

# Hybrid Digital Video Recorder

Quick Guide

*CR1600PC*  
*CR3200PC*

**COSTAR**  
**COSTAR VIDEO SYSTEMS**

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## About This Document

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This document contains brief instructions for the configuration and operation of DVR. For detailed instructions, see the User's Manual on the software CD.

## Notice

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Specifications are subject to change without prior notice.

The information contained herein is to be considered for reference only.

The software included in this product contains some Open Sources. You may obtain the complete corresponding source code from us. See the Open Source Guide on the software CD (*OpenSourceGuide\OpenSourceGuide.pdf*) or as a printed document included along with the User's Manual.

## Warning

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	<div style="background-color: black; color: white; padding: 5px;"><b>WARNING</b></div> <div style="border: 1px solid black; padding: 5px;"><b>RISK OF ELECTRIC SHOCK DO NOT OPEN</b></div>	
<b>WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b>		



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

## Disposal

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### WEEE (Waste Electrical & Electronic Equipment)

#### **Correct Disposal of This Product**

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



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

# Important Safeguards

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## 1. Read Instructions

All the 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 the approval of the manufacturer 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. Ventilation

Slots and openings in the cabinet and the back or bottom are provided for ventilation, and to ensure reliable operation of the equipment and to protect it from overheating. These openings must not be blocked or covered. Do not block these openings or allow them to be blocked by placing the equipment on a bed, sofa, rug, or bookcase. Ensure that there is adequate ventilation and that the manufacturer's instructions have been adhered to.

## 7. 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.

This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

## 8. 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 equipment dealer or local power company.

## 9. Power Cords

Operator or installer must remove power and other connections before handling the equipment.

## 10. 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.

## 11. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

## 12. 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.

## 13. Servicing

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

## 14. Damage requiring Service

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

- A. When the power-supply cord or the plug has been damaged.
- B. If liquid is spilled, or objects have fallen into the equipment.
- C. If the equipment has been exposed to rain or water.
- D. 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.
- E. If the equipment has been dropped, or the cabinet damaged.
- F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

## 15. Replacement Parts

When replacement parts are required, be sure the service technician has used 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.

## 16. 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.

## 17. Field Installation

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

#### **18. Telnet Communication Cable**

Caution: To reduce the risk of fire, use only No. 26 AWG or larger telecommunication line cord.

#### **19. Correct Batteries**

Warning: Risk of explosion if battery is replaced by an incorrect type. Replace only with same or equivalent type recommended by manufacturer. Dispose of used batteries according to the instructions.

#### **20. Elevated Operating Ambient**

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T<sub>ma</sub>) specified by the manufacturer.

#### **21. Reduced Air Flow**

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

#### **22. Mechanical Loading**

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

#### **23. Circuit Overloading**

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

#### **24. Reliable Earthing**

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

# Specifications

## 16-Channel Model

### Video

Signal Format	NTSC or PAL (programmable)
Video Input	Composite: 16 BNC, 1 Vp-p, 16 looping, auto-terminating Network camera: max. 16 channels (Hybrid model only)
Monitor Outputs <sup>i</sup>	One HDMI, One DVI, One VGA, 10 SPOT (One HD SPOT, 9 SD SPOT)
Recording Resolution	704x480 (4CIF), 704x240 (2CIF), 352x240 (CIF) (704x576, 704x288, 352x288 for PAL) Max. 1920x1080 (Full HD) for network cameras of hybrid model only
Decompression	BNC cameras: H.264 Network cameras: H.264, M-JPEG
Display / Record Speed (images per second)	max. 480ips @ CIF / 480ips @ 4CIF (400ips / 400ips for PAL) max. 480ips @ Full HD / 480ips @ Full HD (or network cameras of hybrid model only)

### Inputs/Outputs

Alarm Input	16 TTL, NC/NO programmable Network camera alarm in: max. 16 channels (for network cameras of hybrid model only) Network alarm in: max. 16 channels (for non-hybrid model only)
Alarm Output	1 relay, 1A@5V 16 TTL, 25mA@5V Network camera alarm out: max. 16 channels (for network cameras of hybrid model only) Network alarm out: max. 16 channels (for non-hybrid model only)
Audio Input	16, "line in", 1 Vp-p Network camera audio in: max. 16 channels (for network cameras of hybrid model only)
Audio Output	One, "line" Network camera audio out: max. 16 channels (for network cameras of hybrid model only)

