

Stand Alone Digital Video Recorder



Advanced MPEG-4 DVR 4, 8, 16 Channel Models

User's Manual



FCC Compliance Statement

Notice to Users: 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.

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

The equipment complies with the requirement of FCC CFR 47 PART 15 SUBPART B, Class A.

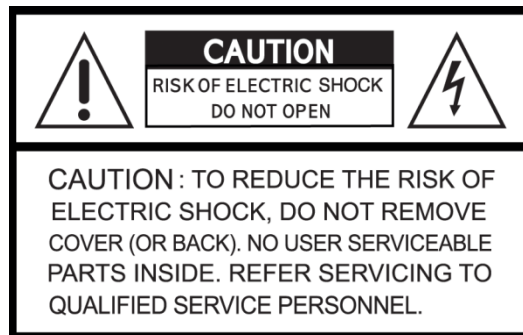
Explanation of Graphical Symbols



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



This symbol indicates the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



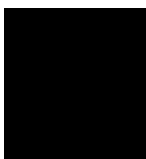
Warnings

- Installation and servicing should be performed only by qualified and experienced personnel.
- Power off the DVR when connecting cameras, audio, or sensor cables.
- The manufacturer is not responsible for any damage caused by improper use of the product or failure to follow instructions for the product.
- The manufacturer is not responsible for any problems caused by or resulting from the user physically opening the DVR for examination or attempting to fix the unit.
- The manufacturer may not be held liable for any issues with the unit if the warranty seal is removed.

Cautions

- This product has multiple-rated voltages (110V and 220V). See installation instructions before connecting to the power supply.
- This product uses a Lithium battery.
- To avoid a risk of explosion, do not replace the battery on the main board by anything other than a Lithium battery.
- Dispose of used batteries according to the manufacturer's instructions.
- This equipment and all communication wirings are intended for indoor use only.
- To reduce the risk of fire or electric shock, do not expose the unit to rain or moisture.

WEEE(Waste Electrical and Electronic Equipment)



Customers in European Union countries are advised to dispose of this product, at the end of its useful life, as per applicable local laws, regulations and procedures.

Important Safeguards

1. **Read Instructions**
All safety and operating instructions should be read before the appliance is operated.
 2. **Retain Instructions**
The safety and operating instructions should be retained for future reference.
 3. **Cleaning**
Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.
 4. **Attachments**
Never add any attachments and/or equipment without manufacturer approval as such additions may result in the risk of fire, electric shock, or other personal injury.
 5. **Water and/or Moisture**
Do not use this equipment near water or in contact with water.
 6. **Accessories**
Do not place this equipment on an unstable cart, stand, or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment.
Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.
-
- Move this equipment and cart combination with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.
7. **Power Sources**
This equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power, please consult your distributor or local power company.
 8. **Power Cords**
Operator or installer must remove power, BNC, alarm, and other connections before moving the equipment.
 9. **Lightning**
For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.
 10. **Overloading**
Do not overload wall outlets and extension cords to avoid the risk of fire or electric shock.
 11. **Objects and Liquids**
Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock.
Never spill liquid of any kind on the equipment.
 12. **Servicing**

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

13. Damage Requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- When the power-supply cord or the plug has been damaged
- If liquid is spilled or objects have fallen into the equipment
- If the equipment has been exposed to rain or water
- If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
- If the equipment has been dropped or damaged the cabinet.
- When the equipment exhibits a distinct change in performance—this indicates a need for service.

14. Replacement Parts

When replacement parts are required, ensure the service technician uses replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

15. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

16. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

17. Correct Batteries

WARNING

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

18. Operating Temperature

An operating temperature range is specified so that the customer and installer may determine a suitable operating environment for the equipment.

19. Elevated Operating Ambient Temperature

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 specified operating temperature range.

20. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

21. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

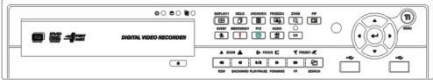




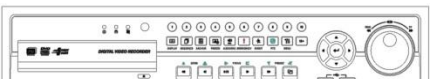



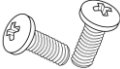
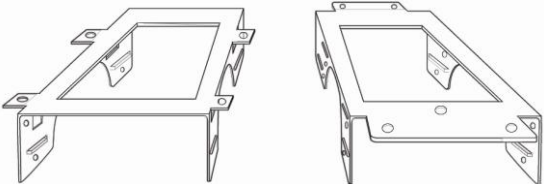
22. Circuit Overloading

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

23. Reliable Earthing (Grounding)

Reliable grounding of rack mounted equipment should be maintained. Particular attention should be given to supply connections other than direct connections to the branch circuit (for example, use of power strips).

THE LIST OF CONFIGURATION

| | |
|-------------------------|--|
| DVR Set | <p>A Type</p>  <p>4CH</p>  <p>8CH</p>  <p>16CH</p> <p>B Type</p>  <p>4CH</p>  <p>8CH</p>  <p>16CH</p> |
| CD (Software/Manual) |  |
| Remote Controller |  |
| Manual |  |
| Screws |  |
| HDD Brackets (Optional) |  |

Operation Precautions

● Power Off

- Do not turn DVR off, or plug off the power adapter while DVR is in operation (record/playback). Otherwise, it may cause permanent damage to the equipment. Please click (←) SETUP>SYSTEM>Shutdown sequentially and then remove the power after DVR is shutdown completely. It is safe to wait for 5 seconds before turning the power on again.
- Do not turn DVR off, or plug off the power adapter while External storage device (e.g., USB memory stick, removable external hard disk and the like) in use. Otherwise, it may cause permanent damage to the equipment. Make sure that the power switch is in the "ON" position until data storage is completed. Please be aware that removing the storage device cause the same damage to the equipment.
- Do not turn DVR off, or plug off the power adapter during the format of the hard disk. Otherwise, it may cause permanent damage to the equipment. Make sure that the power switch is in the "ON" position until the formatting of the disk is completed.

● HDD Installation/Addition/Moving/Replacement/Removal

- For installation/addition/replacement/Removal of HDD (CD-RW, DVD-RW), make sure that DVR is turned off. Otherwise, it may cause permanent damage to the HDD (CD-RW, DVD-RW).
- When you want to power DVR off, please click (←) SETUP>SYSTEM>Shutdown sequentially and then remove the power after DVR is shut down completely.
- **Installation/Addition/Moving/Replacement:** You should start 'HDD initialization' including formatting. Otherwise, DVR won't recognize the hard disk and may begin to function abnormally. Please follow the below procedure for 'HDD initialization'.
 - ① (Date/Time setup) Set up the current date and time (SETUP>SYSTEM>Admin>Date/Time).
 - ② (Initialization of system setup) All setup values are restored to original factory default settings. (SETUP>SYSTEM>Information>Status>Setup>Default).
 - ③ (HDD format) HDD format is done by SETUP>SYSTEM>Admin>Storage>Format. If there are more than two HDDs, each must be formatted, separately. When the format is completed, DVR will auto-reboot.
- **Removal:** Follow the Remove procedure even when a pre-installed hard disk has been removed. SETUP>SYSTEM>Admin>Storage>Format, click (←) 'Removed' item under the discrete Format headings of a corresponding HDD to discard 'HDD' item. When the Remove procedure is completed, DVR will auto-reboot.

● Date/Time Change

- Any change in Date/Time is immediately applied onto live video (LIVE), but the date/time when the recording was done are not changed.
- Make sure that you reboot DVR after adjusting the Date/Time.
- Also, do not forget to execute SETUP>SYSTEM>Shutdown in sequence before reboot.

● Upgrade

- Do not upgrade until you install a hard disk drive. Make sure you upgrade when the hard disk drive is in proper operation.

● Using a Mouse

- **Left mouse button:** have the same function as **Enter (↵)** on the Front panel of DVR
- **Central button (wheel):** have the same function as **Search** key on the Front panel of DVR(display search menu)
- **Right mouse button:** display a number of 'Function keys' (please see 'Input Device and Screen Icons>Using a mouse' in this manual)

● PLAY/PAUSE Key

- Press the **PLAY/PAUSE** key to one-touch playback on the viewing screen (playback the recorded video from the last one minute).
- Every time you press the **PLAY/PAUSE** key during playback mode, it is changed to '1X PLAY' and 'PAUSE'. The displayed sign on the screen also changes from ► to II.
- If you want to change mode (1X PLAY, REW, FF, BACKWARD, FORWARD) during playback, always press the **PLAY/PAUSE** key first (please see if the sign II is shown on the screen).
- Press the **PLAY/PAUSE** key to back up. Make sure that the backup is done in 'PAUSE' mode.

● Camera Title

- Camera Title displayed in Record and Playback modes of DVR is set to CAM1 ~CAM16. Registering camera title in setup menu (DEVICES>Camera/PTZ>Title) is to make every setup process easier.

Table of Contents

SERVER

| | | | | |
|-----------|---|-----------|--|--|
| 1. | Product Features | 8 | | |
| 1.1 | Unpacking | 8 | | |
| 1.2 | Service | 8 | | |
| 1.3 | System Connection Diagram | 8 | | |
| 2. | Installation | 10 | | |
| 2.1 | Hard disk and CD-RW Installation | 10 | | |
| 2.1.1 | SATA Port | 10 | | |
| 2.1.2 | No Jumper Designation | 10 | | |
| 2.1.3 | HDD Installation | 10 | | |
| 2.1.4 | CD-RW (DVD-RW) Installation | 11 | | |
| 2.2 | Connector Wiring | 11 | | |
| 2.2.1 | Video In/Out Connections | 11 | | |
| 2.2.2 | Monitor Connections (Video Out, SVHS, VGA, SPOT) | 11 | | |
| 2.2.3 | Audio Connections | 11 | | |
| 2.2.4 | TCP/IP(Ethernet) Connections | 11 | | |
| 2.2.5 | Alarm Connections | 11 | | |
| 2.2.6 | RS-485/422 Connections | 11 | | |
| 2.2.7 | USB Connections | 12 | | |
| 2.2.8 | RS-232 Connection | 12 | | |
| 2.2.9 | Factory Reset Switch | 12 | | |
| 2.2.10 | Power Supply Connections | 12 | | |
| 2.2.11 | Connection Guideline | 12 | | |
| 3. | Input Device and Screen Icons | 13 | | |
| 3.1 | Keys and LEDs | 13 | | |
| 3.2 | Camera Select Keys for 4/8 channel DVR | 14 | | |
| 3.3 | Front Panel | 14 | | |
| 3.4 | Using a Remote Control | 15 | | |
| 3.5 | Using a Mouse | 15 | | |
| 3.6 | Screen Icons | 16 | | |
| 4. | Setup | 17 | | |
| 4.1 | Login/Logout | 17 | | |
| 4.2 | SYSTEM | 18 | | |
| 4.2.1 | Information | 18 | | |
| | Status | | | |
| | Version | | | |
| | Record | | | |
| 4.2.2 | Admin | 20 | | |
| | Date/Time | | | |
| | NTP | | | |
| | Storage | | | |
| 4.2.3 | Account | 24 | | |
| | New Group | | | |
| | Login Settings | | | |
| | New User | | | |
| 4.2.4 | System Log | 26 | | |
| 4.2.5 | Exit | 26 | | |
| 4.2.6 | Shutdown | 27 | | |
| 4.3 | DISPLAY | 27 | | |
| 4.3.1 | OSD | 27 | | |
| 4.3.2 | Main Monitor | 28 | | |
| | Full Seq | | | |
| | Quad Seq | | | |
| | X9 Seq | | | |
| 4.3.3 | Spot Monitor | 28 | | |
| 4.3.4 | Spot Monitor control on display mode | 29 | | |
| 4.4 | DEVICES | 29 | | |
| 4.4.1 | Network | 29 | | |
| | LAN | | | |
| | DDNS | | | |
| | Port | | | |
| | Notification | | | |
| 4.4.2 | Camera/PTZ | 32 | | |
| 4.4.3 | Audio | 33 | | |
| 4.4.4 | Alarm In | 34 | | |
| 4.4.5 | Alarm Out | 34 | | |
| 4.5 | RECORD | 35 | | |
| 4.5.1 | Settings | 35 | | |
| | Continuous | | | |
| | Event | | | |
| | Emergency | | | |
| 4.5.2 | Schedule | 37 | | |
| 4.5.3 | Pre Alarm | 38 | | |
| 4.5.4 | Motion Detection | 38 | | |
| 4.5.5 | Holiday | 39 | | |
| 4.6 | LINK | 39 | | |
| 4.6.1 | Alarm In | 40 | | |
| 4.6.2 | Motion Event | 40 | | |
| 4.6.3 | Video Loss | 41 | | |
| 4.6.4 | System Event | 41 | | |
| 4.6.5 | Popup Link | 42 | | |
| 5. | Operation Instruction | 43 | | |
| 5.1 | Viewing | 43 | | |
| 5.1.1 | First Image | 43 | | |
| 5.1.2 | View Formats | 43 | | |
| 5.1.3 | Digital Zoom | 44 | | |
| 5.1.4 | Freeze Live Image | 44 | | |
| 5.1.5 | Pan/Tilt Control | 44 | | |
| 5.1.6 | System Log | 45 | | |
| 5.1.7 | Key Lock | 45 | | |

| | | |
|------------|---|-----------|
| 5.1.8 | Emergency Recording----- | 46 |
| 5.2 | Search ----- | 46 |
| 5.2.1 | Date/Time Search ----- | 46 |
| 5.2.2 | Calendar Search ----- | 46 |
| 5.2.3 | Event Search ----- | 47 |
| 5.3 | Playback----- | 48 |
| 5.4 | One-touch Playback----- | 49 |
| 5.5 | ARCHIVE----- | 49 |
| 5.6 | Color Control and Position ----- | 50 |
| 5.7 | Alarm Out Control ----- | 51 |

CMS

| | | |
|------------|-----------------------------------|-----------|
| 6. | Program Installation ----- | 53 |
| 6.1 | System Recommendation----- | 53 |
| 6.2 | Program Installation Method----- | 53 |
| 6.3 | Login----- | 54 |

| | | |
|-----------|--|-----------|
| 7. | Function and Instructions ----- | 55 |
|-----------|--|-----------|

| | | |
|------------|---|-----------|
| 8. | Watch Mode ----- | 56 |
| 8.1 | Login Screen ----- | 56 |
| 8.2 | Local Setting ----- | 56 |
| 8.2.1 | System Setup ----- | 56 |
| 8.2.2 | Remote Site ----- | 57 |
| 8.3 | Live Video ----- | 58 |
| 8.3.1 | Network Connect ----- | 58 |
| 8.3.2 | Watch Mode ----- | 59 |
| 8.3.3 | Multi Screen ----- | 60 |
| 8.3.4 | Screen Color Adjustment ----- | 60 |
| 8.3.5 | Audio ----- | 60 |
| 8.3.6 | System LOG ----- | 60 |
| 8.3.7 | Alarm Out ----- | 61 |
| 8.3.8 | One Touch Recording ----- | 61 |
| 8.4 | PTZ Control ----- | 61 |
| 8.5 | Health Check ----- | 62 |
| 8.5.1 | Camera Connection and Operating Status ----- | 63 |
| 8.5.2 | HDD Connection and Its Operating Status ----- | 63 |
| 8.5.3 | Recording Status ----- | 63 |
| 8.5.4 | Motion Recording Status ----- | 63 |
| 8.5.5 | Alarm In Connection and Operating Status ----- | 63 |
| 8.5.6 | Alarm Out Connection and Operating Status ----- | 63 |
| 8.6 | Remote Setting----- | 63 |

| | | |
|------------|-------------------------------|-----------|
| 9. | Search Mode ----- | 65 |
| 9.1 | Search Screen ----- | 65 |
| 9.2 | Remote Search ----- | 65 |
| 9.3 | Local Search ----- | 66 |
| 9.4 | Event Search ----- | 66 |
| 9.5 | Playback ----- | 67 |
| 9.5.1 | Playback Control Button ----- | 67 |
| 9.5.2 | Print ----- | 67 |
| 9.5.3 | Save ----- | 67 |
| 9.5.4 | Archive----- | 68 |

| | | |
|-------------|-----------------------------|-----------|
| 10. | Others ----- | 69 |
| 10.1 | Viewer ----- | 69 |
| 10.2 | E Map ----- | 69 |
| 10.3 | Watermark Check System----- | 70 |
| 10.4 | Estimator ----- | 71 |

1. Product Features

1.1 Unpacking

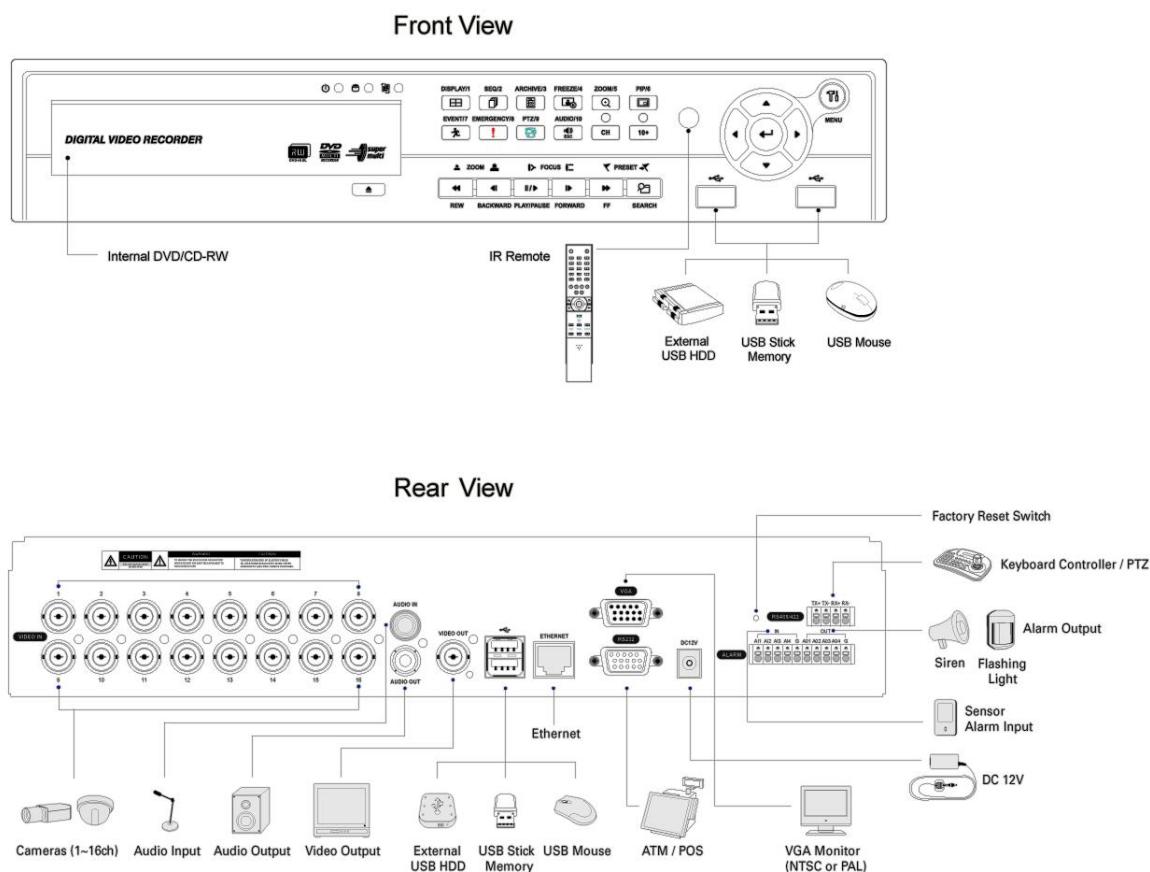
- This equipment is an electronic appliance, so it should be handled with special care.
- After unpacking, please check if all the following items are included.
 - DVR Main body
 - Power Supply Adapter (DC 12V, 5A) or Power Supply Cable
 - Remote Control With 2 AAA batteries
 - Installation CD (CMS Software & User's Manual)

1.2 Service

- If there is any problem in the product, please refer servicing to a supplier or a distributor with qualified service personnel.

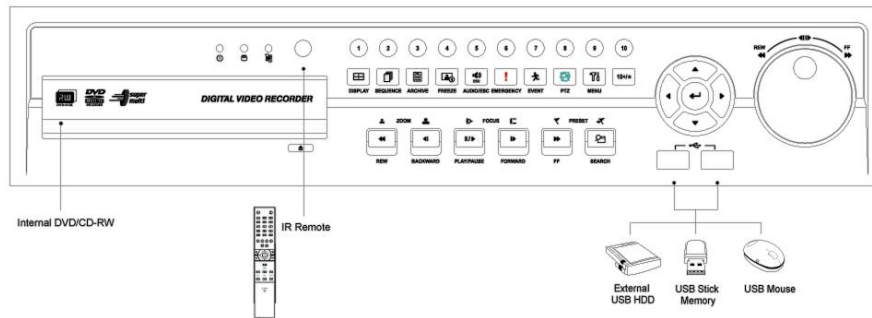
1.3 System Connection Diagram

A Type - 4 / 8 / 16 Channel Series DVR

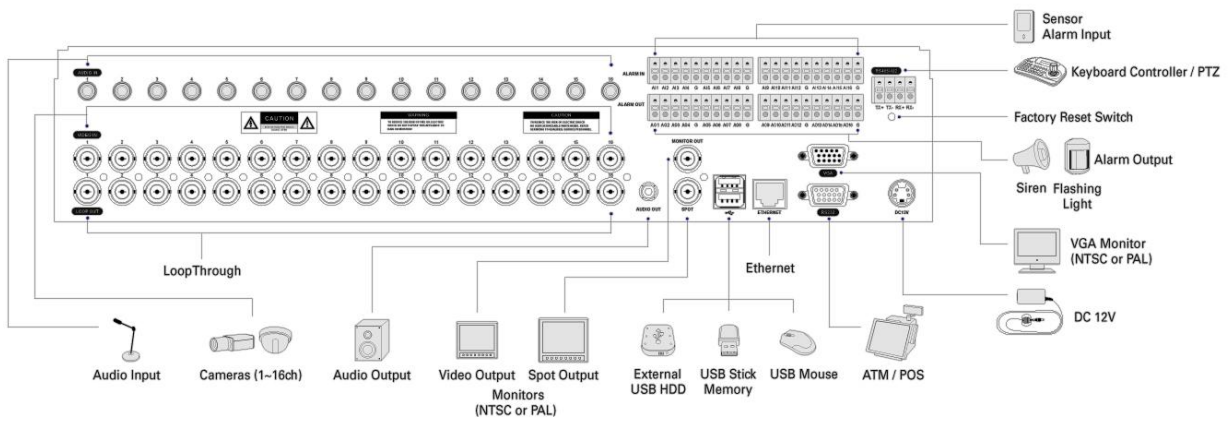


B Type - 4 / 8 / 16 Channel Series DVR

Front View



Rear View



2. Installation

2.1 Hard disk and CD-RW Installation

2.1.1 SATA Port

- Main substrate of this DVR has three SATA ports: they are indicated as SATA 1,2 and SATA 3.(**A Type**)
Main substrate of this DVR has four SATA ports: they are indicated as SATA 1,2 and SATA 3,4.(**B Type**)
- Up to two SATA devices (hard disk, CD-RW, and DVD-RW) are connected in Serial to the SATA ports, but the devices must be connected correct SATA port.
- Please mount CD-RW (or DVD-RW) at the **SATA 3 port.**(**A Type** DVR)
Please mount CD-RW (or DVD-RW) at the **SATA 4 port.**(**B Type** DVR)
- Refer to below table to mount a hard disk and CD-RW (or DVD-RW).

A Type

| | Storage | | SATA 1,2 Port | | SATA 3 Port |
|----------------------------------|---------|--------------|---------------|------|----------------|
| | HDD | CD or DVD-RW | 1 | 2 | 3 |
| A Type 4/8/16 Channel DVR | 1 | 1 | HDD | ---- | CD-RW (DVD-RW) |
| | 2 | 1 | HDD | HDD | CD-RW (DVD-RW) |

B Type

| | Storage | | SATA 1,2 Port | | SATA 3,4 Port | |
|----------------------------------|---------|--------------|---------------|------|---------------|----------------|
| | HDD | CD or DVD-RW | 1 | 2 | 3 | 4 |
| B Type 4/8/16 Channel DVR | 1 | 1 | HDD | ---- | ---- | CD-RW (DVD-RW) |
| | 2 | 1 | HDD | HDD | ---- | CD-RW (DVD-RW) |
| | 3 | 1 | HDD | HDD | HDD | CD-RW (DVD-RW) |
| | 4 | ---- | HDD | HDD | HDD | HDD |

2.1.2 No Jumper Designation

- SATA device does not use jumper. You only need to connect SATA device to SATA port according to HDD/ CD-RW (or DVD-RW) you have. A connector for designation is located between the 7-pin SATA connector and the 15-pin Power connector.

