hour later than the start time if it is set.
- Preview : Select a data item in the list to display the still image of the item.



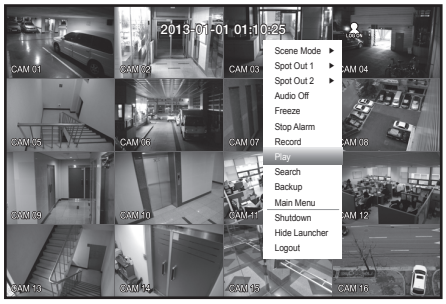
3. Select a data item and click <**Play**>.
   The screen switches to the motion data playback mode.

Play

You can play data stored in the HDD and backup a desired portion of the data.

Using the mouse may help make setup easier.

1. In Live mode, click <**Play**> in the right-click menu or < ▶ > in the launcher menu, or press the Play button on the remote control or the front panel.
2. Use the up/down button (▲▼) to select a menu.
   - For data search, refer to <**Search**>. (Page 82)

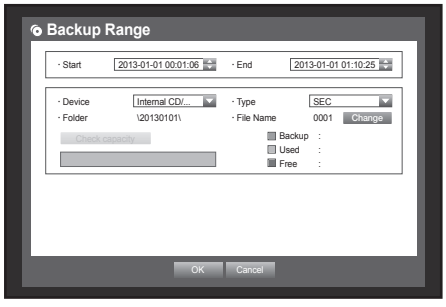


3. Select a data item and click <**Play**> in the Search menu. The selected data is played and the play launcher appears on the screen.
   - If there is an existing data, <**Play**> will start immediately without performing the search.



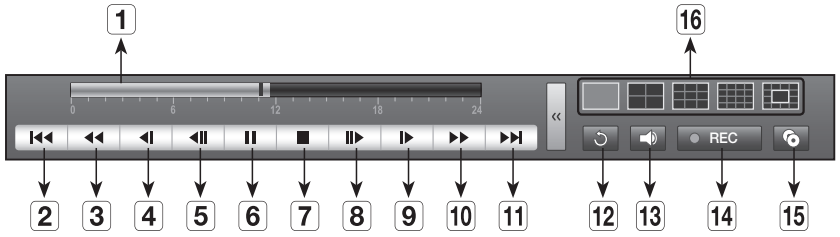
- Playback Information : Displays the date and time of the current data in the top corner.

- Backup : Click < ⊙ > to set the current time to the start time of backup; you can specify a backup area using the mouse (yellow triangle).
  Click < ⊙ > again to set the current time to the end time of the backup and the "**Backup Range**" window appears.
  - Type : Supports formats of DVR, AVI and SEC.
    Refer to a list of formats in "**Setting the Backup**". (Page 64)
  - Device : Select a backup device.
  - Check Capacity : Enables you to check the capacity of the selected storage device.



4. If you want to return to the Live screen in Play mode, click < ■ > in the launcher menu or press the [■] button on the remote control or the front panel.

Using the Playback Button



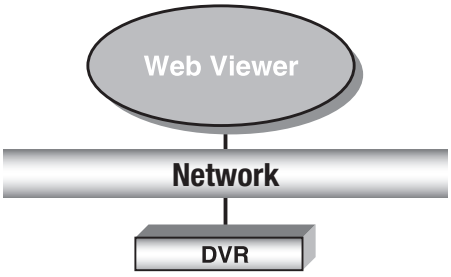
Part Names		Functions
1	Play Timeline	Indicates the current playback point, and can be used to move.
2	Skip Backward	Moves backward by unit time. (Move by 10 minutes)
3	Backward Fast Play	Used for quick backward playback. (2 - 64x speed)
4	Backward Slow Play	Used for backward frame-by-frame search while in PAUSE. (1/2 - 1/8x speed)
5	Step Backward	Moves backward by one frame at a time.
6	Pause	Stops playing the current video temporarily.
7	Stop	Stops playback and moves to the live screen.
8	Step Forward	Moves forward by one frame at a time.
9	Forward Slow Play	Ensured to play forward up to 4 channels simultaneously at a low speed. (1/2 - 1/8x speed) ▪ In a split mode, the real time playback may not be supported, depending on the record quality, resolution and number of channels. And some frame rates may be supported.
10	Forward Fast Play	Used for quick forward playback. (2 - 64x speed)
11	Skip Forward	Moves forward by unit time. (Move by 10 minutes)
12	Return	Return to the search setup screen.
13	Audio	Sets Audio ON/OFF.
14	REC	Records all channels in Live mode.
15	Partial Backup	Begins backup of the selected section of the video being played, with the specified starting/ending point.
16	Mode Switch	Click a desired playback mode or press [**MODE**] to switch the screen mode in sequence. ▪ The grey area in the center of the 13-split mode plays the Live channel. The default channel of the Live mode is CH1, which can be changed later.

web viewer

INTRODUCING WEB VIEWER

What is Web Viewer?

Web Viewer allows remote access to your DVRs. You have access to li ve video, archived video, PTZ control (if configured), etc.



Product Features

- Remote access from a standard browser
- Supports PTZ camera controls
- Supports 1, 4, 9, 16 camera viewing formats (maximum of 16 cameras in the list).
- Gets jpeg, bmp or png format images to print and save to “Print or Save jpeg, bmp or png format images”.
- Record video in AVI format-compatible with popular media players. (needed the H.264 codec)

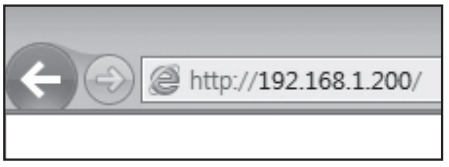
System Requirements

The following lists the minimum suggested hardware and operating system requirements needed to run the Web Viewer.

OS	Windows XP Professional Windows Vista Home Basic / Premium Windows 7, Windows 8 Mac OS 10.6 and later versions
Web Browser	- Windows OS : Internet Explorer 7.0 or higher, Firefox 3.6 or higher, Chrome 12 or higher - Mac OS : Safari 5 or higher, Firefox 3.6 or higher.
CPU	Intel Core i5 Quad
Memory	2 GB or more
HDD	50 MB (Installation space required) * Additional HDD space required for recording. Recorded file size will vary depending on recording quality settings.

CONNECTING WEB VIEWER (Windows)

1. Open your web browser and type the IP address or URL of DVR into the URL address box.



- "**192.168.1.200**" is set to IP by default.
- Set to an available IP address in IP Installer or "**Network** > **Connection Mode**".
- The URL connection will be enabled only when the DDNS connection settings have been completed.

2. A user with the admin permissions should provide the admin ID and password. A registered user should provide the user ID and password.



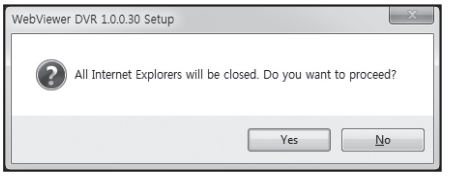
- The default administrator ID is "admin", and the password must be set when the user log in at the first time.
- Set password for your wireless network if you use the product with a wireless router. Being not protected with password or using the default wireless router password may expose your video data to potential threat.
- To prevent from your personal information being exposed, please change your password every 3 months. Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

- It allows up to 10 simultaneous access including the Admin and general users.
- It does not allow multiple login of the Admin user.
- Password of the Admin and general users can be changed in <**Permission Management**> menu of the DVR.
- Normal users should have set <**Viewer**> under <**Permission Management**> to "**Use**" before connecting to the Web Viewer. (Page 43)
- All settings are applied by the DVR's settings.
- If you change such as the permission settings with logged in to the Web Viewer, you may go back to the log in screen.

3. Click <**Install ActiveX Control...**>.



4. When the installation confirm message appear, click [**Yes**] button.



5. When a program installation wizard window appears, press the [**Install**] button to install the program.



6. When the program installation is complete, the Explorer window closes.
Open the web viewer window again to log in.
Live Viewer's main screen appears when you log in successfully after installing the program.



USING LIVE VIEWER (Windows)

The Live Viewer screen consists of following :



Menu		Functions
1	**Menu Selection**	Switches into corresponding menu screen by clicking each menu.
2	**Address, Name, Time**	Displays the IP, model name, time, etc. of connected DVR.
3	**DVR Time, PC Time**	Select <**DVR Time**> or <**PC Time**> for the OSD time information display setting of the Live Viewer.
4	**Split Mode Selection**	Selects the type of split screen and specify the channel displayed in Display Pane.
5	**Change Channel**	Switches into previous/next channel or perform Auto Sequence. Click Auto Sequence button to display the Time Interval Selection menu.
6	**CAPTURE**	Saves current video for selected channel in designated path.
	PRINT	Prints current video image for selected channel through designated printer.
	AVI Save	Records the live video in AVI file format in designated path, and then stops recording. Recording status icon is displayed on screen during recording.
	Audio	Sets the sound connected to each channel to ON/OFF.
	OSD	Select the format of OSD information that will be displayed.
7	**PTZ**	Controls connect PTZ camera(s).
	OSD Menu	Goes to the relevant menu screen of a camera, which supports OSD menu and changes the menu.
8	**User ID, Logout**	Displays the user's ID. Click Logout icon for logout.
9	**Display Pane**	Displays the video of camera connected to DVR.