### Connectors

Video Input	Composite: 16 BNC Network camera: max. 16 channels (Hybrid model only)
Video Loop	Composite: 16 BNC (Auto Terminating) (x16 and 416DH models only)
Monitor Output <sup>i</sup>	1 HDMI, 1 DVI, 1 VGA, 10 SPOT (1 HD SPOT, 9 SD SPOT)
Audio In	Line in: 16 RCA Network camera audio in: max. 16 channels (for network cameras of hybrid model only)
Audio Out	Line out Network camera audio out: max. 16 channels (for network cameras of hybrid model only)
Alarms	Terminal Block Network camera alarms: max. 16 channels each for input and output
Ethernet Port <sup>ii</sup>	Two RJ-45 (1 Gbps Ethernet)
eSATA Port	eSATA
RS232C Serial Port	DB9 (P)
RS485 Serial Port	1 Half Duplex
USB Port	6 USB 2.0 connectors, 2 USB 3.0 connectors

### Storage

Primary Storage	SATA hard disk drive (Expandable up to 5)
Secondary Storage	eSATA HDD
Backup Storage	DVD RW

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## General

Dimensions (W x H x D)	17.3" x 7.0" x 18.2" (440mm x 177mm x 462mm)
Unit Weight	38.1 lbs. (17.3kg)
Shipping Weight	46.1 lbs. (20.9kg)
Shipping Dimensions (W x H x D)	23.2" x 13.7" x 27.6" (590mm x 350mm x 700mm)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90%
Power	AC 100-240V~, 50/60 Hz, 3.0-1.5A
Approvals	FCC, CE, CB, UL <sup>iii</sup>

<sup>i</sup> VGA, DVI and HDMI main out supports dual display (SmartGuard on the primary display and SmartSearch on the additional display) and not triple display.

<sup>ii</sup> The network connector is not designed to be connected directly with cable or wire intended for outdoor use.

<sup>iii</sup> CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions. This equipment is indoor use and all the communication wiring are limited to inside of the building.

## **32-Channel Model**

### **Video**

Signal Format	NTSC or PAL (programmable)
Video Input	Composite: 1 Vp-p, 32 auto-terminating Network camera: max. 32 channels (Hybrid model only)
Monitor Outputs <sup>i</sup>	One HDMI, One DVI, One VGA, 12 SPOT (2 HD SPOT, 10 SD SPOT)
Recording Resolution	704x480 (4CIF), 704x240 (2CIF), 352x240 (CIF) (704x576, 704x288, 352x288 for PAL) Max. 1920x1080 (Full HD) for network cameras of hybrid model only
Decompression	BNC cameras: H.264 Network cameras: H.264, M-JPEG
Display / Record Speed (images per second)	max. 960ips @ CIF / 960ips @ 4CIF (800ips / 800ips for PAL) max. 960ips @ Full HD / 960ips @ Full HD (or network cameras of hybrid model only)

### **Inputs/Outputs**

Alarm Input	32 TTL, NC/NO programmable Network camera alarm in: max. 32 channels (for network cameras of hybrid model only) Network alarm in: max. 16 channels (for non-hybrid model only)
Alarm Output	2 relay, 1A@5V 32 TTL, 25mA@5V Network camera alarm out: max. 32 channels (for network cameras of hybrid model only) Network alarm out: max. 16 channels (for non-hybrid model only)
Audio Input	32, "line in", 1 Vp-p Network camera audio in: max. 32 channels (for network cameras of hybrid model only)
Audio Output	One, "line" Network camera audio out: max. 32 channels (for network cameras of hybrid model only)

### **Connectors**

Video Input	Composite: 32 BNC Network camera: max. 32 channels (Hybrid model only)
Video Loop	Composite: 16 BNC (Auto Terminating) (x16 and 416DH models only)
Monitor Output <sup>i</sup>	1 HDMI, 1 DVI, 1 VGA, 12 SPOT (2 HD SPOT, 10 SD SPOT)
Audio In	Line in: 32 RCA Network camera audio in: max. 32 channels (for network cameras of hybrid model only)
Audio Out	Line out Network camera audio out: max. 32 channels (for network cameras of hybrid model only)
Alarms	Terminal Block Network camera alarms: max. 32 channels each for input and output
Ethernet Port <sup>ii</sup>	Two RJ-45 (1 Gbps Ethernet)
eSATA Port	eSATA
RS232C Serial Port	DB9 (P)
RS485 Serial Port	1 Half Duplex
USB Port	6 USB 2.0 connectors, 2 USB 3.0 connectors