2.1.3 HDD Installation

- Securely fix a hard disk by using bracket and screws provided herewith.
- Please do not use any different hard disk cables (data cable and power supply cable) other than ones we provide. Otherwise, it may cause damage to the hard disk.

CAUTION

Install hard disk after DVR power is off. Otherwise, it may cause permanent damage to the hard disk. To turn off DVR, please click (←) SETUP>SYSTEM>Shutdown. Also, wait for 5 seconds before plugging in power supply again.

CAUTION

- For installation/addition/replacement/Removal of HDD (CD-RW, DVD-RW), make sure that DVR is turned off. Otherwise, it may cause permanent damage to the HDD (CD-RW, DVD-RW).
- **Installation/Addition/Moving/Replacement:** You should start 'HDD initialization' including formatting. Otherwise, DVR won't recognize the hard disk and may begin to function abnormally. Please follow the below procedure for 'HDD initialization'.
 - ① (Date/Time setup) Set up the current date and time (SETUP>SYSTEM>Admin>Date/Time)
 - ② (Initialization of system setup) All values in setup are restored to factory default settings (SETUP>SYSTEM>Information>Status>Setup>Default).
 - ③ (HDD format) HDD format is done by SETUP>SYSTEM>Admin>Storage>Format. If there are more than two HDDs, each must be formatted, separately. When the format is completed, DVR will auto-reboot.
- **Removal:** Follow the Remove procedure even when a pre-installed hard disk has been removed. In SETUP>SYSTEM>Admin>Storage>Format, click (↩) 'Removed' item under the discrete Format headings of a corresponding HDD to discard 'HDD' item. When the Remove procedure is completed, DVR will auto-reboot.

2.1.4 CD-RW(or DVD-RW) Installation

- Securely fix CD-RW (or DVD-RW) by using bracket and screws provided herewith.
- Please do not use any different CD-RW (or DVD-RW) cables (data cable and power supply cable) other than the ones we provide. Otherwise, it may cause damage to the CD-RW (or DVD-RW).
- Only one CD-RW (or DVD-RW) can be used. Mount it at the SATA 3 port. (**A Type DVR**)
Only one CD-RW (or DVD-RW) can be used. Mount it at the SATA 4 port. (**B Type DVR**)

CAUTION

Install CD-RW (or DVD-RW) hard disk after DVR power is off. Otherwise, it may cause permanent damage to the hard disk. To turn off DVR, please click (↩) SETUP>SYSTEM>Shutdown. Also, wait for 5 seconds before plugging in power supply again.

2.2 Connector Wiring**2.2.1 Video-In/Out Connections**

- Connect a camera to '**VIDEO IN**'.
- If you want to link camera input to another device, please connect the camera to '**LOOP OUT**'.
- Assure the '**VIDEO IN**' and '**LOOP OUT**' are connected properly, not oppositely.

(NOTE)

LOOP OUT function use Only **B Type** model.

2.2.2 Monitor Connections (Video Out, VGA, SPOT)

- Use with CCTV monitor, SVHS monitor, and computer monitor. Please connect the CCTV monitor to '**VIDEO OUT**', the computer monitor to '**VGA**', respectively. If necessary, you may connect another CCTV monitor to '**SPOT**'.

(NOTE)

SPOT function use only **B Type** model.

2.2.3 Audio Connections

- Connect an audio device to '**AUDIO IN**', and a speaker system to '**AUDIO OUT**'. Please use a speaker system with volume adjustable.

2.2.4 TCP/IP(Ethernet) Connections

- Connect to '**ETHERNET**' connector with the LAN cable.
- When connect to Internet, use an ordinary LAN cable (Non-cross cable). However, when connect directly to your PC, please use only 'Cross cable'.

2.2.5 Alarm Connections

- Connect Alarm Input (Sensor) to '**AI 1~AI 4(AI 16)**' connectors, and connect Sensor Common to '**G**' connector.
- Connect Alarm Output (buzzer, siren, etc.) to '**AO 1~AO 4(AO 16)**' connectors, and connect Common to '**G**' connector.
- Connect Pan/Tilt receiver (or Pan/Tilt camera) to '**RS-485/422**' connector. Please observe proper (+) and (-) polarity.

2.2.6 RS-485/422 Connections

- PTZ Camera connector
- Please use TX+, TX-, RX+, and RX- terminals.

2.2.7 USB Connections

- There are three identical USB (2.0) ports in front and in rear. You may connect an external hard disk, an external USB CD/DVD-RW, and a USB memory stick to the USB ports.
- When you use an external hard disk, please assure the connecting cable is not longer than 1.8m (6 ft).

2.2.8 RS-232 Connection

- This connector is for manufacturer only.
- Please do not use this connector.

2.2.9 Factory Reset Switch

- Reset the switch to restore all setup values of menus to factory default settings. You may also use this switch to initialize System Log file.
- The switch is located in a pin hole on the left-hand side of the USB connector of the back panel.
- Put the clip pin into the switch hole on the monitor (Live) screen, and keep pressing until you feel the switch has clicked.

CAUTION

PRESS FACTORY RESET SWITCH ONLY IN LIVE MODE. NEVER PRESS IN SETUP MODE.

2.2.10 Power Supply Connections






















- DC powered DVR: Plug the power supply adapter included in this product in '**DC12V**' connector. Input voltage is a free volt (100 VAC ~ 240 VAC). Please do not use any different power supply adapter because it may cause the DVR to malfunction.
- AC powered DVR: Plug the power supply cable into the power supply (the wall socket). Input voltage is a free volt (100 VAC ~ 240 VAC).

2.2.11 Connections Guideline

- **Video Out Connector**: If only the monitor is connected to VIDEO OUT connector, please set the impedance switch on the rear side of the monitor to 75 ohms to prevent abnormally bright or collapsed images. If you want to connect another device (e.g., a recorder) to the back of the monitor, please set the impedance switch on the rear side of the monitor to HIGH Z (High Impedance) and set the last device to 75 ohms.
- **Alarm Input Connector**: Do not impress any type of voltage to the AI 1~AI 4 (AI 16) connectors.

3. Input Device and Screen Icons

3.1 Keys and LEDs

| KEYS | PTZ KEY | Operating mode | Setup mode |
|--------------------------------|---|---|---|
| ▲, ▼, ◀, ▶ | | • Control Pan/Tilt rotation of up/down/left/right in PTZ mode | • Up/Down/Left/Right on screen cursor control |
| 1 ~ 8 |  | • Camera select keys (A Type : 4/8/16 channel DVR) | |
| 1 ~ 10 |  | • Camera select keys (B Type : 4/8/16 channel DVR) | |
| DISPLAY |  | • Select sequence mode | |
| SEQUENCE |  | • Channel sequence mode on/off (Main Monitor) | |
| SEARCH |  | • Video search mode on/off | |
| ARCHIVE |  | • Copy video data into the external storage device | |
| FREEZE |  | • Screen freeze mode on/off | |
| AUDIO/ESC |  | • Audio on/off (Viewing/Playback) • Select audio channel: Press AUDIO key and then channel key • ESC | |
| EMERGENCY |  | • Emergency recording on/off | |
| EVENT |  | • System Log display on/off | |
| PTZ |  | • Pan/Tilt control mode on/off | |
| MENU |  | • Enter the Main Menu (Setup mode) | |
| REW |  | • Fast reverse playback (changes to x16, x32 with each press) • Zoom Out in PTZ mode | |
| BACKWARD |  | • Frame-by-frame reverse still image playback • Zoom In in PTZ mode | |
| PLAY/PAUSE |  | • Viewing mode: One-touch playback (playback the recorded video from the last one minute) • Playback mode: 1X PLAY/PAUSE • Focus Near in PTZ mode | |
| FORWORD |  | • Focus Far in PTZ mode • Exit Window without saving | |
| FF |  | • Fast forward playback (changes to x16, x32 with each press) • Save Preset in PTZ mode | |
| FORWARD |  | • Frame-by-frame forward still image playback • Go to in PTZ mode | |
| Power LED (Red) |  | • Light off: DVR off • Light on: DVR on | |
| HDD LED (Green) |  | • Light off: Stop recording • Blink : Recording/Playback modes (HDD Access), Archive in operation | |
| Network LED (Yellow) |  | • Light off: failed to connect to Ethernet • Blink: Connected to Ethernet | |

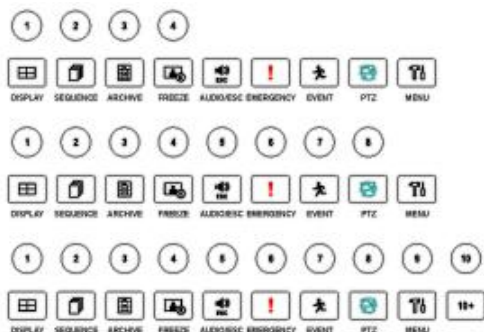
3.2 Camera Select Keys for 16 channel DVR.

A Type model



- Below shows how to select camera channel for 4 channel DVR
 - Select Camera No. 1~4: press **CH** key and use **1~4** key
- Below shows how to select camera channel for 8 channel DVR
 - Select Camera No. 1~8: press **CH** key and use **1~8** key
- Below shows how to select camera channel for 16 channel DVR
 - Select Camera No. 1~9: press **CH** key and use **1~9** key
 - Select Camera No. 10~16: press **CH** key and use **10+**, **1~6** key

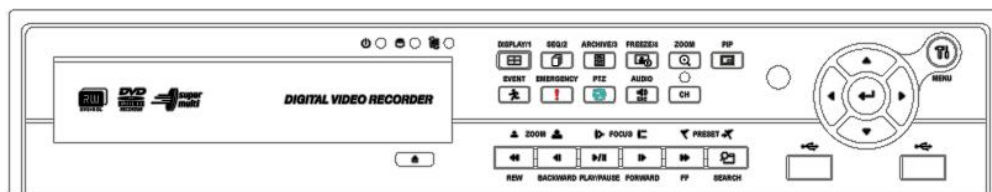
B Type model



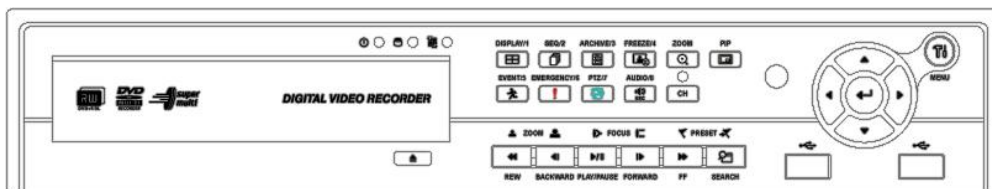
- Below shows how to select camera channel for 4/8/16channel DVR
- Below shows how to select camera channel for 4 channel DVR
 - Select Camera No. 1~4
- Below shows how to select camera channel for 8 channel DVR
 - Select Camera No. 1~8
- Below shows how to select camera channel for 16 channel DVR
 - Select Camera No. 1~10: use **1~10** direction key
 - Select Camera No. 11~16: press **10+/*** and use **1~6** direction key

3.3 Front Panel

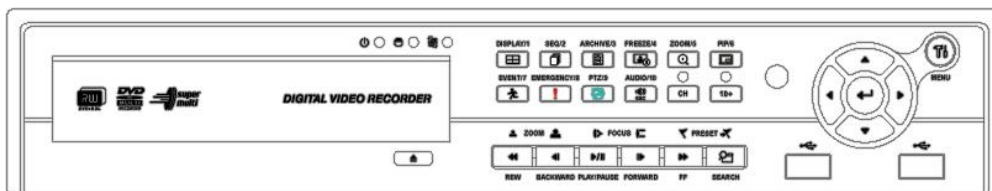
A Type model



4 Channel DVR

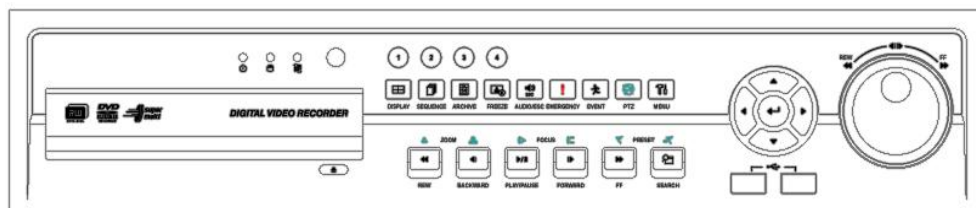


8 Channel DVR

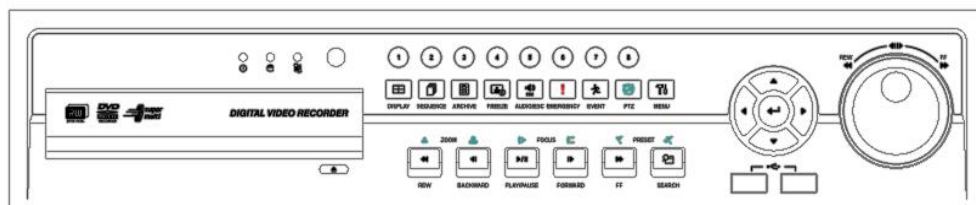


16 Channel DVR

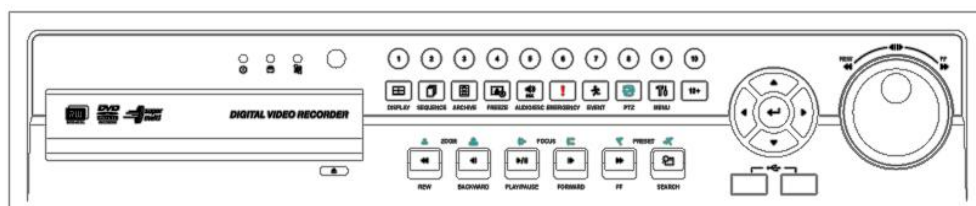
B Type model



4 Channel DVR



8 Channel DVR



16 Channel DVR

3.4 Using a Remote Controller













- Usage of a remote controller is same as the front panel keys.
- Follow the procedure below when you use the remote controller for multi DVRs.
 - ① Check System ID (e.g., between 1 and 999) of the DVR you wish to use (SETUP>SYSTEM>Information>Status>System ID).
 - ② Holding up the remote controller to face towards the DVR, and press the System ID numbers one by one, while pressing ID button on the remote controller. Note that the System ID is a **3-digit number**. Button '10' functions the same as '0'. (e.g.: If System ID is 3, you should press **10>10>3** buttons in sequence while pressing the ID button)

3.5 Using a Mouse

- Mouse provides an easier access to adjustment. Refer to below for proper use.
- Left mouse button functions the same as **Enter** (↵) key on the front panel of DVR.
- Right mouse button displays the following "Function keys" on your screen.
- Click Search menu at "Function Keys" the same as **Search** key on the front panel of DVR. Press the button, then the Search menu will appear on your screen.

| Name of Key | Function | Name of Key | Function |
|-----------------|-------------------|------------------|--|
| Display | Same as panel key | Event | Same as panel key (indicate System Log) |
| Sequence | Same as panel key | Search | One-touch playback (same function with (PLAY/PAUSE)) |
| Spot | Same as panel key | Setup | Same as panel key |
| Zoom | Same as panel key | Emergency | Same as panel key |
| Freeze | Same as panel key | Shutdown | Prestep before Power off (SETUP>SYSTEM>Shutdown) |
| PIP | Same as panel key | Cancel | Cancel Function key menu |
| PTZ | Same as panel key | | |

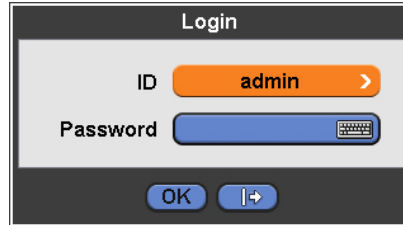
3.6 Screen Icons

| Icon | Description | Icon | Description |
|---|--|---|---|
|  | Continuous recording mode |  | In Audio recording |
|  | Event recording mode (Alarm In/Motion) |  | CMS access indication/ No. of accesses (up to 4) |
|  | In recording |  | In channel sequencing |
|  | PTZ registration / PTZ mode |  | Lock |
|  | Remote Controller |  | Setup in HDD Overwrite mode |
|  | Setup in HDD No Overwrite mode (HDD Full) |  | Setup in HDD No Overwrite mode (recording) |

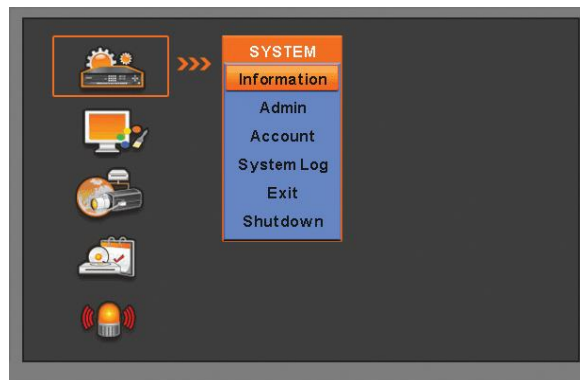
4. Setup

4.1 Login/Logout

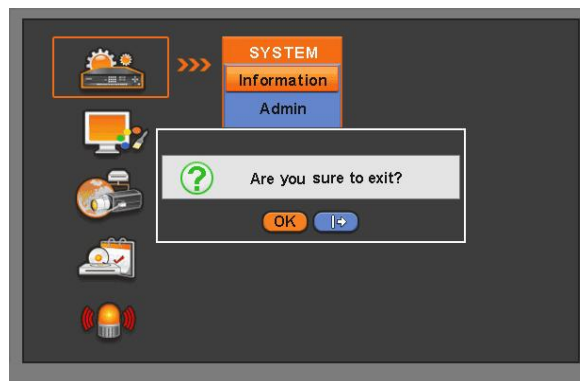
- At the default setting of DVR, you have to input the password to enter the set up menu.
- Please press SETUP key to enter the setup menu and the following screen will appear.



- In order to use all functions and privileges, login is as ID: admin.
- Default Password is "1111".
- At Setup>System>Account, click Login Settings button and you can set for Login window. When you use Setup, Archiving, Search, Shutdown, Network menu, you can limit general users' approach by the login window (See 4.2.3 Account).
- At Setup>System>Account menu, if you add a user, that user's ID will appear and you can login as its general ID.
- After login successfully, following screen will appear:



- Recording continues during setup.
- Main menu consists of 5 sub menus.
(SYSTEM / DISPLAY / DEVICES / RECORD / LINK)
- There is no factory default in the case of passwords.
- To escape from the setup menu, please click(←) on SYSTEM>Exit on the screen. Then, the following dialogue box will appear.



- Please choose 'OK' to log out.
- You may select the Main menu with ◀, ▶ direction keys or mouse click. Please click (↵) the submenu to choose a submenu under the Main menu.

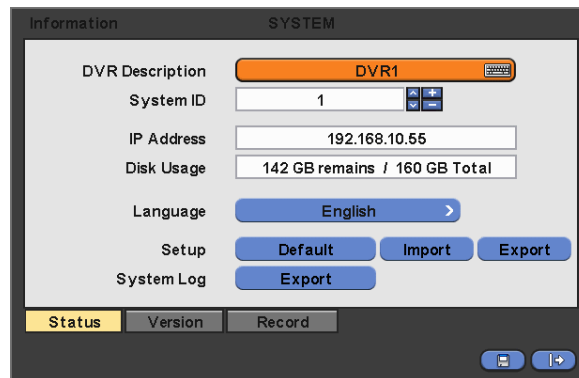
(NOTE)

Press AUDIO/ESC in the setup screen, start operation alike CANCEL (ESC).
It will not operate live or playback mode but only in the setup menu.

4.2 SYSTEM

4.2.1 Information

- Please click (←) SYSTEM>Information, and the following screen will appear.



Status

Site Description

- Decide name of DVR.
- Please click (←) keyboard icon on Site Description frame, and the following virtual keyboard will appear.



- Please click (←) desired letters (characters) on the virtual keyboard to input.

① Use to erase one character every time.

② Use to erase the whole sentence.

- Please choose 'OK' to confirm the input, and choose 'Cancel' to cancel.

System ID

- Control DVRs by one remote controller by setting DVR IDs.
- Please click (←) ▲, ▼ direction keys on the right-hand side of the System ID frame to set the ID of DVR. Take any whole number **between 1 and 255**.
- While pressing (+) or (-) button, the System ID value increases or decreases by 10 units.

Language

- Please click (←) Language frame to choose desired language and press (←) key again.

Setup

- **Default:** Click (←) Default frame to restore all setup values of menus to factory default settings. Please note that System Log is not initialized.

(NOTE)

This has a different function from Factory Reset Switch on the back panel of DVR in that System Log is not initialized.

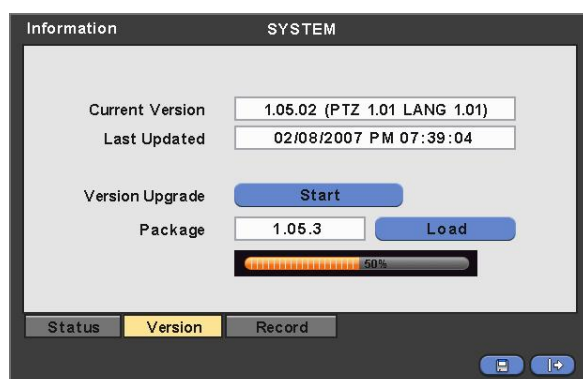
- **Import:** Copy the Menu setup stored in USB memory stick into DVR. Please plug in the memory stick and then click (↵) Import.
- **Export:** Store the Menu setup of DVR in USB memory stick. Please plug in the memory stick and then click (↵) Export.
- When you are working on Default, Import, Export, a message box will ask the progress and click the confirmation icon, then a message box will show whether its success or failure.

System Log

- **Export:** Store the System Log contents in USB memory stick. Please plug in the memory stick and then click (↵) Export.
- When you are working on Default, Import, Export, a message box will ask the progress and click the confirmation icon, then a message box will show its success or failure.

Version

- When you complete Status data input, please click (↵) Version, and the following screen will appear.



Version Upgrade

- You may upgrade DVR software.
- Please follow the Upgrade procedure below.
 - ① Plug USB memory stick having upgrade file into DVR.
 - ② Click (↵) Load frame. Then, software version stored in the USB will appear on the left-hand side.
 - ③ Click (↵) Start frame to start the upgrade.
 - ④ When the upgrade is completed, a dialogue box pops up. Please choose 'OK' and DVR will auto-reboot.

CAUTION

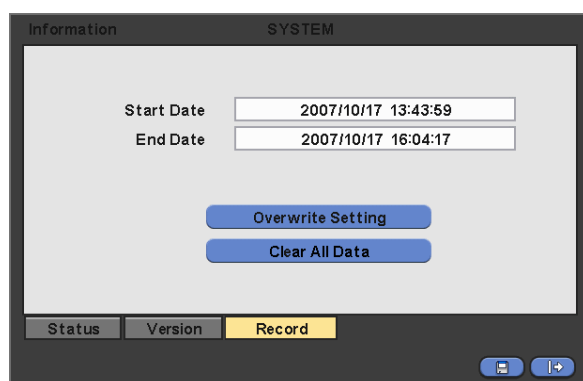
DO NOT UPGRADE UNTIL YOU INSTALL A HARD DISK DRIVE. MAKE SURE YOU UPGRADE WHEN HDD IS IN PROPER OPERATION.

CAUTION

PLUGGING OUT USB DEVICE OR FORCED POWER-OFF MAY CAUSE PERMANENT DAMAGE.

Record

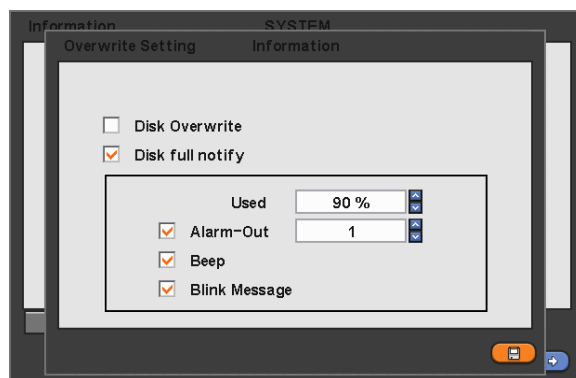
- When you complete Version input, please click (↵) Record. Then, the following screen will appear.






- The screen shows start time and end time of recorded data.

Overwrite Setting

- Click(↵) Overwrite Setting button and the following screen will appear.



