

SAMSUNG TECHWIN

NETWORK VIDEO RECORDER

User Manual

SRM-872



SAMSUNG

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SAMSUNG

Network Video Recorder User Manual

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✧ Design and specifications are subject to change without prior notice.

✧ The initial administrator ID is "admin" and the password should be set when logging in for 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. Please change your password every three months to safely protect personal information and to prevent the damage of the information theft. Please, take note that it's a user's responsibility for the security and any other problems caused by mismanaging a password

Overview

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.



STANDARD APPROVALS



This equipment has been tested and found to comply with 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..

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 adding a hard disk drive or external storage (USB memory, USB HDD, etc), check if it is compliant with this product. For the compatibility list, contact the retailer.
- Use industrial use 'Micro SD'(not included). It saves data on SD in lower temperature and changes to HDD when HDD reaches operational temperature.
- Place GPS Antenna evenly out of vehicle toward sky. If antenna installation is wrong, it receives unstable data. Normal GPS error distance is 16m in stop, 30m in moving.

WARNING

Caution

- Power off before installation to extend power cord, use AWG(American Wire Gauge) 18 or thicker.
- When Install GPS antenna, attach it on flat place outside of vehicle with accessories. GPS antenna must head to the air. Wrong installation causes unstable data receiving. GPS error range is 16m when stops, 30m when moving. When install GPS antenna in the vehicle, purchase and use 'Active Antenna(2.85V)'.
• Must use vehicle use batteries. Fuse may be broken when you connect to 'always on' power supply.
- Battery lifecycle can be shorten if battery status not good. Use good status batteries.
- 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, 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 -25°C ~ 50°C (-13°F ~ 122°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 0°C ~ 60°C (32°F ~ 140°F).

Likewise, the hard drive may not work at a temperature below the guaranteed one.

Ethernet Port

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

Security Precautions

The initial administrator ID is "admin" and the password should be set when logging in for 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. Please change your password every three months to safely protect personal information and to prevent the damage of the information theft.

Please, take note that it's a user's responsibility for the security and any other problems caused by Mis-managing a password.

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Product Features

- Provide Ultimate reliability with embedded linux System
- Dedicated Database structure for more stability.
- CMS(Central Monitoring System) support
- Use same UI on NVR, CMS and web viewer.
- Web monitoring, Searching and setup available.
- Built in Media Player for backup playback
- USB support for Mouse and external storage.
- HDD/SSD and Micro SD support
- Mobile device support (IPhone and Android)
- Digital zoom
- Compact size for vehicle installation
- Backup storage support such as USB memory stick
- Built in GPS – E-Map support
- Industrial standard in Enduring Temperature limit
- Built in power support (PoE).
- Apply military product level test in vibration and shock test.
- I/O Box (Sensor, Alarm, G-Sensor, Status LED)
- Event detection through G-sensor in I/O Box
- Control Box (IR input, Emergency Button, Status LED, Audio-Out)

Package Contents

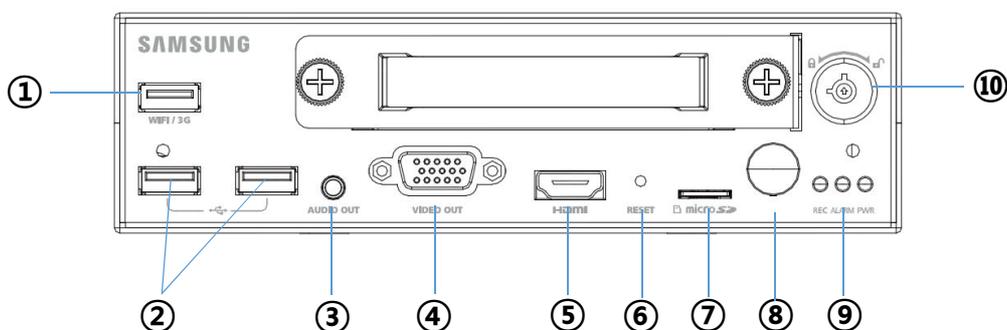
The following components are included in product box

		
NVR Main unit	IO BOX	Control Box
		
Power cable(1ea)	RS232 connect cable(2ea)	RJ45 UTP cable (2ea)
		
GPS Antenna	Remote Control & Battery	CD (User manual)
		
Quick Guide	HDD fix screw and Key	Rear cover

- Part color and design may differ due to the manufacture

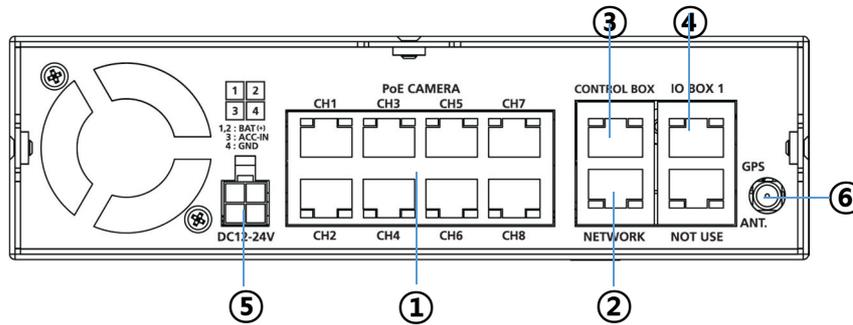
Front & rear view and details

Front



Name		Description
1	WiFi / 3G USB	Connect USB module when use WiFi or 3G communication(optional)
2	USB port	Use for mouse connection or external storage.
3	Audio output	Sound output as line output
4	Video output	Connect VGA monitor to view display
5	HDMI output	Connect HDMI monitor
6	RESET switch	Use when restart system
7	Micro SD Slot	Insert Micro SD for recording
8	IR sensor	Receives signals from remote controller
9	LED	Display NVR status
10	Lock Key	Lock HDD device. This must be locked to start system.

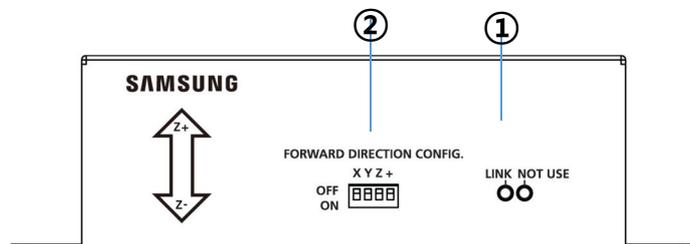
Rear



Name		Description
1	Poe Camera	Connect IP cameras. System supports power over Ethernet when use PoE IP camera
2	NETWORK	Connect network cable for CMS and Web view
3	CONTROL BOX	Connect to control box
4	IO BOX 1	Connect to IO box
5	PWR	Connect power supply from vehicle
6	GPS	Connect GPS Antenna (SMA type)

IO Box

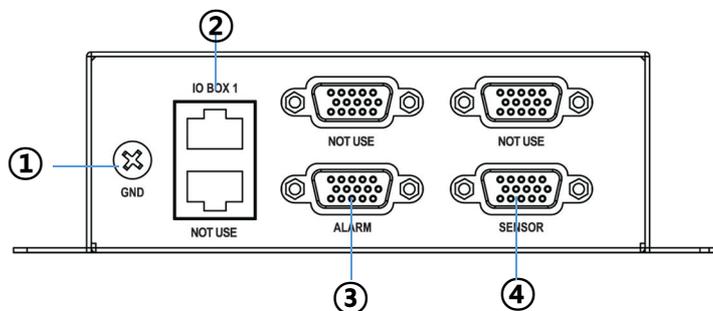
Front



name		Description
1	LED Display	Display following status. -Link : Shows connection status of IO BOX
2	Dip Switch	Set moving direction of vehicle.

**For more details, see page 62 'IO BOX Installation'.*

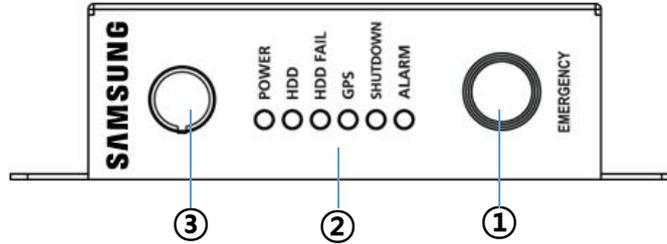
Rear



name		Description
1	GND	Ground connection. Connect to vehicle body
2	IO BOX 1	Connect to main unit's port.
3	ALARM	Connect to speed pulse of the vehicle. This port can be used for RS232/485.
4	SENSOR	Connect Alarm output to External devices. Additional power required. (Open-collector type)

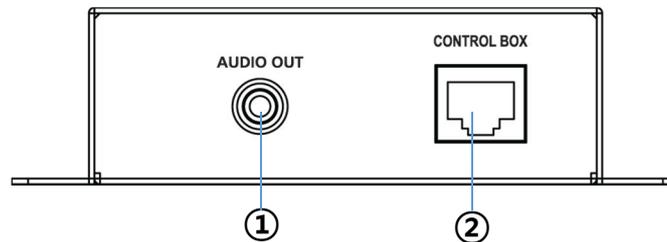
CONTROL BOX

Front



name		Description	
1	Emergency	Start Emergency Recording with this button.	
2	LED lights	POWER	Display power on status of control box
			Light on when storage(HDD, SD) storage is available
			Light on when storage (HDD, SD) is not available.
			Light on GPS position fixed after receiving data
			Light on when 'Shutdown delay' is processing.
			Light on when alarm output is working
3	IR receiving ports	Receives IR signals from remote controller	

Rear

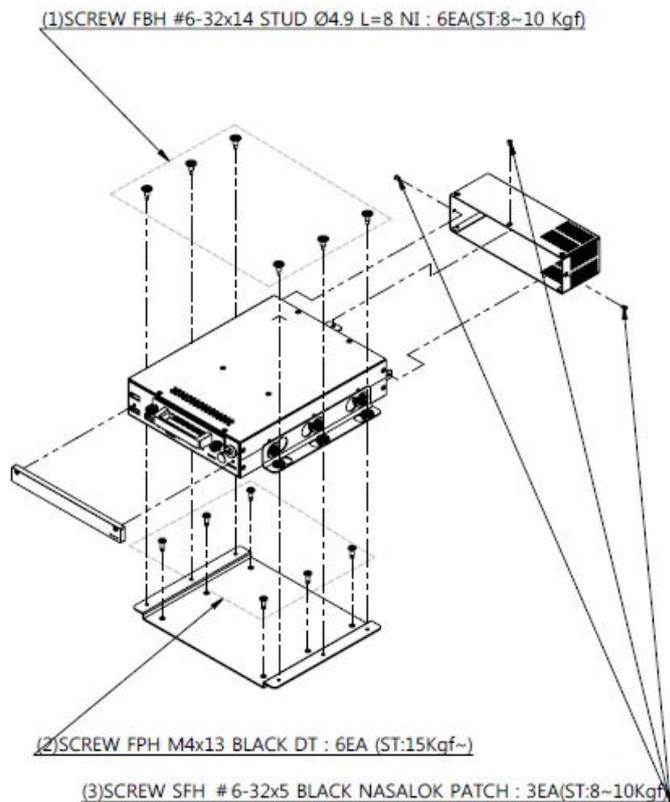
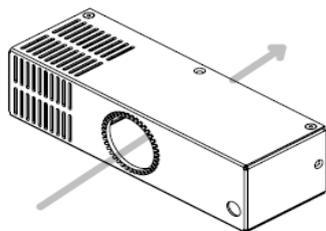


name		Description
1	Audio out	Audio Line out
2	Control box	Connect to main unit's control port

Installation

Disassemble Brackets

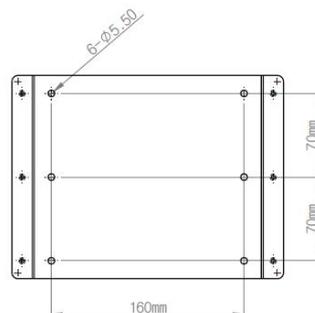
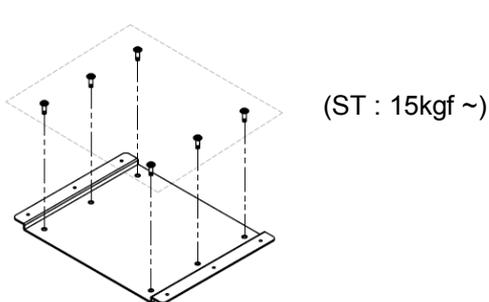
1. Open box and take out product. Then separate bottom bracket with screw(1) in picture.
2. Place 'bottom bracket' on even place and assemble main unit and bracket with screw(2) in picture.
3. Assemble rear cover and main unit with screw(3) in picture. The cables must be passed through rear cover hole as following picture.
4. Tied up installed cables firmly.