### **Storage**

Primary Storage	SATA hard disk drive (Expandable up to 5)
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Operating Temperature	41°F to 104°F (5°C to 40°C)
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Approvals	FCC, CE, CB, UL <sup>iii</sup>

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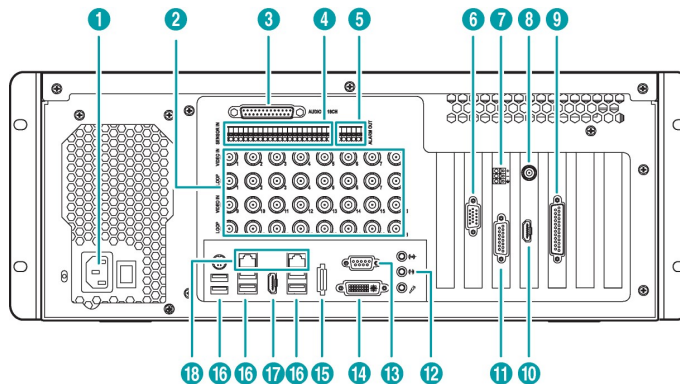
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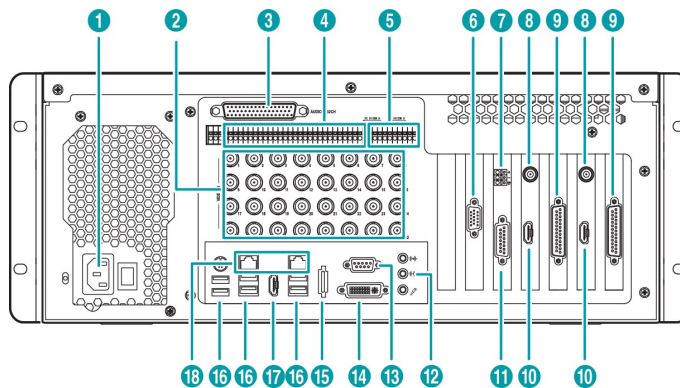
# Installation

No special tools are required to install the DVR. Refer to the installation manuals for the other items that make up part of your system.

## 16-Channel Model



## 32-Channel Model



- |  |   |                   |          |
|--|---|-------------------|----------|
| ① Power In                             | ② Video In (BNC)                          | ③ Audio In        |          |
| ④ Alarm In                             | ⑤ A Alarm Out (Relay)                     | ⑥ RS232           | ⑦ RS485  |
| ⑧ SD SPOT (BNC, Multi-Channel Display) | ⑨ Alarm Out (TTL)                         |                   |          |
| ⑩ HD SPOT (Multi-Channel Display)      | ⑪ SD SPOT (D-Sub 8 BNC, Sequence Display) |                   |          |
| ⑫ Audio Out                            | ⑬ VGA (D-Sub)                             | ⑭ DVI             | ⑮ E-SATA |
| ⑯ HDMI                                 | ⑰ USB                                     | ⑱ Network (RJ-45) |          |

- **Power In:** Connect a power cord.
- **Video In (BNC):** Connect BNC cameras.
- **Audio In:** Connect audio sources (Line-in).
- **Alarm In:** Connect external alarm-in devices.
- **Alarm Out (Relay):** Connect external alarm-out devices such as buzzers or lights.
- **RS232:** Connect a remote control device for RS232 communication.
- **RS485:** Connect a remote control device for RS485 communication.

- **SD SPOT (BNC, Multi-Channel Display):** Connect a spot monitor which supports a BNC interface for the multi-channel display. The multi-channel display settings are available at the **SPOT – Multi Channel** menu of SmartGuard.
- **Alarm Out (TTL):** Connect external alarm-out devices such as buzzers or lights.
- **HD SPOT (Multi-Channel Display):** Connect an HD (high-definition) PC monitor which supports an HDMI interface for the multi-channel display. The multi-channel display settings are available at the **SPOT – Multi Channel** menu of SmartGuard.