- You may set for beeping or notifying messages that notify the used percentage of disk.
- Check Disk Overwrite and you may activate the overwrite function.
This function makes restart the recording from the beginning when the HDD is full. The previous recorded data will be erased from the first one. Following icon will display in bottom of live mode .
- ① Uncheck (☐) Disk Overwrite, recording will stop automatically when the HDD is full.
- ② At the Overwrite mode, when HDD capacity is full,  icon will appear, and the recording is going on,  will appear.
- ③ If you change this setting, the warning message will appear. Then click (↵) 'confirmation' button and you may change the setting.
- If you check (☑) Disk full notify item, the warning message will appear as the used amount of disk.
 - ① **Used**
You may set the certain value of HDD usage for notification. It will notify at that point. The values are from 50 ~ 100%.
 - ② **Alarm-Out**
The Alarm-out will happen at the used amount of HDD which is specified at Used.
 - ③ **Beep**
Check (☑), the warning sound will happen at the used amount of HDD which is specified at Used.
 - ④ **Blink Message**
Check (☑), the warning message "Disk Used(xx%)!" will appear on the OSD.

(NOTE)

Notify setting does not affect saving the recorded data. It only gives notification, and keep recording until hard disk is full.

(NOTE)

For more specific setting about Alarm-out, use Setup>DEVICES>Alarm Out.

Clear All Data

- Use to delete or purge all normal recorded data from database. Please follow the procedure below.
 - ① Click (↵) Clear All Data frame.
 - ② When a dialogue box asking "Remove All Data?" shows, choose 'OK'.
 - ③ Then, Progress window will appear and the process starts.
 - ④ When all data are deleted, a dialogue box asking "Are you sure to reboot?" will pop up.
 - ⑤ Choose 'OK' to delete all the recorded data as well as System Log.

(NOTE)

This might take a while to completely delete all data. In case of 80GB HDD for example, it takes about 90 seconds.

- When you finish all the necessary inputs to SYSTEM menu, please click (↵) 'OK' on the bottom to go back to SETUP screen.

4.2.2 Admin

- Please click (←) SYSTEM>Admin, and the following screen will appear.

The screenshot shows the 'Admin' screen for the 'SYSTEM' menu. It contains the following fields and controls:

- Date:** 2007 - 08 - 01 (with up/down arrows)
- Time:** 14 : 41 : 49 (with up/down arrows)
- Time Zone:** GMT+00:00 Greenwich Mean Time : Dublin (with a right arrow)
- Use Daylight Saving Time:** An unchecked checkbox and a 'Period' button.
- Date Format:** YYYY-MM-DD (with a right arrow)
- Time Format:** 24 Hour (with a right arrow)

At the bottom, there are three tabs: 'Date/Time' (highlighted in yellow), 'NTP', and 'Storage'. In the bottom right corner, there are two buttons: a save icon and a back/forward arrow icon.

Date/Time

Date

- This menu will allow you to adjust the settings.
- Please follow the procedure below for time adjustment.
 - ① Click (←) items (Y, M, D) you want to change. A designated item will be highlighted in a box (Y: Year, M: Month, and D: Day).
 - ② Adjust the number by clicking (←) ▲, ▼ buttons on the right-hand side.
 - ③ Repeat the same procedure to change Y, M, and D.

Time

- This menu will allow you to adjust the current time. The adjustment procedure is same as of Date.

CAUTION

IF ADJUSTED DATE/TIME IS PRIOR TO RECORDED DATA, DATA AFTER NEW DATE/TIME MAY BE ERASED.

CAUTION

ANY CHANGE IN DATE/TIME IS IMMEDIATELY APPLIED ON VIEWING SCREEN (LIVE), BUT THE DATE/TIME WHEN THE RECORDING WAS DONE ARE NOT CHANGED. MAKE SURE TO REBOOT DVR AFTER CHANGING THE DATE/TIME. DO NOT FORGET TO EXECUTE SHUTDOWN (SYSTEM>Shutdown) BEFORE REBOOT.

Time Zone

- Please click (←) Time Zone frame to see the list of nations, and choose one.
- Click (←) a check box next to Use Daylight Saving Time. When you live in a region to observe DST, please check it (i.e. ☒.
- If DST is observed, please click (←) Period and the following screen will appear.

This screenshot shows the 'Day light Saving Time' settings screen, which is a sub-menu of the 'Admin' screen. It contains the following controls:

- Month:** A dropdown menu currently showing '3'.
- Week:** A dropdown menu currently showing '2nd'.
- Weekday:** A dropdown menu currently showing 'SUN'.
- Begin:** A field showing '11' with up/down arrows.
- End:** A field showing '1st' with up/down arrows.

At the bottom of the sub-menu, there are two buttons: a save icon and a back/forward arrow icon. The background shows the 'Admin' screen with the 'Date/Time' tab selected.

- Adjust the dates of beginning (Begin) and end (End) of DST by 'Month/Week/Weekday'.
- Click (←) the numbers in 'Month/Week/Weekday' for adjustment.

- Choose 'OK' to confirm the setting.

Date Format

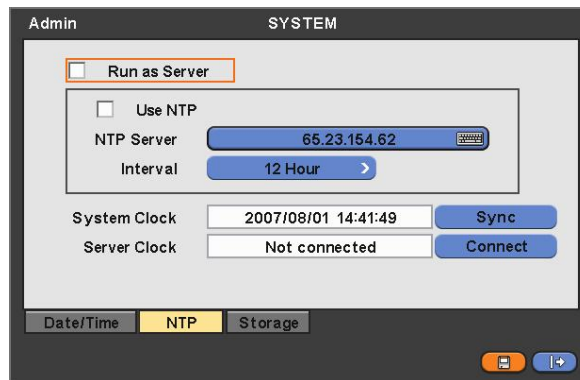
- Set date indication format. Please click (↵) Date Format frame to select a format you like from the list.

Time Format

- Set time indication format. Please click (↵) Time Format frame to select a format you like from the list.

NTP

- When you complete Date/Time input, please click (↵) NTP and the following screen will appear.



- This menu is for accurate setting of time of day clock in DVR.
- You may check ☒ only one of Run as Server and Use NTP.
 - **Run as Server:** NPT cannot be used in a non-networked environment (Intranet environment). In this case, DVR with Run as Server functions as Time Server.
 - **Use NTP:** Connect to Internet to synchronize DVR clock with Network Time Server's clock.

NTP Server

- Click (↵) keyboard icon in NTP Server frame, and the virtual keyboard will appear. Input IP address of NTP server.

(NOTE)

Currently used NTP is administered by pool.ntp.org and its IP address is 65.23.154.62. However, users are allowed to use IP address of any NTP site.

Interval

- Set clock-update-interval from NTP Server. Normally, you can adjust 30 min up to 24 hours.

System Clock

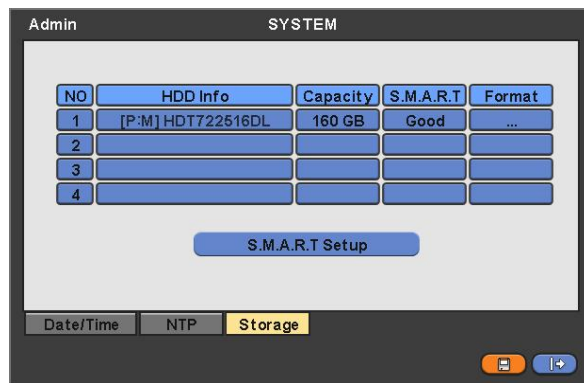
- Display DVR clock.

Server Clock

- Display NTP Server's clock if Internet is not connected to Server Clock. If not, please click (↵) Connect button.
- When Server Clock is displayed, please click (↵) Sync button to synchronize NTP Server's clock with DVR clock.
- Choose 'OK' to confirm the clock synchronization.

Storage

- When you complete NTP input, please click (↵) Storage and the following screen will appear.
- Set S.M.A.R.T. (Self-Monitoring Analysis and Reporting Technology) function for HDD format and auto-display of HDD information. CD-RW (DVD-RW) is not shown here.



- Four rows will show as follows:
 - 1: SATA 1 Port
 - 2: SATA 2 Port
 - 3: SATA 3 Port
 - 4: SATA 4 Port(B type model only)

Format

- You must format when you:
 - install new HDD
 - add another HDD
 - replace HDD
 - move HDD (change installation port)
 - remove HDD
- Click (←) Add/Remove frame in Format column, and choose 'OK' on the dialogue box to start formatting.
- Following format, DVR will auto-reboot. If there are more than 2 HDDs, please format each of HDDs. DVR will auto-reboot when all the HDDs are formatted.
- If the frame changes to '---' after reboot, it means formatting has been properly done.

CAUTION

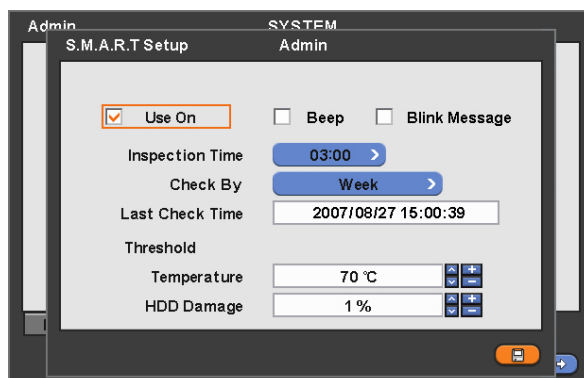
EXECUTE REMOVE PROCEDURE EVEN WHEN YOU REMOVE PREVIOUSLY INSTALLED HDD. THE REMOVE PROCEDURE IS THE SAME AS THE FORMAT PROCEDURE DESCRIBED ABOVE.

S.M.A.R.T

- Click the frame on S.M.A.R.T column, and temperature and HDD damage will show.

S.M.A.R.T Setup

- Please click (←) S.M.A.R.T Setup, and the following screen will appear.

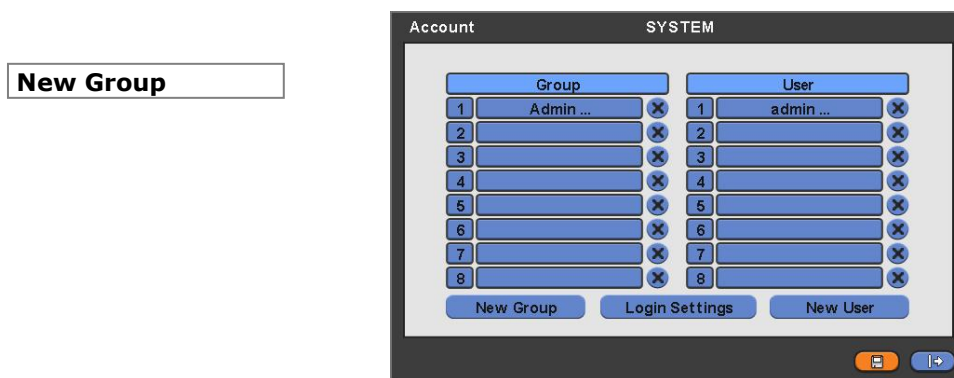


- Check the square box ☒ next to Use On. Through S.M.A.R.T function, make alarm message, indicating HDD damage, will show.
- Check ☒ Beep, it will give the alarm sound, indicating HDD damage, as the SMART setup.
- Check ☒ Blink Message, the alarm message will blink on the OSD, as the SMART setup.

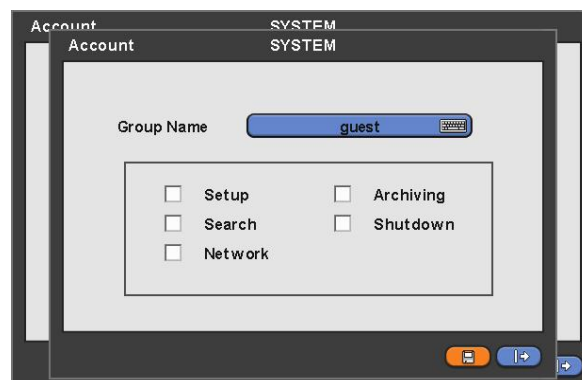
- If you uncheck Used on, Beep, Blink Message will be unchecked automatically. Only when you check ☒ Used on, you can set Beep, Blink Message function.
 - Click (←) Inspection Time frame to set inspection time.
 - Click Check by frame to select inspection interval.
 - Last Check Time: show the time of the last inspection.
 - Click (←) ▲, ▼ direction buttons on the right-hand side of Temperature frame to adjust to maximum temperature for the HDD used in DVR. In general, it is **55°C**.
 - Click (←) ▲, ▼ direction buttons on the right-hand side of HDD Damage frame to set the permissible level of HDD damage (%). HDD is a very crucial element for DVR recording, so set the permissible level within 1% to 2% to assure maximum safety.
- While pressing (+) or (-) button on the rightmost side of Temperature or HDD Damage item, a target value increases or decreases by 10 units.
- Choose 'OK' to confirm the setting.

4.2.3 Account

- Please click (←) SYSTEM>Account, and the following screen will appear.



- Please click (←) New Group, and the following screen will appear.



- Click (←) keyboard icon on the right-hand side of Group Name frame. Then, the virtual keyboard will show. Please click (←) desired characters (up to 20) on the virtual keyboard.
- Do provisioning for Group Name by selectively checking ☒ some of the following items (Setup, Search, Network, Archiving, and Shut Down).
- Choose 'OK' to confirm the setting.

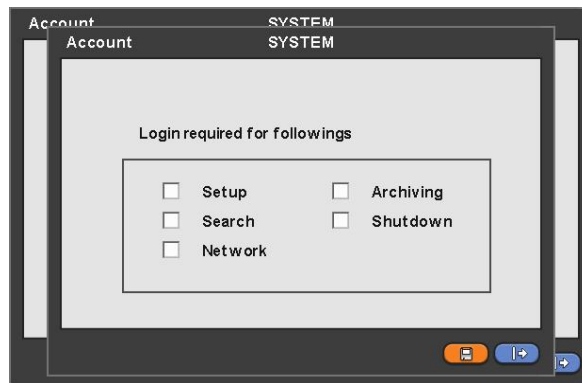
Login Settings

- Please click (←) Login Settings, and the following screen will appear.
- Selectively enable password protection for important operations (Setup, Search, Network, Archiving, and Shut Down). Please check ☒ the operations you wish to enable password protection.

CAUTION

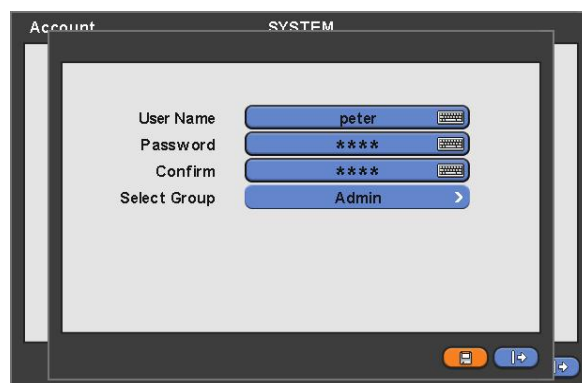
YOU WILL NOT BE ASKED TO ENTER YOUR PASSWORD FOR OPERATION(S) WHERE PASSWORD PROTECTION IS NOT ENABLED.

- Choose 'OK' to confirm the setting.

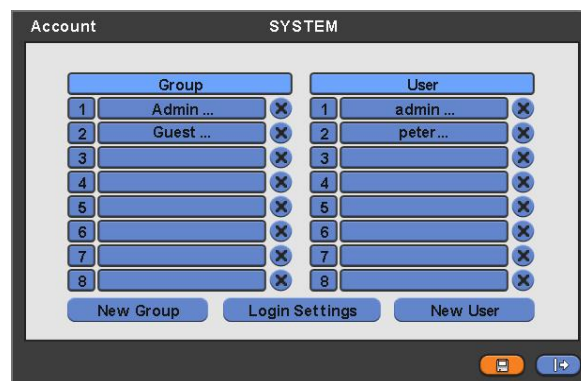


New User

- Please click (↵) New User, and the following screen will appear.
- Click (↵) the keyboard icon on the right-hand side of User Name frame, and the virtual keyboard will appear. Click desired characteristics (up to 20 characteristics) on the virtual keyboard.
- Input Password and Confirm.



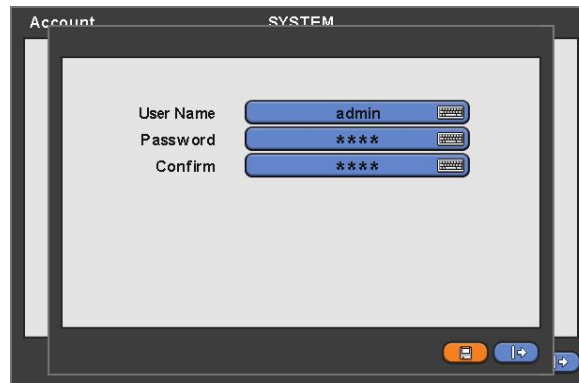
- Choose 'OK' to confirm the setting. Then, lists of Group and User will show as follows.



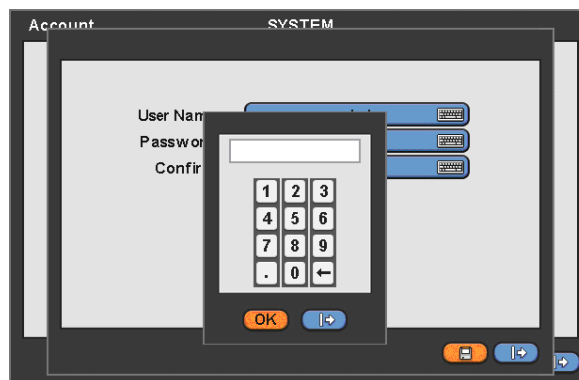
- Click (↵) X to delete the set Group or User.
- You may create up to 8 Groups and 8 Users.
- Choose 'OK' to confirm the setting.


Password Resetting

- Click ID on User column. The following screen will appear.



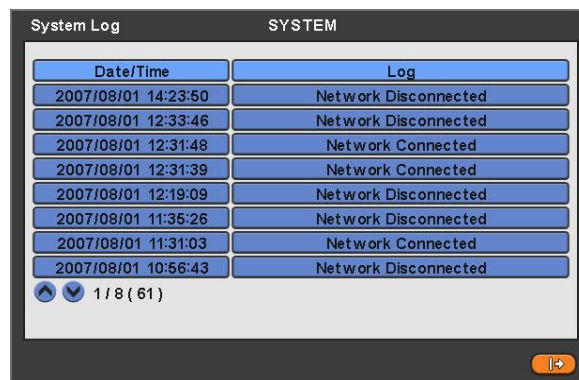
- This is a screen for password resetting
- Input password by clicking the keyboard icon on the right-hand side of the frame.



- Use  key if you wish to erase password on keyboard.

4.2.4 System Log

- Please click (←) SYSTEM>System Log, and the following screen will appear.



- System Log System Log displays diverse events.
 - Setup (Menu) Enter/Exit
 - Playback Mode Enter/Exit
 - Network Access Enter/Exit
 - Archive Success/Fail
 - System Start/shut down
 - S.M.A.R.T. Check
 - NTP Sync/ Sever Success/Fail
 - Send E-mail Success/Fail
 - HDD Format Success/Fail

- Data clear Success/Fail
- USB Upgrade Success/Fail
- DVR Setup Change by Remote
- Before/After Time Adjust
- System Log deletion procedure is as follows:
 - Execute Clear All Data in SYSTEM>Information>Record and choose 'OK' on the popup dialogue box. Please note that all normal recorded video data are deleted from database.
 - Press Factory Reset Switch on the back panel. Please note that the entire menu setup is also defaulted.

4.2.5 Exit

- Please click (↵) SYSTEM>Exit, and choose 'OK' on the popup dialogue box to exit from the setting.

CAUTION

ANY CHANGES MADE IN SETUP ARE APPLIED AFTER EXIT.

4.2.6 Shutdown

- Shutdown is a function to help you safely turn off DVR. Please use the proper shut down procedure to avoid damaging to our DVR system. Do not remove the power during shut down.

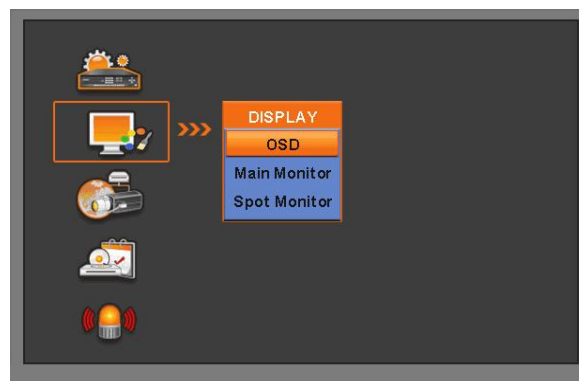
CAUTION

DO NOT TURN DVR OFF WITHOUT USING THE PROPER SHUT DOWN PROCEDURE. OTHERWISE, IT MAY CAUSE DAMAGE TO YOUR DVR. ALWAYS REMOVE THE POWER AFTER SHUT DOWN.

- Click (↵) SYSTEM>Shutdown, and then choose 'OK' on the dialogue box to confirm.
- When you select Shutdown menu, the OSD menu on the screen disappears.
- Reboot the DVR after Shutdown. Turn off the DVR and wait for 5 seconds before restart.

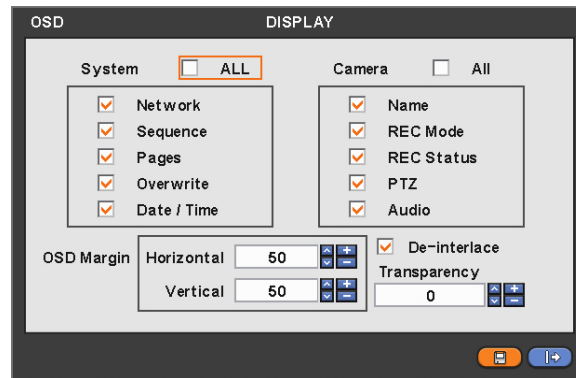
4.3 DISPLAY

- Please click (↵) DISPLAY, and the following screen will appear.



4.3.1 OSD

- Please click (↵) DISPLAY>OSD, and the following screen will appear.



- The OSD menu will allow you to configure full features (i.e., on/off every letter and icon) displayed on the screen.
- Letters and icons are divided under System and Camera categories. If you click (↵) 'All', all items are on/off at once.

OSD Margin

- The OSD Margin menu will allow you to adjust the position of OSD (letters) on the monitor. Use it when some of letters are dropped out and invisible on the monitor.
- Adjust Horizontal to change margin between both ends of the monitor on horizontal side and OSD. Margin range is between **0 and 50**, with a larger number representing greater margin.
- Adjust Vertical to change margin between both ends of the monitor on vert 130
- Vertical side and OSD Margin range is between **0 and 50**, with a larger number representing greater margin.
- While pressing (+) or (-) button, a target value increases or decreases by 10 units.

De-Interlace

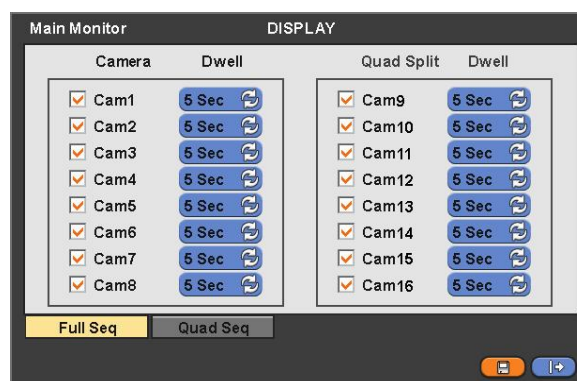
- This function changes playback display into Progressive Scan or Interlace Scan. Check (☑) De-Interlace, then frame will display as the Progressive Scan and shows the better picture quality.

Transparency

- The Transparency menu will allow you to alpha-blending of OSD menu on the monitor. Transparency is the quality that an object or substance has when you can see through it.
- Transparency range is between **0 and 100**, with a larger number representing can see through it. (default 0)
- While pressing (+) or (-) button, a target value increases or decreases by 10 units.

4.3.2 Main Monitor

- Please click (↵) DISPLAY>Main Monitor, and the following screen will appear.



- The Main Monitor menu will allow you to adjust channel sequencing interval of Main monitor.

Full Seq

- Adjust interval for 'Full screen sequencing'.
- Check ☑ check box next to the camera you want to include in sequencing. Any camera with unchecked check box will be excluded from channel sequencing.
- Adjust the rotation interval of camera by clicking Dwell column. The rotation interval changes to **3>5>10>15>30>60 seconds** by each press.

Quad Seq

- Use only with 8 / 16 channel DVRs.