Screw Torque = ST (Kgf)

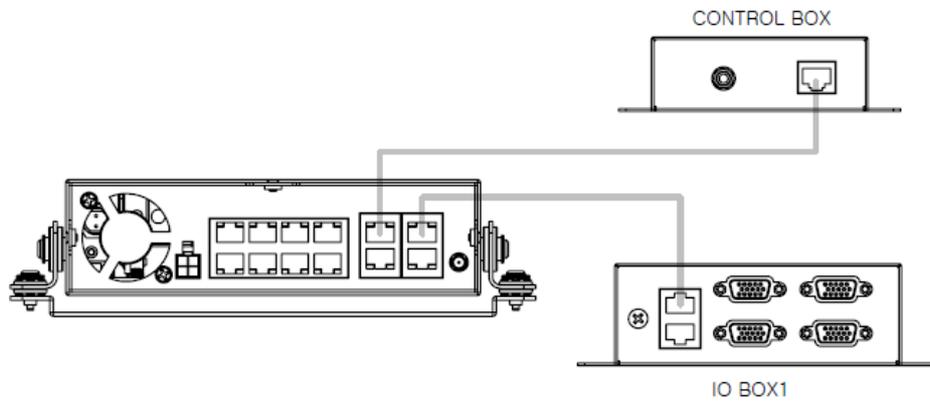
Mount product

Use 6 screws as following picture and mount brackets on installation place.

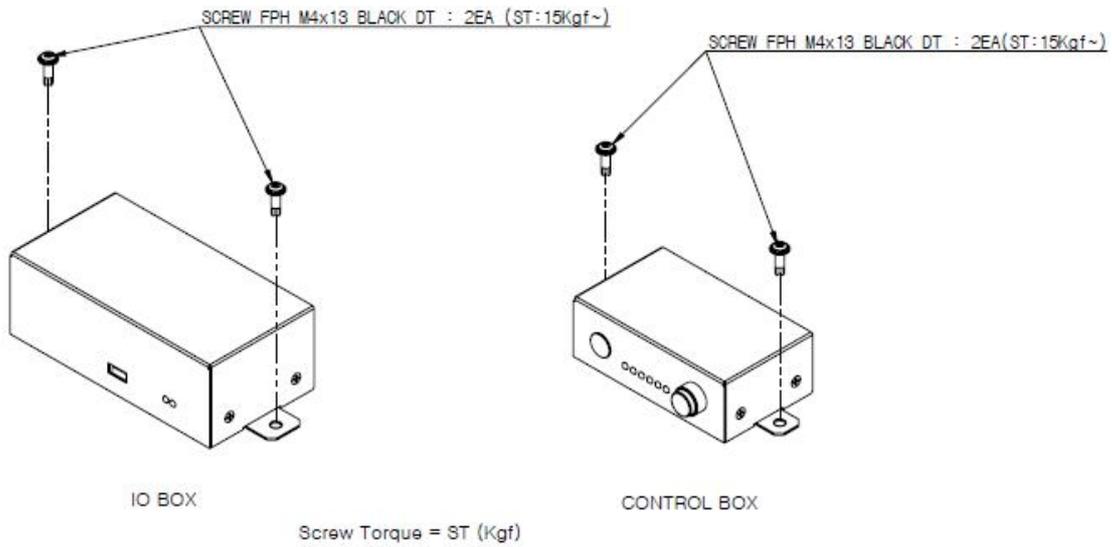


- ST = screw tightening power
- Tighten screw with recommended torque

Install IO & Control box



* Connect IO box and Control box with provided cable as above picture.



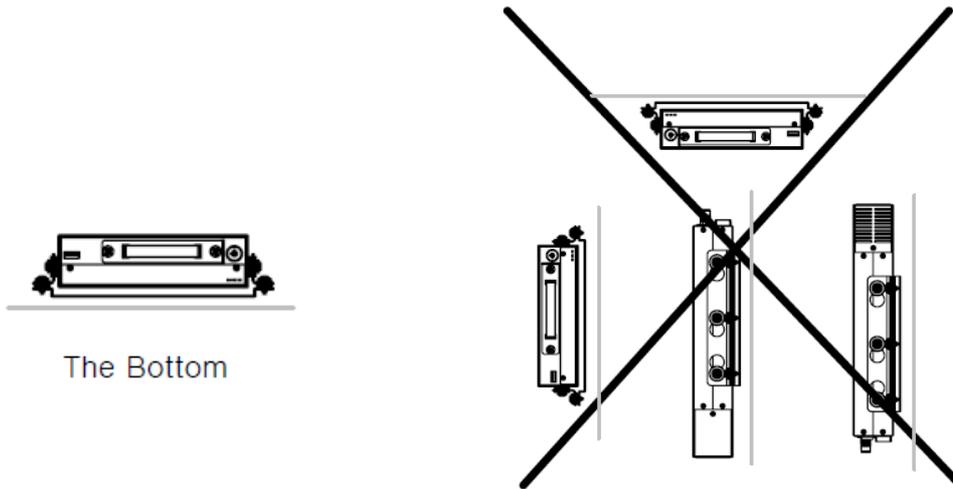
- ST = screw tightening power
- Tighten screw with recommended torque

Vehicle Installations

When install on the bottom, fix the brackets on main unit to the bracket which installed on bottom with 6 screws.

Caution: When installed on bottom, it may cause HDD shock issues. For the torque of screws, see the pictures on previous page. * ST = torque of screws.

Each tool has differ torque, you should follow guided torque when installation.



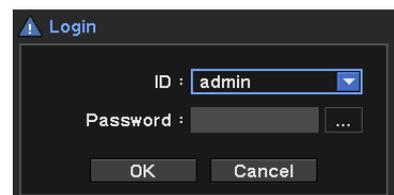
Surveillance

Start/End system

Before install on vehicle, user should set system first. Connect VGA or HDMI monitor If monitor doesn't display because of resolution, press and hold 'zoom' key on remote controller for 5seconds. It adjust system resolution automatically.

Log in

1. Connect power on system.
2. System displays initial screen and start initializing.
3. It shows login screen.
4. To log in, select 'admin' and press 'OK'. No password is configured at initial time.
*if there's configured password, click password field and use virtual keyboard.(see picture)
5. System logs in as 'Administrator'.



Note : password can be set up to 8 numbers with combination of number 0 to 9. Special character (& # < > ` ~) are not allowed. To enter new password, go to 'Menu->System->User' page.



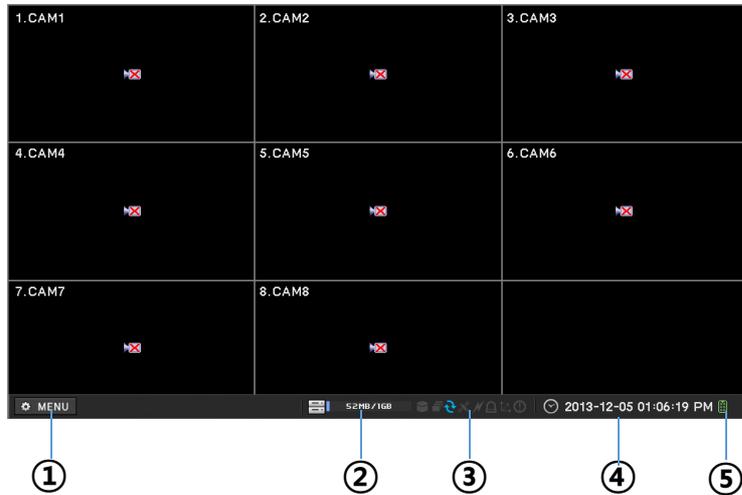
Shutdown system

1. Press 'Menu' and select 'Shutdown' system
Only allowed user can shut down system.



Live Monitoring screen

Monitoring system with VGA or HDMI output on control box after installation on Vehicle.



Name		Description
1	Menu	Open NVR menu.
2	HDD status	Display HDD used status with percentage.
3	Status Icons	 Turn on when archiving data
		 Turn on when sequencing mode works
		 Turned on when HDD is set as overwrite mode
		 Turned on system receiving GPS data
		 Turned on network connected
		 Turned on when alarm is activating
		 Turned on with G-Sensor detects events
		 Turned on Emergency Recording is on.
4	Time & date info.	Display time & date information
5	Remote controller	Turned on when IR remote controller is activating. Remote controller can control system regardless of system id If system ID is set '0',

OSD Icons

Following status icons displayed on each channels.

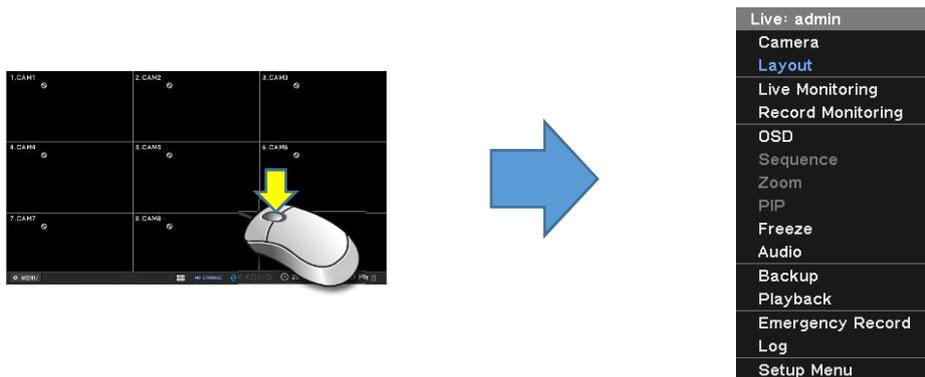
name	Description
	No Recording(greed)
	Recording (Red)
	Emergency Recording
	Event Recording (red)
	High Resolution Playback*

name	Description
	Pre Event Rec.(blue)
	Motion Detection
	Sensor Detection
	IP Camera event Detection

- Displays when it's over than following recorded size and it shows 1fps speed. (4 division 1280x720 60fps, 9 division : 1280x720 30fps)

Contextual Menu on Live

Press right mouse button to see Contextual menu. Frequently used features are in this menu box.



Right click mouse button on live screen

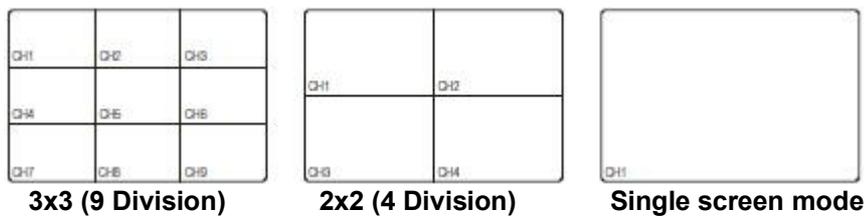
name	Description
1	Camera Select camera and display
2	Layout Select screen mode.
3	Live Monitoring Display IP camera images
4	Record Monitoring Display real time recording status
5	OSD OSD display options.
6	Sequence Sequence live channels
7	Zoom Run Digital zoom. Only available on single channel mode.
8	PIP Run PIP feature. Only available on single channel mode
9	Freeze Freeze current screen.

10	Audio	Select audio channel
11	Backup	Playback recorded data
12	Playback	Move to search playback mode.
13	Emergency Rec.	Start emergency recording.
14	Log	Display current system log
15	Setup	Open setup menu

* The Audio sound output in live mode is based on the channel configuration in 'Menu-Audio'. It has not same as current selected channel.

Live Screen division

Display live screen as 9 division (3x3), 4division (2x2), and single screen mode.



To change layout, click right mouse button on live mode and select camera or 'Lay out' menu.

Layout	>	▼ 2 x 2
Live Monitoring		3 x 3
Record Monitoring		Next

Single Channel Live view

Enlarge selected channel as single full screen.

1. Move mouse to desired channel and double click left mouse button and it display single channel view of selected channel
2. Press desired channel number on remote controller and it display single channel view of selected channel
3. Click right mouse button on live view and select 'Camera' then select desired channel.
4. Double click again back to previous mode.

Backup

1. Click 'backup' button on remote controller
2. Click right mouse button and open contextual menu.
3. Select 'Backup' on menu and set storage and duration to archive
4. Press 'start' to backup.

Live Monitoring

Select 'Live Monitoring' on live view. It displays Live status of connected camera and transmitting status.

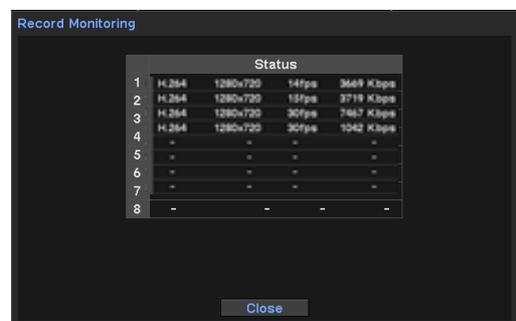


The screenshot shows a window titled "Live Monitoring" with a "Status" table. The table has 8 rows and 4 columns. The first four rows (1-4) show dashes in all columns. The fifth row (5) shows "H.264", "1280x720", "30fps", and "7.63M". The sixth row (6) shows dashes in all columns. The seventh row (7) shows dashes in all columns. The eighth row (8) shows "H.264", "1920x1080", "28fps", and "5.47M". A "Close" button is at the bottom.

1	-	-	-
2	-	-	-
3	-	-	-
4	-	-	-
5	H.264	1280x720	30fps 7.63M
6	-	-	-
7	-	-	-
8	H.264	1920x1080	28fps 5.47M

Recording status

Select 'Record Monitoring' on live view. It displays recording status of connected camera and transmitting status.



The screenshot shows a window titled "Record Monitoring" with a "Status" table. The table has 8 rows and 4 columns. The first four rows (1-4) show "H.264", "1280x720", "14fps", and "3669 Kbps", "H.264", "1280x720", "13fps", "3719 Kbps", "H.264", "1280x720", "30fps", "7467 Kbps", and "H.264", "1280x720", "30fps", "1042 Kbps" respectively. The last four rows (5-8) show dashes in all columns. A "Close" button is at the bottom.