☞ **SD SPOT (BNC, Multi-Channel Display), Alarm Out (TTL) and HD SPOT (Multi-Channel Display)** on the left are supported for Channel 1 to Channel 16 and **SD SPOT (BNC, Multi-Channel Display), Alarm Out (TTL) and HD SPOT (Multi-Channel Display)** on the right are supported for Channel 17 to Channel 32. (Only 32-channel model)

- **SD SPOT (D-Sub 8 BNC, Sequence Display):** Connect a spot monitor which supports a BNC interface for the sequence display. The sequence display settings are available at the **SPOT – Sequence** menu of SmartGuard.
- **Audio Out:** Connect an amplifier (Line-out). The DVR does not have amplified audio output, so you will need a speaker with an amplifier.
- **VGA (D-Sub):** Connect an HD (high-definition) PC monitor which supports a D-Sub interface. Connect a monitor before turning on the system. Video might not be displayed on the monitor when connecting a monitor after turning on the system.
- **DVI:** Connect an HD (high-definition) PC monitor which supports a DVI interface.
- **E-SATA:** Connect an external hard disk drive which supports an eSATA interface.
- **HDMI:** Connect an HD (high-definition) PC monitor which supports an HDMI interface.
- **USB:** Connect USB devices such as a mouse, keyboard, USB storage device or printer.
- **Network (RJ-45):** Connect a Cat5 cable with an RJ-45 connector. The network settings are available at the **SYSTEM – Network** menu of SmartGuard.

**NOTE:** **SPOT display is not supported for network cameras.**

The location of ports in slots can be different from the image above.

**VGA, DVI and HDMI main out supports dual display (SmartGuard on the primary display and SmartSearch on the additional display) and not triple display.**

**Windows may not operate properly when using the USB connectors on the front panel of the DVR, depending on the model type of the USB device. In this case, connect the USB device after Windows boots properly or use the USB connectors located on the rear panel.**

**If the LAN 1 and LAN 2 is connected to the same network, the system may malfunction.**

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

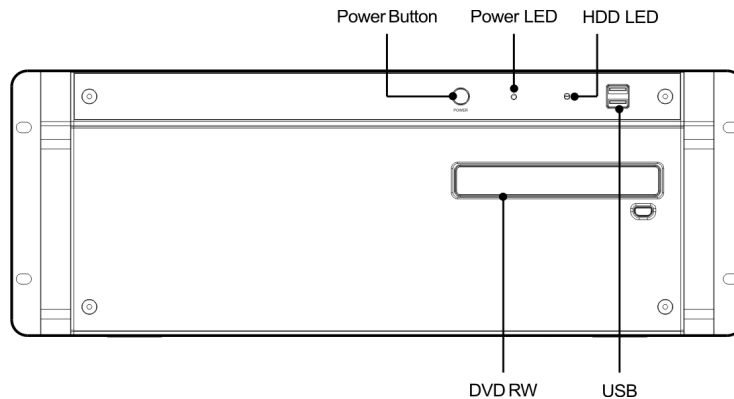
- Ensure that the rack inside is not sealed.
- Ensure the air is circulated through the inlet/outlet.
- If you pile up DVRs or other rack-mount devices, secure room for ventilation or install a vent.
- For natural air convection, place the inlet at the bottom of the rack and the outlet on top.
- It is strongly recommended that a fan motor is installed at the inlet and the outlet for air circulation and fit a filter at the inlet to screen dust or foreign substances.
- Maintain the temperature inside the rack or surrounding areas between 41°F to 104°F (5°C to 40°C).

# Configuration

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## Front Panel Buttons and LEDs

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- **Power Button:** Turn the system on or off.
- **Power LED:** Is lit when the unit is turned on.
- **HDD LED:** Flickers when the unit accesses the hard disk drive.
- **DVD RW:** Use to export recorded data to the DVD RW media.
- **USB:** Connect USB devices such as a mouse, keyboard, USB storage device or printer.

## Turning on the DVR

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Press the power button located on the front panel to turn the system on. The system goes into the SmartGuard mode as soon as it finishes its boot process.

**NOTE:** Connect a monitor before turning on the system. Video might not be displayed on the monitor when connecting a monitor after turning on the system.

**CAUTION:** The 16, 32-channel model requires at least 1280 x 1024 or 1920 x 1080 resolution. -The SmartGuard program will not run if the monitor does not have the resolution that fits for each model.

## Turning off the DVR

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Click the  (Menu) button and System Shutdown menu of SmartGuard in the SmartGuard mode or press the power button on the front panel to turn the system off.

**NOTE:** When turning off the system, you must confirm that you want to turn off the unit. Turning off the system is allowed to only authorized users for the *Shut Down* option during the *at the USER menu of SmartGuard*.

**CAUTION:** The system can be shut down by force by pressing the power button on the front panel over 10 seconds. However, follow the normal shutdown procedures as mentioned above when the system is operating normally. Turning off the DVR without shutdown procedures can cause damage to the system.