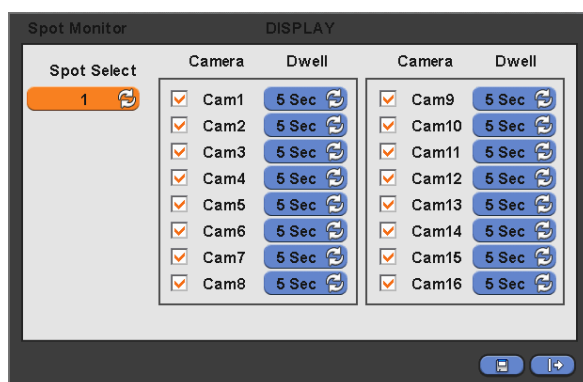
- Adjust interval for 'X4 Split Screen sequencing'.
- Check ☒ check box next to the camera you want to include in sequencing. Any camera with unchecked check box will be excluded from channel sequencing.
- Adjust the rotation interval of camera by clicking Dwell column. The rotation interval changes to **3>5>10>15>30>60 seconds** by each press.
- '4 Split Screen sequencing' is disabled in the following modes.
 - **8 channel DVR: 3x3 Mode**
 - **16 channel DVR: 4x4 Mode**

X9 Seq

- Use only with 16 channel DVR.
- Adjust interval for 'X9 Split Screen sequencing'.
- Check ☒ check box next to the camera you want to include in sequencing. Any camera with unchecked check box will be excluded from channel sequencing.
- Adjust the rotation interval of camera by clicking Dwell column. The rotation interval changes to **3>5>10>15>30>60 seconds** by each press.
- '9 Split Screen sequencing' is disabled in 4X4 Mode.

4.3.3 Spot Monitor

- Please click (←) DISPLAY>Spot Monitor, and the following screen will appear.



- This menu will allow adjust interval of channel sequencing of Spot monitor.
- Click (←) Spot Select to choose Spot monitor to be set up.
- Check (check box next to the camera you want to include in sequencing. Any camera with unchecked check box will be excluded from channel sequencing.
- Adjust the rotation interval of camera by clicking Dwell column. The rotation interval changes to **3>5>10>15>30>60 seconds** by each press.

4.3.4 Spot monitor control on display mode

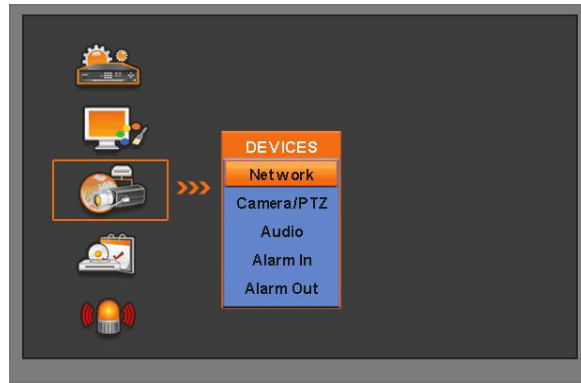
- Every click of the "SPOT" menu item on mouse right click menu will indicate "SP" and "SP1", on the right bottom of main monitor.
- After "SP1", the it shows nothing. And system gets out of spot monitor control mode.
 - SP mode : Sequence is automatically activated as configured on Spot monitor Setup menu.
 - SP1 mode : Displayed channel on Spot monitor 1 can be changed by pressing channel button.
Sequence stops at "SP1" mode.

(NOTE)

THIS FUNCTION IS ENABLED ONLY WHEN **B Type model**

4.4 DEVICES

- Please click (←) DEVICES, and the following screen will appear.



4.4.1 Network

- Please click (←) DEVICES>Network, and the following screen will show.

LAN

Network Type

- Please click (←) Network Type. Every time you click (←), it changes to Static (fixed IP) and DHCP (floating IP).
- In Static, user must manually set the static IP address for use.
 - Set IP Address, Subnet Mask and Gateway. Please ask your network administrator for more details.
 - To input address, please click (←) and execute the keyboard icon on the right-hand side of each frame.

- In DHCP, IP Address, Subnet Mask, Gateway and DNS Server will have input automatically.

DNS Server

- When you set Network Type to DHCP, DNS server will be inputted automatically.
- When you set Network Type to Static, please click (←) the keyboard icon on the right-hand side of DNS Server frame and manually input the address.

CAUTION

NOTE THAT DNS SERVER ADDRESS IS IP ADDRESS OF YOUR COMMUNICATIONS COMPANY NAME SERVER PROVIDING INTERNET SERVICE. IT IS NOT THE IP ADDRESS OF DDNS SERVICE SITE.

DDNS

- Please click (←) DDNS, and the following screen will appear.

- 'Floating IP system', although being predominantly used over Internet, is very inconvenient for users because its address varies every time you access. The best alternative is DDNS (Dynamic Domain Naming System) which uses name (domain name) instead of IP address (numbers). DDNS automatically recognizes ever changing, floating IP addresses, so it will allow easy Internet access.
- Check ☒ a checkbox of Use DDNS to use DDNS function.
- As for DDNS Server, ctrdns.com name is shown by default.
- As for Port, 95 is shown by default. If '95' is disenable, please consult with a product distributor.

- When you press Get Domain Name button, Domain Name and MAC Address value will automatically display after 10 seconds.
- Choose 'OK' to confirm the setting.

Port

- Please click (←) Port, and the following screen will appear.

- Transfer Speed is used for setting a mean transfer speed per unit of time between a client and a DVR.
- Set a proper Transfer Speed for a current configuration state of the network for the client to be able to playback DVR screen in optimum state.

- There is a total of 14 different transfer speeds you may choose. (bps: bit per second)
56 kbps, 128 kbps, 256 kbps, 512 kbps,
1 Mbps, 2 Mbps, 4 Mbps, 8 Mbps, 10 Mbps, 20 Mbps, 40 Mbps, 80 Mbps, 100 Mbps, Unlimited
- Check the box beside “Enable Dual Streaming” to activate “Dual Streaming”.
Network video streaming independent of recording frame rate offers more flexible monitoring environment on the various network condition

(Note)

This menu cannot be configured on CMS
Dual Streaming On/Off menu is available only on 16-channel model.

CAUTION

Activating Dual Streaming will make maximum recording frame rate down to 240fps(200fps in PAL)

- Network video transmission speed and quality can be configured by pressing “Frames” and “Quality” buttons as follows.
 - Frames : 1, 7, 15, 30 frames for NTSC(1, 6, 12, 25 frames for PAL)
 - Quality : Std. 1, Std. 2, Std. 3, Std. 4 (standard), High 1, High 2, High 3, Super 1, Super 2, Super 3
- The Port Number Setup menu will allow you to set Administrator and Port Number for Video/Audio and Web Port.
- For Port Number Setup, please get an approval of the network administrator in connection with CMS program.
Port Number:
 - **Administrator:** 5000~9999
 - **Video / Audio:** 5000~9999
 - **Web:** 5000~9999

CAUTION

YOU CANNOT CHANGE Port Number DURING CMS ACCESS TO DVR.

CAUTION

CHANGES BEING MADE ARE APPLIED AFTER YOU COMPLETE SETUP TO EXIT.

CAUTION

IF Port Number IS CHANGED, YOU MUST ALSO CHANGE Port Number OF CMS (Central Monitoring Station) PROGRAM.

- Choose ‘OK’ to confirm the setting.

Notification

- Please click (↵) Notification, and the following screen will appear.

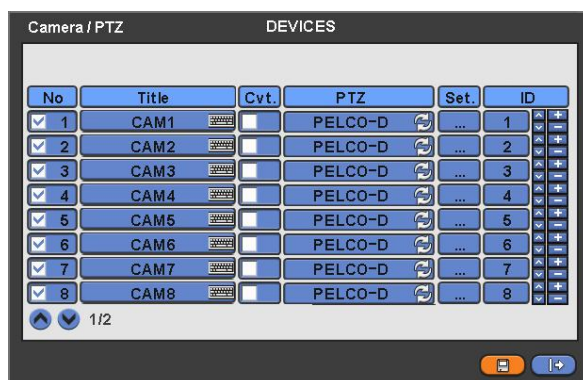
The screenshot shows the 'Notification' menu in the 'Network DEVICES' section. The menu is divided into four tabs: LAN, DDNS, Port, and Notification. The 'Notification' tab is currently selected. Inside the Notification menu, there is an 'Add E-Mail' button at the top. Below it is a table with two columns: 'No' and 'E-Mail Address'. The table has five rows, with the first row containing the number '1' and the email address 'peter@yahoo...'. To the right of the table, there are fields for 'SMTP server', 'Sender ID', and 'Sender Password'. At the bottom of the menu, there are two buttons: 'Attachment' (with a 'VIDEO CLIP' icon) and 'Duration' (with a '5sec' icon). The bottom of the screen shows a navigation bar with icons for back, forward, and other functions.

- The Notification menu will allow you to set transmission of Event occurred in DVR via E-Mail.
- Click (↵) the keyboard icon on the right-hand side of Add E-Mail frame, and the virtual keyboard will appear. Please register E-Mail address. E-Mail address should contain @.

- Click (⌨) the keyboard icon on the right-hand side of SMTP Server frame, and the virtual keyboard will appear. Please register IP of SMTP Server (mail server on the sender side) (e.g., kornet.net).
- Click (⌨) the keyboard icon on the right-hand side of Sender ID frame, and the virtual keyboard will appear. Please register an ID to the sender mail server (e.g., tony123).
- Click (⌨) the keyboard icon on the right-hand side of Sender Password frame, and the virtual keyboard will appear. Please register a password having registered to the sender mail server.
- When an event occurs, you can send an email to a designated mail address by clicking Attach button and selecting Data to be transmitted. You may select one of JPEG, VIDEO CLIP, None modes. In case of transmitting VIDEO CLIP Data, set the duration of time for recorded images in Duration item (e.g., 1 sec, 3 sec, 5 sec).

4.4.2 Camera/PTZ

- Please click (⌨) DEVICES>Camera/PTZ, and the following screen will appear.

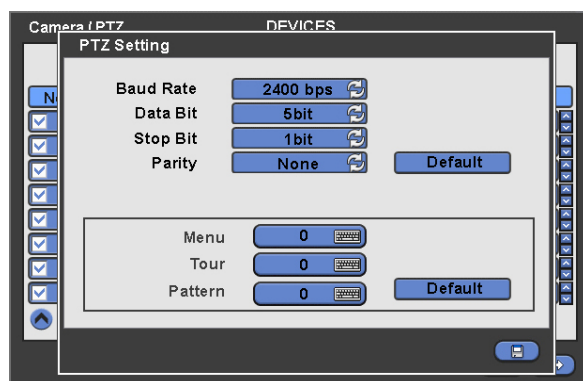


- Give titles to cameras and choose PTZ protocols.
- Click (⌨) the keyboard icon on the right-hand side of each frame on Title column, and the virtual keyboard will appear. Then, register titles of cameras.
- If you check ☒ a check box on No column, a video of the corresponding camera is recorded and displayed on the monitor. However, if you do not check the checkbox, both recording and monitor display stop. Then, DVR picture, instead of a recorded video, will be displayed on the monitor.

CAUTION

WHEN YOU EXCLUDE A CORRESPONDING CAMERA VIDEO FROM RECORDING AND MONITOR DISPLAY (CHECK A CHECK BOX ☐) , MAKE SURE CHANNELS OF LARGE NUMBERS ARE EXCLUDED FIRST.

- If you check ☒ a check box on Convert column, a video is recorded but is not displayed on the monitor.
- Click (⌨) each frame on PTZ column to select PTZ protocols connected to a corresponding camera.
- Click (⌨) each frame on Set to set PTZ Settings connected to a corresponding camera.



- If you click (Default), proper number of selected PTZ will appear automatically. Please choose 'OK' to confirm the setting.
- Menu, Tour, and Pattern help you to use OSD function of PTZ camera.
 PTZ camera itself supports OSD menu, use the setup value to more easily enter and use the OSD menu even in DVR.
 If OSD enter command is 95 + PSET for example, designate 95 for Menu item,
 if shortcut key to use Tour function is 71 ~79 + PSET, designate 70 for Tour item, and
 if shortcut key to use Pattern function is 81 ~ 89 + PSET, designate 80 for Pattern item.
 The setting information herein is used for PAN/TILT control in 5.1.5 (to be described).

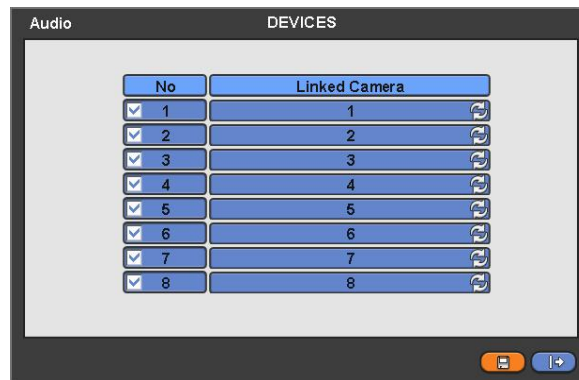
If you click Default, basic setup values are given (i.e., Menu: 95, Tour: 70, Pattern: 80).

For further details on setting, please refer to the PTZ camera manual.

- Click (←) ▲, ▼ direction buttons on the right-hand side of the ID column to set ID number (i.e., 0 ~ 9999) of each PTZ.
- While pressing (+) or (-) button, ID increases or decreases by 10 units.
- Choose 'OK' to confirm the setting.

4.4.3 Audio

- Please click (←) DEVICES>Audio, and the following screen will appear.



- The Audio menu will allow you to choose whether to record Audio.
- When you check ☒ a check box on No column, corresponding audio and video are recorded. However, if you do not check the check box, recording stops.
- Choose 'OK' to confirm the setting.

4.4.4 Alarm In

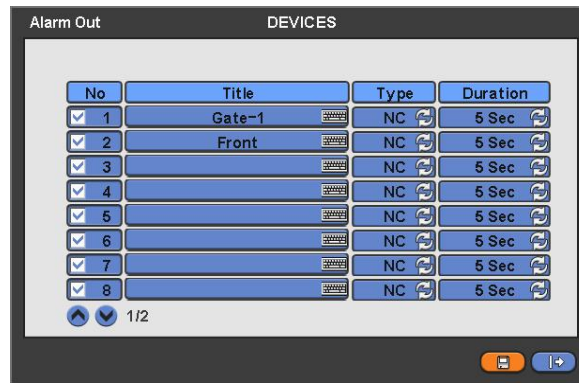
- Please click (←) DEVICES>Alarm In, and the following screen will appear.



- The Alarm In menu will allow you to give title and to select the type of Alarm input.
- Click (←) the keyboard icon on the right-hand side of each frame on Title column, and the virtual keyboard will appear. Then, please register the title of Alarm input.
- When you check ☒ a check box on No column, a corresponding Alarm starts operating. However, if you do not check the check box, the operation stops.
- Click (←) each frame on Type column to select type of a corresponding Alarm input.
 - **NO**: contact is normally open (Normally open)
 - **NC**: contact is normally closed (Normally closed)
- Choose 'OK' to confirm setting.

4.4.5 Alarm Out

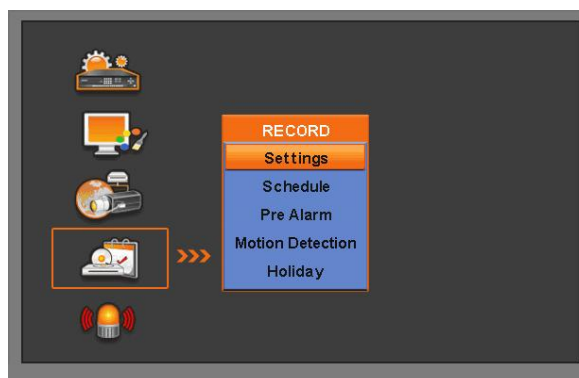
- Please click (←) DEVICES>Alarm Out, and the following screen will appear.
- The Alarm Out menu will allow you to give title and to select the type and duration of Alarm output.



- Click (⌨) the keyboard icon on the right-hand side of each frame on Title column, and the virtual keyboard will appear. Then, please register the title of Alarm output.
- When you check ☒ a check box on No column, a corresponding Alarm output starts operating. However, if you do not check the check box, the operation stops.
- Click (⌨) each frame on Type column to select type of a corresponding Alarm output.
 - **NO**: contact is normally open (Normally open)
 - **NC**: contact is normally closed (Normally closed)
- Click (⌨) each frame on Duration column to select duration (i.e., **1 second ~3 hours**) of a corresponding Alarm output.
- Choose 'OK' to confirm the setting.

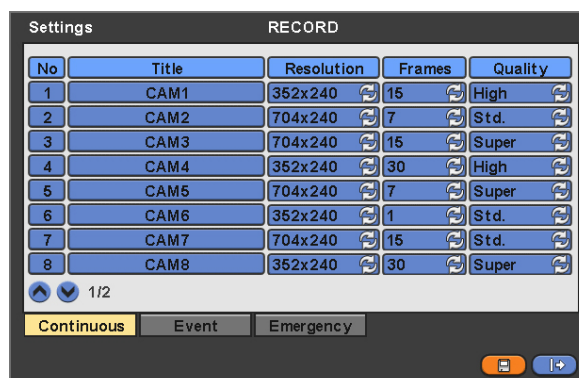
4.5 RECORD

- Please click (⌨) RECORD, and the following screen will appear.



4.5.1 Settings

- Please click (⌨) RECORD>Settings, and the following screen will appear.



- There are three kinds of recording mode.
 - **Continuous**: record continuously.
 - **Event**: record only when Sensor or Motion calls.
 - **Emergency**: record when you press **EMERGENCY** key.

Continuous

- The Continuous menu will allow you to set recording mode.
- Each frame on Title column shows camera title registered in DEVICES>Camera/PTZ. You cannot change camera titles here.
- Click (↔) each frame on Resolution column to select recording resolution of a corresponding camera. You may select one of **704x480, 704x240, and 352x240**.
- Click (↔) each frame on Frames column to select recording rate of a corresponding camera. Recording rate varies by camera. Below lists the maximum recording rate of each camera. Do not use 352x240 of 4 channel DVR.

| NTSC(PAL) | 352x240 | 704x240 | 704x480 |
|-----------------------|----------|----------|----------|
| 4 Channel DVR | 120(100) | 120(100) | 60(50) |
| 8 Channel DVR | 240(200) | 120(100) | 60(50) |
| 16 Channel DVR | 480(400) | 240(200) | 120(100) |

- Click (↔) each frame on Quality column to select recording quality of a corresponding camera. You may select one of **Super, High, and Std.**
- Choose 'OK' to confirm the setting.

Event

- Please click (↔) Event, and the following screen will appear.



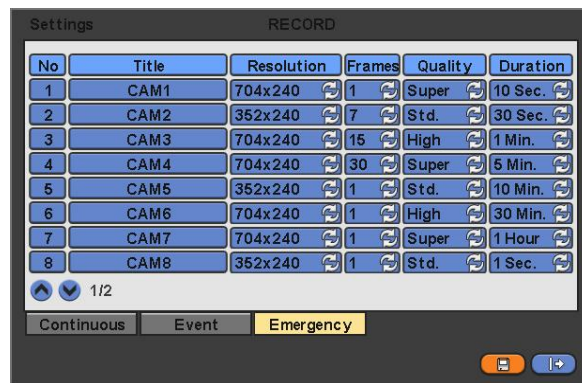
- The Event menu will allow you to set Event videos.
- Each frame on Title column shows camera title registered in DEVICES>Camera/PTZ. You cannot change camera titles here.
- Click (↔) each frame on Resolution column to select recording resolution of a corresponding camera. You may select one of **704x480, 704x240, and 352x240**.
- Click (↔) each frame on Frames column to select recording rate of a corresponding camera. Recording rate varies by camera. Below lists the maximum recording rate of each camera. Do not use 352x240 of 4 channel DVR.

| NTSC(PAL) | 352x240 | 704x240 | 704x480 |
|-----------------------|----------|----------|----------|
| 4 Channel DVR | 120(100) | 120(100) | 60(50) |
| 8 Channel DVR | 240(200) | 120(100) | 60(50) |
| 16 Channel DVR | 480(400) | 240(200) | 120(100) |

- Click (↔) each frame on Quality column to select recording quality of a corresponding camera. You may select one of **Super, High, and Std.**
- Click (↔) each frame on Duration column to select recording duration (i.e., **1 second ~3 hours**) of a corresponding camera.
- Choose 'OK' to confirm the setting.

Emergency

- Please click (↔) Emergency, and the following screen will appear Emergency.
- The Emergency menu will allow you to set Emergency videos.
- Each frame on Title column shows camera title registered in DEVICES>Camera/PTZ. You cannot change camera titles here.



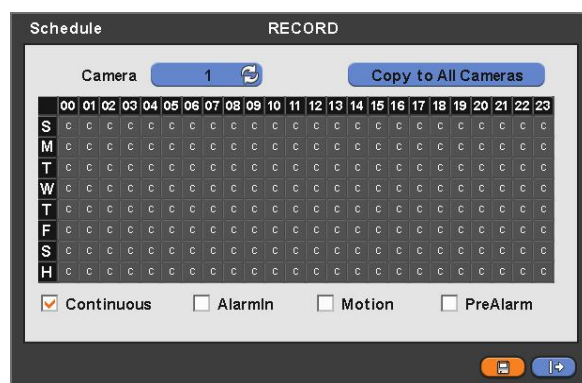
- Click (↔) each frame on Resolution column to select recording resolution of a corresponding camera. You may select one of **704x480, 704x240, and 352x240**.
- Click (↔) each frame on Frames column to select recording rate of a corresponding camera. Recording rate varies by camera. Below lists the maximum recording rate of each camera. Do not use 352x240 of 4 channel DVR.

| NTSC(PAL) | 352x240 | 704x240 | 704x480 |
|----------------|----------|----------|----------|
| 4 Channel DVR | 120(100) | 120(100) | 60(50) |
| 8 Channel DVR | 240(200) | 120(100) | 60(50) |
| 16 Channel DVR | 480(400) | 240(200) | 120(100) |

- Click (↔) each frame on Quality column to select recording quality of a corresponding camera. You may select one of **Super, High, and Std.**
- Click (↔) each frame on Duration column to select recording duration (i.e., **1 second ~3 hours**) of a corresponding camera.
- Choose 'OK' to confirm the setting.










4.5.2 Schedule

- Please click (↔) RECORD>Schedule.
- Each weekday is composed of 24 'Time blocks'. Each block represent 1 hour.
- Click (↔) Camera frame to select Camera No. 1.
- Please set the recording mode as follows:
 - Check (a check box next to your desired recording mode (i.e., Continuous, Alarm, Motion, and PreAlarm)). If you want to stop recording, please clear all check boxes.
 - Click block, row, column or all (square box) to register your desired recording mode.
 - Click (↔) a block, and only the block will be registered.
 - Click (↔) a row (S~H), and the entire row will be registered.
 - Click (↔) a column (00~23), and the entire column will be registered.
 - Click (↔) all (square box (between 'S' and '00')), and all the rows/columns will be registered.



- Repeat the procedure for Camera Nos. 2 to 16. If you want every camera to have the same mode, please click (↔) Copy to All Camera.
- Below lists symbols of the respective recording modes.

 Continuous

-  Alarm In
-  Alarm In / Continuous
-  Alarm In / PreAlarm
-  Motion
-  Motion / Continuous
-  Motion / PreAlarm
-  Motion / Alarm In
-  Motion / Alarm In / Continuous
-  Motion / Alarm In / PreAlarm

- Choose 'OK' to confirm the setting.

(NOTE)

Holiday (H) registration is done with a separate menu.

4.5.3 Pre Alarm

- Please (←) RECORD>Pre Alarm, and the following will appear.
- Pre Alarm is effectively used when you selected recording mode by Alarm or Motion.
- The Pre Alarm will allow you to check, during playback, the previously recorded video before the record start time.



- Each frame on Title column shows camera title registered in DEVICES>Camera/PTZ. You cannot change camera titles here.
- Click (←) each frame on Resolution column to select recording resolution of a corresponding camera. You may select one of **704x480, 704x240, and 352x240**.
- Click (←) each frame on Frames column to select recording rate of a corresponding camera. Recording rate varies by camera. Below lists the maximum recording rate of each camera. Do not use 352x240 of 4 channel DVR.

| NTSC(PAL) | 352x240 | 704x240 | 704x480 |
|----------------|----------|----------|----------|
| 4 Channel DVR | 120(100) | 120(100) | 60(50) |
| 8 Channel DVR | 240(200) | 120(100) | 60(50) |
| 16 Channel DVR | 480(400) | 240(200) | 120(100) |

- Click (←) each frame on Quality column to select recording quality of a corresponding camera. You may select one of **Super, High, and Std.**
- Click (←) each frame on Duration column to select recording duration (i.e., **1 second ~ 3 hours**) of a corresponding camera.
- Choose 'OK' to confirm the setting.