1	H.264	1280x720	14fps 3669 Kbps
2	H.264	1280x720	13fps 3719 Kbps
3	H.264	1280x720	30fps 7467 Kbps
4	H.264	1280x720	30fps 1042 Kbps
5	-	-	-
6	-	-	-
7	-	-	-
8	-	-	-

Emergency Recording

Record immediately on live mode

1. Press 'Emergency Rec' button on control box. It turns red.
2. Press 'E.REC' button on remote controller.
3. Or use contextual menu (click right mouse button) and select 'Emergency Rec'.

Move to Search mode

1. Click Right mouse button on live mode and open contextual menu.
2. Select 'Playback' mode.

Enter Setup menu

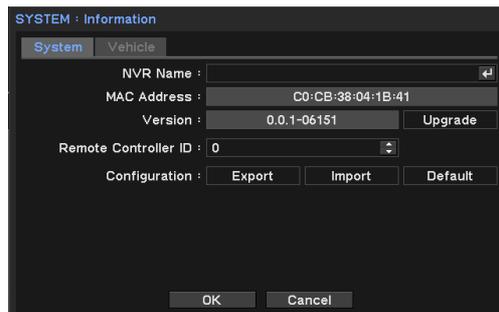
1. Click 'Menu' button on remote controller.
2. Click 'Menu' button and enter setup mode
3. Or use contextual menu and select 'Setup Menu'.

SYSTEM SETUP

System information

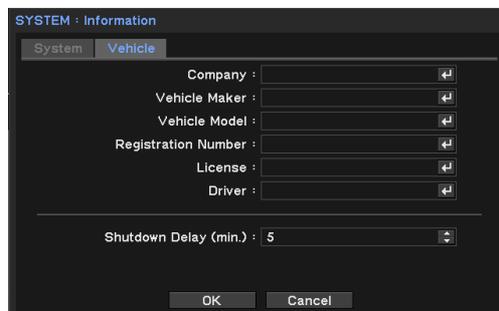
General information setup

1. Press menu and move to SYSTEM->Information.
2. Enter NVR name. (*Easy to recognize in multiple device access*)
3. Set ID on 'Remote Controller'. User can control multi NVRs with single remote controller with changing IDs.
4. User can export / Import and set default system setup. (*To export/import, USB memory is required.*)
5. Back to default with 'Default' button
* Date&Time, User info., Display Resolution, Language, Network Setup(IP address, DDNS) will not be initialized.
6. Press 'OK' to save changes.



Enter Vehicle information

1. Press Menu and move to 'SYSTEM->Information'.
2. Enter necessary information.
3. Shutdown delay: After ignition off, system waits for a configured time and safely shuts down system.
4. Press 'OK' to save changes.

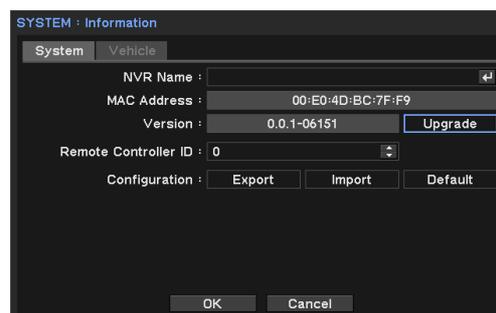


System Upgrade

Upgrade system firmware with new version.

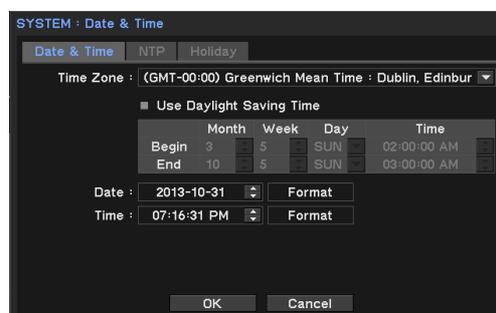
1. Press Menu and move to 'SYSTEM->Information' system page.
2. Insert USB memory which contains update file.
3. Press 'Update' button and select file.
4. Start upgrade with selected file.
5. System restarts automatically when update completed.

Note: Do not remove USB or power during updating.



Set Date and time

1. Press menu move to 'System-> Date&time'.
2. Set time zone and choose option 'daylight saving time'.
** Configure Beginning and End day.*
3. Set date and time with display format selection.
4. Press 'OK' to save changes.

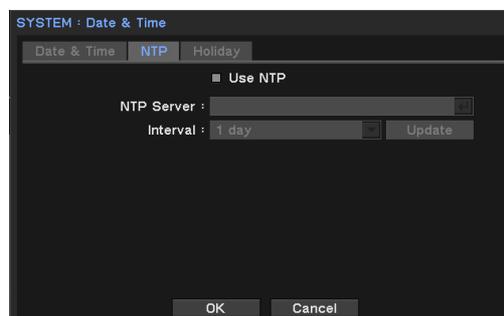


NTP setting

1. Select 'NTP' tab menu on Date &Time setup menu.
2. Tick 'Use NTP' option
3. Press  to enter time server.
4. Enter time server name with virtual keyboard.
5. Set update interval and press update button.

**Internet access required*

Note: NTP is not essential for NVR operation. Time Sync. may not be completed due to heavy traffic or delays from time sync. server.

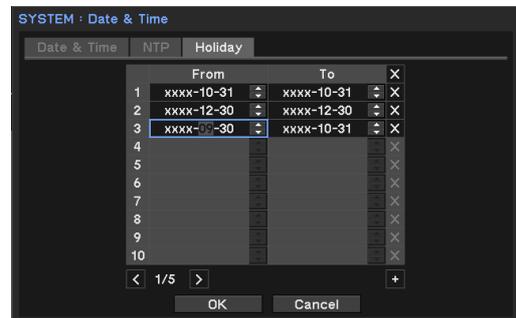


Holiday setup

Set specific day or days as holiday and apply different recording schedule.

1. Move to Holiday tab menu on Date & time setup.
2. Press button and set date.
3. Press 'OK' to apply setup.

Note: Holiday may not same date every year. User may have to update every year.



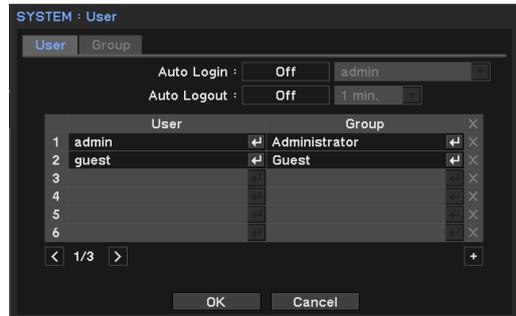
User setup

User can define new user and group permissions.

Add new User

1. Press menu and move to 'SYSTEM-User'.
2. Press button and add new user.
3. Enter user name with virtual keyboard and select user group.
4. Set password for new user.

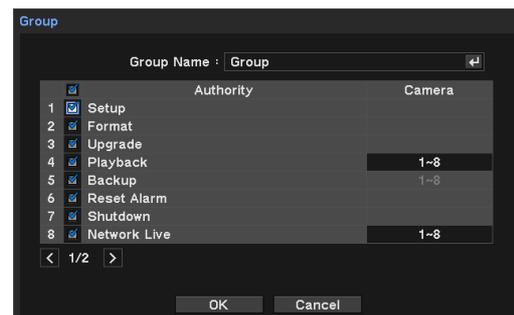
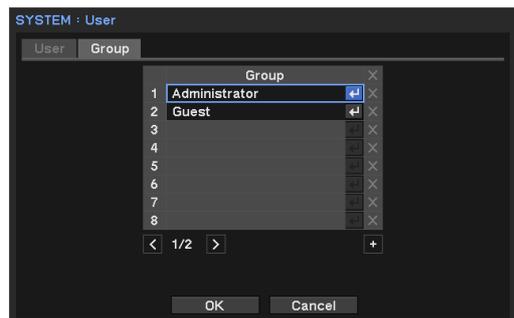
*Auto Login: Log in automatically with selected user.
*Auto Logout: Log out when there is no action during configured time.



Add new group and set permission.

Administrator can define authority on each group. (not per user)

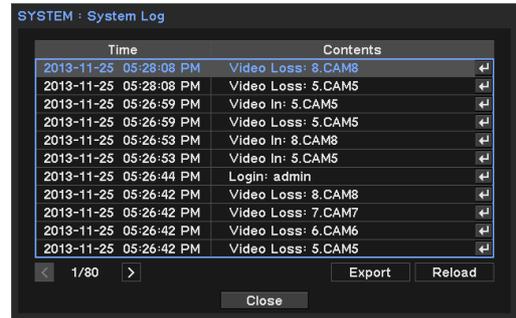
1. Go to 'System-User' menu and select 'Group'.
2. Press button.
3. Enter new group name.
4. Set permission on new group. Set camera channels on each authority (if necessary)
5. Click 'OK' and save changes.



System Log

All system log can be searched in this page.

1. Press Menu and move to SYSTEM->SYSTEM Log.
2. To view latest log, press 'Reload' button and update logs. Use   button to move next pages.



SYSTEM : System Log

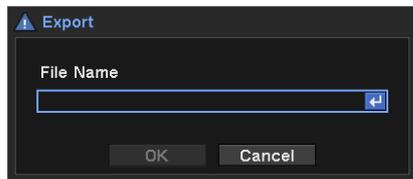
Time	Contents
2013-11-25 05:28:08 PM	Video Loss: 8.CAM8
2013-11-25 05:28:08 PM	Video Loss: 5.CAM5
2013-11-25 05:26:59 PM	Video In: 5.CAM5
2013-11-25 05:26:59 PM	Video Loss: 5.CAM5
2013-11-25 05:26:53 PM	Video In: 8.CAM8
2013-11-25 05:26:53 PM	Video In: 5.CAM5
2013-11-25 05:26:44 PM	Login: admin
2013-11-25 05:26:42 PM	Video Loss: 8.CAM8
2013-11-25 05:26:42 PM	Video Loss: 7.CAM7
2013-11-25 05:26:42 PM	Video Loss: 6.CAM6
2013-11-25 05:26:42 PM	Video Loss: 5.CAM5

< 1/80 > Export Reload

Close

To Export Log file.

1. Prepare USB memory.
2. Insert & connect USB on system and move to 'System Log' page.
3. Press 'Export' button.
4. Set file name and press 'OK' button.



Export

File Name

OK Cancel

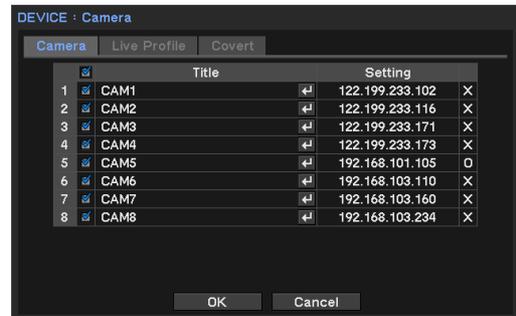
Note: log file exports as csv file format.

DEVICE

In this menu, Set configuration of camera, audio, alarm.

Change Camera Title

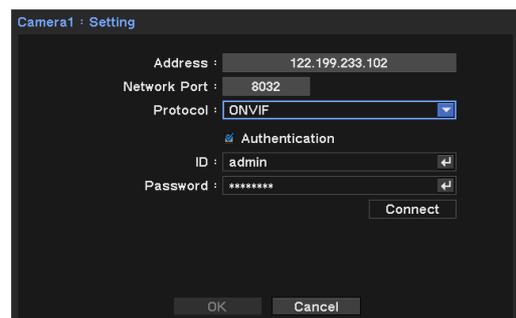
1. Press Menu and move to 'DEVICE->Camera' page.
2. Select camera and press  to change title.
3. Use virtual key and set new camera name.



IP camera setup

Enter IP camera information and authorize it to check its working status.

1. Press 'IP Address' on camera menu.
2. Enter IP, ports and ID/Password of desired IP camera.
3. Check 'Authentication' and press 'Connect' to check IP camera connection status.
4. Once 'Log in' success message means it connects normally. If it fails, check information again.
5. Press 'OK' to save information.



Live Profile

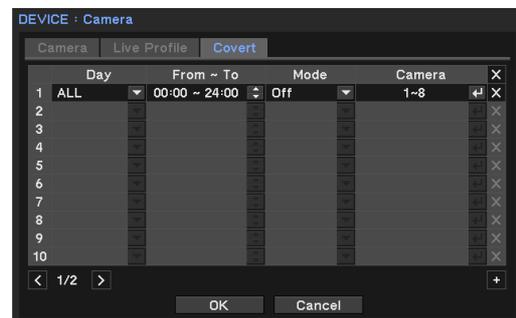
1. Move to 'Device->Camera->Live profile' page.
2. It shows profiles of connected camera. User can select profiles on each cameras and adjust codec & resolutions only available camera.
 - Profile: Shows available profile on connected cameras.
 - Codec: type of Image compressing algorithm.
 - Resolution: image size for live monitoring.
 - Fps: number of frames for live monitoring.
 - Kbps: image data size for live monitoring.
3. Press 'Edit' button to edit profiles.
4. Press 'OK' to save changes.



Covert (Hidden) camera

Covert (Hide) camera on live view according to logged in user.