## Initial Unit Setup

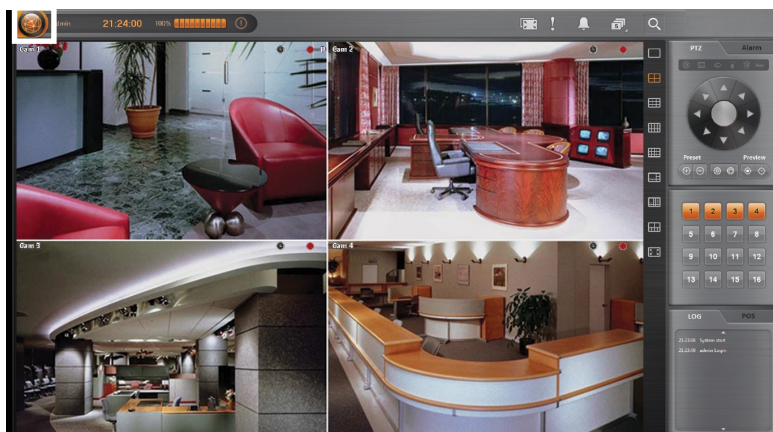
The first time you turn on the system, the SmartGuard program operates and it will immediately begin recording. If you have less than 32 cameras, you must disable cameras which are not connected (**SYSTEM – Set up General** menu of SmartGuard); otherwise, the recording speed might be decreased somewhat.

- **Log In:** Click the  (Menu) button and Login menu of SmartGuard, the User Login dialog box appears. Enter the User ID and Password and then click the OK button if you want to log in the system.
- **Log Out:** Click the  (Menu) button and Logout menu of SmartGuard, the Quit dialog box appears. Click the Yes button if you want to log out the system.

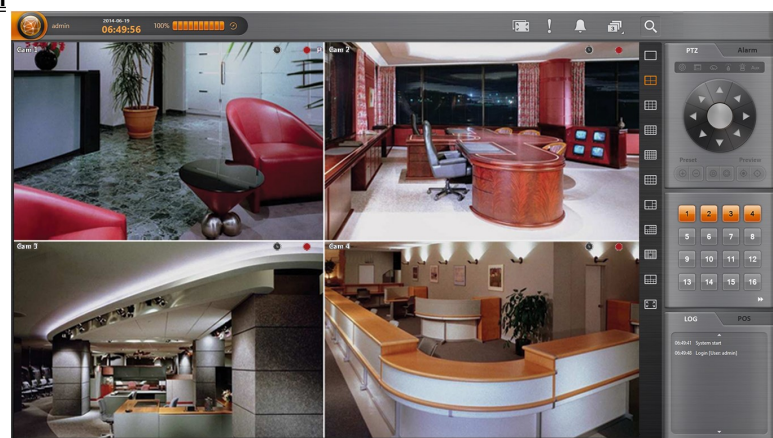
**NOTE:** When Use local login is disabled in the SmartGuard program (**SYSTEM – System Authority** menu), the DVR does not ask login procedure.

When you forgot the password, ask your dealer or distributor.

### 16-Channel Model



### 32-Channel Model




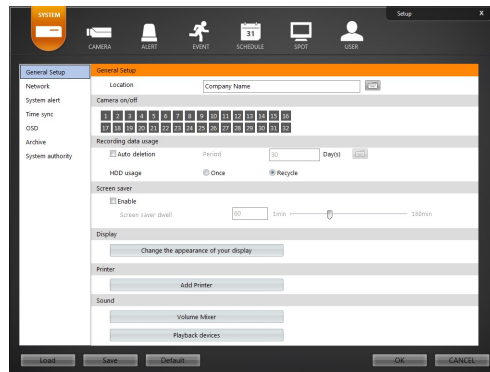
**NOTE:** The recording speed may decrease depending on the network camera settings, system operating environments or system load. It is recommended to use the DVR as follows to prevent the system performance from deteriorating:

- Set the network camera codec to H.264.
- Use a single monitor than multi-monitors.
- If multi-monitors are used, set the screen mode of either SmartGuard or SmartSearch to the single-screen mode.

- If multi-monitors are used, set the screen mode to the single-screen or 2x2 screen mode in SmartGuard during the Event Search – Motion Detection search.
- Use the remote program rather than running the SmartSesarch program when you play back video.

Before using your DVR for the first time, you will want to establish the initial settings. This includes items such as time and date, camera, remote control, record mode, network and password. Your DVR can be set up using various screens and dialog boxes.

Click the  (Menu) button of SmartGuard to enter the setup screens.