4.5.4 Motion Detection

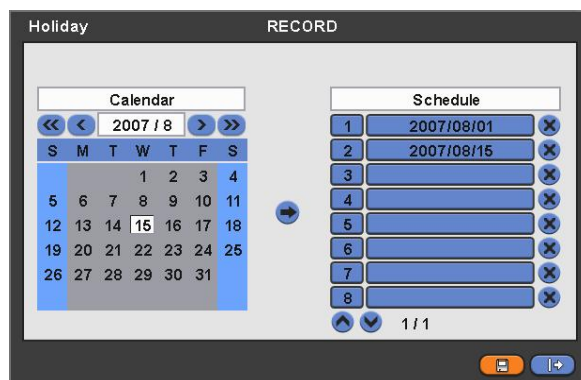
- Please click (←) RECORD>Motion Detection, and the following screen will appear.



- The Motion Detection menu will allow you to set Motion detection alarm.
- Press **SETUP** key (or right mouse button), and the SETUP menu will appear.
- SETUP menu descriptions.
 - **Camera**: select camera for setup.
 - **Sensitivity**: select sensitivity (Low, Normal, and High)
 - **Reverse Vert**: activate the entire column at the cursor's position.
 - **Reverse Horz**: activate the entire row at the cursor's position.
 - **Select All**: active all blocks.
 - **Deselect All**: deactivate all blocks.
 - **Copy to All Cameras**: The present channel setup applies to all other cameras. Only when you click save button, the changed setup can be saved.
 - **Save**: save the new settings and go back to previous menu (page).
 - **Exit**: ignore the new settings and go back to previous menu (page).
 - **Cancel**: cancel Motion Setup menu.
- Choose 'OK' to confirm the setting.

4.5.5 Holiday

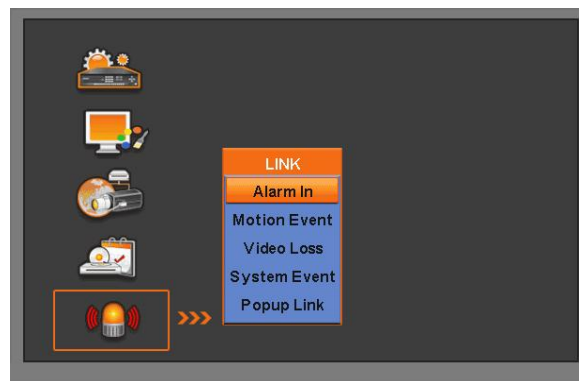
- Please click (↵) RECORD>Holiday, and the following screen will appear.



- The Holiday menu will allow you to register holidays. Please follow the registration procedure below.
 - ① Use arrow buttons in the Month Calendar to select Year and Month of holiday to be registered.
 - ►►: search subsequent 'Year'
 - ◀◀: search previous 'Year'
 - ►: search subsequent 'Month'
 - ◀: search previous 'Month'
 - ② Click (↵) on date you need to register as holiday.
 - ③ Click (↵) ADD button, and the date you just clicked on will be copied to the Schedule frame for registration.
 - ④ If you want to cancel the registration of a certain holiday, please click ☒ button next to the Schedule frame.
- Since holidays may vary every year, we recommend you to update on a regular basis.
- Choose 'OK' to confirm the setting.

4.6 LINK

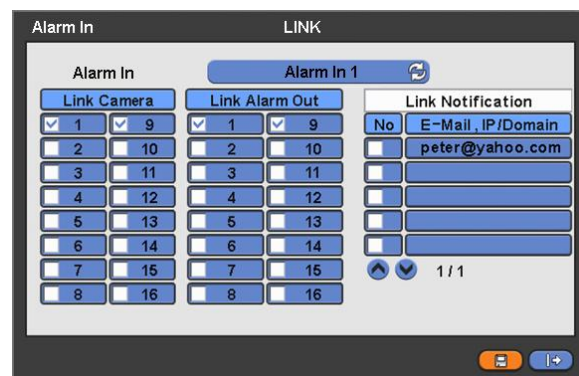
- Please click (⬅) LINK, and the following screen will appear.



- The LINK menu will allow you to set recording modes of all kinds of alarms (Sensor, Motion Event, Video loss, System Event, etc.), alarm output, e-mail notification and the like.

4.6.1 Alarm In

- Please click (⬅) LINK>Alarm In, and the following screen will appear.
- Select cameras for recording while the motion sensor is in operation, and alarm outputs, and set up E-mail addresses for notification.
- Link Notification displays E-mail addresses registered in DEVICES>Network>Notification.
- Please follow the setup procedures below.
 - ① Click (⬅) Alarm In frame, and select Alarm In 1.
 - ② Select cameras for recording when Alarm In 1 is on. Please check ☒ a check box under Link Camera. More than two cameras can be set.
 - ③ Select alarm outputs to be worked when Alarm In 1 is on. Please check ☒ a check box under Link Alarm Out. More than two alarm outputs can be set.
 - ④ Select E-mail addresses for notification when Alarm In 1 is on. Please check ☒ a check box under Link Notification. More than two E-mail addresses can be set.
 - ⑤ Repeat the above procedure for Alarm In 2~ Alarm In 16.



- Choose 'OK' to confirm the setting.

4.6.2 Motion Event

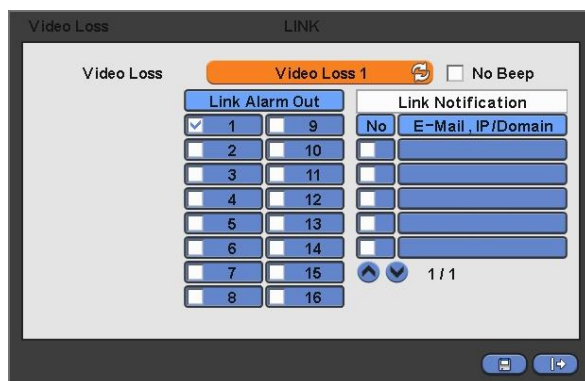
- Please click (⬅) LINK>Motion Event, and the following screen will appear.



- Select cameras for recording while the motion sensor is in operation, and alarm outputs, and set up E-mail addresses for notification.
- Link Notification displays E-mail addresses registered in DEVICES>Network>Notification.
- Please follow the setup procedures below.
 - ① Click (←) Motion Event frame, and select Motion Event 1.
 - ② Select cameras for recording when Motion Event 1 is on. Please check ☒ a check box under Link Camera. More than two cameras can be set.
 - ③ Select alarm outputs to be worked when Motion Event 1 is on. Please check ☒ a check box under Link Alarm Out. More than two alarm outputs can be set.
 - ④ Select E-mail addresses for notification when Motion Event 1 is on. Please check ☒ a check box under Link Notification. More than two E-mail addresses can be set.
 - ⑤ Repeat the above procedure for Motion Event 2~ Motion Event 16.
- Click (←) By Duration box to set up the recording duration and prevent recording caused by event.
The duration time can be controlled by previous setting mode: RECORD>Settings>Event
- Choose 'OK' to confirm the setting.

4.6.3 Video Loss

- Please click (←) LINK>Video Loss, and the following screen will appear.



- Select cameras for recording while the motion sensor is in operation, and alarm outputs, and set up E-mail addresses for notification.
- Link Notification displays E-mail addresses registered in DEVICES>Network>Notification.
- Please follow the setup procedures below.
 - ① Click (←) Video Loss frame, and select Video Loss 1.
 - ② Select cameras for recording when Video Loss 1 is on. Please check ☒ a check box under Link Camera. More than two cameras can be set.
 - ③ Select alarm outputs to be worked when Video Loss 1 is on. Please check ☒ a check box under Link Alarm Out. More than two alarm outputs can be set.
 - ④ Select E-mail addresses for notification when Video Loss 1 is on. Please check ☒ a check box under Link Notification. More than two E-mail addresses can be set.
 - ⑤ Repeat the above procedure for Video Loss 2~ Video Loss16.
- Click No Beep ☒ to deactivate alert sounds from video loss. Apply to all channel.
- Choose 'OK' to confirm the setting.

4.6.4 System Event

- Please click (←) LINK>System Event and the following screen will appear.

System Event LINK

System Event Emergency

Link Camera Link Alarm Out Link Notification

1 9 1 9 No E-Mail, IP/Domain

2 10 2 10 peter@yahoo.com

3 11 3 11

4 12 4 12

5 13 5 13

6 14 6 14

7 15 7 15

8 16 8 16

1 / 1

- Select recording cameras and alarm outputs while Emergency recording using **EMERGENCY** key, and set E-mail addresses for notification.
- Link Notification displays E-mail addresses registered in DEVICES>Network>Notification.
- Please follow the setup procedures below.
 - ① System Event frame displays Emergency, which you do not have to change.
 - ② Select cameras for recording when emergency occurs. Please check ☒ a check box under Link Camera. More than two cameras can be set.
 - ③ Select alarm outputs to be worked when emergency occurs. Please check ☒ a check box under Link Alarm Out. More than two alarm outputs can be set.
 - ④ Select E-mail addresses for notification when emergency occurs. Please check ☒ a check box under Link Notification. More than two E-mail addresses can be set.
- Choose 'OK' to confirm the setting.

4.6.5 Popup Link

- Please click (←) LINK>Popup Link, and the following screen will appear.

Popup Link LINK

Camera Camera 1

Popup ☒ Motion ☐ Alarm-In

Beep ☐ Motion ☐ Alarm-In

Spot ☒ Motion ☒ Alarm-In

Copy to All Cameras

- When Motion or Alarm-In is detected, you can select a popup or beep sound for warning, or have a particular channel of interest to pop-up on Spot Screen.
- Please follow the setup procedures below.
 - ① Select camera
 - ② **Popup**: Please Check ☒ a check box under making the popup screen for main monitor.
 - ③ **Beep**: Please Check ☒ a check box under making beep sound.
 - ④ **Spot**: Please Check ☒ a check box under making the popup screen for spot monitor
- Click Copy to All Cameras button, then the present channel setup will apply to all other cameras.
- Choose 'OK' to confirm the setting.

(NOTE)

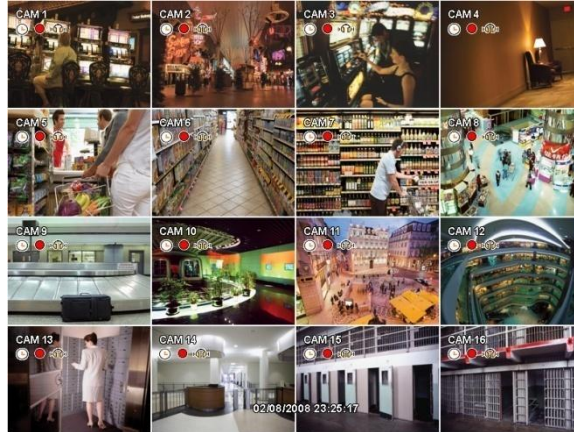
The Spot option is enabled only when **B Type model**

5. Operation Instructions

5.1 Viewing

5.1.1 First Image

- Power on DVR, and the following live video will appear, while viewing and recording at the same time.



- The screen will display date/time and icons below.

| Icon | Description |
|------|---|
| | Continuous recording mode |
| | Event recording mode (Alarm In/Motion) |
| | In recording |
| | PTZ registration/PTZ mode |
| | In Audio recording |
| | CMS Access Indication/No. of accesses (up to 4) |
| | In channel sequencing |
| | Setup in HDD Overwrite mode |
| | Setup in HDD None Overwrite mode(recording) |
| | Setup in HDD None Overwrite mode(HDD Full) |

- On the right bottom side of the screen, disk usage will show by %.
- On the left low side of the screen, , , , , icon will show as the progress.
- At the normal state, HDD Overwrite mode is on and icon shows.
- When Overwrite mode is off (see 4.2.1 Information>Record>Overwrite Setting), will show. And when the disk becomes full, the icon will be changed into .
- Click Emergency recording button, icon will show.
- Click Audio button, icon will show. And click channel button, then you can change only audio channel.

5.1.2 View Formats

- The available view formats when the Main Monitor is in viewing mode include Full Screen, Split Screen, Channel Sequencing Screen, and PEP screen.
 - Full Screen:** Please press camera select key (1~16) to view the corresponding camera image in full view format.

(NOTE)

Using a mouse: Double click to view the corresponding camera image in full view format, and click one more time to back to Split Screen.

- **Split Screen:** Please press **DISPLAY** key, and the available split screens (or multi-window view formats) will display alternately (i.e., 2x2, 3x3, and 4x4).
- **Channel Sequencing:** Please press **SEQUENCE** key to display images in sequencing view format periodically. This automatic sequence function is not limited to the full screen format, but can be used in any view mode. In 8 channel DVR, 4-camera sequencing view mode is possible, and in 16 channel DVR, 4 or 9-camera sequencing view modes are possible.

5.1.3 Digital Zoom

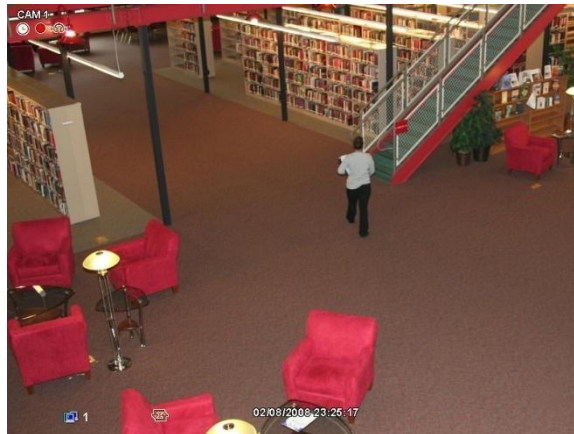
- Press **ZOOM** key, and the current screen will enter a 4X full screen.
- Use **direction** keys to view certain parts on the zoomed screen.
- The digital zoom function works only in the full screen. Please do not use the digital zoom function in split screen format, channel sequencing mode or PIP mode.


5.1.4 Freeze Live Image









- Press **FREEZE** key while viewing live image to pause the image.
- The Freeze function works only in the full screen or split screen formats. Please do not use this function in channel sequencing mode or in PIP mode.

5.1.5 Pan/Tilt Control

- Press **PTZ** key to adjust PTZ cameras connected to DVR. Pan/Tilt mode is available only in the full screen format.

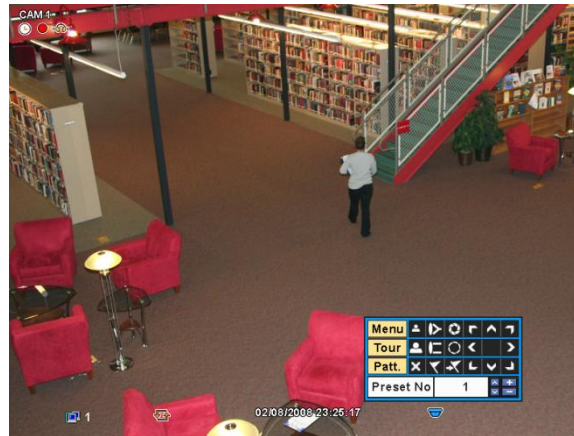




- In Pan/Tilt mode, the  icon is displayed on the bottom of the screen.
- Following is the key usage found in Pan/Tile mode.
-

| Key | Function |
|---|-----------------------------|
| ▲, ▼, ◀, ▶ | Up/Down/Left/Right rotation |
|  | Zoom out |
|  | Zoom in |
|  | Focus near |
|  | Focus far |
|  | Iris Close |
|  | Iris Open |
|  | Save Preset |
|  | Go to the Preset |

| | |
|--------------|---------------------|
| Menu | Go to OSD main menu |
| Tour | Run Group Tour 1~9 |
| Patt. | Run Pattern 1~9 |

- To use a mouse in Pan/Tilt mode, please move the cursor to the lower portion near the center of the screen. To use front button in Pan/Tilt mode, please push setup button. A key pad control will show as follows:



- To save current camera number, select Preset No and  button click.
- To move to preset, select preset No and  button click. You would like to move.
- Available 1 ~ 255 Preset numbers can saved it depends on camera specification.
- As explained earlier in 4.4.2. press Menu button to pop-up PTZ camera OSD setup screen and set up Tour and Pattern items.

Since these functions make use of a memory function of the camera itself, you should set them in Camera OSD.

Once you complete the setup, close the Camera OSD menu.

You can conveniently use Tour and Pattern functions simply by clicking Tour and Pattern buttons.

Particulars on how to setup each function on OSD Menu are found in the manual of a corresponding camera.

(NOTE)

Suppose a command for using Tour function is 71 ~ 79 + PSET and if you had set Tour to 70, use Preset No: 1 ~ 9 + Tour button to benefit the Tour function (70 + 1~9).



5.1.6 System Log

- Press **EVENT** key, and the System Log screen will appear.

| System Log | |
|---------------------|----------------------|
| SYSTEM | |
| Date/Time | Log |
| 2007/08/01 14:23:50 | Playback Exit |
| 2007/08/01 12:33:46 | Playback Enter |
| 2007/08/01 12:31:48 | Search Exit |
| 2007/08/01 12:31:39 | Search Enter |
| 2007/08/01 12:19:09 | Playback Exit |
| 2007/08/01 11:35:26 | Network Disconnected |
| 2007/08/01 11:31:03 | Setup Enter |
| 2007/08/01 10:56:43 | Setup Exit |
| 1 / 8 (61) | |

- Please refer 'SETUP>SYSTEM>System Log' to learn different events listed on the System Log and see how to delete the System Log.

5.1.7 Key Lock

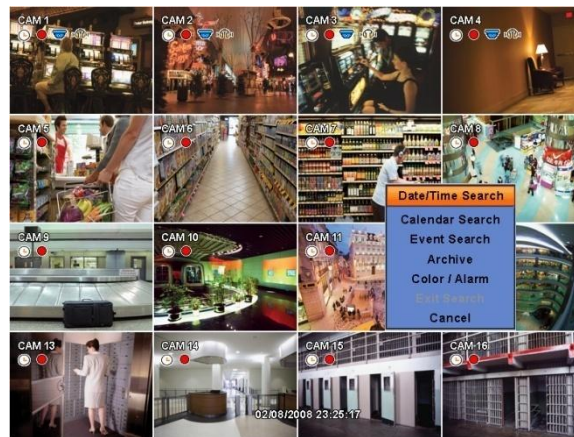
- Press **AUDIO>FF>FORWARD** keys in sequence to operate the key lock function. This function is indicated by  icon in the lower portion on the right-hand side of the screen.
- Once the Key Lock function is on, you cannot use any key. If you want to use a key, please enter the correct password to release the key lock function. If Password is not required, simply press ENTER  key.

5.1.8 Emergency Recording

- When you press **EMERGENCY** key, recording starts right away regardless of preset recording mode.
- Emergency recording is not operated while SETUP.
- Press Emergency key one more time to stop the emergency recording.

5.2 Search

- This involves searching recorded video to playback the wanted video of a specific date and time.
- Press **SEARCH** key on the viewing screen, or Click Search menu at “Function Keys” and the following Search menu will appear.





- There are three ways to search video, i.e., by date/time and by calendar.
 - **Date/Time Search:** search by inputting date/time.
 - **Calendar Search:** search by using calendar.
 - **Event Search:** search by event.



5.2.1 Date/Time Search



- Please click () Date/Time Search in SEARCH menu, and the following input box will appear.




Date/Time

Enter Date/Time

Date  

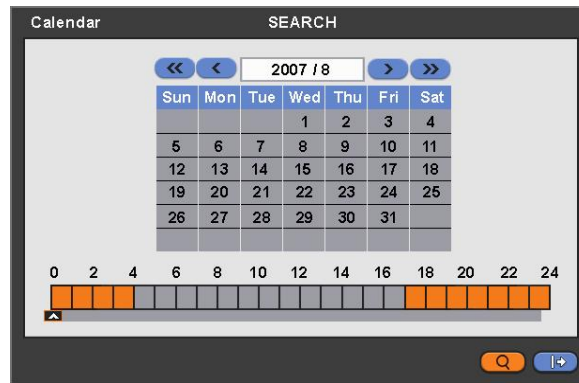
Time  

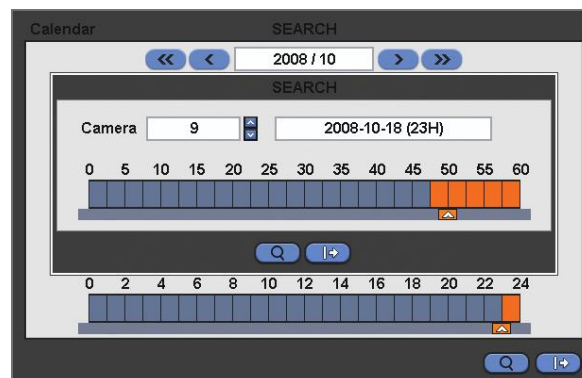
- Follow the procedure below to search video by date/time.
 - ① Click () the date and/or time whichever you need to change, and block the item. The designated item will be marked in a square.
 - ② Click ,  buttons on the right-hand side to adjust the values.
- Choose 'Search' to confirm the setting. Then, the selected video will be played back.
- Playback continues from the designated time until the last recording time.

5.2.2 Calendar Search

- Please click () Calendar Search in SEARCH menu, and the following input box will appear.



- Dates and Time with recorded data available will be high-lighted.
- Follow the procedure below to search video by calendar.
 - ① Select Year and Month by using the arrow buttons in the calendar.
 - ►►: search subsequent 'Year'
 - ◀◀: search previous 'Year'
 - ►: search subsequent 'Month'
 - ◀: search previous 'Month'
 - ② Click (↵) a date you want. The date will be displayed in black color.
 - ③ Click (↵) ▲ symbol below the time indication bar. The date will turn to orange color, and ▲ symbol to [▲].
 - ④ Use ◀ and ► keys to move the [▲] symbol to the start time of the video playback.
 - ⑤ Click (↵) [▲] button to show pop-up window on the screen, If there is a recorded data.



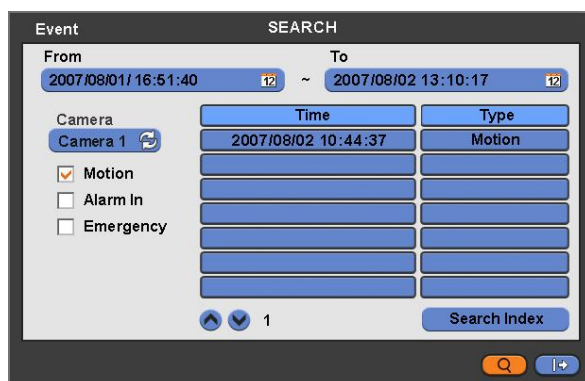
- ⑥ The screen will show selected date/time.
 - ⑦ Click ▲▼ button for selecting cameras.
 - ⑧ Selected camera will show the time bar 0-60 and It will be marked on 2.5minutes basis during selected time zone.
 - ⑨ Use ◀ and ► keys to move the [▲] symbol to the start time of the video playback.
- Click (↵) Search to start playing back the selected video.
 - Playback continues from the designated time until the last recording time.

(NOTE)

- ④ Click (↵) search button for showing entire channel search based on different time frames.

5.2.3 Event Search

- Please click (↵) Event Search in SEARCH menu, and the following input box will appear.
- This involves searching recorded video to playback the selected video of a specific date and time.
- Press **SEARCH** key on the viewing screen, or use the mouse wheel (central button), and the following Search menu will appear.



- ① Designate Event Search start time.
- ② Designate Event Search end time.
- ③ Select camera (video) to search data.
- ④ Check a check box (Motion / Alarm In / Emergency) Check box.
- ⑤ Click on Search Index button to recorded search event data.

5.3 Playback

- This involves searching recorded video to playback the wanted video of a specific date and time in search mode.
- Press **SETUP** key or please press the mouse right button and click in Playback mode. Then, the following screen will appear.



- There are three ways to search video, i.e., by date/time and by calendar.
 - Date/Time Search: search by inputting date/time.
 - Calendar Search: search by using calendar.
 - Event Search: search by event.
- There are three other functions in playback mode;
 - Archive: The Archive function will allow you to copy the recorded video (moving images and still images) from a storage device (USB memory stick, CD-RW, or DVD-RW).
 - Exit Search: From playback display to live display.
 - Cancel: Hide menu in playback mode.
- Playback mode runs in the available maximum number of split screen format. To change the viewing mode, please press **DISPLAY** key or **Camera Select** key (1~16).