1. Press Menu and move to 'DEVICE->Camera' page.
2. Move to 'Covert' tab menu.
3. Set schedule on 'From~To' field.
4. Select covert mode.
 - Low mode: No display but OSD.
 - High mode: No display at all.
5. Press 'OK' to save changes.



Note: Not effect on recording data. This applies on monitoring only.

PROFILE SETUP

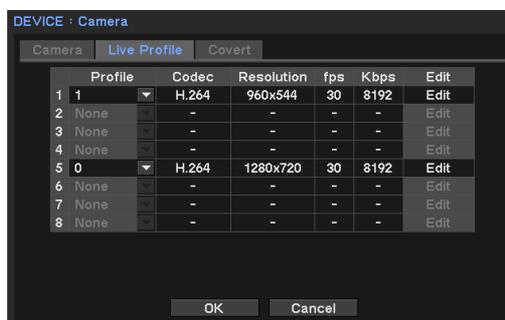
Network camera generally provides single or multiple profiles and user can select details such as live, recording and network transmit profiles.

System shares added profiles. Once you edit profile on live, record or Network, it updates other profiles.

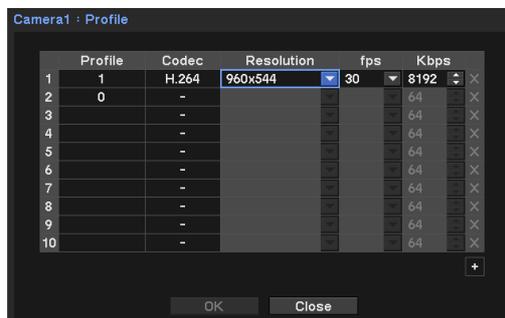
- Live Profile : 'Menu->Device->Camera->Live profile'
- Record Profile : 'Menu->Recording->Recording->Record profile'
- Network Profile : 'Menu->Network->Transmission->Network profile'

Add profiles

1. Select one of profiles from Live, Recording and Network and move to that menu.



2. Press 'Edit' button on right and it shows current profile details.



3. To add new profile, press '+' button below and set profile name, codec, resolution, fps and Kbps information.

- *May differ available profiles by camera*



4. Press 'OK' to save changes.

Audio

Audio Connect

NVR records sounds on each channels.

1. Press Menu and move to 'DEVICE->Audio' page.
2. Select audio channel and change title as desired name.
3. Press 'OK' to save changes

Note: Audio input is only available with camera.

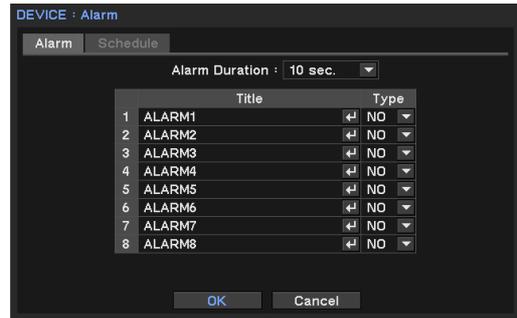


Alarm

Set alarm type and schedule.

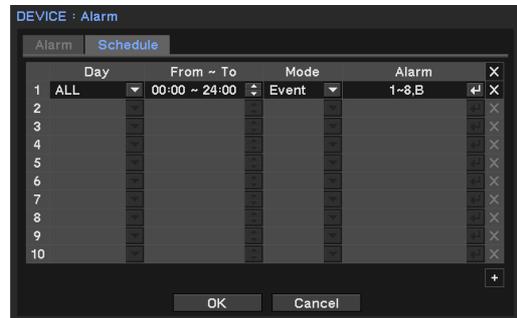
Set Alarm type and duration

1. Press Menu and move to 'Device-Alarm' page.
2. Set duration of alarm activation.(5sec to 10min)
3. Select alarm channel and change title as desired name.
4. Choose type of alarm
-NO: Normal Open.
-NC : Normal Close
5. Press 'OK' to save changes



Set Alarm Schedule

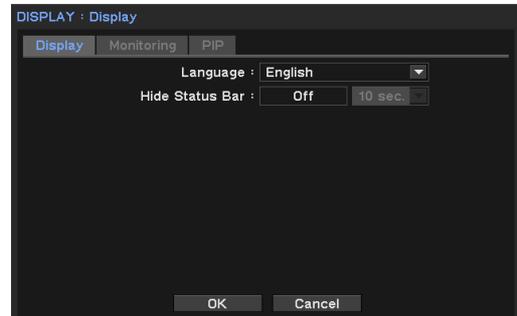
1. Move to Schedule tab.
2. Select Day and time for alarm activation.
3. Select mode. (Event, On, Off)
4. Select alarm output number and buzzer options.
5. Press 'OK' to save changes
* If schedule is overlapped, the latest one will have priority.



Display

Set monitor display and display language

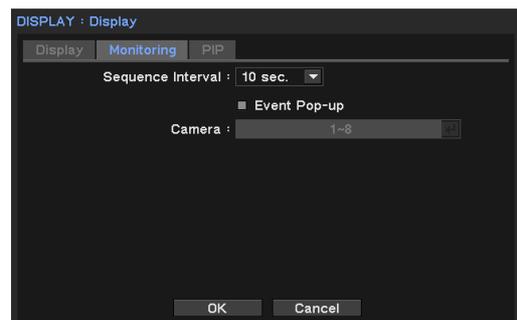
1. Press Menu and move to Display page.
2. Set your language and other display options.
3. To change display resolution, select 'Resolution' menu and select desired one.
4. Press 'OK' to save changes



Channel popup by Event

Display (popup) event triggered channel for a configured time.

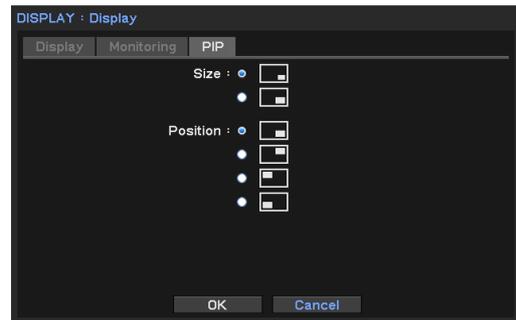
1. Press Menu and move to 'Display-Monitoring' page.
2. Set 'Sequence interval' time
3. Check 'Event popup' option.
4. Select camera number to be displayed when event occurred.
5. Press 'OK' to save changes



PIP (Picture In Picture) Setup

1. Press Menu and move to 'Display-PIP' page.
2. Set 'Size' and 'Position'.
3. Press 'OK' to save changes.

Note: PIP is only available on single live display.



Resolution setup

1. Press Menu and move to 'Display-resolution' page.
2. Set resolution
3. Press 'Ok' to save changes.

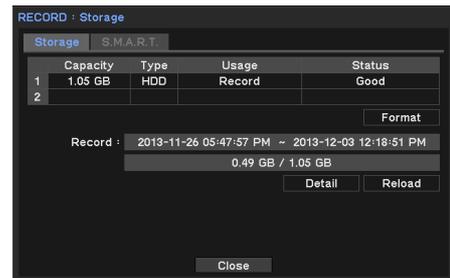


Record Setup

Set storage and recording options.

Set Storage

1. Press Menu and move to 'Record->Storage'.
2. System displays installed HDD(s) on list.
3. To use HDD as storage, select one of HDD and press 'Format' button below.
4. Press 'close' once format process is end.
Note: 'Record' shows data stored period and HDD usage.



Recording Setup

1. Press Menu and move to 'Record->Record'.
2. Check 'Overwrite' option. *If not selected, system only records data until the current HDD is full.
 - *Time Record is continuous recording*
 - *Event record is record only when event triggered.*
 - *Emergency Record: Activated by Emergency Rec. signal from outside*
3. Press 'Ok' to save changes

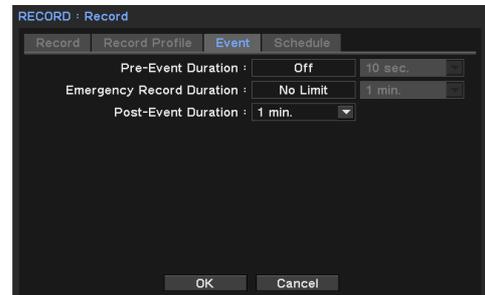


Recording profile

Select profiles for recording. See details on 'Profile Setup' section before 'Audio'.

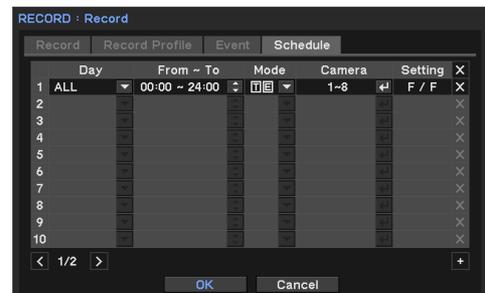
Event recording setup

1. Move to Event page
2. Set 'Pre-Event' Duration 'On' and set time. System will record previous data from event triggered.
3. Set time for Emergency Record. 'No Limit' setup record until off Emergency Rec.
4. Event record duration is for general event recording duration.
5. Press 'OK' to save changes.



Set Recording schedule

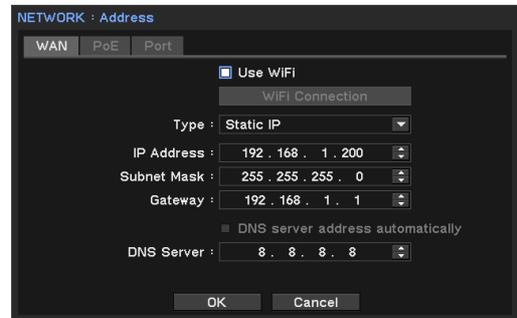
1. Press Menu and move to 'Record->Record' Schedule tab.
2. Set day option on day field.
*One selected day option on each line.
3. Set time to record on 'From~To' field.
4. Select recording mode
5. Select cameras to be applied.
 - To delete schedule, press button on right.



Network

Set IP address

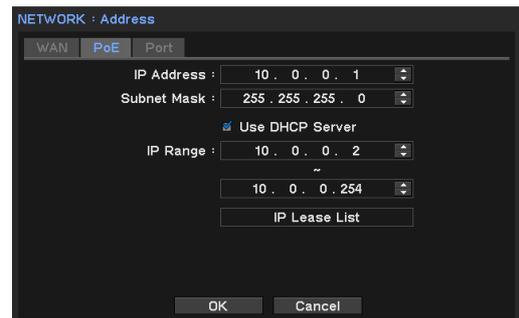
1. Press Menu and move to 'Network->Address->WAN' page.
2. Set one of IP address type.
*No IP address setup required in 'DHCP' option.
3. In 'Static IP' option, you need to enter 'IP address, Subnet mask and Gateway'.
4. Press 'OK' to save changes.
* To change communication port, move to 'PORT' page in this menu.



PoE Setup (Power Over Ethernet)

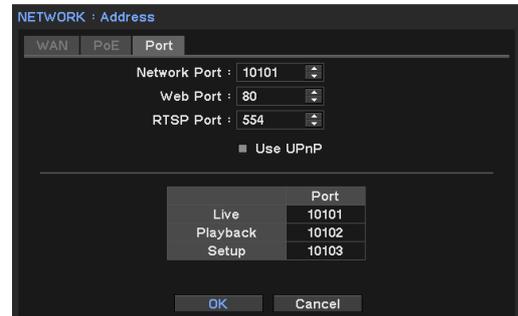
1. Press Menu and move to 'Network->Address->PoE' page
2. Set IP address and Subnet mask
3. Check 'DHCP server' option. When use this system as DHCP server, must set IP ranges which will assigned to connected IP cameras.

* connected camera should be set on DHCP option.
4. Press 'Ok' to save changes.



Set Port

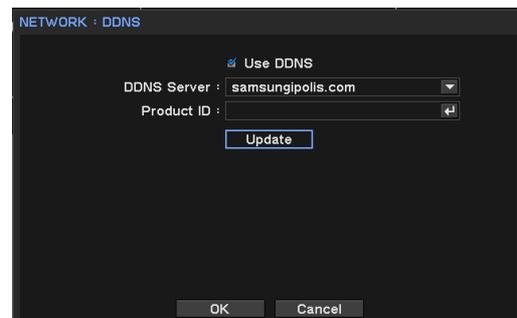
1. Press Menu and move to 'Network->Address->Port' page.
2. Set port for 'Remote monitoring, Playback and setup. Default is '10101'.
* Set Live port and other port sets automatically.
3. Set port for Web viewer. Default is '80'.
4. Set RTSP port. Default is '554'.
5. Use UPnP: This feature enables auto port forwarding on router.



DDNS setup

For remote access, use DDNS service with DDNS server setup.

1. Press Menu and move to 'Network-DDNS'.
2. Check 'Use DDNS' option.
3. Enter 'Product ID' and press 'Update' to check it access DDNS server normally.
4. Press 'Ok' to save changes.
* To use DDNS, system should be connected to Internet.
* For more details about DDNS setup, see the manual of your router.