- Dual Stream selection: Right click on any of live channels, there will be a drop-down menu profile1/profile2. The default setting is profile1, that's to say, video displayed as profile1 resolution. If you select profile2, Video will be displayed as profile2 resolution.
  profile1: Live transfer resolution, Profile 2: Recording resolution

OSD Information Display



1. The channel number of the connected DVR are displayed.
2. Either the <**DVR Time**> or the <**PC Time**> will be displayed as the current date and time, according to your configuration.
3. It displays whether the PTZ controls are active.
4. Shows Audio On/Off status.
5. Alarm icon appears when alarm is issued.
   It disappears when pressed the [**ALARM**] button of the DVR.
6. Motion icon appears when a motion is detected.
7. Tampering icon appears when a tampering is detected.
8. Shows the recording status.

- If you have set PTZ cameras for the DVR, "**PTZ**" is displayed on the screen. Select a PTZ camera channel and use the [**PTZ**] button for camera control.

Connected DVR

This displays the IP address and the status of the connecting DVR.



- Connection failure message
  No Response : Appears when the DVR does not respond.
  Access Denied : Appears when the maximum number of users is exceeded.
- The number of simultaneous connections are limited to 10.

Setting the Display of the OSD Time Information

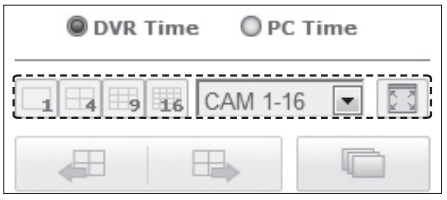
Select <**DVR Time**> or <**PC Time**> for the OSD time information display setting.

- **DVR Time** : Based on the time of the connected DVR
- **PC Time** : Based on the time of the PC currently running the Web Viewer.



Split-Screen

Click split mode selection button to switch to the corresponding screen mode.





SINGLE MODE



QUAD MODE



NINE MODE



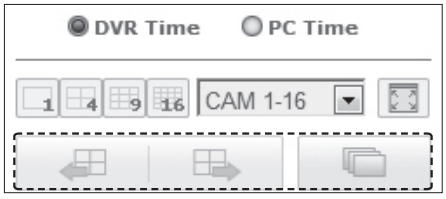
SIXTEEN MODE

To switch to full screen mode

Click <[ ]>.
Current split screen appears in full screen.
Press the [**ESC**] key to exit the full screen mode.



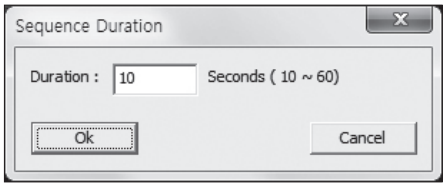
Changing the Live Screen Mode



- 16-split mode does not support "**Sequence**", "**Previous**" and "**Next**".

• : When this button is clicked, the previous screen appears.
  - In SINGLE MODE, the channel numbers are switched in reverse order.
  - In QUAD MODE, the screens are changed like 1st 4 channels (1~4) → 2nd 4 channels (13~16) → 3rd 4 channels (9~12) → 4th 4 channels (5~8).
  - In NINE MODE, the screens are changed from 9 channels (1~9) to 7 channels (10~16).

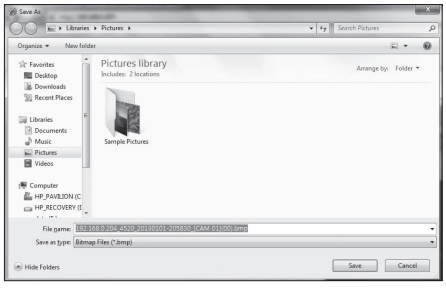
• : When this button is clicked, the next screen appears.
  - In SINGLE MODE, the channel numbers are sequentially switched from 1 to 16.
  - In QUAD MODE, the screens are changed like 1st 4 channels (1~4) → 2nd 4 channels (5~8) → 3rd 4 channels (9~12) → 4th 4 channels (13~16).
  - In NINE MODE, the screens are changed from 9 channels (1~9) to 7 channels (10~16).



• : When this button is clicked, screens are switched at a preset interval.
  - In SINGLE MODE, the channel numbers are sequentially switched from 1 to 16.
  - In QUAD MODE, the screens are changed like 1st 4 channels (1~4) → 2nd 4 channels (5~8) → 3rd 4 channels (9~12) → 4th 4 channels (13~16).
  - In NINE MODE, the screens are changed from 9 channels (1~9) to 7 channels (10~16).

- Default setting time (10 seconds)

To capture a screen

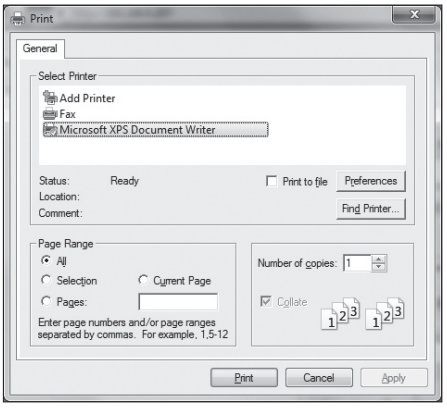


1. Click < > button.
   When a pop-up window appears, select the saving path for captured image.
2. Select the path and name the file. And then click the <**Save**> button.
3. Save current camera's video image as .bmp, .jpg or .png file.

- If the viewer is running without the administrator's permission in Windows Vista/7, you may not save the captured image as .bmp, .jpg or .png file.

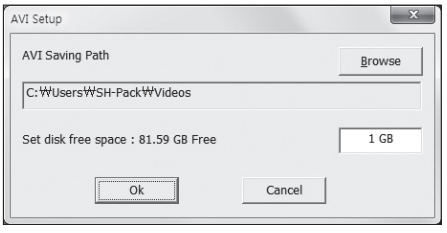
To print a screen

1. Click < > button.
2. Print current camera's video image with the printer connected to the PC operating the Web Viewer.



To save as AVI

1. Click < > button.
   When "**AVI Setup**" window appears, select the record saving path and capacity.
2. Select a desired path, enter the maximum recording capacity, and then click <**OK**> button.
   - Save current channel's video as AVI file. For playing a video clip, you can use the free video player to play the video. (ex: GOM Player, KM Player, etc.)



   - After saving an AVI file, install the CODEC when playing it in Windows Media Player.
   - However, the video may not played properly, depending on the CODEC compliance of the player. At least 1GB of free space is required for recording.

- While recording current data in Web Viewer, you cannot select Split Mode buttons, switch to the previous/next screen, or activate Auto Sequence function.
- If the viewer is running without the administrator's permission in Windows Vista / 7, you may not change a folder when saving a video as AVI file.

Audio

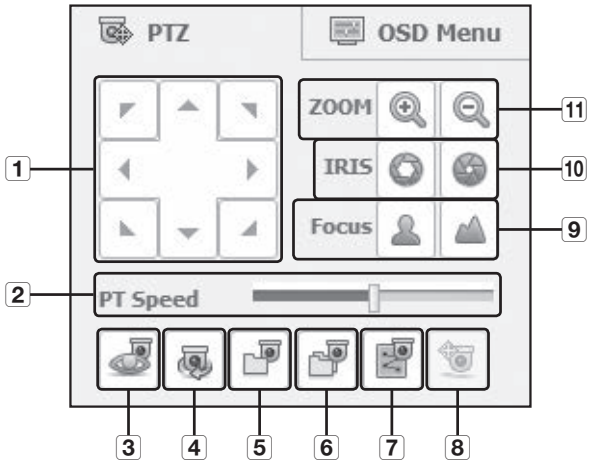
• : Sets audio of each connected channel to On/Off.

OSD

• : Select Show OSD on the Live screen.

Controlling PTZ

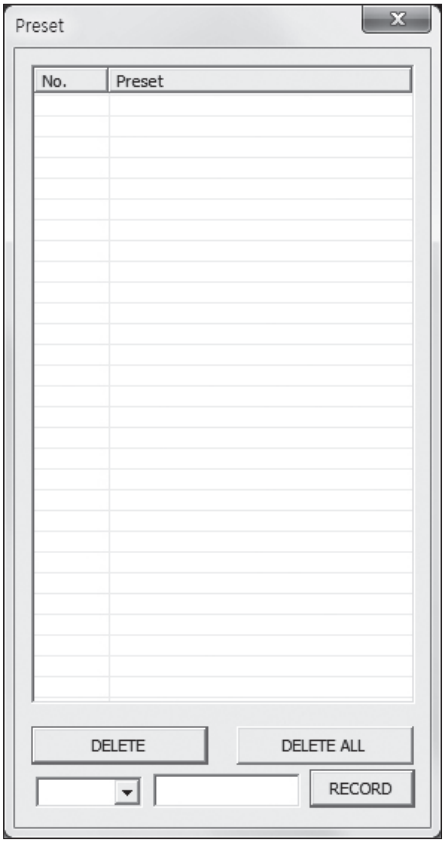
If PTZ camera is connected, the <PTZ> icon appears on screen. When selecting corresponding camera channel, the PTZ tab is provided to allow you to control the PTZ.