(NOTE)

Using a mouse: Double click to view the corresponding camera image in full view format and click one more time to back to Split Screen.

- Move the cursor of the mouse, and the keypad control will appear at the bottom near the center of the screen.
- Every time you press the **PLAY/PAUSE** key during playback mode, it is changed to '1X PLAY' and 'PAUSE'. The displayed sign on the screen also changes from ► to II.
- Following is the key usage found in playback mode. You may also use the keypad provided on the screen.

| | | |
|-------------------|----|---|
| Goto Start | I◀ | • Goto start of recorded data |
| REW | ◀◀ | • Fast reverse playback (changes to x2, x4, x8, x16, x32, x64 and Extreme with each press) |
| BACKWARD | ◀I | • Frame-by-frame reverse still image playback |
| PLAY | ► | • Playback mode: 1X PLAY |
| PAUSE | II | • PAUSE |
| FORWARD | I► | • Frame-by-frame forward still image playback |
| FF | ►► | • Fast forward playback (changes to x2, x4, x8, x16, x32, x64 and Extreme with each press) |
| Goto End | ►I | • Goto end of recorded data |

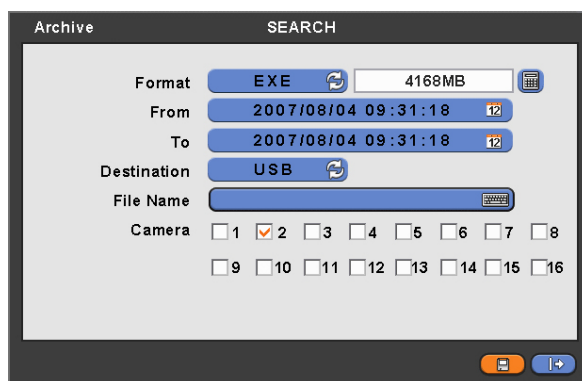
- Press **SEARCH** key to stop playing back video.


5.4 One-touch Playback

- Press the **PLAY/PAUSE** key or click the mouse wheel (central button) in the viewing mode. Then, you will be able to view the wanted recorded video right away without going through the search procedure. The video plays back the recorded video from the last one minute. To stop playing back the video, please press **SEARCH** key.

5.5 Archive

- The Backup function will allow you to copy the recorded video (moving images and still images) from a storage device (USB memory stick, CD-RW, or DVD-R).
 - Please execute Backup Live or playback.
 - Follow the backup procedure.
- ① Press **ARCHIVE** key. In case of using a mouse, please press the mouse right button and click in Archive. Then, the following screen will appear.



- ② Click (⌨) Format frame to select EXE or JPEG. Choose EXE for storing moving images; and JPEG for still images.
- ③ Click (⌨) the keyboard display on the right-hand side of FROM frame to set the storage start time.
- ④ Click (⌨) the keyboard display on the right-hand side of TO frame to set the storage end time.
- ⑤ Click (⌨) Destination frame to select a storage device out of USB and CD/DVD-RW.
- ⑥ Click (⌨) the keyboard display on the right-hand side of File Name frame to input a file name. You do not need to input extension (exe, jpeg). Please note that the file is not going to be stored unless you input a name.
- ⑦ Check ☒ a square box next to a camera with the video you want to store. You can archive multichannel at the same time.
- ⑧ Click (⌨) the Calculator button  on the rightmost side of Format line to check the data capacity for backup. The capacity will show only for EXE Archive.
- ⑨ Click (⌨) Start button. Then, Progress bar will appear and the storage process proceeds.
- ⑩ If the storage is done properly, Archive Success message will pop up. Please choose 'OK' to confirm. If the storage fails, Archive Fail message will pop up. In this case, you must try again.

(NOTE)
PLEASE DO NOT USE JPEG FORMAT SELECTING WHILE ARCHIVING IN LIVE MODE.

(NOTE)
PLEASE LIMIT THE BACKUP SIZE TO 2GB OR LOWER. OTHERWISE, DATA BACKUP WILL NOT BE EXECUTED.

(NOTE)
PLEASE DO NOT CHANGE THE SETTINGS BY DVR OR CMS, WHILE BACKUP.

CAUTION
PLEASE DO NOT USE THE SPACE IN BACKUP'S FILE.

CAUTION
WHILE BACKUP, PLEASE DO NOT DETACH STORAGE DEVICE OR POWER OFF THE DVR. OTHERWISE, IT MAY CAUSE PERMANENT DAMAGE TO THE DVR OR THE STORAGE DEVICE. IN SUCH CASE, YOU MUST REBOOT THE DVR. IF THE DVR DOES NOT OPERATE PROPERLY, YOU MIGHT NEED FILE SYSTEM RECOVERY PROGRAM OR YOU MUST FORMAT HDD.

5.6 Color Control and Position

- Please click (⌨) **Color /Alarm** in SEARCH menu, and the following input box will appear.

(NOTE)
THIS FUNCTION IS ENABLED ONLY WHEN **LIVE MODE** AND **1 CHANNEL MODE**



- If you click (**Default**), proper number of Color Control or HSTART/VSTART will appear automatically. Please choose 'OK' to confirm the setting.
- Click (←) ▲, ▼ direction buttons on the right-hand side of Brightness/Contrast/Saturation to set adjust color of the screen (i.e. 0 ~ 255)
- Click (←) ▲, ▼ direction buttons on the right-hand side of HSTART / VSTART to set adjust display poison.
- If you want every camera to have the same mode, please click (←) Copy to All Camera.
- Choose 'OK' to confirm the setting.

5.7 Alarm Out Control

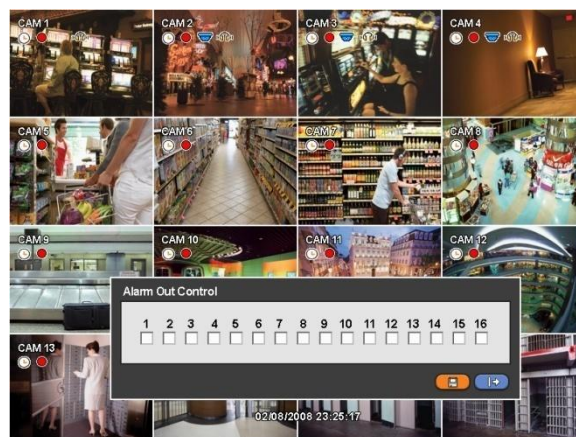
- Please click (←) **Color / Alarm** in SEARCH popup menu or in front panel and the following input box will appear.

(NOTE)

THIS FUNCTION IS ENABLED ONLY WHEN **LIVE MODE** AND **4 SPLIT SCREEN MODE OR HIGHER**.

(NOTE)

ONLY 4 ALARM CONTROLS ARE AVAILABLE FOR 4 CHANNEL DVR OR 8 CHANNEL DVR



- Check ☒ a check box next to a alarm control you want to on/off alarm out control.
- Choose 'Close' to confirm the setting.

CMS (Central Monitoring Station) User's Manual



6. PROGRAM INSTALLATIONS

6.1 SYSTEM RECOMMENDATIONS

- The followings are our recommendations for system configurations/specifications used with CMS.
 - **Processor:** Intel Pentium(R) (at 2.8GHz or better)
 - **Memory:** 1.00GB or more
 - **Video:** 128 MB AGP VGA card, 1024 x 768 Resolution, 32-bit Color, DirectX® 8.1 version or later
 - **HDD Space:** 500 MB of space
 - **Monitor:** SVGA or XGA, 1024 x 768 Resolution, 32-bit Color
 - **OS:** Windows® 2000 (SP4) or Windows XP only

6.2 PROGRAM INSTALLATION METHOD

- Please follow the program installation procedures below.
 - ① If an old version of CMS program was installed, completely remove or delete the old version.

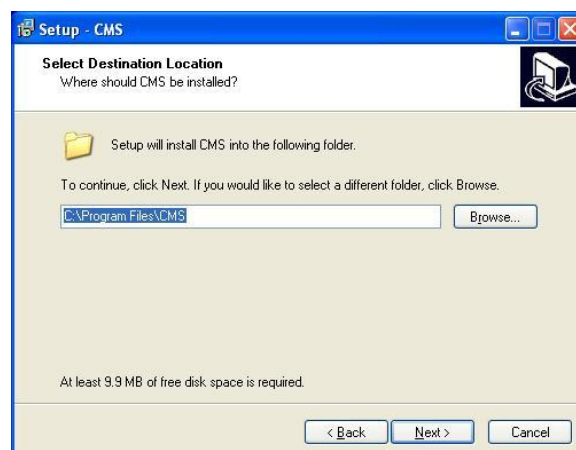
CAUTION

YOU SHOULD COMPLETELY REMOVE CMS PROGRAM OF AN OLD VERSION BEFORE INSTALLING NEW VERSION TO REDUCE COLLISION.

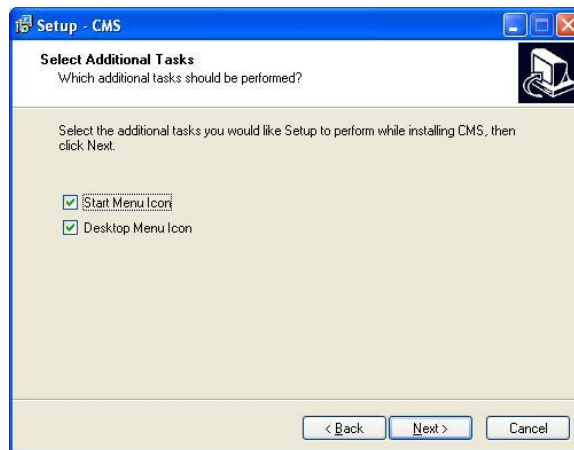
- ② Insert CD in your CD-RW(DVD-RW).
- ③ Run the CMSSetup.exe file.
- ④ When the following screen appears, click Next.



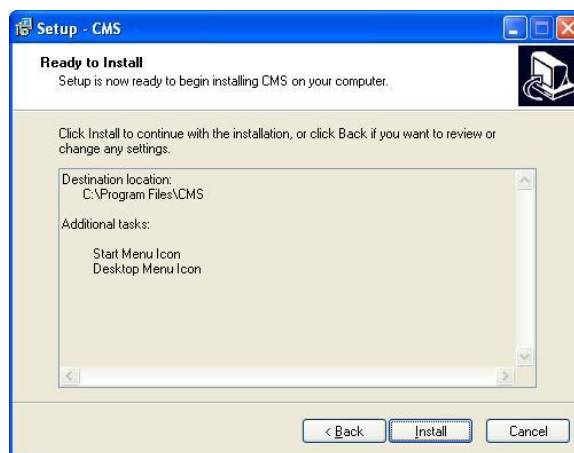
- ⑤ When the following screen appears, select folder and click Next.



⑥ When the following screen appears, check what you need and click Next.



⑦ When the following screen appears, click Install.



⑧ When the following screen appears, click Finish to complete the installation.



6.3 LOGIN

- After you install CMS software, CMS icon below appears on your desktop.



CMS

- Please double click on the icon to execute the program.

7. FUNCTIONS AND OPERATING INSTRUCTIONS

- Below lists are functions of the program.

| ICON | ICON NAME | WATCH MODE | SEARCH MODE | REMARKS |
|---|-------------------|--|-----------------------|-------------------------|
|  | | System Log | | DVR System Log |
|  | | PTZ Control | | DVR PTZ Control |
|  | | System Health Check | | DVR System Health Check |
|  | | | DVR Data Playback | DVR Data Playback |
|  | | | CMS(PC) Data Playback | CMS(PC) Data Playback |
|  | | | DVR Event Record Data | DVR Event Record Data |
|  | REMOTE WATCH | | Changed to Watch Mode | |
|  | REMOTE SEARCH | Changed to Search Mode | | |
|  | LOCAL SETTING | Local Setting | | CMS Setting |
|  | REMOTE SETTING | Remote Setting | | DVR Setting |
|  | ARCHIVE | | Archive(Moving Image) | Playback Image Archive |
|  | E MAP | View E map image | | |
|  | DVR(Name) | DVR Activation | | DVR Select |
|  | REMOTE CONNECT | DVR Connection | | Network Connection |
|  | REMOTE DISCONNECT | DVR Disconnection | | Network Disconnection |
|  | Exit CMS | DVR Disconnection | | Network Disconnection |
|  | INSTANT RECORD | Instant Record | | Watch Screen Recording |
|  | IMAGE PRINT | | Print | Playback Image Print |
|  | IMAGE SAVE | | Save(Still Image) | Playback Image Save |
|  | | Full Screen | | |
|  | | Quad Screen | | |
|  | | 9-Split Screen | | |
|  | | 16-Split Screen | | |
|  | | 36-Split Screen | | |
|  | | 64-Split Screen | | |
|  | | Zoom Mode (Setup screen disappears and the image is zoomed) (Cancel: click the right mouse button) | | |

8. WATCH MODE

8.1 LOGIN SCREEN

- When you login CMS, the following screen will appear. This screen is of Watch mode.



- Because it is not connected to DVR, images do not show.
- Please do Local Setting first before connecting to DVR.

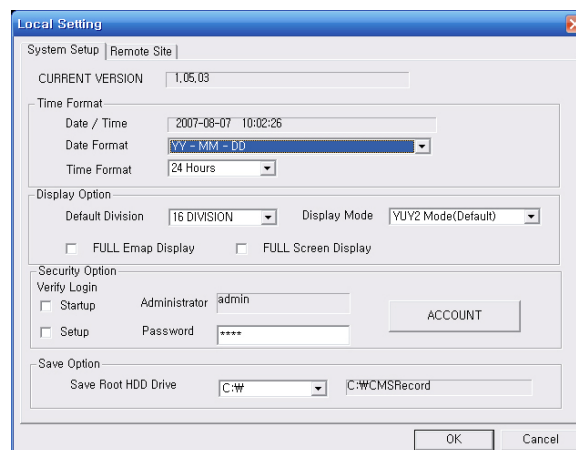
8.2 LOCAL SETTING



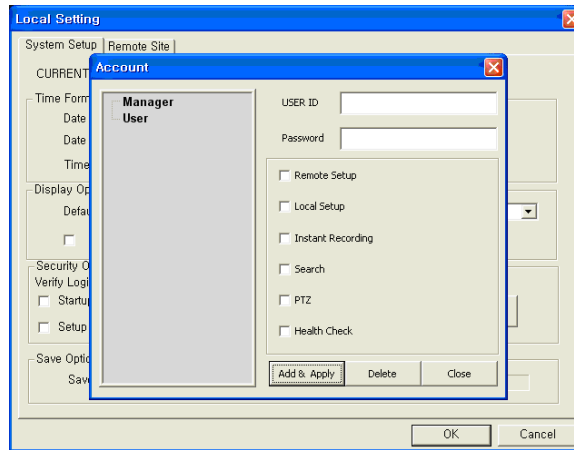
- Please click LOCAL SETTING button of Toolbar and the following screen will appear.
- This menu is for CMS (PC) and Network setup.

8.2.1 System Setup

- This menu is for CMS (PC) setup.



- **CMS VERSION:** displays current version of CMS.
- **Time Format:** displays current time and allow user to set date and time.
- **Display Option:**
 - Default Division: default displays division.
 - Display Mode: (Default: YUV2 Mode (Default)).
 - FULL E Map Display: full E Map displays (page 68).
 - FULL Screen Display: display in Full Screen according to the resolution of PC.
- **Security Option:** Set up user's ID, Password and attribution for login CMS.
Click Account and will display following.

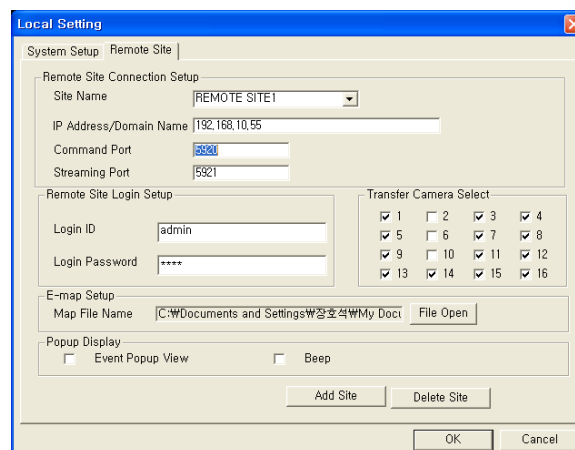


- Manager/User: allow user to authority.

- **Save Option:** allow user to select Drive(C, D) and folder to save data.
- Choose 'OK' to confirm the setting.

8.2.2 Remote Site

- This menu is for Network setup.
- Make CMS IP address and Port coincide with DVR.



• Remote Site Connection Setup:

- **Site Name:** input DVR site name to be displayed on the right-hand side of DVR icon. Please note that this name has nothing to do with the ID registered in DVR. User may create a name that is fairly easy to distinguish.
- **IP Address/Domain Name:** input IP address or Domain Name of DVR (check with SETUP>DEVICES>Network in your DVR).
- **Command Port:** input Administrator's number among port numbers set in DVR (check with SETUP>DEVICES>Network in your DVR).
- **Stream Port:** INPUT Video/Audio number among port numbers set in DVR (check with SETUP>DEVICES>Network in your DVR).

• Remote Site Login Setup: input ID and Password.

- Please do not input ID and Password if you want a popup window for logon ID and password to appear at the time of connection to CMS.
- Please input ID and Password if you want to connect directly to CMS without ID and password verification.
- ID and Password should be coincident with those of DVR. If Password for DVR has not been set up, enter ID only (check with DVR: SETUP>SYSTEM>Account>User in your DVR).
- Transfer Camera Select enables you to set the kind of channel(s) that show during the initial connection.
- **Add Site:** Click this button to add DVR site. You are allowed to register up to 4 DVR sites.

• Delete Site: use this button to delete the already registered DVR site(s).




• E-map Setup: Use this to upload saved E-map image file (see 10.2 E-map).

• Popup Display: Setup for beep and popup displays when event input.

- Please choose 'OK' to confirm the setting.

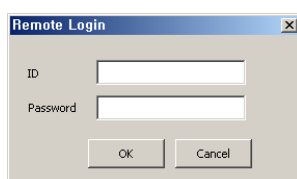
8.3 LIVE VIDEO

8.3.1 Network Connection

- As the setup is completed, you are now ready to connect CMS to DVR over Network.
-  Please click in REMOTE DVR on the screen.
-  It will turn to yellow, while being activated.
-  Please click REMOTE CONNECT button.
- If a popup window for ID/Password appears, please input ID/Password. The window may not show up at all depending on Remote Site Login Setup.

(NOTE)

If there is no Admin Password set up in DVR, you may log-in to Admin for CMS and enter without Password.



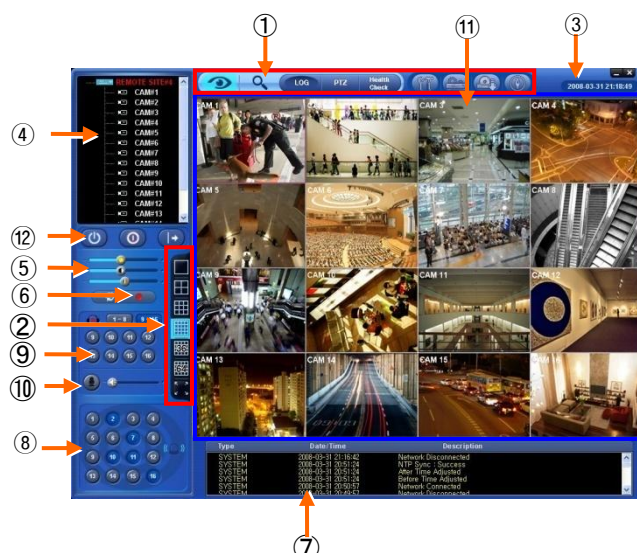
- If video does not display, please check Local Setting again.
- Site Tree of DVR will show with the video. Site Tree lists DVR sites being currently connected to the CMS.
- This is Live video of the connected DVR.
- You can connect several DVR at once (Maximum 16 DVR).
- If you click Remote Disconnect, interface with a site is disconnected.



- To connect another DVR, please press REMOTE DISCONNECT button to disconnect the current DVR, and connect the new DVR.



- If you want to exit CMS program, click on Exit CMS button.



- The list below describes functions of each part of the screen.

| | |
|---|------------|
| 1 | Tool Bar |
| 2 | Watch Mode |

| | |
|----|--|
| 3 | Date/Time LED |
| 4 | Site Tree (DVR and Channels) |
| 5 | Color Control Bar |
| 6 | Instant Record Button |
| 7 | System Log |
| 8 | Alarm Out Channels |
| 9 | Audio Channels |
| 10 | Two way Audio |
| 11 | Video Display Screen |
| 12 | Network Connect/Disconnect Button/Exit CMS |

8.3.2 Watch mode

The first image (or the initial image) shows the available maximum split screen format, but you can choose a watch mode you want.



- **Full Screen Mode:** Select a channel and click on FULL SCREEN button. Then, the corresponding channel will display in Full Screen.

(NOTE)

A selected channel is outlined in red.



- **Quad Screen Mode:** Click on QUAD SPLIT button, and a quad screen will display. The quad screen is in combination of 1~4, 5~8, 9~12 and 13~16. If you select Channel No. 7 and click the button, 5~8 quad screen will display. Similarly, if you select Channel No. 16, 13~16 quad screen will display.



- **9-Split Screen Mode:** Click on 9-SPLIT button, and 9-split screen will display. The 9-split screen is in combination of 1~9, and 8~16. If you select Channel No. 9 and click the button, 1~9 split screens will display. Similarly, if you select Channel No. 10, 8~16 split screens will display.



- **16-Split Screen Mode:** Click on 16-SPLIT button, and 16-split screens will display.



- **36-Split Screen Mode:** Click on 36-SPLIT button, and 36-split screens will display.



- **64-Split Screen Mode:** Click on 64-SPLIT button, and 64-split screens will display.



- **Zoom Mode:** Click on Zoom button. Then, the setup screen will disappear and only the video image will be zoomed (scaled to fit the screen). To cancel, please press the right mouse button.



- **E Map: load and close E Map image program.**
- **Mouse Double Click:** If you double click the mouse on a split screen, it will turn to full screen mode. Double click the mouse to back to the previous watch mode.

8.3.3 Multi Screen

- CMS supports multi remote site connections simultaneously.
- **Server Drag & Drop:** Drag & Drop Remote Site of site tree to any screen. Then all cameras of the site will display sequentially.
- **Camera Drag & Drop:** Drag & Drop a camera of Remote Site to any screen. Then the camera will display.



8.3.4 Screen Color Adjustment

- Adjust color of the screen using three bars (Brightness / Contrast / Saturation). Selecting a channel and dragging the bar(s) with your mouse. Color will change in about 7 seconds.



Click on UNDO button to return to the original colors.



8.3.5 Audio

- Click an audio channel to listen to the corresponding channel.
- You may adjust the audio volume with your mouse.
- Click a MIC Icon to use to two way audio.



8.3.6 System LOG



- Click on LOG button on Watch screen. This will allow you to check System Log of Remote Site (DVR).


| Type | Date/Time | Description |
|--------|---------------------|----------------------|
| SYSTEM | 2007-08-01 15:48:33 | Network Disconnected |
| SYSTEM | 2007-08-01 14:31:51 | Network Disconnected |
| SYSTEM | 2007-08-01 14:31:10 | Network Connected |
| SYSTEM | 2007-08-01 14:29:53 | Network Connected |
| SYSTEM | 2007-08-01 14:23:50 | Network Disconnected |
| SYSTEM | 2007-08-01 12:33:46 | Network Disconnected |

8.3.7 Alarm Out

- This is for operating Alarm Out of a selected DVR from a remote distance.
- Click a channel number, and Alarm Out of the corresponding channel will operate.
- If you see an intruder, use this function to turn on a siren in an area where the DVR is installed.




8.3.8 One Touch Recording

-  Click on INSTANT RECORD button to save video of every channel in HDD of Local System (PC with CMS installation).

8.4 PTZ Control

- This is for the control of Pan/Tilt of DVR.

-  Click on PTZ button in Watch mode, and the following screen will appear.



- Buttons on the screen have the following functions.
- ① Up/Down/Left/Right direction buttons



- ② Zoom/Focus/Iris Control buttons



③ Preset Control button

| PRESET NO | TITLE |
|-----------|-------------------|
| 01 | Network Connected |
| 02 | Setup Enter |
| 03 | System start |
| 04 | System start |
| 05 | Setup Enter |

The completed Preset

- Click on Preset Control button, and the following screen will appear. Please input Title and Preset Number.

Preset Control dialog box:

- TITLE
- Preset NO
- Delete
- OK
- Cancel

- When you completed input, please choose 'OK' to confirm.
- Press LOG button to go back to Live video.