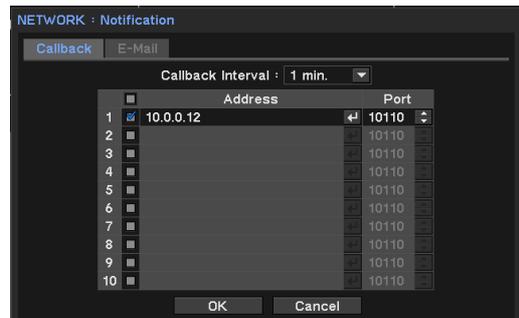


Notify event through network

Use provided feature and send message to specified IP and E-mail.

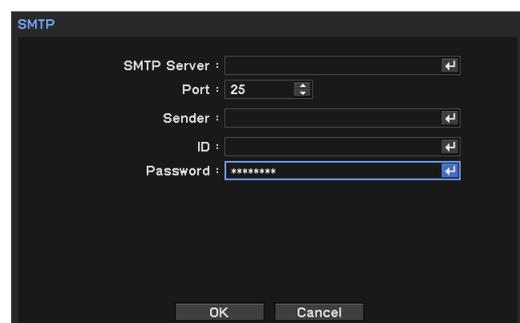
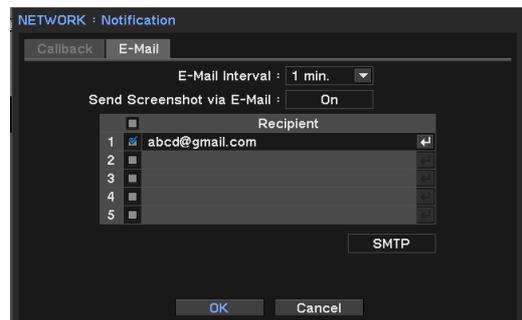
Callback Setup

1. Press Menu and move to 'Network->Notification -> Callback' page.
2. Set callback interval.
** The triggered event between intervals would not be delivered. It only delivers new event as callback message after interval.*
3. Enter IP address that would receive callback messages.
4. Press 'Ok' to save changes.
 - *Callback utility is installed when you install Remote client software.*



Email setup

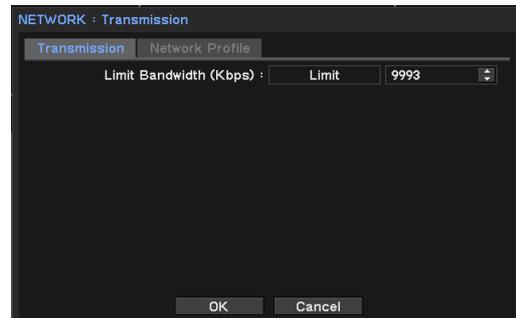
1. Press Menu and move to 'Network->Notification->Email' page.
2. Set E-mail interval.
**not send event between interval time.*
3. Check image option to attach on email.
4. Enter e-mail address of receiving side.
5. Press SMTP button and enter information
6. Press 'Ok' to save changes.



Network Transmission

Adjust network data streaming option and optimize it.

1. Press Menu and move to 'Network->Transmission->Transmission page.
2. Set network bandwidth according to you network speed.
3. Press 'Ok' to save changes.



Network profile

Select profile for live monitoring. See details for profile section before Audio.

EVENT

Set event related options such as Sensor, Motion, Video Loss, System, G-sensor and IP camera.

About Event activation and activate Recording, Alarm and Notification

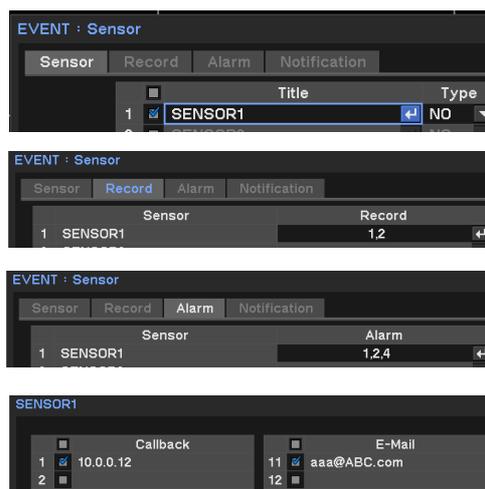
Each triggered event can be activated following actions.

1. Record: start recording on selected multiple channels.
2. Alarm: start alarming or buzzer on selected multiple channels.
3. Notification: send message to remote pc with 'Callback' or 'E-mail.'

Example1) Sensor setup

Once sensor 1 is triggered, record channel 1 & 2, alarming 1, 2, 4 and send Notification

1. Press Menu and move to 'Event->Sensor' page
2. Tick 'Sensor1' and set type (NO or NC)
3. Click 'Record' tab and click sensor1 'Record' field and select channel 1, 2.
4. Click 'Alarm' tab and click sensor1 'Alarm' field and select channel 1, 2, 4.
5. Click 'Notification' tab and click sensor1 'Notification' tab and select 'Callback' IPs and 'E-mail' on list.



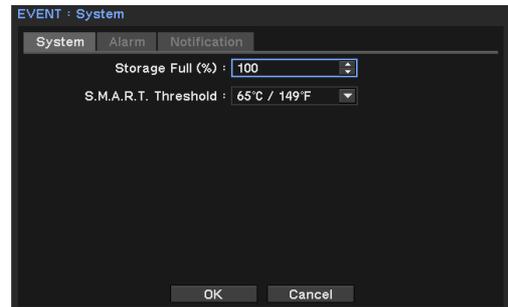
*** To register Callback IP and E-mail address go to 'Network->Notification' page.**

Motion Event, Video Loss event setup is same as Sensor event setup.

System Notification

Notify system status through alarm and Callback.

1. Set level of Storage full. System start notification when storage reaches this level.
2. Set temperature level you desired to get notification on S.M.A.R.T. Threshold.
3. Set alarm and Notification.(see examples above)



EVENT : System

System Alarm Notification

Storage Full (%) : 100

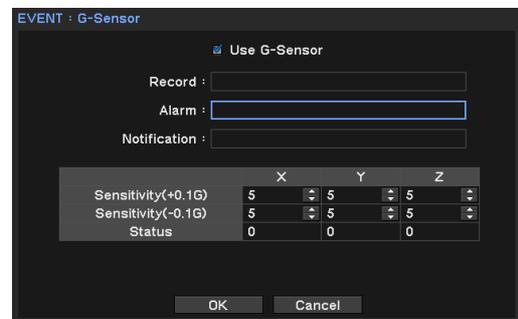
S.M.A.R.T. Threshold : 65°C / 149°F

OK Cancel

G-Sensor Notification

Detect movements such as sudden acceleration, stop and suspected as accident.

1. Press Menu and move to 'Event->G-Sensor' page.
2. Check 'Use G-sensor'.
3. Press 'Record' field and select channels to be recorded when event triggered.
4. Press 'Alarm' field and select channels for alarm activation.
5. In 'Notification' field, select Client IP address and e-mail that will receive event notification.
6. Set sensitivity of each x, y, and z axis.



EVENT : G-Sensor

Use G-Sensor

Record : _____

Alarm : _____

Notification : _____

	X	Y	Z
Sensitivity(+0.1G)	5	5	5
Sensitivity(-0.1G)	5	5	5
Status	0	0	0

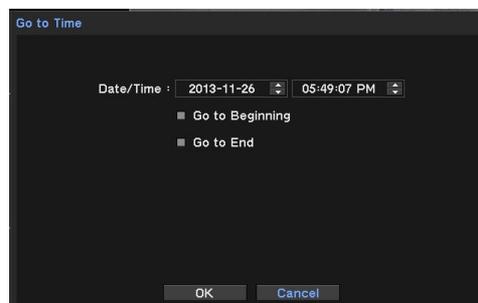
OK Cancel

* If G-sensor included IO box DIP switch configuration is wrong, it would generate unnecessary alarms. Please check DIP switch configuration when installation.

Playback (Search)

Time search (Go to Time)

1. Click right mouse button on live mode and select 'Playback'
2. Select storage that has recorded data.
3. System enters 'Playback(Search)' mode
4. Click right mouse button again and select 'Go to'.
5. Select 'Go to time' of options.
6. Set date and time and press 'OK' to playback.



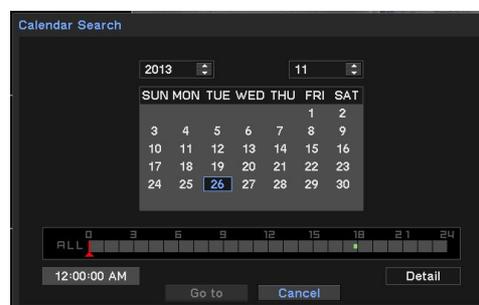
About Search options

- Go to time: set time and move to specific time.
- Go to Beginning: move to the first recorded data.
- Go to End: move to the end of data.
- Go to **sec: move to previous recorded data. (** data before)

* When playback recorded data, it displays single channel image which is close to search condition.

Calendar Search

- 1~3. Same as 'Time Search'.
4. Click right mouse button again and select 'Calendar'
5. Select date and time and press 'Go To'.
6. Displays selected data on screen. Use playback control button below.
7. To exit playback mode, click right mouse button and select 'Exit Playback'.



Event Search

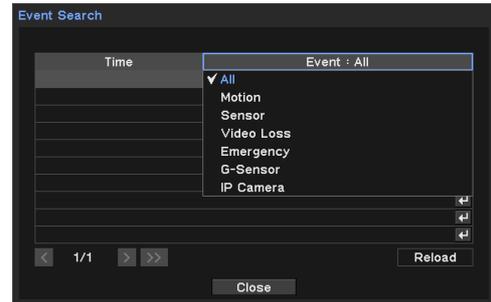
Provides easy search by recorded event list

- 1~3. Same as 'Time Search'.
4. Click right mouse button again and select 'Event Search'
5. Select the date and type of event to find specific data.

* Events are searched by 1,000ea and press >> button to see next 1,000 events.

*You can search event on 'Log' menu event page.

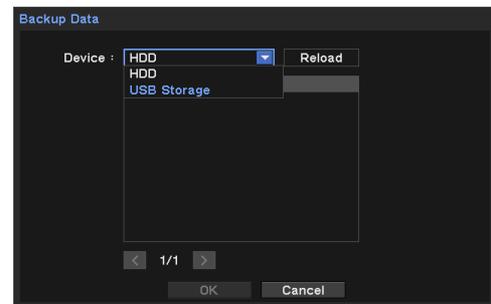
*System writes event log when it is set as Event recording



Backup data playback

1. Click right mouse button on live mode.
2. Select 'Backup data'
3. Select Device and files
4. System displays playback screen. Use playback control button below.

* Backup playback is only available if there's backup file.



Playback control

R.Play: Reverse Playback (1x->2x->..64x -> 1x)

Step Backward: Go to the previous image

Pause: Freeze or Stop current image

Step Forward: Go to the next image

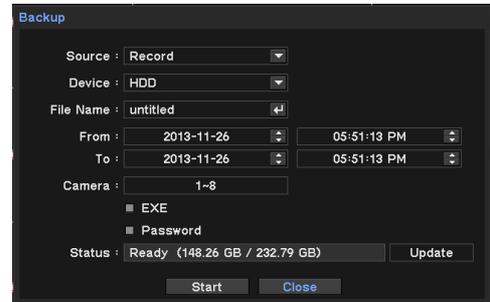
Play: Play the data at normal speed (1x->2x->..64x -> 1x)



BACKUP

Backup Recorded Data

1. Click right mouse button on live mode
2. Select Backup and choose type.(backup or AVI maker)
3. Insert USB memory on system USB slot.
4. Select Device for backup data(generally USB memory is used)
5. Set backup data period and camera.
6. Select 'EXE' option and 'Password Option.
7. Press 'Start' button.



* 'Backup' data saved as 'strg, exe' format and requires exclusive player for multi channel playback.

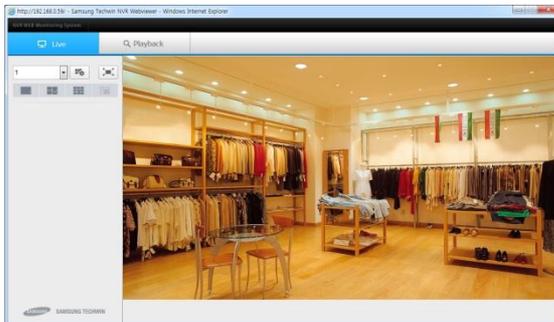
* For Single channel backup, use AVI backup.

* Do not remove backup media while data backup is being processed

Web client access

Access System with using web browser.

1. Run web browser and enter IP address of NVR or DDNS address.
2. Enter ID and Password in log in page.



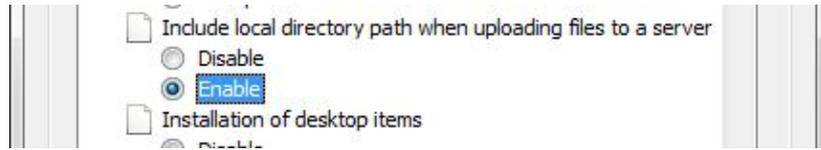
3. Press buttons (Live, playback) and move to new windows.

4. Use following buttons to do data search

Button	Description	Button	Description
	Select camera		Event search
	Remote setup		FW/Rev Playback
	Entire screen		2~64x playback
	Change layout		Move 1 frame
	Select calendar		Move to first/last
	Pause		

5. Detail usage is same as remote client software. See 'Smart viewer' part on next page.
If no 'Active X' installed, run explorer with 'Run as Administrator' option.