Part Names		Functions
1	Direction Adjustment	Adjusts the direction of a camera.
2	PT Speed	Adjusts the PAN, TILT reaction speed.
3	Preset	Sets the preset position for camera framing and moves to designated preset position when selecting a desired preset.
4	Swing	Moves between the preset start point and end point.
5	Group	Moves in the path specified by combining the preset, pattern and auto pan.
6	Tour	Moves in the path specified by combining multiple groups.
7	Trace	Moves camera's framing in the predefined path.
8	PowerPTZ	Click or drag on the screen to control PTZ.
9	Focus	Adjusts the focus of the camera.
10	IRIS	Adjusts image's brightness by controling the camera's iris.
11	ZOOM	Zooms in/out the image by controling camera's zoom.

To set a preset

1. Click < > button to display "**Preset**" window.
2. Click < > to select a desired preset number.
3. Enter the name of preset.
4. Use direction keys to adjust the direction which camera aims at.
5. Click the <**RECORD**> button.



To activate the preset

1. Click < > button to display "**Preset**" window.
2. Select a desired preset to activate from the list.
   The camera's framing moves to the preset position.

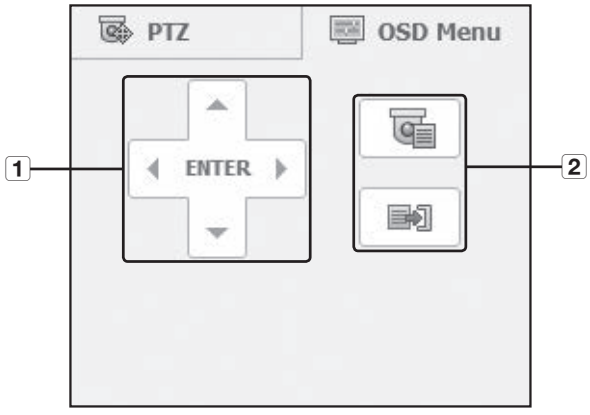
To activate Swing, Group, Tour and Trace

You can activate listed functions in the same manner as using a preset. For more information, refer to corresponding user manul of applicable camera.

- Only selective functions of the camera can be supported, depending on camera.

Controlling OSD Menu

If connected PTZ camera supports the OSD menu, press the < > to enter camera's menu screen to change its settings.



Part Names		Functions
1	Direction Adjustment	You can go to a desired menu.
	ENTER	Selects a desired item.
2	Menu On/Off	You can On/Off camera's OSD menu settings.

▪ For more information about camera's OSD menu, refer to corresponding user manul of each camera.

USING SEARCH VIEWER

The Search Viewer screen consists of following :

- Up to 3 users can access simultaneously.



Menu		Functions
1	Menu Selection	Switches to the corresponding menu screen by clicking each menu.
2	Address, Name, Time	Displays the IP, model name, time, etc. of connected DVR.
3	Split Mode Selection	Selects the type of split screen and selects the channel displayed in Display Pane.
4	CAPTURE	Saves current video for selected channel in designated path.
	PRINT	Prints current video image for selected channel through designated printer.
	AVI Save	Records the live video in AVI file format in designated path, and then stops recording. Recording status icon is displayed on screen during recording.
	Audio	Sets the sound connected to each channel to ON/OFF.
	OSD	Select the format of OSD information that will be displayed.
5	Calendar	Displays the video-recorded date in blue and today in white. Click the date in blue color to display the recorded video information in timeline.
6	Overlapped Data	Displays and zooms in/out recorded video data. If overlapping data found, this function selects one of them to play.

Menu		Functions
7	Play Control	Adjusts current video's playback speed and played time position.
8	Recording Color	Displays the corresponding color depending on recorded data type if you place your mouse cursor on that area.
9	User ID, Logout	Displays the user's ID. Click Logout icon for logout.
10	Display Pane	Plays corresponding data on the screen if you select a search result.

Searching the Recorded Video in the Calendar



Dates having recorded video are marked in blue.
Click a date marked blue to display video information on the timeline. When you click < Today >, it will be synchronized with the system time (date) of the current PC.

To search by date

You can select the search date by using calendar.

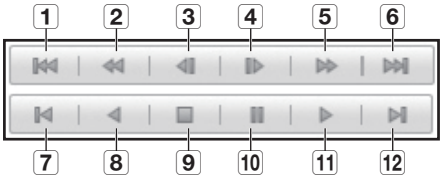
1. Click < « > or < » > to select the year to search.
2. Click < ‹ > or < › > to select the month to search.
   The date including data appears in blue and today appears in red.
3. Click the date to search in calendar.
   The first image of searched video data on the date is displayed on screen and the data is displayed in the timeline.
4. To search video data on today, click < Today >.
   Today's date is selected.

To adjust timeline

If searched data are overlapping, you can select a desired data, move its playback time point, and zoom in/out the timeline.

1. Select the number of data to search if data is overlapping.
   It appears only when data are overlapped and assigns <**0**> to the most recent data.
2. Click your desired time point to play on the timeline.
   The playback start point is moved.
3. Click < + >, < − > to zoom in/out the zoom factor to display time.
4. To show the previous/next timeline in zoomed-in status, click < ◀ > or < ▶ > to go to the left or right.

Names and Functions of Play Buttons



1. Moves backward by 10 minutes from the current playing point.
2. Plays in reverse at doubled speed. The playback speed is doubled up to 64x speed.
3. Moves backward by 1 second from current playing point.
4. Moves forward by 1 second from current playing point.
5. Plays at doubled speed. The playback speed is doubled up to 64x speed.
6. Moves forward by 10 minutes from the current playing point.
7. Moves to the recording start point on the corresponding timeline.
8. Plays in reverse.
9. Stops playing. When resuming playback, it is played from the recording start point.
10. Pauses playing. When resuming playback, it is played from the stopped point.
11. Plays normally.
12. Moves to the recording end point on the corresponding timeline.

VIEWER SETUP

You can configure the DVR settings remotely on the network.

To configure the DVR settings, click <**Setup**>.

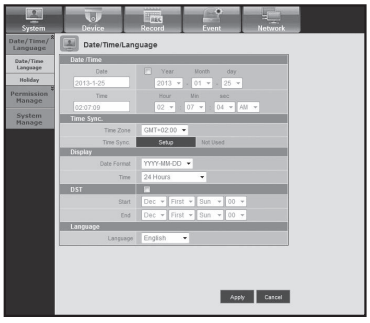
System

You can configure the various settings of the DVR system.

Date/Time/Language

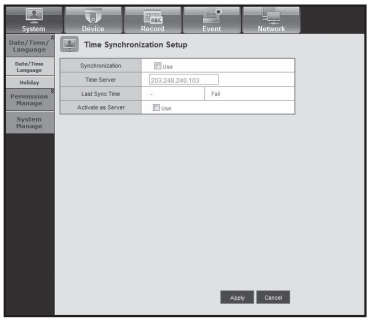
For more information, refer to <**Date/Time/Language**> in the <**System Setup**> menu. (Page 38)

1. Select <**Date/Time/Language**> in the System menu.
2. Configure the DVR settings according to your system environment.



- **Date/Time**

Set the date and time.



- **Time Synchronization Setup**

Set the time synchronization.

- **Display**

Date Format : Set the date type.

Time : Select a time format to display on the screen.

- **DST (Daylight Saving Time)**

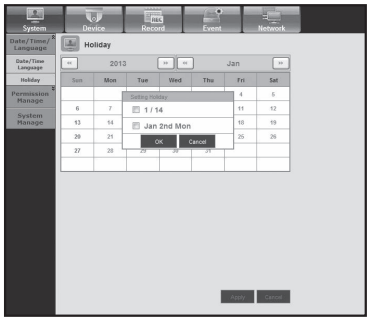
DST is displayed an hour ahead of the standard time of the time zone.

- **Language**

Select a preferred language for the DVR.

Holiday

You can set specific dates to Holidays according to your preferences. For more information, refer to <**Setting Holiday**> in the <**System Setup**> menu. (Page 39)



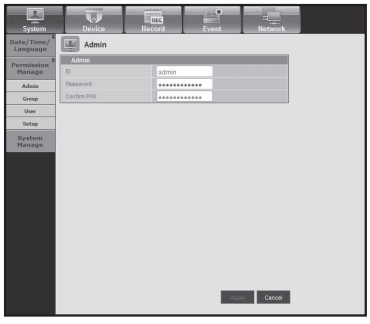
Permission Management

For more information, refer to <**Permission Management**> in the <**System Setup**> menu. (Page 40)

• **Admin**

You can change the admin ID or the password.

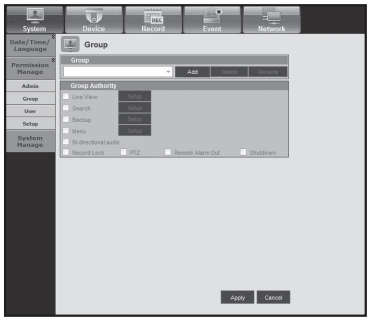
- You can type the ID with alphanumeric characters only.
- For the password, use alphabets and special characters excluding <\> and <">.



• **Group**

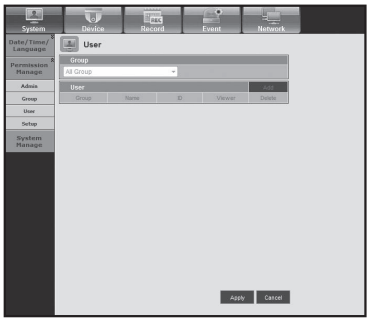
Users are classified into groups and the permission can be set according to the group.