8.5 Health Check

- This function allows you to check operating status of each unit in DVR connected to CMS.



- Click on Health Check button in Watch mode, and the following screen will appear.







- The list below describes functions of each part of the screen.




| | |
|---|---|
| 1 | CMS connections (up to 4) |
| 2 | Camera connections and operating status |
| 3 | HDD connection and its operating status |
| 4 | Recording status |

| | |
|---|---|
| 5 | Motion recording status |
| 6 | Alarm In connection and operating status |
| 7 | Alarm Out connection and operating status |
| 8 | Version |
| 9 | Recording start/end date and time |




8.5.1 Camera Connections and Operating Status

-  Camera is in normal operation.
-  Camera is not in use.
-  Camera is not connected or Video Loss.
-  Camera is Covert status.




8.5.2 HDD Connections and Operation Status

-  HDD is in normal operation.
-  HDD is not connected (up to 4).
-  HDD has an error.




8.5.3 Recording Status

-  In recording.
-  Recording is stopped.
-  Above the maximum number of cameras allowed.




8.5.4 Motion Recording Status

-  In motion recording.
-  No motion recording is available.
-  Above the maximum number of cameras allowed.

8.5.5 Alarm In Connection and Operating Status

-  Alarm In is On.
-  Alarm In is Off.
-  Above the maximum number of Alarm In allowed.

8.5.6 Alarm Out Connection and Operating Status

-  Alarm Out is On.
-  Alarm Out is Off.
-  Above the maximum number of Alarm Out allowed.

8.6 REMOTE SETTING

- You may change DVR's Menu setup through CMS.
- Remote Setting works only in Watch mode.



- Click on REMOTE SETTING button in Watch mode, and the following SETUP menu same as DVR's will appear on CMS screen.



- The setup procedure is same as that of DVR.
- When the setup is completed, do not click Exit button on the SETUP screen, but click OK or Cancel button on the Remote Setup screen.

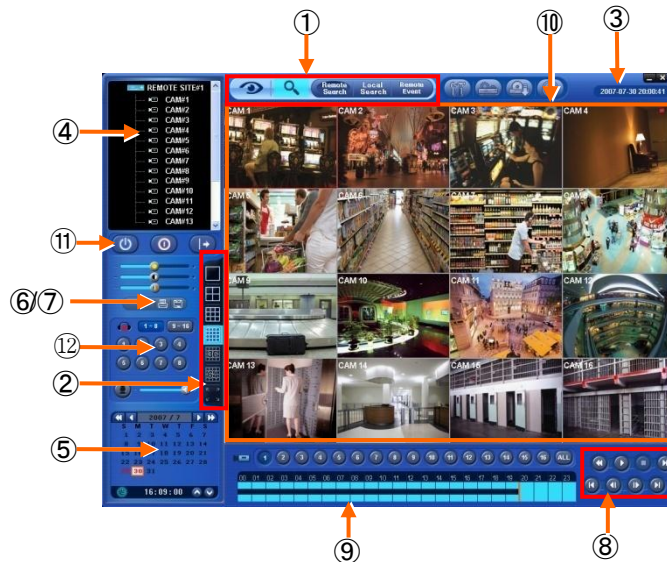
9. SEARCH MODE

9.1 SEARCH SCREEN

- This menu is for playing back from recorded data.



- Click on REMOTE SEARCH button in Watch mode, and the following Screen mode screen will appear.
- Search mode provides three search functions. One is for searching DVR video by clicking REMOTE SEARCH button, and another is for searching video stored in CMS (HDD of PC) by clicking LOCAL REARCH button and the other is for searching event recorded data stored in DVR by clicking REMOTE EVENT button.



- The list below describes functions of each part of the screen.

| | |
|----|--|
| 1 | Tool Bar |
| 2 | Watch Mode |
| 3 | Date/Time LED |
| 4 | Site Tree (DVR and Channels) |
| 5 | Calendar |
| 6 | IMAGE PRINT button |
| 7 | IMAGE SAVE button |
| 8 | Playback control button |
| 9 | Time Select Bar |
| 10 | Video display screen |
| 11 | Network Connect/Disconnect button |
| 12 | Audio Channel (Display selected Audio channel) |

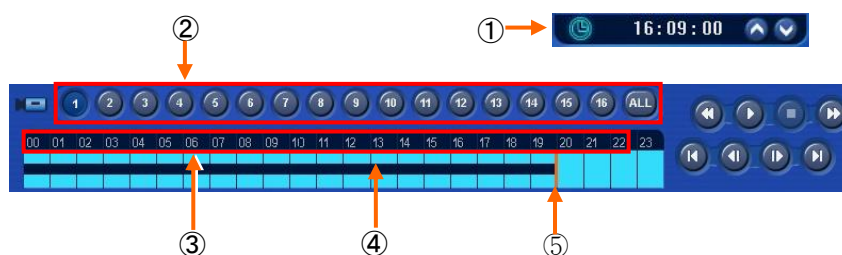
9.2 REMOTE SEARCH



- The REMOTE SEARCH button allows you to playback recorded video of DVR.
- Select Date
 - In Calendar, dates with recorded data are marked in red.
 - Click the wanted date among the dates marked in red. In background of Time Select Bar, data recorded time is displayed in bar shape.
- Select Time
 - Click the time you want to playback, then Time Select Bar will move. You may drag the Time Select Bar with your mouse.



| | |
|----|---------------------------|
| ◀◀ | Search previous 'Year' |
| ▶▶ | Search subsequent 'Year' |
| ◀ | Search previous 'Month' |
| ▶ | Search subsequent 'Month' |



| | |
|---|---|
| 1 | Start Time (Time for starting playback) |
| 2 | Select Camera to be played back |
| 3 | Time LED (24 Hour) |
| 4 | Data Bar (Recorded data) |
| 5 | Time Select Bar |

- When Date/Time search is completed, please click Playback control button to begin playback.

9.3 LOCAL SEARCH



- The LOCAL SEARCH button allows you to playback recorded data in CMS (HDD of PC).
- Date/Time search procedures are same as Time Search.
- When Date/Time search is completed, please click Playback control button to begin playback.

9.4 EVENT SEARCH



- The REMOTE SEARCH button allows you to search event recorded data of DVR.



- ① Designate Event Search start time.
- ② Designate Event Search end time.
- ③ Select camera (video) to search data.
- ④ Check a check box (Motion/Alarm In/Emergency) Check box
- ⑤ Click on Search Index button to recorded search event data.

9.5 PLAYBACK

9.5.1 Playback Control Button

- Select time and click ► button to begin playback.
- Use the control buttons below while playback.




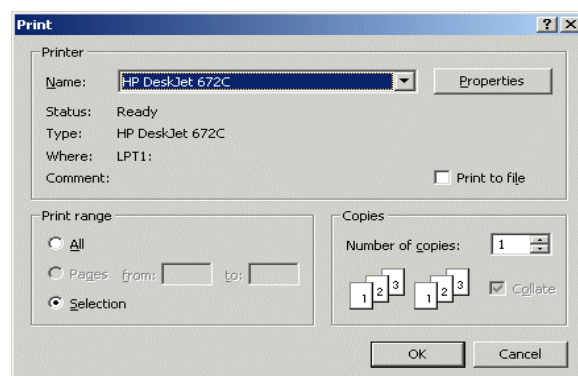
| | |
|----|--------------------------|
| ◀◀ | Fast Backward Play |
| ▶▶ | Fast Forward Play |
| ▶ | Play |
| ■ | Stop |
| ◀ | Go to the First Image |
| ▶ | Go to the Last Image |
| ◀ | Go to the Previous Image |
| ▶ | Go to the Next Image |

CAUTION


Make sure that you use control buttons after STOP button. For example, if you want to change from Play mode to Fast Forward Play mode, press STOP button first and then Fast Forward Play button. This applies equally when you use other buttons.

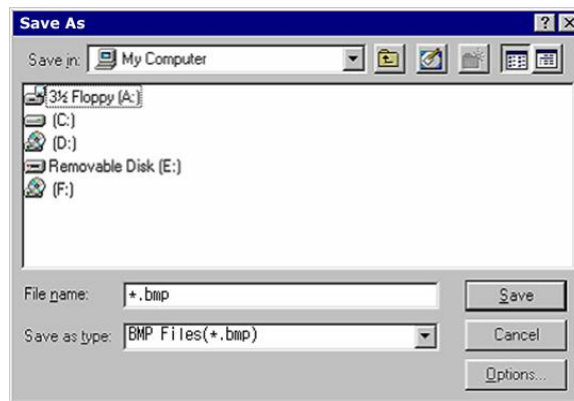
9.5.2 Print

- This is for printing a selected image (within the red outline).
-  Click IMAGE PRINT button, and the following screen will appear.
- Choose 'OK' to confirm the setting. Then, the printing proceeds.



9.5.3 Save

- This is for saving still image(s) in Bitmap or JPEG file.
-  Click IMAGE SAVE button, and the following screen will appear.
- Input the name of the file to save, and execute Save.



CAUTION

If images are not saved properly, click UNDO button and save again.

9.5.4 Archive

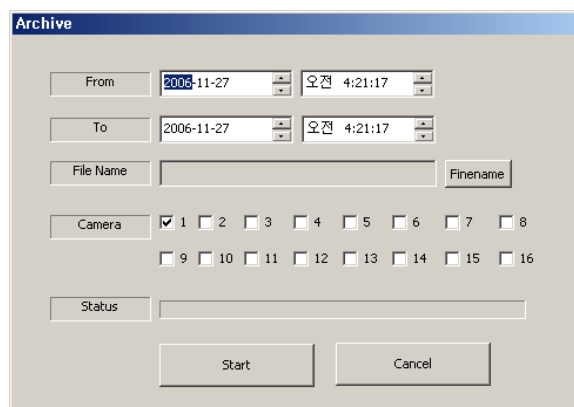
- This is to back up the DVR's moving image data to AVI file in PC(CMS).
- Work only in playback mode.



- Press STOP button first to make sure the playback is stopped and then press ARCHIEVE button.




- Click ARCHIVE button, and the following screen will appear.

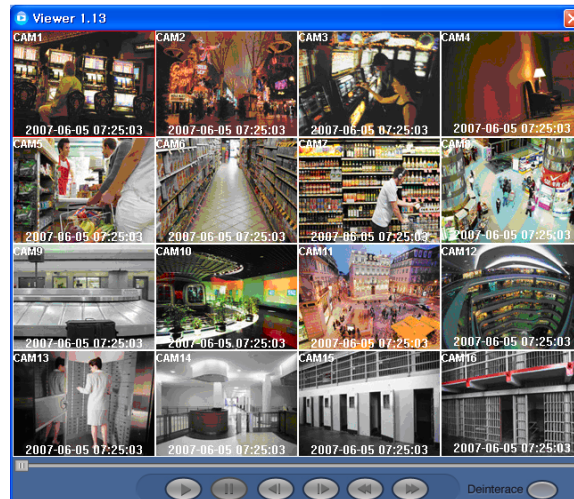









- ① Designate Archive start time.
- ② Designate Archive end time.
- ③ Designate file name.
- ④ Select camera (video) to save.
- ⑤ Click on Start button to begin Archive.

10. Others


10.1 Viewer

- The Format of archive file is .exe(executable file).
-  Please double click on the icon to execute the program.








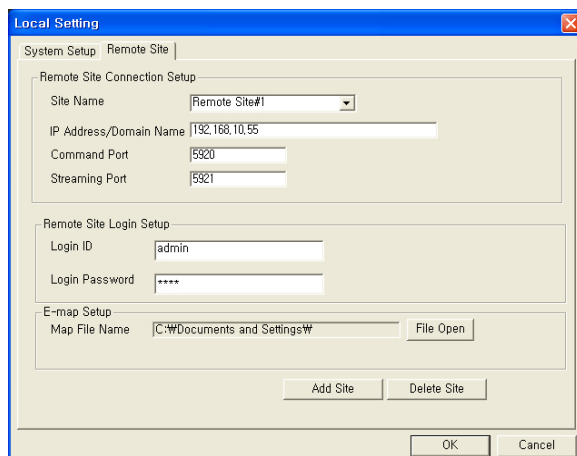
| | | |
|------------|---|--|
| PLAY |  | • Playback mode: 1X PLAY |
| PAUSE |  | • Playback mode: PAUSE |
| BACKWARD |  | • Frame-by-frame backward still image playback |
| FORWARD |  | • Frame-by-frame forward still image playback |
| REW |  | • Fast reverse playback |
| FF |  | • Fast forward playback |
| DEINTERACE |  | • Deinterlace On / Off |


10.2 E MAP

- You can find emap.exe program following directory (Default: C:\Program Files\CMS\emap.exe).
- Please double click  on the **emap.exe** to execute the program.




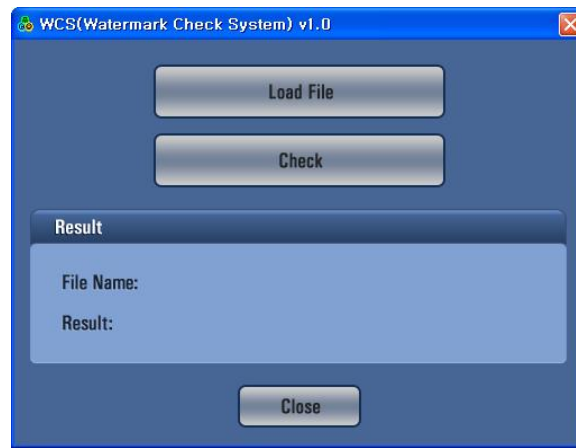
-  Please click on the icon to load the image file.
-   To move the icon just drag and drop.
- You can also rotate the icon.
-  Please click on the icon and input the name of the E Map file to save, and execute.
-  Please click on the icon to exit program.
- Please click on CMS (PC) setup and select remote site tab, and the following screen will appear.



- Please click on file open button, and select the E Map file to load.
- Please click on OK button to exit program.
- Click  button and you can use E Map function.
(You cannot use E Map function in the Search Mode, Health Check Mode)
- To move an E Map image, just click the image after connected the DVR.

10.3 Watermark Check System

- Mouse double click  WCS.exe program in the CMS program folder (Default: C:\Program Files\CMS\WCS.exe).



- To open the check .exe or .jpg file just click Load File button.
- To click the check button, you will get following message;

Result:

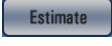
Verification OK !

Corrupted or Modified

10.4 Estimator

- When you set up CMS program, the application, Estimator will set up additionally.
- The operation screen is as follows.



- At Setup>Record>Settings, by changing settings, you can estimate data size, maximum recording days in advance.
- Set DVR channel, video type, hard disk size you use.
- After setting FPS per channel, video size, video quality, click  button. Then the maximum recording days and data size will show.

Advanced Keyboard Controller

User's Manual



11.1 Keyboard Controller

- CP1200A(hereinafter CP) has two modes. (Direct Connect mode, Relay mode)



- “Mouse” button
 - Short click: Control mode of keyboard is changed. (Direct connection, Relay)
 - Long click: Mouse functions are performed through USB port.
- Direct Connect Mode: PTZ camera is connected directly to CP.
- Relay Mode: DVR is first connected to CP, and PTZ camera is connected to DVR.

- **Set CP1200A in Relay mode.** You will then see the screen shown below.

DVR WKEY 9.6K ID : 001

- This indicates that CP is currently in relay mode and operates at transfer speed of 9600bps, and control ID is 1.
- **ID here is not of DVR, but of camera to control.**
- All IDs, i.e., Camera jumper ID, ID given from DVR setup >DEVICES >CAM/PTZ, and ID controlled at CP should be identical.

11.2 PTZ / DVR Control Mode

- After system configuration is done in a relay mode, you may control DVR through rs485 line.
- **DVR control mode:** You can control DVR by using keyboard.
- **PTZ control mode(default):** You can use PTZ functions of camera by using keyboard.
- How to set mode:
 - 1.Check System ID of DVR. (Setup>SYSTEM>Information: System ID)
 2. Input SYSTEM ID numbers in CP1200A and press “CLR”.
 - Input the ID numbers and press “CLR” key, the operation mode is switched to **DVR control mode**.
 - If you do not input 0 or numbers and presses “CLR” key only, the operation mode is switched to **PTZ control mode**.
 - In DVR control mode, a text saying KBD: (SYSTEM ID) appears at a position for DVR recording capacity on the OSD screen.
- If you want to control another DVR while using a DVR in DVR control mode currently, press number keys (SYSTEM ID of a target DVR) + “ENT” key to change DVR to be controlled. Then, the current DVR control mode is automatically switched to PTZ control mode.

If SYSTEM ID is changed on Setup window while you are using a DVR in DVR control mode, you can no longer control the DVR with the keyboard. Therefore, once you have changed System ID, you should immediately press numeric keys (new SYSTEM ID) + “ENT” key to let the keyboard recognize the DVR.

11.2.1 PTZ Control Mode

- In relay mode, Default status indicates a PTZ control mode.
- **Press number keys + “ENT”(Long)** key to change to Camera ID you want to control. If there is a corresponding Camera ID, a camera image will pop up. PTZ control is possible.
- You can control up to 255 devices.
- **PSET:** Preset save – Number keys + PSET (Long on)
Preset shift – Number keys + PSET
- **Joystick:** PAN/TILT, Zoom In, Zoom Out
- **TELE:** Zoom Out
- **WIDE:** Zoom In
- Please refer to DVR User’s Manual for setup in DVR.

11.2.2 DVR Control Mode

- In DVR control mode, all buttons operate according to texts written underneath. The operations are the same as

Front buttons of DVR as follows:

- **DISPLAY**: changes channel split screens in sequence of 1>4>9>16>1.
- **SEQ**: turns on/off Sequence function.
- **SPOT**: changes the channel of a screen connected to the Spot monitor.
- **ARCHIVE**: pops up Archive window.
- **AUDIO/ESC**: shuts down window when Setup window appears. Otherwise, it activates the AUDIO function.

Any setup changes during shutdown are not saved.(same as Cancel)

- **EMERGENCY**: turns on/off Emergency record function.
- **EVENT**: pops up a window to let you see System Log.
- **PIP**: turns on/off PIP screen in case of 1 channel screen. If PIP function is on, user **number key(s) + ENT** key to change the PIP channel.

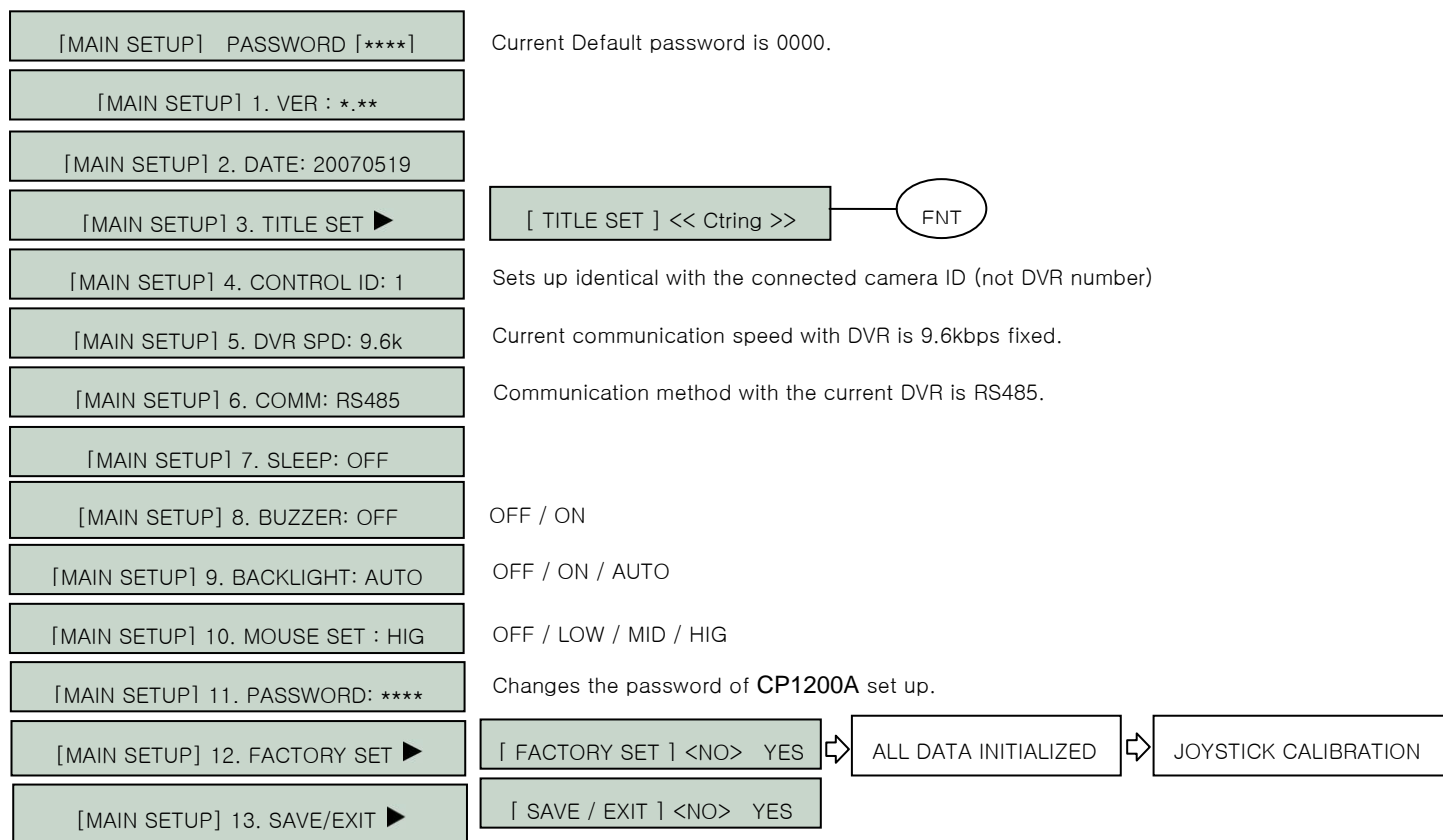
In case of 4 or 9 channel screen, it changes the screen to a next one in the sequence.

- **FRZ**: freezes a current image.
- **SETUP**: pops up Setup window.
- **PLAY/PAUSE**: plays/pauses recorded data in play mode.
- **SEARCH**: pops up Search window, or switches play mode to search mode.
- **ZOOM**: zoom in a current image.
- **JOYSTICK (REW)**: rewinds in sequence of 2X, 4X, 8X, 16X, 32X, 62X, Extreme in play mode.
- **JOYSTICK (FF)**: fast forwards in sequence of 2X, 4X, 8X, 16X, 32X, 62X, Extreme in play mode.
- **JOYSTICK(SETUP)**: operates with direction keys if Setup window is popped up. (up/down/left/right)
- **ENT**: operates with Select key if Setup window is popped up.

(If Setup window is not popped on, you can select a channel of interest by using **number key(s) + "ENT"(short)** key.)

11.3 Keyboard Controller Setup

- If you press number key 2 on CP1200A(hereunder CP) + **"SET"** (Long on), you can set up the main menu of CP.
Set up as followings.(Joystick: ↓ next, ←, → change)



11.4 Q / A

11.4.1 When a Key does not Work after Set up

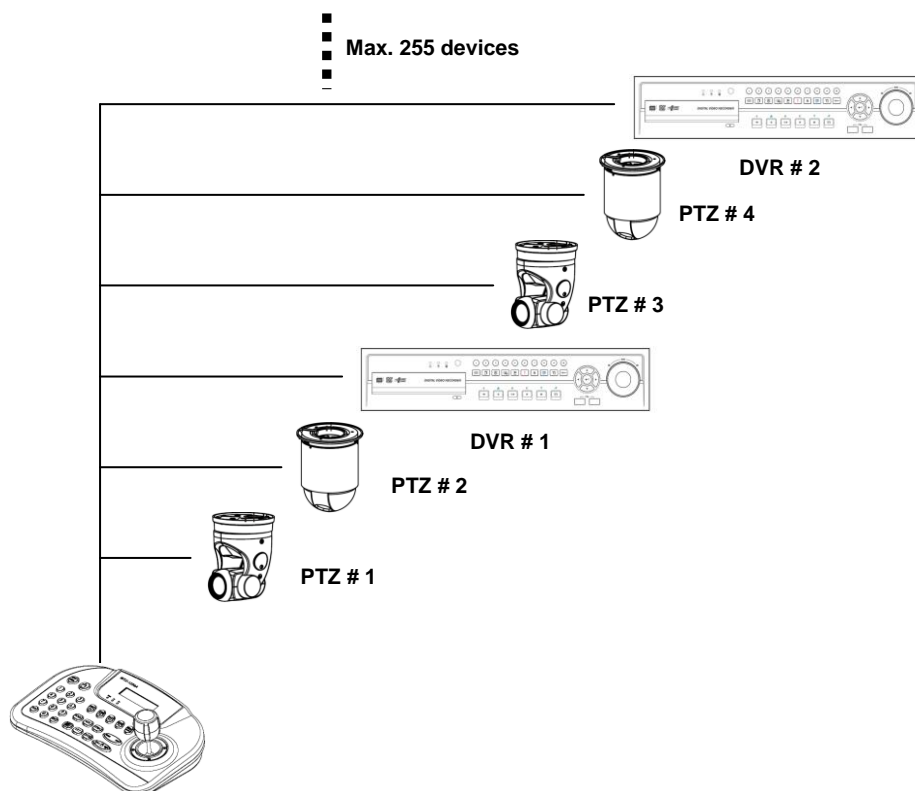
- If the communication speed of DVR and CP are not identical, it may not work.
Please make sure the baud rate of CP sets on 9.6kbps.
- Press the button to enter PTZ mode and switch to DVR mode again.
- Please reboot the DVR.