- To upload file on IE(internet Explorer), set options on 'Tools->Internet option->Security->Customer level'. *supported on IE7.0 or higher.

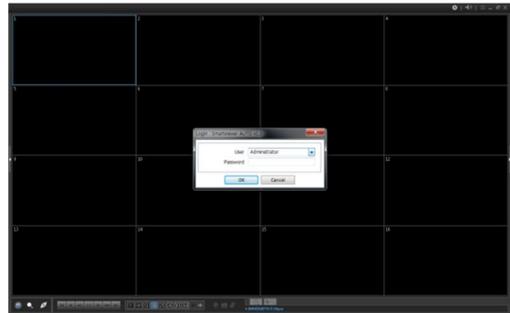


Smartviewer AUTO v1.0

Monitoring live view, search and other features on remote place through network.

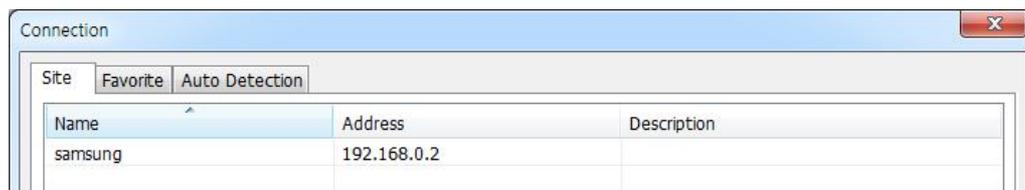
Start Remote software(S.W should be installed on your PC)

1. Double click remote s.w and run it.
2. It displays main screen.
Minimum resolution: 1024x620.
Recommended resolution: 1280x1024
3. To log in, select user and enter password.
* No initial password is set. Change password for your security.



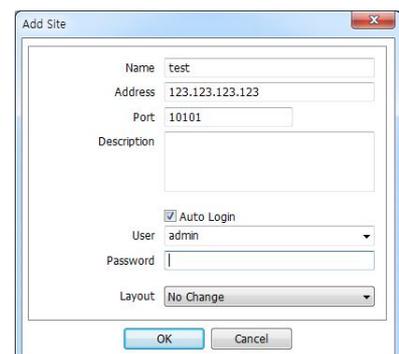
Connect NVR from remote software

1. Press Connect icon  to display connection list.



2. Press 'Add' and NVR information that desired to connect.

- Name : Enter NVR name
- Address : Enter NVR's IP address
- Port: Default is 10101. If changed, enter changed port.
- Description (Optional): enter comment.
- User : select NVR user account
- Password: enter password for NVR user.



3. Click 'OK' to save information and complete the registration.

4. Press double click NVR list on connection list and 'Connection' button.

Note: Auto Detection requires specific service. To use this service, install 'Apple® Bonjour®' service on remote PC

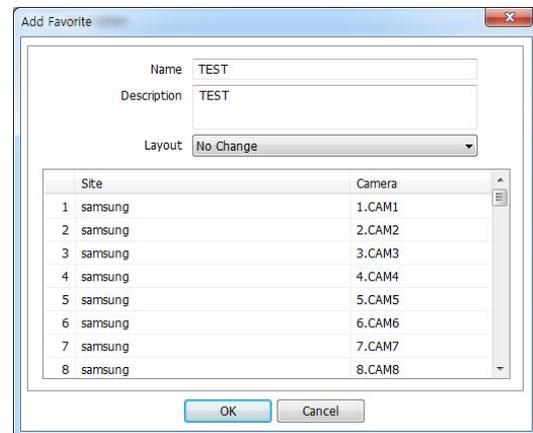
Note : Set NVR name when you use multiple systems.

Favorite setup

Manage multiple site. Up to 64 different cameras and sites can be monitored.

1. Start Remote software
2. Press  button and select 'Favorite' tab.
3. Press 'Add' button.
4. Enter group name and description.
5. Select 'Layout' and choose layout.
6. Click 'site' field and select one of site and camera.

****Only Registered site can be displayed.***



NVR status

Click buttons on right side to display to display NVR status. It shows NVR status as follows.

 **Reload:** Refresh the latest NVR status info.

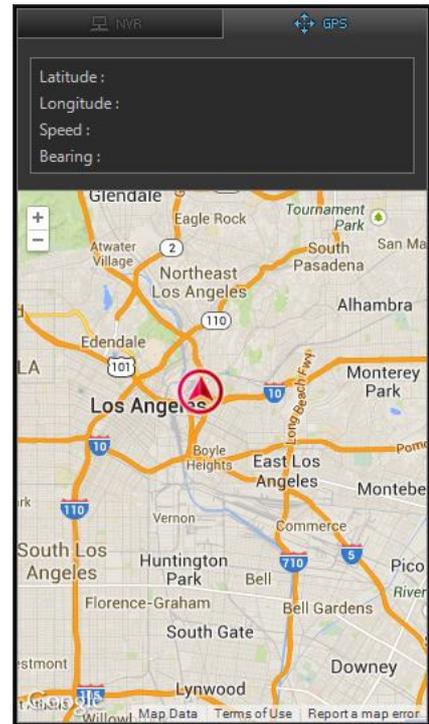
 **Reset Alarms:** Turn off activated Alarms on the NVR.



GPS

Displays NVR tracking under playback mode. GPS data is recorded with images using built in GPS on Mobile NVR. This data will be displayed on Google Map under playback mode.

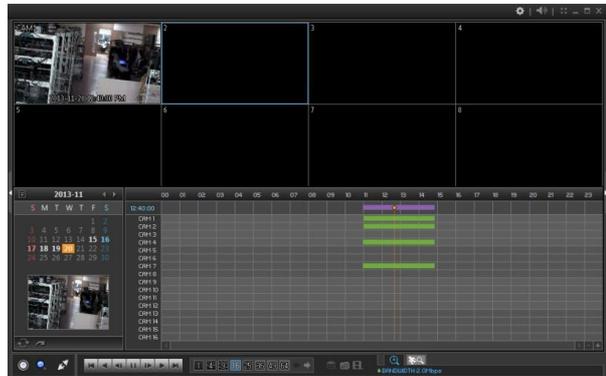
You can check latitude, longitude, speed, direction angle etc.



Remote Playback (Search)

1. Press search button  and connect NVR with connect  button.
2. Select date on calendar and time on screen.
3. Playback image with control buttons.

Button	Description
	Move to the first
	Reverse playback (1~64x)
	1 frame move to backward
	Pause
	1 frame move to forward
	Forward playback (1~64x)
	Move to the end

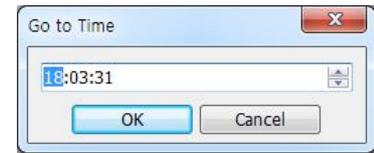


* In search mode, it displays a channel image of the closest time.

* Audio playback is only available on single channel playback.

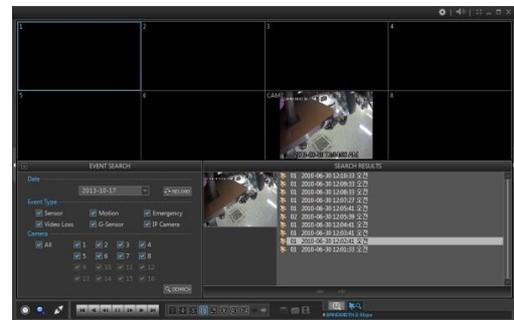
Go to Time

1. Click  icon and enter time.
2. Click  icon to refresh and update calendar information.
3. Playback image with control buttons.



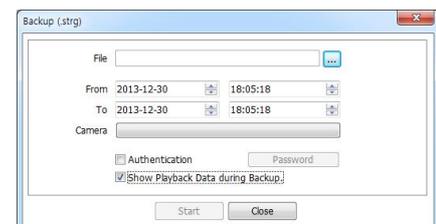
Event Search

1. Press event search icon  in playback mode.
2. Select the date, event type and camera.
3. Then select one of event desired to playback.



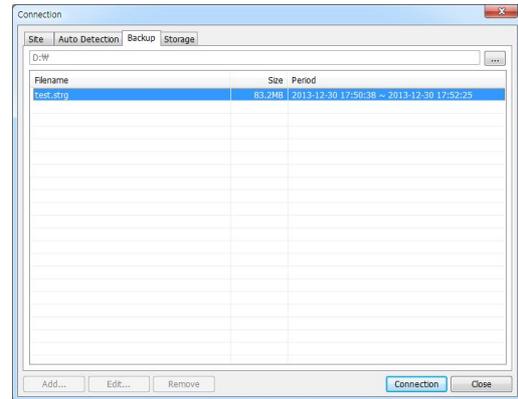
Saves recorded data

1. Move to Playback mode.
 2. Click  icon and select 'Backup(.strg) or (.exe)'..
 3. Specify file name, duration and camera.
- * '.strg' requires remote s.w to playback.



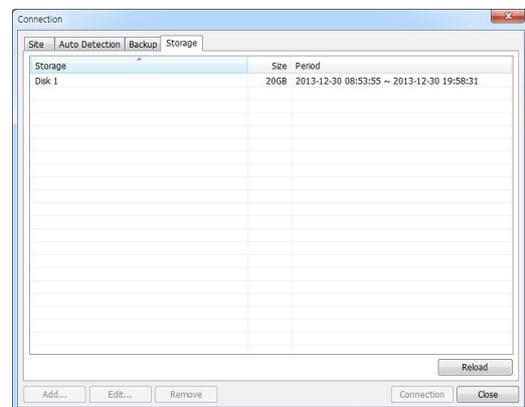
Playback backup data

1. Run remote software.
2. Press 'connect'  button.
3. Click 'Backup' tab and select backup file.
4. Click 'Connect' button to playback.



Playback HDD data on PC

1. Connect HDD with USB cables.
2. Remote s.w should be installed on PC.
3. Run Remote s.w on PC (*run as administrator)
4. Click  button and move to 'Storage' tab to display HDD data.
* Click 'Reload' button to refresh data.
5. Double click one of list and click 'Connection' button
* Run Smartviewer AUTO v1.0 as 'Run as administrator' to display recorded data list on 'Storage tab'. (In Higher version than Widows Vista)



* To supply enough power, use cables as below picture. Double USB port required to supply enough power to HDD.



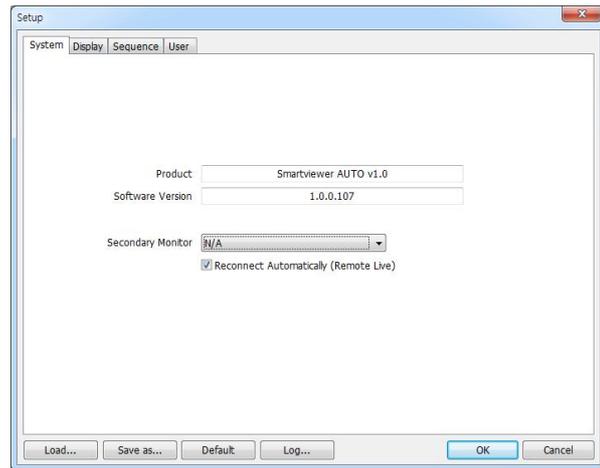
Smartviewer AUTO v1.0 Setup

Remote Software setup

Click  and 'Setup' to enter Remote software setup menu.

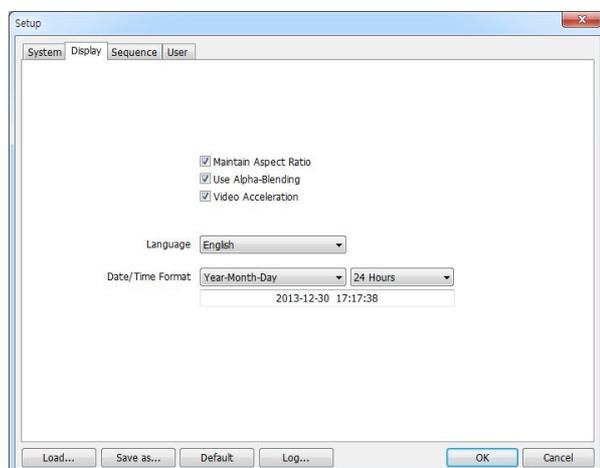
System

- **Product:** Displays general information of the S/W
- **Software Version:** Displays current S/W version
- **Secondary Monitor:** Select the secondary monitor when using multi monitors on PC
- **Event Pop-up Duration:** Set the time duration for a camera display when it is displayed in full screen mode in case of event.
- **Reconnect Automatically:** Set auto reconnection on Live if the connections is ended by any chances.
- **Load:** Load saved data for settings for remote software
- **Save as:** Save current settings of remote software
- **Default:** Set default settings of remote software
- **Log..:** Displays logs



Display

- **Maintain Aspect Ratio (4:3):** Keep 4:3 ratio on display screen
- **Use Alpha-Blending:** Enables alpha-blending effect to S/W UI
- **Video Acceleration:** Enhances natural live image display.
*Do not select this option if live display is wrong. Some PC graphic card does not support nor compatible this option
- **Language:** Select language option for the remote software. This follows OS language.
- **Date/Time Format:** Select Date/Time Format for the remote software