- First of all, add a group.



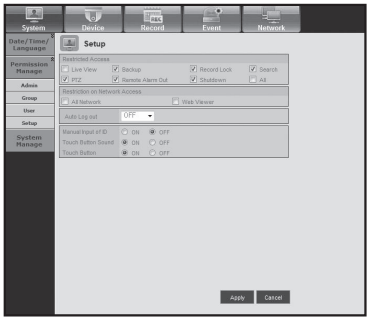
• **User**

You can add, change or remove a user or users.



• **Setup**

You can set the user permission.

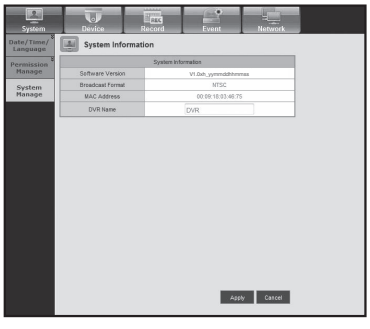


System Management

For more information, refer to <**System Management**> in the <**System Setup**> menu. (Page 44)

• **System Information**

You can see information of the current system.
Check the Software Version, Broadcast Format and MAC Address.



Device

You can check a list of devices that are connected to the DVR and configure the necessary settings.
Click <**Device**> in the menu screen.
For more information, refer to "**Setting the Device**". (Page 48)

Camera

• **Camera**

You can configure the settings of the camera that is connected to the DVR.



You can select the numbers of HD channels.



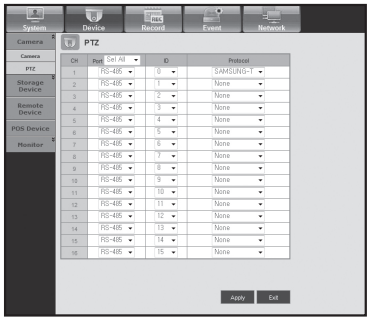
• **Privacy Region**

You can specify a certain area of the camera video to be protected for your privacy.



• **PTZ**

You can configure the settings of the PTZ camera that is connected to the DVR.
Set the ID and protocol.

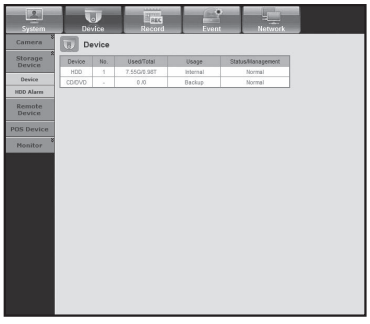


Storage Device

You can check and change the settings of the storage device.

• **Device**

You will see a list of storage devices that are connected to the DVR. You can check the type, used/total, usage and status of the device.



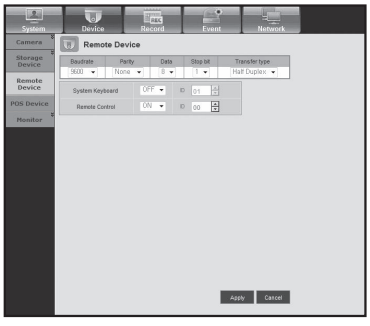
• **HDD Alarm**

You can set the alarm output channel and the alarm duration for an error.



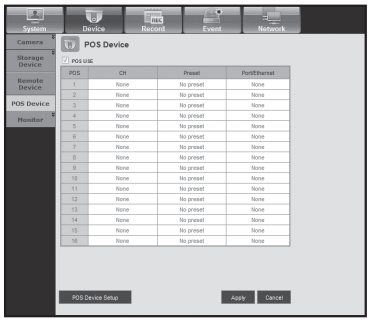
Remote Device

You can see a list of remote devices including PTZ cameras and system keyboards that are connected to the RS-485 port of the DVR and configure the necessary settings.



POS Device

You can set the channel, preset and communication port of the POS device that is connected to the DVR.

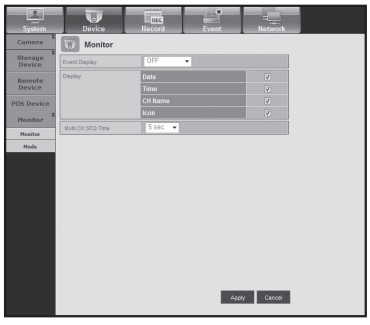


- You cannot set to use the POS device remotely.

Monitor

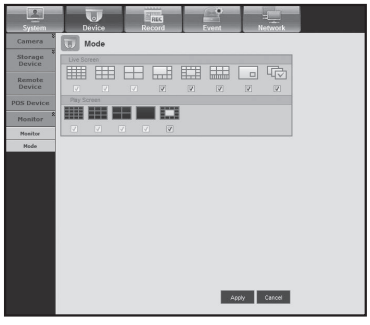
- **Monitor**

You can configure the monitoring screen settings and set the output system.



- **Mode**

You can switch between live mode and play mode.

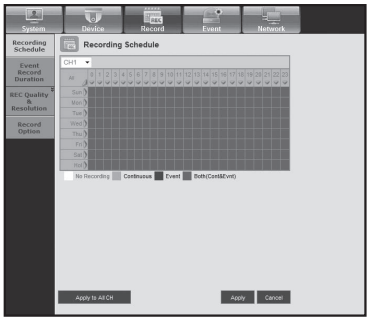


Record

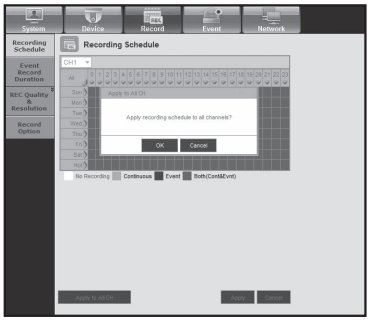
For more information, refer to <**Setting the Recording**>. (Page 58)

Recording Schedule

If you set a recording schedule for a specific date and time, the recording will start at that specific time.

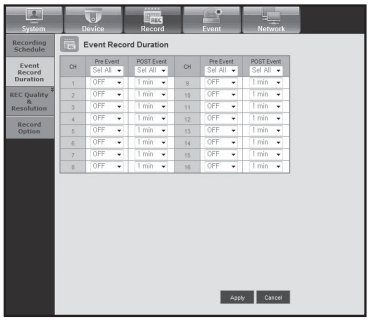


- Apply to All CH : Click <**Apply to All CH**> to display the confirmation window.



Event Record Duration

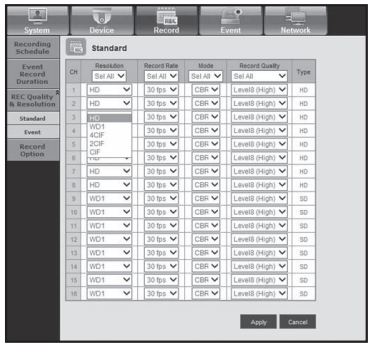
You can set the start and end times of recording that will be activated if an event occurs.

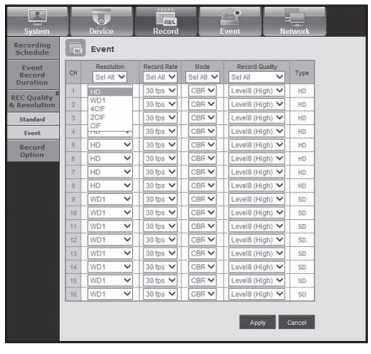


REC Quality & Resolution

• **Standard/Event**

You can set the resolution, frame rate and recording quality for each channel.

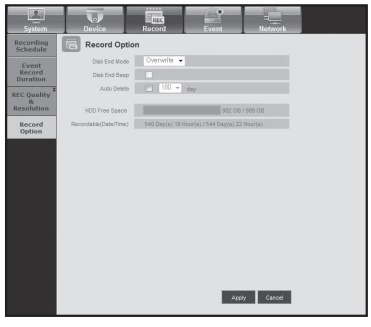




- If HD camera is connected to the current channel, then HD option would be displayed in recording resolution. If you select HD as resolution, standard recording resolution of the channel is set as 1920 x 1080.

Record Option

You can set the Disk End Mode.

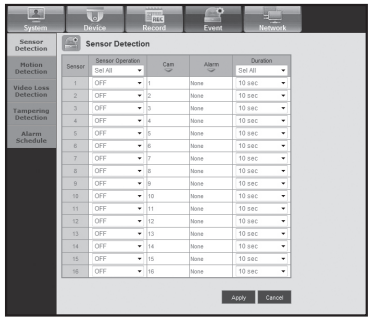


Event

For more information, refer to <**Setting the Event**>. (Page 61)

Sensor Detection

You can set the sensor operation mode and the synchronized camera as well as the alarm output type and the duration.



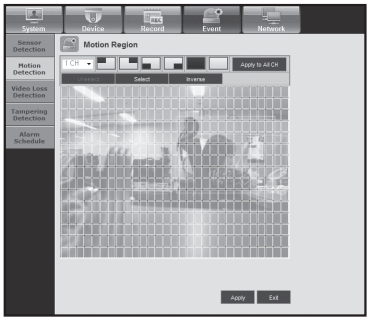
Motion Detection

You can set the motion detection mode and the sensitivity as well as the alarm output type and the duration.