11.4.2 When Tx Blinks Continually on the LED Window

- If Tx blinks continually without any operation, it may be mistakenly set up for Joystick.
 - OFFSET of the Joystick may not appropriately set up.
 - Please touch the Joystick and position it on the center.

If the problem still remains, select YES on FACTORY SET of the CP main setup and set up the Joystick again.

11.5 Keyboard System Connections

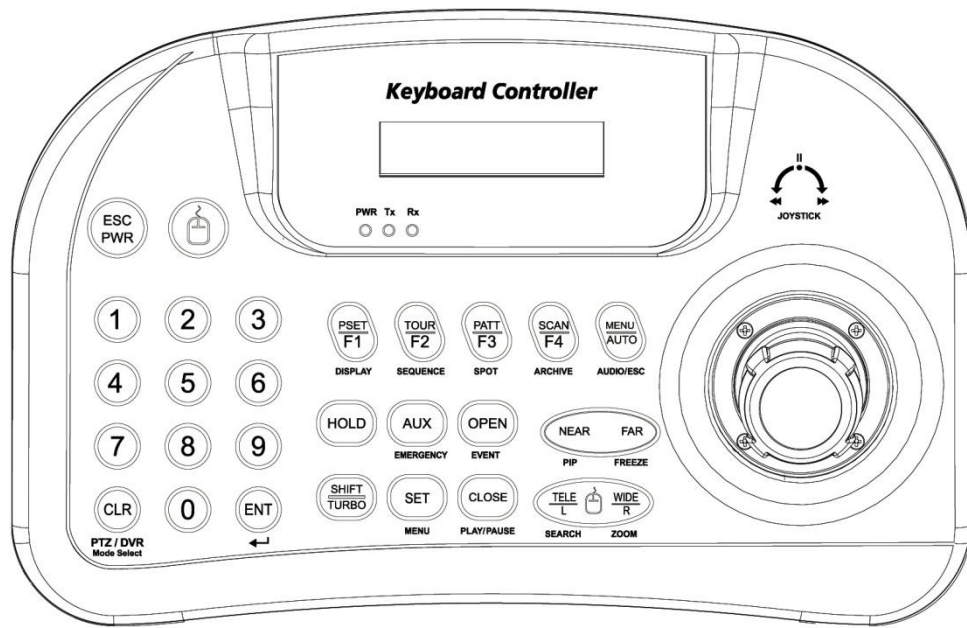


11.6 CONSIDERATIONS

- **SYSTEM ID:** DVR identification number. It can be set up on SYSTEM ID of SETUP>SYSTEM>Information page.
- **Camera ID:** Camera identification number defined by the Camera jumper setting
 - It should be set up with the identical ID on SETUP>DEVICES>Cam/PTZ page.
 - Camera jumper ID, ID given from DVR setup ->DEVICES->CAM/PTZ, and ID controlled at CP1200A should be identical.
- Please use the number key on left side of the Keyboard for number input ("short key")
 - It may not operate appropriately because it is used to select Device.
- The **Set** key is used for entering Keyboard menu.(long on key)

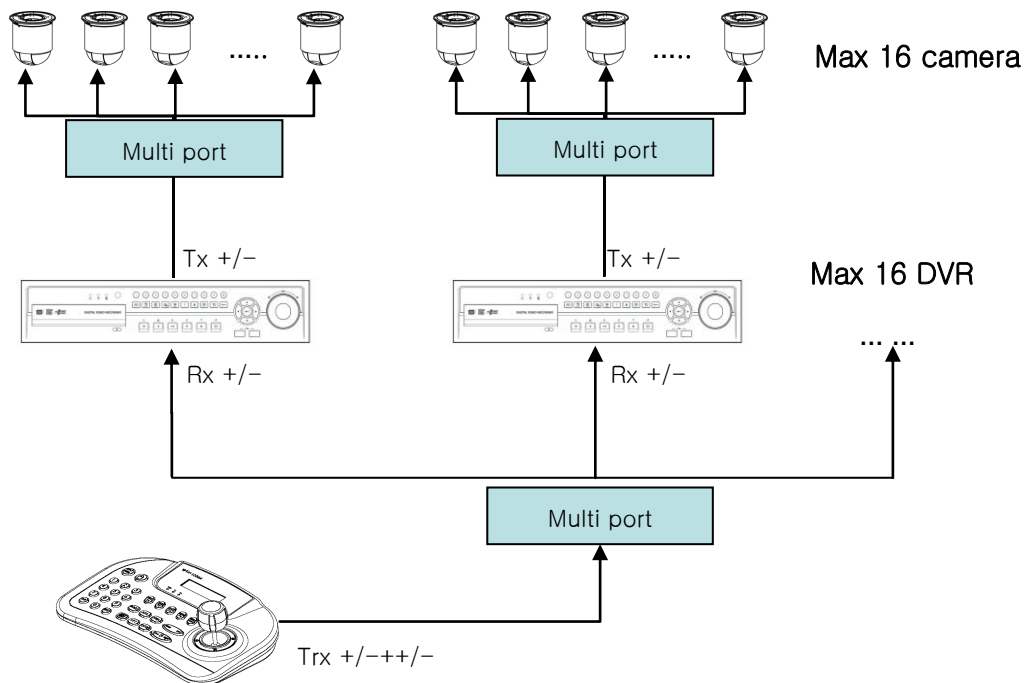
11.7 Display Channel Change

- The numbers to be selected are different according to the DVR control mode and PTZ control mode.
- **DVR control mode**
When KBD : (SYSTEM ID) displays on OSD screen, it is DVR control mode.
The applicable channel pops up if you press the Channel number + "ENT"(short) key.
You can select the channel number of 1 to 16 according to the DVR model.
- **PTZ control mode**
When a disk recording capacity displays on OSD screen, it is PTZ control mode.(Default)
If you press Camera ID + "ENT"(Long) key, camera image of the applicable ID pops up. PTZ control is available.
You can select the Camera ID number of 1 to 255 according to the camera ID set up.
- The method to input the number follows as;
ex)Ch. 8 => 8 and "ENT" Ch.16 => 1, 6 and "ENT"
 ID 8 => 8 and "ENT" ID 255 => 2, 5, 5 and "ENT"
- The key combination should be recognized on the DVR of receiving mode.

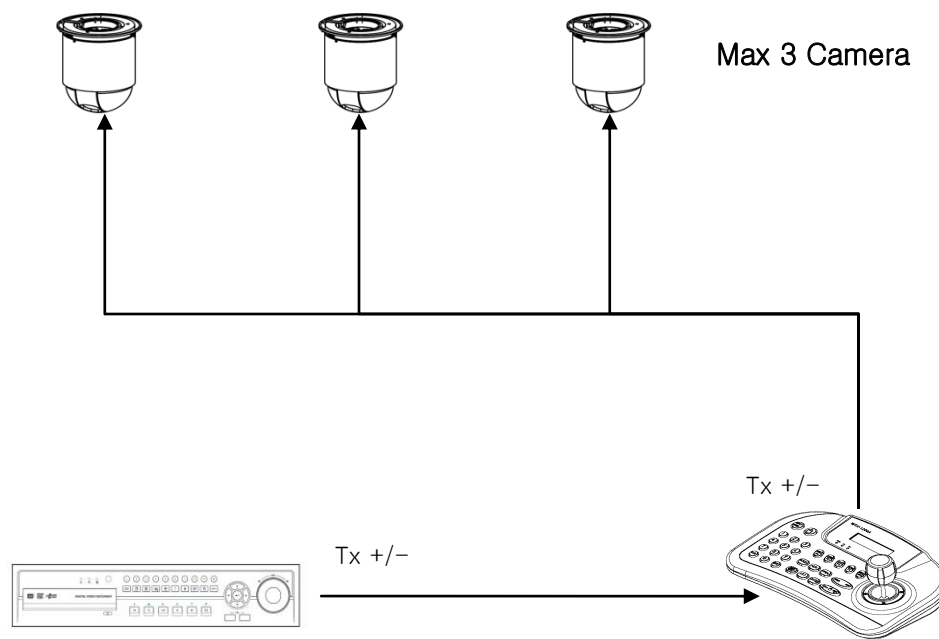


11.8 System Configuration Diagram

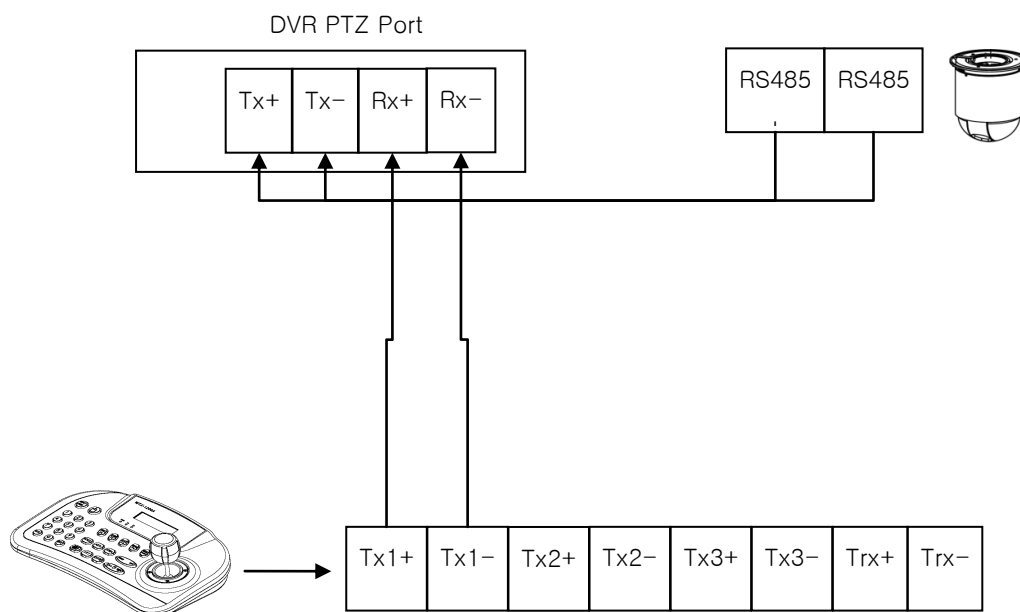
11.8.1 Configuration Diagram I



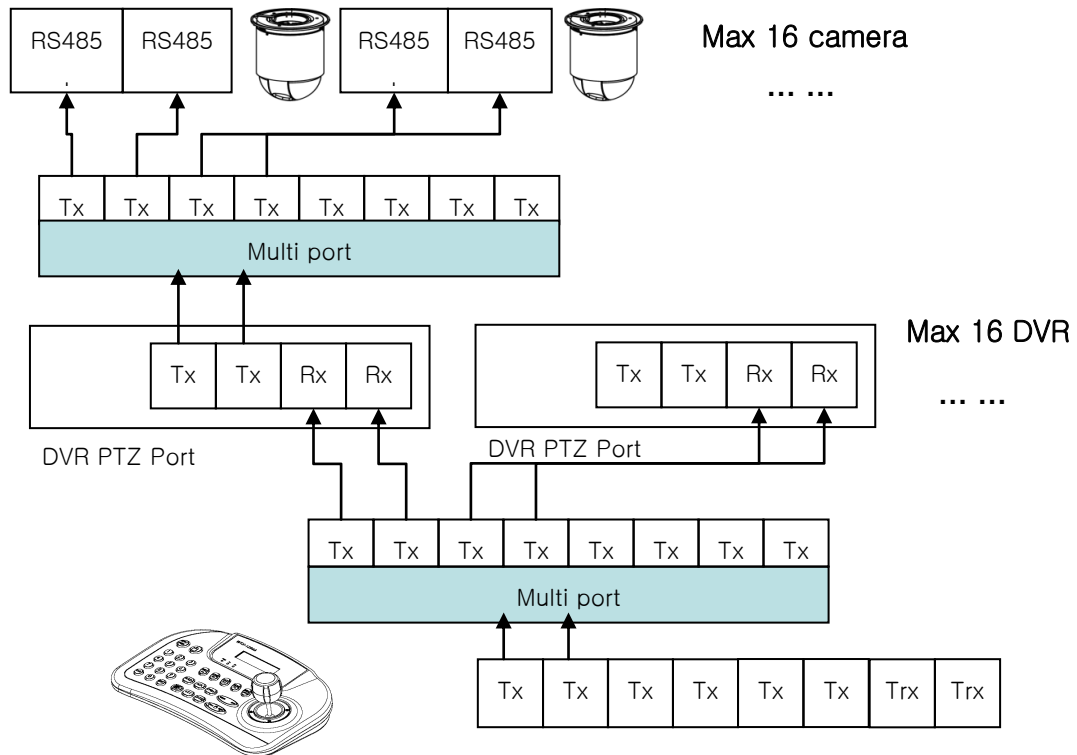
11.8.2 Configuration Diagram II



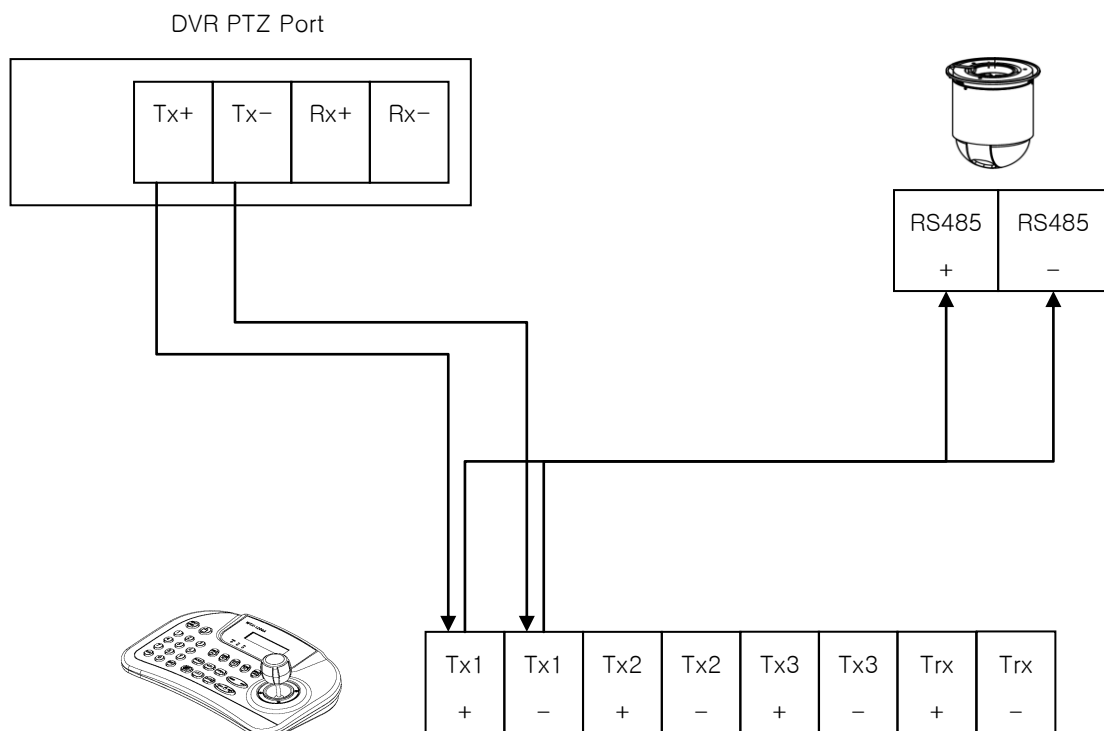
11.8.3 Configuration Diagram III – Single System Configuration (Camera 1, Keyboard 1, DVR 1)



11.8.4 Configuration Diagram IV – Multiple System Configuration

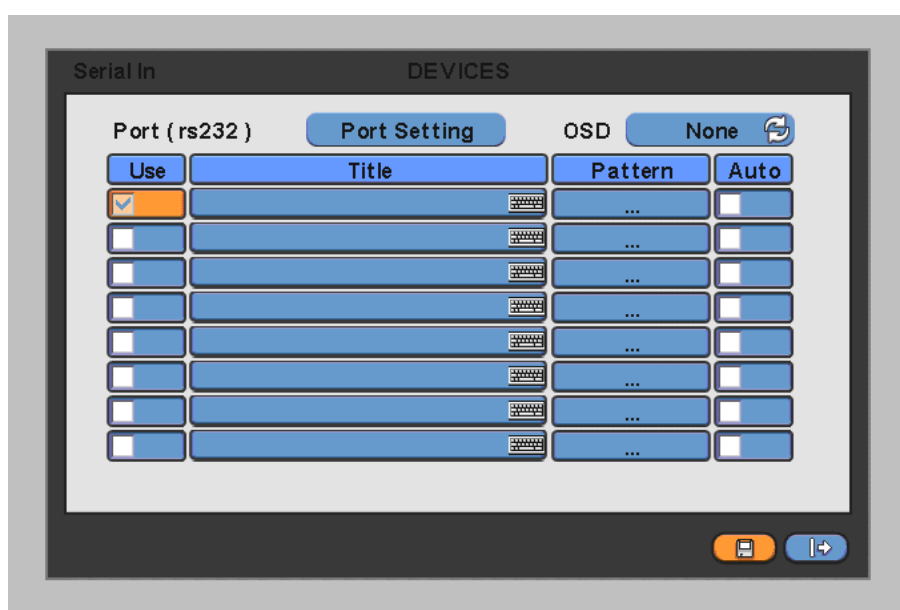


11.8.5 Configuration Diagram V – Single System Configuration (connected directly to PTZ)



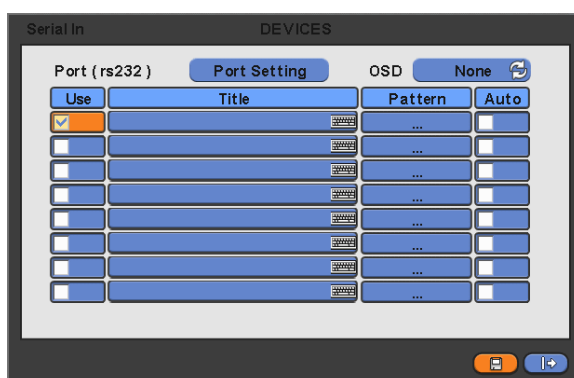
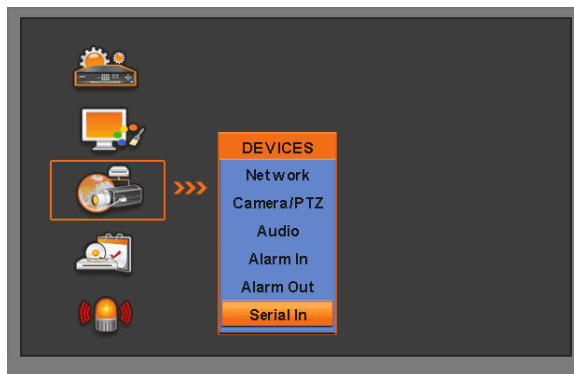
Serial In (POS / ATM)

User's Manual



12.1 Set- up Methods

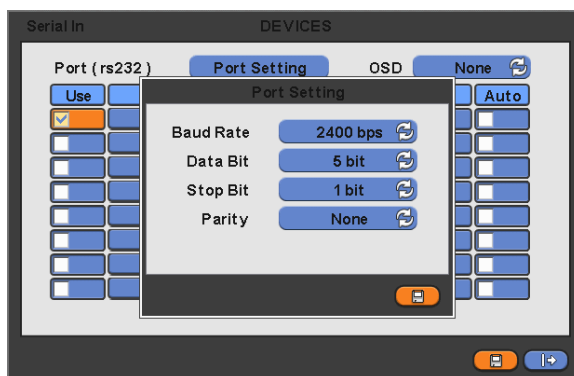
- Please click(↵) “System>Devices>Serial-In”, then you will see the display below.



(Note)

The above menu is only available on the DVR model with Serial-In function.

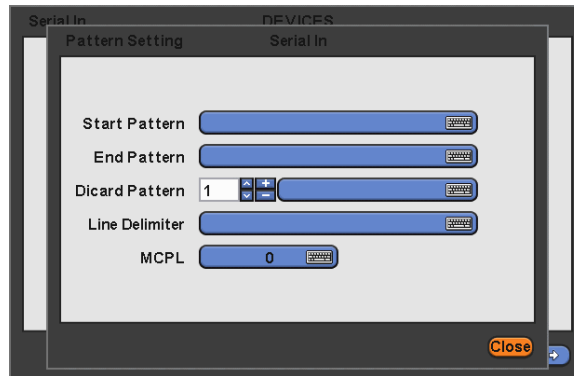
- Port rs232 is used to connect serial devices. Press(↵) the “Port Setting” button in order to set up the port. Default values are Baud rate 2400 bps, Data Bit 5 bit, Stop Bit 1 bit, Parity None.



- When the setup is done, press enter(↵).
- OSD items are to decide whether to display the information from the serial port connected to the rs232 port on OSD screen. They have 4 menus as followings:
 - None : does not display anything on the OSD screen.
 - Live : displays incoming information from the serial port in real time on the OSD screen.
 - Playback : displays the saved information on the OSD screen during replay.
 - Both : displays all the information on both Live and Playback mode.
- When “Use” items of Nos. 1-8 are checked☑ on Serial-In page, it gets the data from the applicable serial device.
- You can select the name of serial device if you click(↵) the keyboard button for Title.
- You can check☑ the “Auto” item so as to analyze automatically the data out of serial device and create user-friendly information.

Unless you check “Auto” item, make sure to set up “Start Pattern” and “End Pattern”. “Discard Pattern”, “Line Delimiter”, “MCPL” are used, independent of “Auto” mode.

After you release(☐) the checked item on “Auto” item and click the button of “Pattern” item, you can analyze the serial information in more detail as following screen;

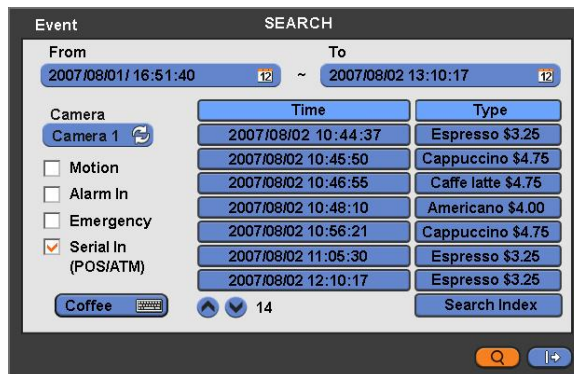



Each item explains below:

- Start Pattern : Indicates the beginning of the new data when new designated data are received from a serial device.
 - End Pattern : Indicates the end of the data when designated data are received from a serial device.
 - Discard Pattern : Does not show the designated data on OSD screen.
Sets up in order to designate dummy data or characters which is not favorably to be displayed.
Can be designated up to 64 of discard patterns in total.
 - Line Delimiter : Inputs characters to be used as delimiter between lines.
 - MCPL(**M**inimum **C**haracter **P**er **L**ine) :
Sets up the number of the minimum strings each line.
Does not show the characters on OSD screen if there is a character of which number is below the designated number in each line divided by the line delimiter.
- Linking
 - The number for each serial event is equivalent to the Alarm In number. Therefore, if you want to send an email or Alarm Out message in each transaction, please take a necessary action on “setup>Link>Alarm In”.

12.2 SEARCH

- Event Search
Please click(☐) the “Search>Event Search” menu on the pop up menu of the wallpaper, then you will see the following screen.



- You can search the recorded data which is set up on Serial In and Linking pages.
 - The keyboard button for setting up the characters to be searched activates only when the Serial In item is checked☒.
- If you select an item and click(☐)  button on the list of search result, you can replay the recorded images.