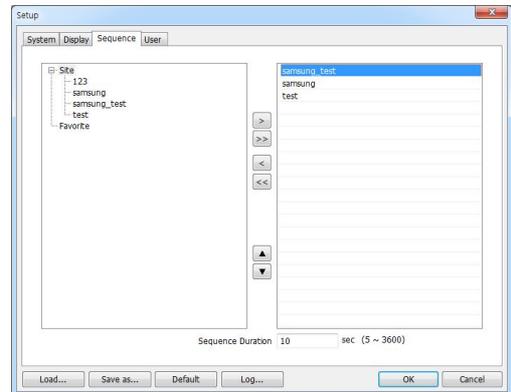


Sequence

Set sequence mode and sites from registered sites

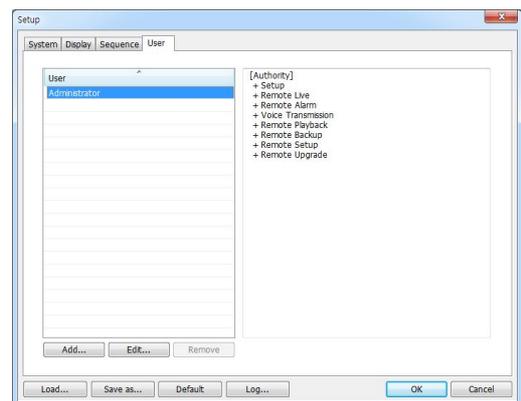
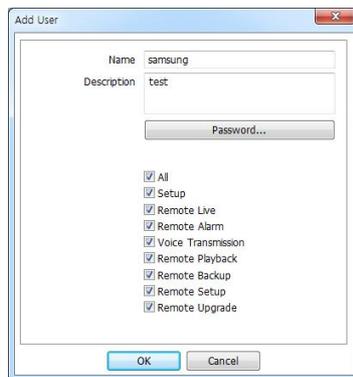
1. Move to 'Sequence' tab on Setup.
2. Select the site on the list left side.
3. Click button and add to sequence list.
4. To move all sites, click button.
5. Set sequence duration.(interval time)

* Only selected sites can be sequenced on live monitoring



User setup

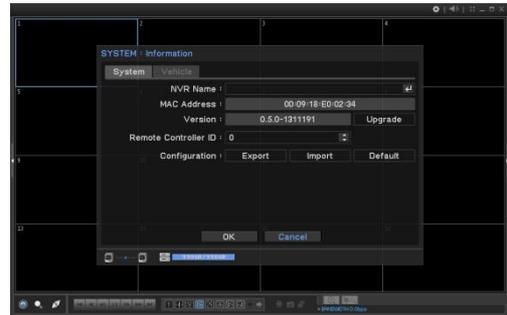
1. Move to 'User' tab on setup.
2. Press 'Add' button to add user.
3. Enter user name and set password.
4. Check necessary permissions on list.



5. Press 'OK'
6. Select newly added user and his authority is correct..

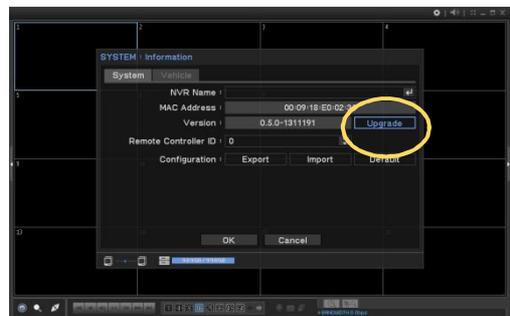
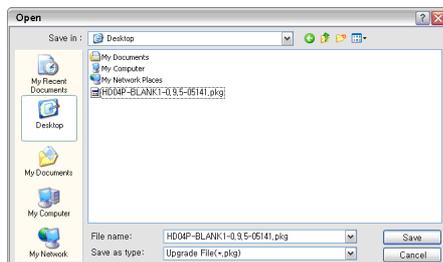
REMOTE setup connected Devices

1. Connect NVR first.
* if not connected, press connect button and connect device first.
2. Click  button on top of right and select 'Remote Setup'.
3. Display connected device's setup screen as same as local device.
*Setup menu and usage is same as local device.
4. To exit setup, press 'menu->exit'.



Remote upgrade

1. Prepare upgrade file from your provider.
2. Go to 'Remote Setup' and move to 'System->Information' page.
3. Press 'Upgrade' button and select upgrade file.

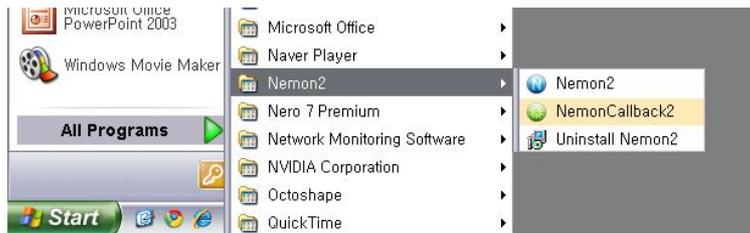


4. Proceed upgrade.
* *Do not close or power off system until the upgrade process is over.*

Call Back

'Callback' installed together with remote software. Callback receives event list from NVRs through network.

1. Go to 'Start->Program->Nemon2' and run 'Nemon Callback2'.



2. Callback Icon displayed on windows task bar.



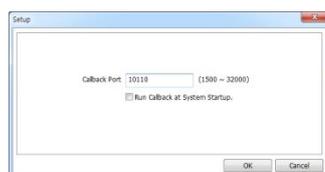
3. Click Callback icon to display Callback window.

Address	NVR Name	Date/Time	Event Type	Title
192.168.0.2		2013-12-30 05:12:22	Motion	CAV1
192.168.0.2		2013-12-30 05:12:15	Sensor	SENSOR5
192.168.0.2		2013-12-30 05:12:15	Sensor	SENSOR3
192.168.0.2		2013-12-30 05:12:15	Sensor	SENSOR1
192.168.0.2		2013-12-30 05:12:03	G-Sensor	

4. To connect NVR, select a log and click live or playback icon below.

- Clear : clear all logs on callback window
- Log: Open log search window. (up to 100,000 logs can be saved. 1,000 logs display per search. To see more, click 'More' button. To export, press export and save logs (txt or csv format)
- Setup: Set port for call back.

Address	NVR Name	Date/Time	Event Type	Title
192.168.0.2		2013-12-05 20:01:52	G-Sensor	
192.168.0.2		2013-12-05 20:01:41	G-Sensor	
192.168.0.2		2013-12-05 20:00:01	G-Sensor	
192.168.0.2		2013-12-05 19:59:31	G-Sensor	
192.168.0.2		2013-12-05 19:59:19	G-Sensor	
192.168.0.2		2013-12-05 19:59:12	G-Sensor	
192.168.0.2		2013-12-05 19:59:06	G-Sensor	
192.168.0.2		2013-12-05 19:59:01	G-Sensor	
192.168.0.2		2013-12-05 19:58:24	G-Sensor	
192.168.0.2		2013-12-05 19:50:10	G-Sensor	
192.168.0.2		2013-12-05 15:36:03	G-Sensor	
192.168.0.2		2013-12-05 15:29:48	G-Sensor	
192.168.0.2		2013-12-05 15:35:34	Emergency	
192.168.0.2		2013-12-05 15:34:25	G-Sensor	
192.168.0.2		2013-12-05 15:33:38	Emergency	
192.168.0.2		2013-12-05 15:32:04	Emergency	
192.168.0.2		2013-11-27 15:22:54	G-Sensor	
192.168.0.2		2013-11-27 15:22:48	G-Sensor	
192.168.0.2		2013-11-27 15:22:38	G-Sensor	



* UDP port needs to be set (open) to transmit Callback if Firewall is being used

MobileViewer iPolisAuto

User can do live view, Search playback and setup configuration on mobile device. (Android / iOS)

How to use

1. Search with the key word 'iPolisAuto' in 'App Store' or 'Play Store'.

Android	Description	iPhone
	<p>Press android's menu button to see the detail menu. User can add, Edit and delete NVR Site .</p>  <p>Select site and connection mode.</p> 	

2. Live mode

Android	Description	iPhone
	 <p>Camera displays current camera list and select desired channel to see live view.</p> <p>Event Display NVR's live events</p> <p>Alarm Display alarm control list.</p>	
 <p>Default live display is single division and 4divisions can be displayed in one live pane.</p>		

3. Search

Android	Description	iPhone
	<p data-bbox="646 481 837 515">Android Search</p> <p data-bbox="758 683 949 716">iPhone Search</p>	
	<p data-bbox="454 907 1093 929">In Search mode, there are Event, Time information displays.</p> <p data-bbox="454 952 1117 1041">Click date and it displays event lists on selected date. To do time search, press and hold time line for 3 seconds, it displays time on selected position.</p> <p data-bbox="454 1064 1117 1176">Adjust desired event or time to load recorded data and you can control playback with control buttons. Max. 4 channels can be playback in same time and 1~32x speed control available.</p> <p data-bbox="454 1198 1117 1265">In Event search playback, use  button and select option to playback desired event and camera.</p>	

4. Setup configuration

Android	Description	iPhone
		
<p data-bbox="191 1747 1356 1803">Same Setup UI provided on mobile device like local NVRsetup. * Not available these features. (Configuration Export / Import, System upgrade, Log export)</p>		

Appendix

System Specification

Video		SRM-872
N/W Camera	Inputs	Up to 8CH
	Resolution	CIF, VGA, 4CIF, 1.3M, 2M, 3M
	Protocols	ONVIF
Installation	Camera Setup	Resolution, Frame rate, bit rate setup.
	Viewer	Built-in Webviewer
	Multi Screen Monitor display	1/4/9
Performance		
OS		Embedded Linux
Recording	Compression	H.264, MJPEG
	Rec. bit rate	64Mbps
	Record Rate	Up to 240fps @1280 x 720 (1.3M)
	Record Mode	Emergency, Schedule (Time/Event)
	Overwrite modes	Continuous, Auto Deletion w/ Retention duration
	Pre-alarm	Up to 30 sec.
	Post-Alarm	Up to 6 hour.
Event	Source	Sensor, MD, V-Loss, G-Sensor, IP camera event
Network	Ethernet	Gigabit Ethernet x 1, FE x8 w/PSE
	Transmission speed	Up to 1Gbps.
	Max. Remote users	Live (10)/ Search(3)/ Setup (1)
	Protocol support	TCP/IP, DHCP, SMTP, NTP, HTTP, DDNS, RTP, RTSP
	Monitoring	CMS, Webviewer, Smart-phone Viewer.
	Connection Mode	Static/DHCP
Storage	Internal HDD	1 HDD(2.5") or 1 SSD
	Removable	Micro SD(Industrial, Max 32GB)
Backup	USB	2 USB Ports (use 2 ports below)
	File Format	STRG(NVR Player), EXE(Include Player), AVI
Search	Backup Viewer	Search Playback on Google Map
	Function	8ch Search/Playback, GPS information, G-Sensor
Interface		
Video	Inputs	8 RJ-45 (PoE Support)
	Output	1 HDMI, 1 VGA, Up to 1080p
Audio	Inputs	Network Camera audio input, up to 8CH
	Compression	G.711, G.726
	Ext. Audio Output	1 Phone Jack (main unit), 1 RCA Connector(Control BOX)
Alarm	Inputs	Terminal 8 inputs, NO/NC
	Outputs	Terminal 8 outputs, NO/NC
Others	Ethernet	1 RJ45 (10/100/1000 Base-T Ethernet)
	USB	3 USB(2.0 High Speed)
	GPS	1 SMA
Functions		

Power Management	Shutdown Delay	1 Min. ~ 30 Min. (User selectable)
General		
Electrical	Input Voltage	12V ~ 24V DC
	Power consumption	Max. 30 W
	Camera Power Output	Max. 8 W per channel, Total 64W(PoE, IEEE 802.3af)
Environmental	Operating Temp./Humidity	-25°C to +50°C (-13°F to +122°F) / 20% to 85% RH
Mechanical	Dimension (W x H x D)	<ul style="list-style-type: none"> • SYSTEM : 225.5(W)x 59(H) x 312.2(D) mm • I/O Box : 155(W) X 44(H) X 70(D) mm • Control Box : 121(W) X 32(H) X 75(D) mm
	Weight (With Out HDD)	<ul style="list-style-type: none"> • SYSTEM : 2.17 Kg • I/O Box : 0.35Kg • Control Box : 0.18Kg
Approvals	EMC/Safety	CE, FCC, cUL, e-Mark, KCC, EN50155
	Shock, Vibration	MIL STD-810F method 514.5, EN61373

Default Configurations

Classification	Details		Value	
System	Information	System	NVR Name	None
			Remote controller ID	0
		Vehicle	Company	None
			Manufacture	None
			Model	None
			Registration No.	None
			License No.	None
			Driver	None
	System shut down Delay	5		
	Date & Time	Date & Time	Time zone	GMT
			Daylight saving	OFF
			Date	YY-MM-DD
			Time	12hours
		NTP	Use NTP	OFF
			NTP Server (NTP) Interval	None 1day
		Holiday	None	
	user	user	Auto Login	OFF
Auto Logout			OFF	
User		admin, guest		
Group		Group Administrator, Guest		
Device	Camera	Camera	Title	CAM1~CAM8
			Protocol	ONVIF
			ID	admin
			Password	4321
		Covert	Day	All
			From ~ to	00:00~24:00
			Mode	OFF
	Audio	Select Audio	None	
		Name	AUDIO1~AUDIO8	
	Alarm	Alarm	Alarm Duration	10 sec.
			Title	ALARM1~ALARM8
			Type	NO
		Schedule	Day	All
			From ~ to	00:00~24:00
Mode			Event	
Alarm			1~8, Buzzer	
Display	Displays	Display	Language	English
			Hide Status Bar	Off
		Monitoring	Sequence Interval	10 sec.
	Event popup		OFF	
	PIP	Size	Small	
		Position	Right bottom	
Resolution	Resolution	1280x720		
Record	Record	Record	Overwrite	ON
			User Emergency Rec.	ON
			Auto deletion	OFF
			Time Record	Full frame
			Event Record	Full frame
Emergency Record	Full frame			