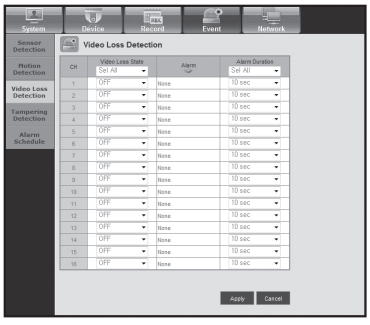
• **Motion Region**

Set the target motion detection area.



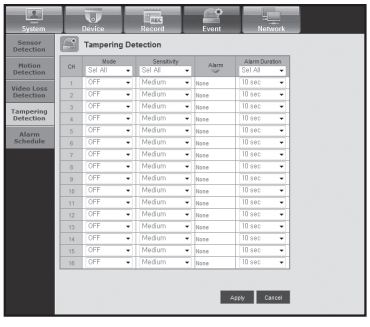
Video Loss Detection

You can set the alarm output time if a video loss occurs.



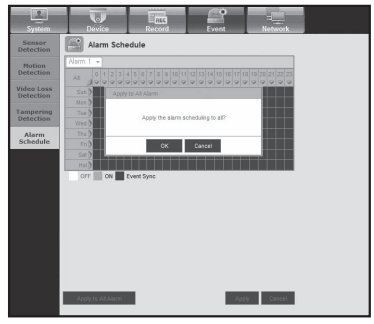
Tampering Detection

You can set whether to generate alarm and its dwell time for video tampering events.



Alarm Schedule

You can schedule the alarm output according to the day of the week and the time.
The default setting is Event Sync, which activates the alarm only if an event occurs.



Network

For more information, refer to <**Network Configuration**>. (Page 66)

Connection Mode

A remote user can access the DVR via the network to check the current mode and the IP address.

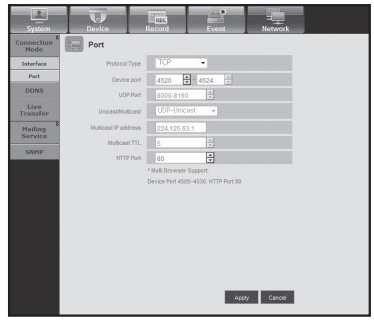
- **Interface**

You can set the network connection route.



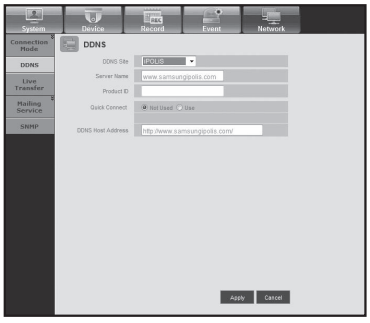
- **Port**

You can configure the protocol related settings.



DDNS

You can check the DDNS settings.

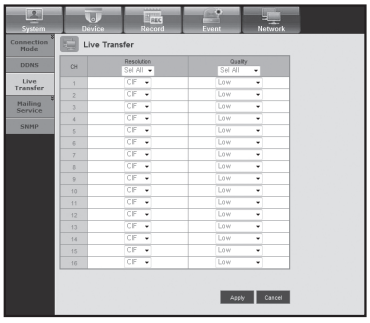


Live Transfer

Sets the quality of the image that is transferred from the DVR to the network.

- **Live Transfer**

A remote user can set the image resolution of the transferred data.

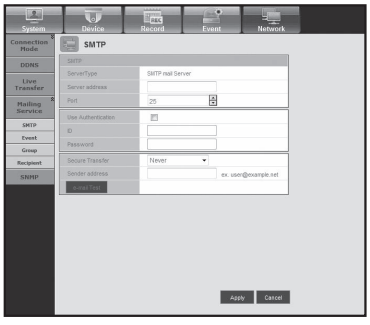


Mailing Service

You can specify the SMTP server that sends a mail if an event occurs and set the recipient group and users.

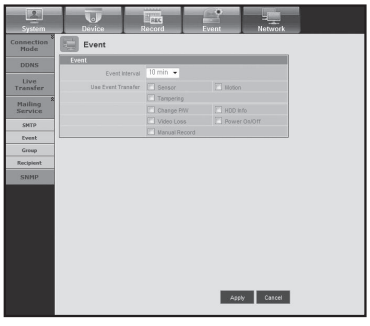
- **SMTP**

You can set the server that sends mails and specify if you use the authentication process.



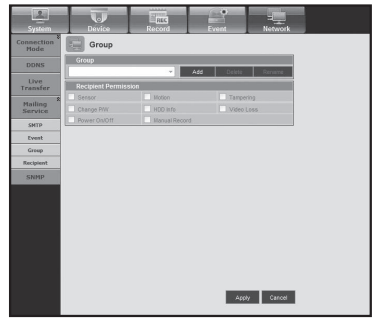
- **Event**

You can set the event interval and specify which events the server sends mails for.



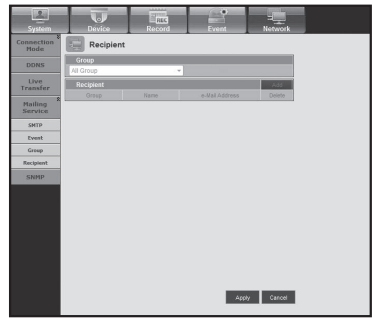
• **Group**

You can add a group to receive the mail if an event occurs and set the permission to receive the event mail for each group.



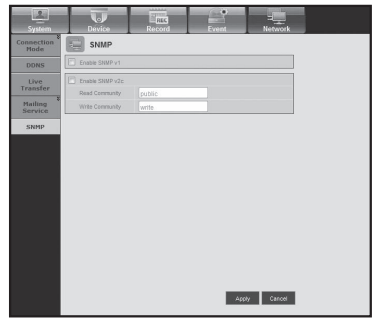
• **Recipient**

You can add a user or users who will receive the mail.



SNMP

You can configure the settings for the SNMP protocol.



ABOUT

Click <**About**>.

Displays the model name of connected DVR and the version of Web Viewer.

Safari on MAC.

If you want to use SRD-Series DVR Web Viewer with Safari Browser on a Mac, please refer to this user guide and install Multi Viewer with firmware upgrade if necessary.

- Mac OS versions available : 10.6 or later version
- Silverlight : 5 or later
- Safari : 5 or later

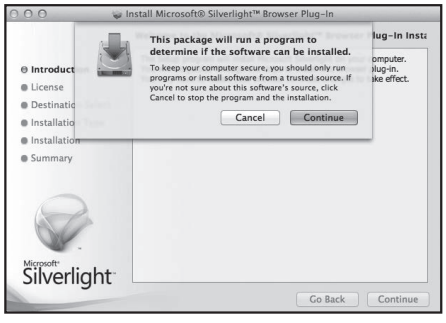
1. Click [**Click now to Install**] to display the installation screen as shown.



2. Double-click the [**Silverlight.pkg**] icon to display the Silverlight plug-in installation screen as shown.



3. Click [**Continue**] to start installing Silverlight plug-in. When done, you will see the screen as below.



4. Click [**Close**] to exit from the Silverlight plug-in installation screen.



- **If Microsoft Silverlight plug-in is already installed**

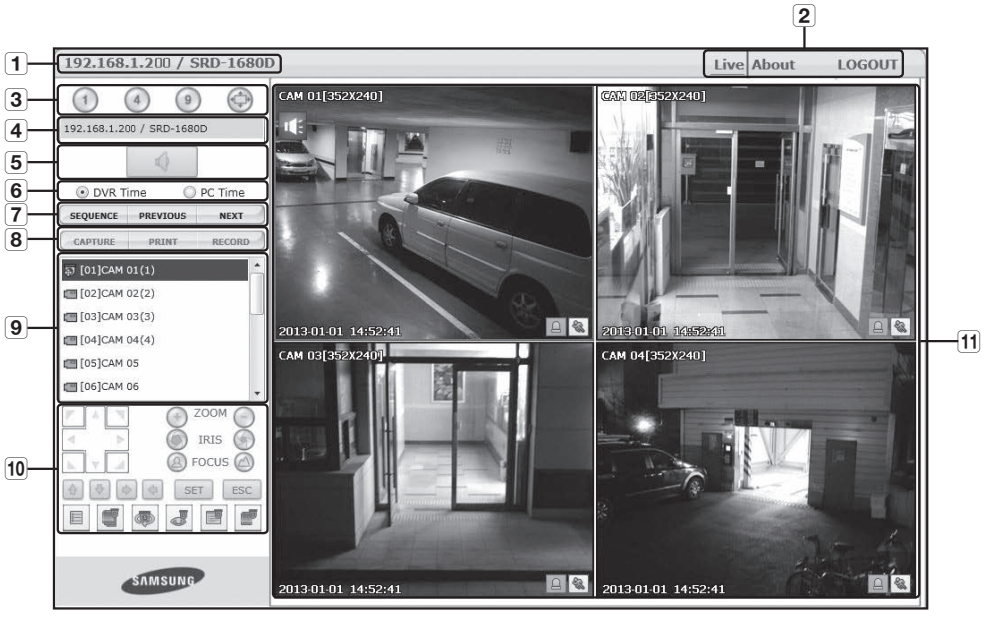
1. Use a web browser to connect to the DVR.
2. If Silverlight plug-in is already installed, you will see the login screen as shown.
3. If the login screen does not appear, check if the DVR set is connected properly with a valid IP address.



- If automatic proxy is activated and an invalid DNS server is specified while configuring network, the Internet access may not be available.
- For more details on using the Web Viewer, please refer to "**Connecting Web Viewer (Windows)**". (Page 88)

USING LIVE VIEWER (Mac)

The Live Viewer screen consists of following :



Menu		Functions
1	**Name, Address**	Displays a connected DVR's IP address and model name.
2	**Menu Selection**	Consists of <**LIVE**> ,<**ABOUT**> and <**LOGOUT**> menu.
3	**Split Mode Selection**	These buttons are used for the screen split and full screen mode. ■ Supports up to a maximum of 9 channels due to performance constraints of Silverlight.

Menu		Functions
4	Name, Address	Displays a connected DVR's IP address and model name.
5	Audio	Sets the sound connected to each channel to ON/OFF.
6	DVR Tim, PC Time	Select <**DVR Time**> or <**PC Time**> for the OSD time information display setting of the Live Viewer.
7	Change Channel	Switches into previous/next channel or perform Auto Sequence. Click Auto Sequence button to display the Time Interval Selection menu.
8	CAPTURE	Saves current video for selected channel in designated path.
	PRINT	Prints current video image for selected channel through designated printer.
	RECORD	Starts and stops recording. If you cannot play the file recorded from the web, please install the H.264 CODEC. ex) MAC: perian_1.2.3.dmg (http://perian.org)
9	Channel	Indicates connected DVR's channels.
10	PTZ	Controls connect PTZ camera(s).
11	Display Pane	Displays the video of camera connected to DVR.

MOBILE VIEWER

What is Mobile Viewer?

Mobile Viewer is management software that enables you to connect to DVR (Digital Video Recorder) remotely and control the video playback and PTZ operations (if configured) in real time.



Key Features

- Remote access via Smart phone
- Voice Recognition
- 1-split and 4-split modes supported in Live Viewer
- Supports single channel search function
- Switch channels using the touch-sensitive LCD panel
- PTZ camera operations supported
  (complies with the protocol of the connected DVR)
- Up to 16 channels supported

Compatible Smartphone

This application is optimized for

- iOS v5.1, v6.0, v6.1 (iPhone 4/5, iPad 3/4)
- Android OS v2.3, v4.0, v4.1 (Galaxy S2/S3, Galaxy Note)

▪ For more information, refer to the user manual.
(http://www.samsungcctv.com)

backup viewer

SEC BACKUP VIEWER

You can play a file that is backed up in the format of SEC.

Backup in SEC format produces backup data file, library file and self-executable viewer file.

If you run the backup file viewer, the backup data file will be automatically played.



Recommended System Requirements

PCs with a lower specification than the recommended below may not fully support forward/backward and high-speed playback.

- OS : Windows XP professional, Windows Vista, Windows 7
- CPU : Intel i5 2.8GHz or faster
- RAM : DDR PC-3200 1G or more
- VGA : Geforce 6200 or higher

backup viewer

Part Names			Functions
1	Split Screen		Set the screen's aspect ratio to be displayed.
			The screen switches to the selected split screen mode. ▪ Split screen function is not supported during the CD/DVD backup.
2	Screen Printout		Saves the current video's image as in an image file. Supports jpeg file format.
			Prints out the current screen. You should have installed the appropriate printer driver before you can print out the screen.
3	Audio		A toggle button. Each time you press this button, the audio output will toggle between activated and deactivated.
			You can adjust the volume level from 0 to 100.
4	Watermark		Press the button to enable file tampering detection, to detect data file forging.
5	Deinterlace		You can enable the De-interlace function.
6	Show OSD		Check the OSD checkbox to display the OSD information on the backup playback screen. Information such as backup date, day of the week, time, model name, and channel number will be displayed on the screen.
7	Enlarge / Reduce Timeline		Collapses the time range that is displayed on the range bar of the storage time. You can collapse the range bar until the overall range is shortened to 24 hours.
			Enlarges the time range that is displayed on the range bar of the storage time. You can enlarge the range bar until the overall range is extended to 1 minute.
8	Restore Timeline		Restores the timeline to the default.
9	Display of storage time range		Displays the time range of a stored video file. You can move the gridline of the range bar to select a time point to play.
10	Playback Control		You can adjust the video playback of the timeline.

▪ If it has a high recording rate and is played at high speed playback of 16x or higher speed in the backup viewer, actual playback speed may not reach the set playback speed.

PRODUCT SPECIFICATION (SRD-880D/1680D)

Item		Details	
		SRD-880D	SRD-1680D
Video	Inputs	8CH HD-SDI	8CH HD-SDI/16CH SD(0.5–1 Vpp, 75 ohm)
	Resolution	NTSC: 1080p, 720p (Max: 30fps) PAL: 1080p, 720p (Max: 25fps)	NTSC: 1920x1080, 1280x720, 960x480, 704x480 (Max : 30fps) PAL : 1920x1080, 1280x720, 960x576, 704x576 (Max : 25fps)
Live	Frame rate	240fps NTSC, 200fps PAL	480fps NTSC, 400fps PAL
	Resolution	NTSC: 1920x1080, 1280x720 PAL : 1920x1080, 1280x720	NTSC: 1920x1080, 1280x720, 960x480, 704x480 PAL : 1920x1080, 1280x720, 960x576, 704x576
	Multi Screen display	1/4/7/9/13/SEQUENCE/PIP	1/4/7/9/13/16/16A/PIP/Sequence
Performance			
OS	Embedded	Linux	
Recording	Compression	H.264	
	Record Rate	• SRD-880D NTSC: Up to 240fps @ 1920x1080 / PAL: Up to 200fps @ 1920x1080 NTSC: Up to 240fps @ 1280x720 / PAL: Up to 200fps @ 1280x720 • SRD-1680D NTSC: Up to 240fps @ 1920x1080 / PAL: Up to 200fps @ 1920x1080 NTSC: Up to 240fps @ 1280x720 / PAL: Up to 200fps @ 1280x720 NTSC: Up to 480fps @ 960x480 / PAL: Up to 400fps @ 960x576 NTSC: Up to 480fps @ 704x480 / PAL: Up to 400fps @ 704x576 NTSC: Up to 480fps @ 704x240 / PAL: Up to 400fps @ 704x288 NTSC: Up to 480fps @ 352x240 / PAL: Up to 400fps @ 352x288	
	Mode	NTSC : Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1~30 fps)	
		PAL : Manual, Schedule (Continuous/Event), Event(Pre/Post), Time lapse (1~25 fps)	
	Event	Video Loss, Motion(Level 1~10), Alarm, Tampering(Level 1~3)	
	Overwrite modes	Selectable (Stop/Continuous)	
	Pre Event	Up to 30 sec (5, 10, 20, 30 Sec)	
	POST Event	Up to 6 hour (5, 10, 20, 30 sec, 1, 3, 5, 10, 20 min, 1, 2, 3, 4 ,5, 6 hour)	
Search & Playback	Search mode	Date/time, Event, Back up, Pos, Motion (✲All Search Included Prview Function)	
	Playback function	Fast Forward/Backward (x2,x4,x8,x16,x32,x64) ✲Backward Play with I-frame Only Slow Forward/Backward (x1/2,x1/4,x1/8) Step Forward/Backward (x2, x4,x8,x16,x32,x64) ✲ Backward Play with I-frame Only	

appendix

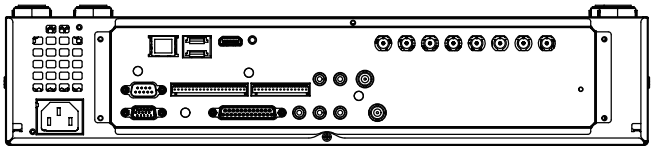
Item		Details	
		SRD-880D	SRD-1680D
Network (IPv4)	Transmission speed	NTSC : 1~2M(240fps) / PAL : 1~2M(200fps)	Option 1) NTSC : 2M(240fps),1M~4CIF(480fps)/ PAL : 2M(200fps),1M~4CIF(400fps) Option 2) NTSC : 4CIF(120fps),2CIF(240fps),CIF(480fps)/ PAL : 4CIF(100fps),2CIF(200fps),CIF(400fps)
	Bandwidth	Up to 64Mbps	
	Bandwidth control	Selectable	
	Stream	H.264(4CIF/2CIF/CIF Selectable)	
	Remote users Maximum	Search(3)/Live Unicast(10)/Live Multicast(20)	
	Protocol support	TCP/IP, DHCP, PPPoE, SMTP, NTP, HTTP, DDNS, RTP, RTSP, SNMP	
	Monitoring	Smart viewer, Webviewer, Mobile Viewer	
Smart phone	Smart Phone	Android, iOS	
	Protocol support	RTP, RTSP, HTTP, CGI	
	Remote users Maximum	Live(1), Playback(1CH)	
Storage	Internal HDD	Up to 4 SATA HDDs	
	External HDD	Up to 2 expansion bay (※Model : SVS-5R/5E)	
	DVD Writer (Back-up)	YES	
	USB (Back-up)	2 USB Ports	
	File Format (Back-up)	BU(DVR Player), EXE(Include Player), AVI	
Security	Password Protection	1 Admin, 10 Group , 10 User per 1 Group	
	Data Authentication	Watermark	
Interface			
Monitors	VGA	1 VGA (1280x720, 1280x1024, 1920x1080)	
	HDMI	1 HDMI (1280x720, 1280x1024, 1920x1080)	
	Main Composite	–	
	Spot Composite	Digital Spot (2CH) ※ Incldued OSD On Screen, Multi mode Support(1CH)	
	Loop Outputs	–	