		Event	Pre event duration	OFF	
			Emergency Record Duration	No Limite	
			Post Event Duration	1 min.	
		Schedule		Day	All
				From ~ to	00:00~24:00
				mode	Time & event
				Camera	1~8
Network	Address	WAN	Setting	Full frame	
			Type	Static IP	
			IP Address	192.168.1.200	
			Subnet mask	255.255.255.0	
			Gateway	192.168.1.1	
		DDNS server address automatically	OFF		
		DNS server	8.8.8.8		
		PoE	IP Address	10.0.0.1	
			Subnet Mask	255.255.255.0	
			Use DHCP Server	ON	
			IP Range Start	10.0.0.2	
			IP Range End	10.0.0.254	
		Port	Network port	10101	
			Web port	80	
			RTSP port	554	
			Use UPnP	OFF	
		DDNS	Use DDNS	OFF	
DDNS server	smsungipolis.com				
Product ID	None				
Notification	Call back	Call Back Interval	1 min		
		Email interval	1 min		
	Email	Add capture image on email	OFF		
Transmission	Transmission	Limit bandwidth(Kbps)	OFF		
Event	Sensor	Sensor	Select Sensor	None	
	Motion	Motion	Select Camera	None	
	Video loss	Record	Select record	None	
	System	System	Storage full	100 %	
			S.M.A.R.T. Threshold	65°C / 149°F	
		Alarm	Storage bad	Buzzer, Alarm	
			Storage full	Buzzer, Alarm	
			S.M.A.R.T.	Buzzer, Alarm	
		No Record storage	Buzzer, Alarm		
		Emergency recording	None		
	G-Sensor		Use G-Sensor	OFF	
IP Camera		Select IP Camera	None		

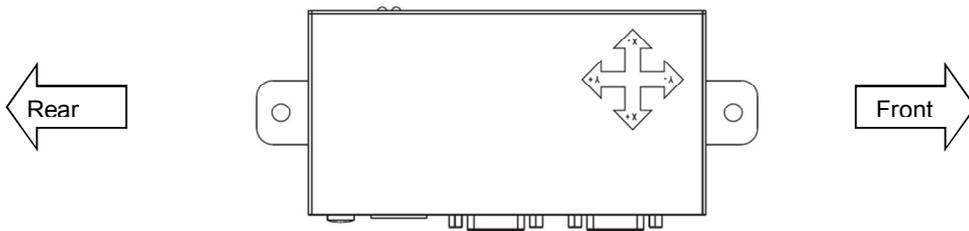
IO BOX Installation

1. Cautions on Installation

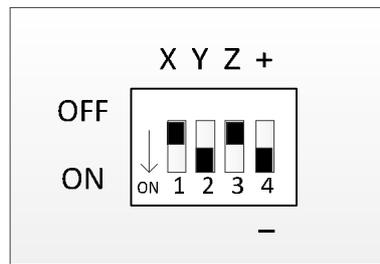
Inside IO Box G-Sensor included. Mind following installation guide when install.

- No matter where you install, maintain level with your vehicle.
- Install parallelize with vehicle moving direction and X, Y, Z axis on product case.
- Check moving direction and axis and set DIP switch on front properly.

Ex) If installed following picture



Set DIP switch as 'Y-' as following picture.



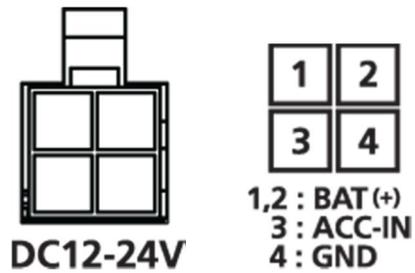
2. Cautions.

Maintaining Level and Dip switch setup should be done before power input to device because IO box calibrates G-sensor when system initialized. If not maintained level nor wrong dip switch setup, system may fail to G-Sensor calibration. If failed to calibrate, G-Sensor output value would not be adjusted again and it send sensor output data from IO box to main unit.

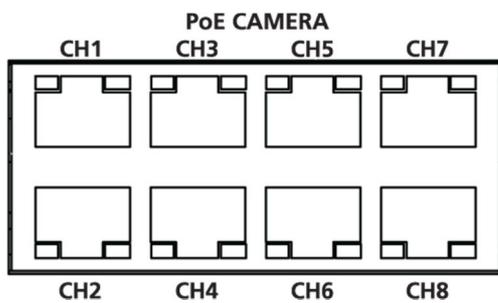
Connector Pin Map

1. Power connector

- VCC/ACC input range is 12Vdc ~ 24Vdc.
- VCC power pin should be connected to battery on vehicle and connect ACC power pin to accessory power on vehicle.
- ACC. Power means the power on when turn key at 'ACC' mode..
-



2. IP camera input connection pin map



No.	PoE Power out / Data in
1	TX+, DC+
2	TX-, DC+
3	RX+, DC-
4	Not use
5	Not use
6	RX- DC-
7	Not use
8	Not use

- When connect IP camera, it's recommended to use 'FTP' or higher level of cable to minimize noises from outside.

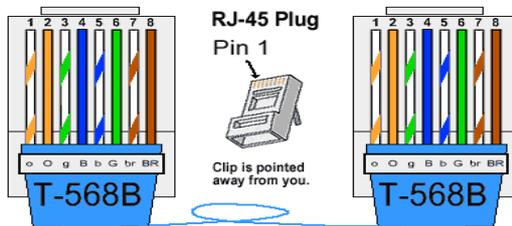
3. UTP Cable Pin Map (IO Box 1/2, Ctrl Box)

- RJ-45 Connector Pin map

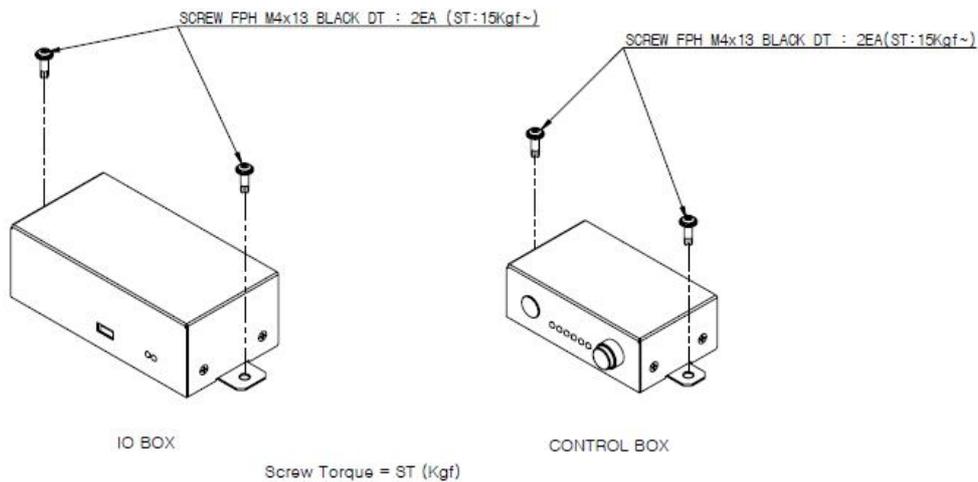
No.	IO Box1	IO Box2	Ctrl Box
1	Not use	Not use	Not use
2	Not use	Not use	GND
3	IO Box TXD	Not use	Analog Audio
4	VCC 12V	Not use	VCC 12V
5	VCC 12V	Not use	Ctrl Box TXD
6	IO Box RXD	Not use	GND
7	GND	Not use	Ctrl Box RXD
8	Detect Pin	Not use	Detect Pin

- UTP Cable

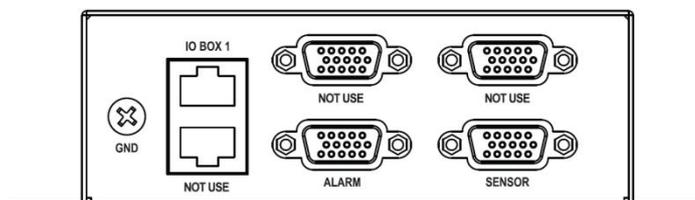
Use Straight type UTP Cable.



4. Installation (IO Box, Control Box)



5. IO Box D-SUB15 Pin Map



No.	Alarm / Sensor	No	Alarm/Sensor
1	Signal 1	9	Signal 5
2	GND	10	GND
3	Signal 2	11	Signal 6
4	GND	12	GND
5	Signal 3	13	Signal 7
6	GND	14	GND
7	Signal 4	15	Signal 8
8	GND		

- **Sensor input connection**
Connect one of sensor signal line to 'Signal' port and the other to 'GND port.
- **Alarm output connection**
It may causes malfunction of system when use alarm devices with excessive voltage or electric current with 'Open Collector' type. Contact installer before use this type.

FAQ

Problem	Action
The system does not turn on and the LED indicator on the front panel does not work at all.	<ul style="list-style-type: none"> • Check if the power supply system is properly connected. • Check the system for the input voltage from the power source.
Video input is connected, but some channels do not display corresponding videos	<ul style="list-style-type: none"> • Check the video output connecting the camera's webviewer. • Check if the network port is properly connected and the network setting is set correctly • Go to 'Menu>Device>Camera>Setup' and enter ID/PW for camera again.
Only display logo continuously.	<ul style="list-style-type: none"> • Mainboard or software may defected. Call your service provider.
No screen displays on monitor even it is connected.	<ul style="list-style-type: none"> • Press 'zoom' button on remote controller for 5 seconds. It adjusts display resolution automatically.
Can't release triggered alarm	<ul style="list-style-type: none"> • Change the 'hour' option on 'menu>device>alarm>Schedule' as 'off' or 'Event' mode.
Can't access from PC to system	<ul style="list-style-type: none"> • Check network cable is connected. • Check IP address configuration on PC. • Do network Ping Test. • Check if there's another device which uses same IP address on network.
System displays 'NO HDD' icon and error message popup.	<ul style="list-style-type: none"> • Check HDD connection status. If there's no problem in connection status, call your service provider and ask them to check HDD..
System doesn't do recording.	<ul style="list-style-type: none"> • Check live image first. If there's no image on live, it won't record. • Check recording configuration is correct. If not configured correctly, it won't record.
Recorded image quality is not good.	<ul style="list-style-type: none"> • Change 'resolution' and 'bit rate' option on 'Menu>record>Record profile'.
Recording frame rate is different to configured frame on Camera	<ul style="list-style-type: none"> • If a camera connect and use multi profiles, it would services less frames than configured frame rate.. Set camera as same profile with single stream as much as you can. In other words, make them same as 'Record , live and network profile'.
Can't receive GPS signal.	<ul style="list-style-type: none"> • Check GPS antenna connection status. • Place GPS Antenna evenly out of vehicle toward sky. If antenna installation is wrong, it receives unstable data with magnetic bottom pad
G-Sensor event triggered on Stop status.	<ul style="list-style-type: none"> • Remove the cable on IO Box and set dip switch properly according to the vehicle's moving direction and connect cable again.
Beep sound when power on system.	<ul style="list-style-type: none"> • Beep sound would be generated by event configuration setup. See event setup. • When don't use 'Micro SD', it would make beep sound until the HDD is 'ready to use' status. In case using Micro SD, data will be stored on it until system temperature reaches to HDD writable point and it switched to HDD when it reached to that temperature.
System still 'on' status after ignition off.	<ul style="list-style-type: none"> • Check 'Shutdown Delay' option on 'Menu->System Information'. System hold power on status during configured time.

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- LGPL Software : glibc, ffmpeg
- OpenSSL License : OpenSSL
- Apache License : mDNSResponder

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Version 2, June 1991

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(Applicable in the European Union and other European countries with separate collection systems)

This marking on the product, accessories or literature indicates that the product and its electronic accessories (e.g. charger, headset, USB cable) should not be disposed of with other household waste at the end of their working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate these items from other types of waste and recycle them responsibly to promote the sustainable reuse of material resources. Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take these items for environmentally safe recycling. Business users should contact their supplier and check the terms and conditions of the purchase contract. This product and its electronic accessories should not be mixed with other commercial wastes for disposal.

Correct disposal of batteries in this product

(Applicable in the European Union and other European countries with separate battery return systems.)

This marking on the battery, manual or packaging indicates that the batteries in this product should not be disposed of with other household waste at the end of their working life. Where marked, the chemical symbols Hg, Cd or Pb indicate that the battery contains mercury, cadmium or lead above the reference levels in EC Directive 2006/6. If batteries are not properly disposed of, these substances can cause harm to human health or the environment. To protect natural resources and to promote material reuse, please separate batteries from other types of waste and recycle them through your local, free battery return system.



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