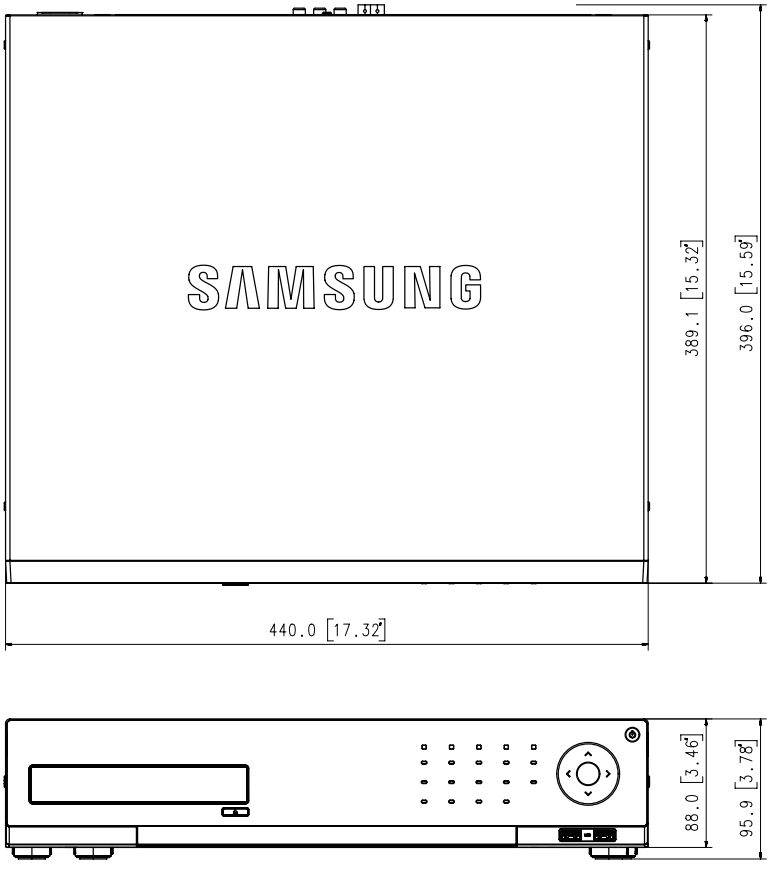
Item		Details	
		SRD-880D	SRD-1680D
Audio	Inputs / Output	8CH line in (Built in 4CH, Option : Audio Extension Cable)/ 1CH line out	16CH line in (Built in 4CH, Option : Audio Extension Cable) / 1CH line out
	Compression	G.711	
	Sampling rate	8KHz	
Alarm	Inputs / Output	Terminal 8 Inputs (NO/NC) / Terminal 4 relay Outputs (NC), Rating : 30V DC/2A, 250V AC/0.25A	Terminal 16 Inputs (NO/NC) / Terminal 4 relay Outputs (NC), Rating : 30V DC/2A, 250V AC/0.25A
	Remote notification	Notification via e-mail	
Connections	Ethernet	1 RJ45 10/100/1000 Base-T	
	Serial interface	RS-485(Half) for PTZ, System Keyboard ※ POS interface(VSI-Pro)	
	USB	USB 2.0, 2 ports	
	e-SATA	2 External SATA ports	
	Application Supoort	Mouse, Remote Controller	
	Protocol support	• Samsung-E/Samsung-T/Pelco-D/Pelco-p/Panasonic/ Phillips/ AD/ DIAMOND/ ERNA/ KALATEL/ VCL TP/VICON/ ELMO/GE • PTZ Control via Coaxial Cable (Samsung CCVC, Pelco-C (Coaxitron))	
General			
Electrical	Input Voltage / Current	100 to 240 VAC ±10%; 50/60 Hz, Autoranging	
	Power consumption	Max. 60 W (with 1x HDD)	
Environmental	Operating Temperature / Humidity	+0°C to +40°C (+32°F to +104°F) / 20% to 85% RH	
Mechanical	Dimension (W x H x D) H (leg not included)	W440 x H88 x D389.1 mm (17.32" x 3.46" x 15.32")	
	Weight (With hard disks)	6.39 kg (14.08 lb)	6.81 kg (15.01 lb)
	Rack mount kit	2 EA	
Lauguage		Korean, Japanese, Chinese (Simplified), English, French, German, Spanish, Italian, Russian, Polish, Czech, Turkish, Netherlands, Portuguese,Swedish, Danish, Thailandais, Rumania, Serbia, Croatia, Hungary, Greek, Chinese (Traditional), Finnish, Norwegian (25 Language)	

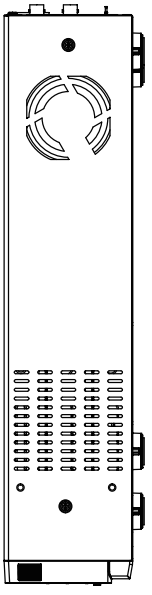
PRODUCT OVERVIEW

• SRD-880D

unit : mm(inch)

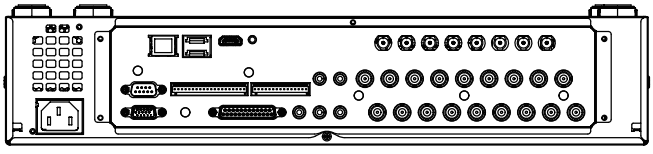


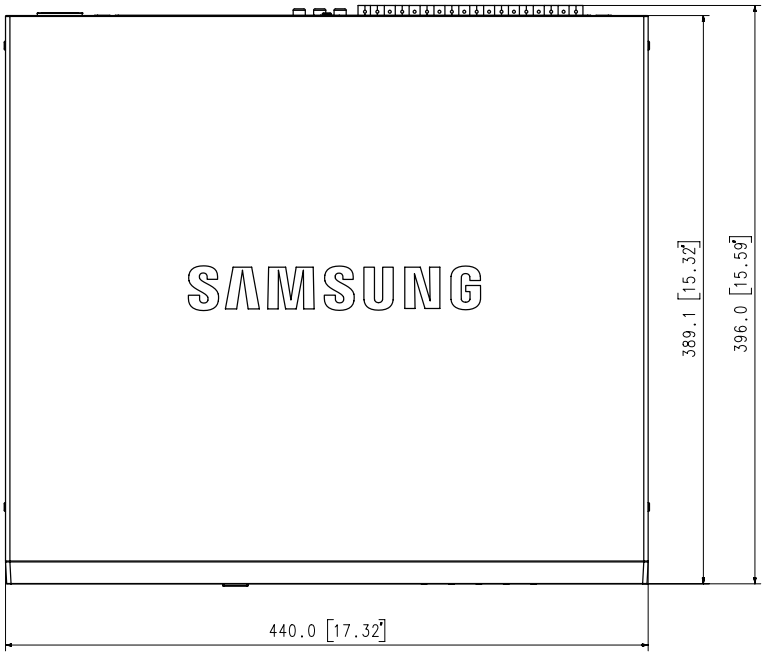


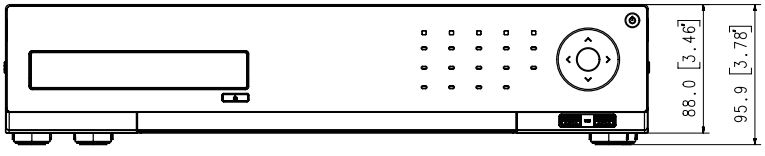


• SRD-1680D

unit : mm(inch)







DEFAULT SETTING

This returns the factory default settings.

The settings are made as follows;

- Use System/Load Factory Default in MENU

▪ The default settings are based on SRD-1680D.

▪ The default administrator ID is “admin”, and the password must be set when the user log in at the first time.
To prevent from your personal information being exposed, please change your password every 3 months. Note that the security and other related issues caused by careless management of password shall be be in the charge of the user.

Category	Details			Factory Default
System Settings	Date/Time/Language	Date/Time/Language	Date	YYYY-MM-DD
			Time Format	24 hours
			Time Zone	GMT
			Time Synchronize	OFF
			DST	OFF
			Language	English
	Permission Management	Admin	ID	admin
		User	Group	All Group
		Setting	Restricted Access	Backup/Record Lock/ Search/PTZ/Remote Alarm Out/Shutdown
			Auto Logout	OFF
			Manual Input of ID	OFF
			Touch Button Sound	ON
			Touch Button	ON
	System Management	System Information	Broadcast Format	NTSC/PAL
Device	Camera	Camera	Video	ON
			Audio	OFF
			CH Name	CAM 01 ~ CAM 16
			SEQ-Dwell Time	5 sec
		PTZ	ID	Camera No.
			Protocol	None
		Screen Setup	Brightness	50
			Contrast	50
			Color	50
	Storage Device	HDD Alarm	Check Alarm Output Port	OFF
			Duration	OFF
			Replace Alarm Output Port	OFF
			Duration	OFF

Category	Details			Factory Default
Device	Remote Device	Baudrate		9600
		Parity		None
		Data		8
		Stop bit		1
		System Keyboard		OFF
		Remote Control		ON(00)
	POS Device			OFF
	Monitor	Monitor	Event Display	OFF
			Display	All
			Multi CH SEQ Time	5 sec
			VGA/HDMI	1280X1024
		Spot Out	Multi Spot	OFF
			Spot Out 1	SEQ
			Spot Out 2	SEQ
			Event Display	OFF
		Mode	Live Screen	ALL
			Play Screen	ALL
Recording	Recording Schedule	CH1~CH16		Both(Cont&Evnt)
	Event Record Duration	PRE Event		OFF
		POST Event		1 min
	REC Quality/Resolution	Normal Recording	Resolution	CIF
			Frame Rate	NTSC: 7fps PAL: 5fps
			Record Quality	Level 4
		Event	Resolution	4CIF
			Frame Rate	NTSC: 7fps PAL: 5fps
			Record Quality	Level 4
	Record Option	Disk End Mode	Setup	Overwrite
			Disk End Beep	OFF
		Auto Delete		OFF
Event	Sensor Detection	Sensor Operation		OFF
		Camera		Camera No.
		Alarm		None
		Duration		10 sec

Category	Details			Factory Default
Event	Motion Detection	Mode		OFF
		Sensitivity		Level10(high)
		Alarm		None
		Duration		10 sec
		Motion Region		All Area
	Video Loss Detection	Video Loss State		OFF
		Alarm		None
		Duration		10 sec
	Tampering Detection	Mode		OFF
		Sensitivity		Medium
		Alarm		None
		Duration		10 sec
	Alarm Schedule	Alarm1		Event Sync
Network	Connection Mode	Interface	IP Type	Static
			Transfer Bandwidth	2Mbps
			IP Address	192.168.1.200
			Gateway	192.168.1.1
			Subnet Mask	255.255.255.0
			DNS	168.126.63.1
		Port	Protocol Type	TCP
			Device Port	4520~4524
			HTTP Port	80
	DDNS	DDNS Site		OFF
	Live Transfer	Resolution		CIF
		Quality		Low
	Mailing Service	SMTP	Server	OFF
			Port	25
			Use Authentication	OFF
			Secure Transfer	Never
		Event	Event Interval	10 min
			Use Event Transfer	OFF
		Group	Group	OFF
			Recipient Permission	OFF
	SNMP		Enable SNMP v1	OFF
			Enable SNMP v2c	OFF

TROUBLESHOOTING

Symptom	Countermeasures
The system does not turn on and the indicator on the front panel does not work at all.	• Check if the power supply system is properly connected. • Check the system for the input voltage from the power source. • If the problem persists even after you have taken the above actions, check the power supplier and replace it with a new one if neccessary.
Some channels display just a black screen even if they receive video sources.	• Check if the camera connected to the system properly displays the image. Sometimes, this problem may occur on a camera that is not properly connected to the video source. • Check if the camera is properly supplied with power. • Sometimes, this problem may occur on a channel with weak video signal from a video distributor that is connected to multiple systems. In this case, input the video source of the camera directly into the DVR. This may find the cause and solve the problem.
If I press the [**REC**] button on the front panel, the REC indicator does not flash, nor the player start recording.	• Check if there is a free space on the HDD for the recording. • Check if the record mode is set to **ON** in the record mode setting.
The screen displays the logo image repeatedly.	• This may occur from a problem with the main board, or the related software is corrupt. Contact the nearest service center for more information.
The Channel button does not work on the Live screen.	• The Channel button does not work if the current screen is in the event monitoring mode. In the event monitoring screen, press the [**ALARM**] button to exit the screen and select a channel.
The cursor will not move to the Start button when I start the calendar search.	• Check if the channel and the date that you want to play are marked with the V symbol. Both channel and date should be checked before you can start playing with the Start button.
When the alarm sounds, I press the [**ALARM**] button on the front panel to release the alarm but it does not work. The alarm persists and I could not set it off in any way.	• Press the [**MENU**] button on the front panel to release the alarm in the following way: 1) To release the event monitoring mode : Monitoring Mode – set the duration of the event monitoring to Off. 2) To release the alarm sound : Event Record Mode - Alarm (Motion Detection/Video Loss/Tampering Detection) – deactivate the alarm sound. 3) To release the event : Event Record Mode - Alarm (Motion Detection/ Video Loss/Tampering Detection) – set the mode to Off.
No response is made even if I press the [**PTZ**] button on the Live screen.	• Menu → Camera → Check if the current protocols and other settings in the PTZ device are properly configured according to the PTZ camera.

Symptom	Countermeasures
I've found that the DVR does not recognize as many disks as installed when I have connected multiple external HDDs to the DVR.	• It takes time for the DVR to recognize multiple external HDDs. Try again in a moment and if the problem (of failure to recognize as many HDDs as connected) persists, it may occur due to a mechanical error of the HDD installed. Try again with a different HDD.
A message of "Need to reset date/time." Is displayed on the screen.	• This message is displayed if there occurs a problem with the time setting of the internal clock or an error in the clock itself. Contact the retailer or the service center for more information.
The time bar is not displayed in Search mode.	• The timeline can switch between normal and extension mode. In extension mode, the time bar may not be displayed in the current timeline. Switch to normal mode or use the left or right button to navigate through the time bar.
The "NO HDD" icon and an error message are displayed.	• Check the HDD for connection. If the problem persists in a normal condition, contact the nearest service center to have the HDD checked by the service personnel.
I have installed an additional HDD on the DVR but it does not recognize the HDD.	• See the compatibilty list to check if the additional HDD is supported by the DVR. For the compatibility list, contact the retailer where you purchased the DVR.
I have connected an external storage device (external SATA HDD) to the DVR but the DVR seems not to recognize it.	• See the compatibility list of external storage devices to check if the connected device is supported by the DVR. For the compatibility list, contact the retailer where you purchased the DVR.
If I press the ESC key in full screen mode of the WebViewer, the system does not switch to a normal split mode.	• Press the ALT+TAB keys to select 'ACTIVE MOVIE' and press the ESC key again. The system will switch to a normal split mode.
I found it difficult to configure the network settings if using the default search, backup and router settings.	• For more information, refer to the user manual. • If you want to check the basics of the product for a quick start, refer to the quick start guide (backup, search). • If you use the router for network connection, refer to the "**Connecting to the Internet using the router**" section in this manual.
I forgot the password.	• Contact the DVR administrator for help.
Backup data is just not played by the PC or DVR.	• When you are backing up data, you have choices about the player either: PC or DVR. Make your selection before proceeding. • If you are using the PC to play the data, the format of the backup file should be either SEC. • If you are using the DVR for this purpose, formatting backup files should be done by the DVR.
My player does not switch to Live mode while in playback.	• Press the Stop [■] button on the DVR or the remote control, or click the [■] icon on the launcher to switch to Live mode.

Symptom	Countermeasures
Recording does not work.	• If your player does not display a Live image at all, that indicates recording does not work so first check if you see an image on the screen. • Recording does not work if the recording settings are not properly configured. 1) Manual Record: Press the [**REC**] button on the front panel of the DVR or on the remote control to start recording. 2) Scheduled Record: Specify a desired time in Menu – Record – Recording Schedule. Recording will start at the specified time. - <**Continuous**> Record: Recording will proceed in any conditions at the specified time. - <**Event**> Record: When an event occurs, recording will perform only if the event is of alarm, motion detection, video loss and Tampering Detection. If there is no event found, recording will not perform. - <**Continuous / Event**> Record: If there is no event found, Continuous recording will perform. Whereas, if an event occurs, Event recording will perform.
The image quality of the recording data is not good.	• Increase the resolution and quality level in Menu – Record – Quality / Resolution. 1) Resolution: Select a bigger size when specifying the recording size. (WD1>4CIF>2CIF>CIF) The recording image in the CIF format shows a deteriorated quality as it is enlarged from a small-sized image. 2) Record Quality: Specify a bigger level for the recording quality. • If you increase the resolution and the recording quality, the data size increases accordingly. So the HDD will be filled faster. Overwriting will overwrite the existing data so recording will proceed at a shorter interval.

OPEN SOURCE ANNOUNCEMENT

The software included in this product contains copyrighted software that is licensed under the GPL/LGPL. You may obtain the complete Corresponding Source code from us for a period of three years after our last shipment of this product by sending email to help.cctv@samsung.com

If you want to obtain the complete Corresponding Source code in the physical medium such as CD-ROM, the cost of physically performing source distribution might be charged.

- GPL Software : linux kernel, Sysvinit, dosfstools, wget, msmtp, busybox, cdrtools, dvd+rw-tools, iconv, smartctl, uboot, minicom, openssl, bash, lm_sensors, parted, procps, util-linux 2.19.1, xfsprogs 3.1.7
- LGPL Software : glibc, vmstat, inetutils, calendarview.js, libiconv
- OpenSSL License : OpenSSL
- Boost Software License: Boost-1.43.0 (http://www.boost.org/)
- COMMON DEVELOPMENT AND DISTRIBUTION LICENSE: cdrtools 2.01.01
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Version 2, June 1991

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Version 2, June 1991

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