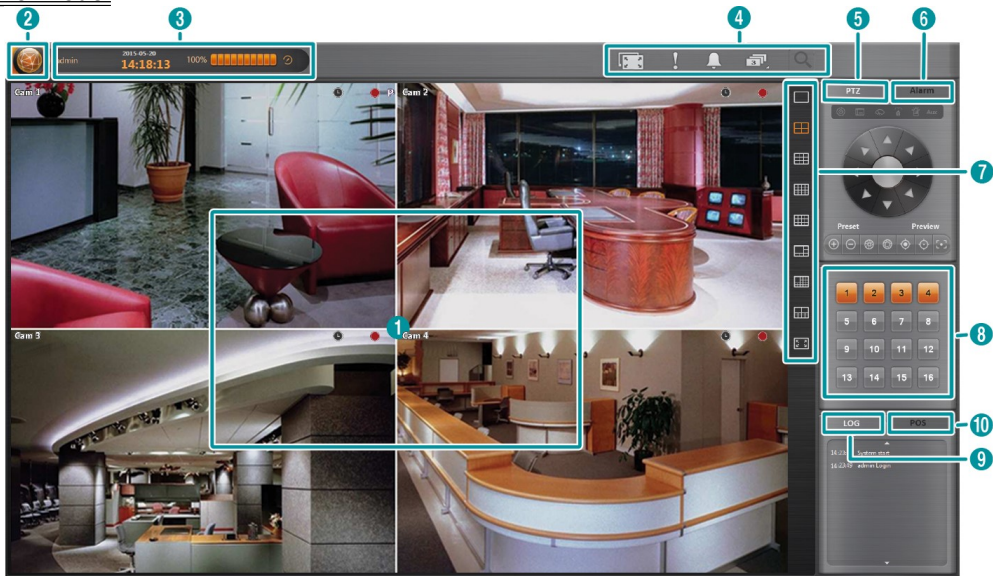


# Operation

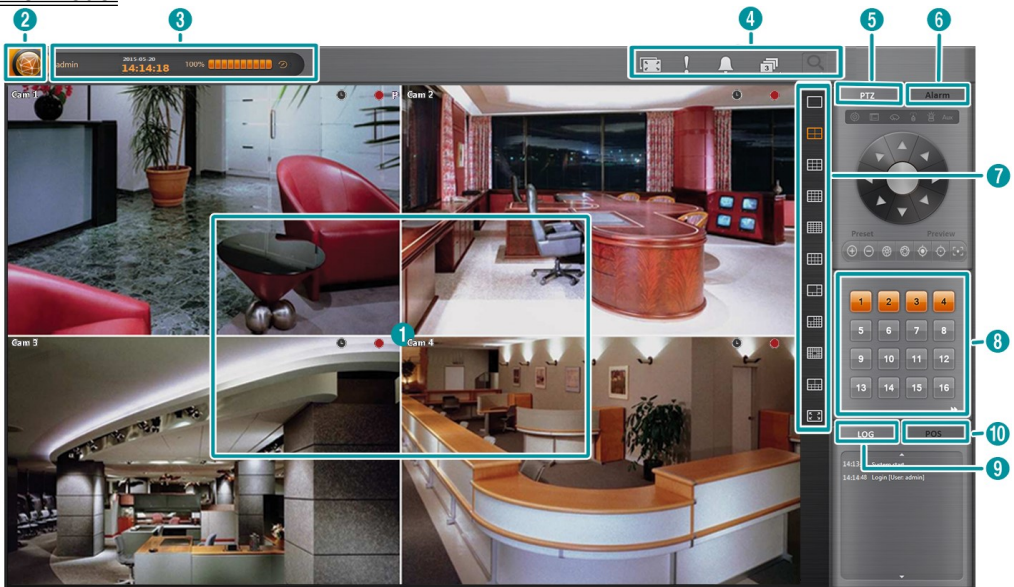
## Live Monitoring

SmartGuard is powerful surveillance software. It provides multiplexer functions, digital time-lapse recording and event-driven recording. SmartGuard also provides motion detection, PTZ control and various image enhancement functions.

### 16-Channel Model



### 32-Channel Model



- |                     |                       |                       |                   |
|---------------------|-----------------------|-----------------------|-------------------|
| ① Monitoring Screen | ② Menu Button         | ③ System Status       | ④ Utility Buttons |
| ⑤ PTZ Control Panel | ⑥ Alarm Control Panel | ⑦ Screen Mode Buttons | ⑧ Camera Buttons  |
| ⑨ Log Panel         | ⑩ POS Panel           |                       |                   |



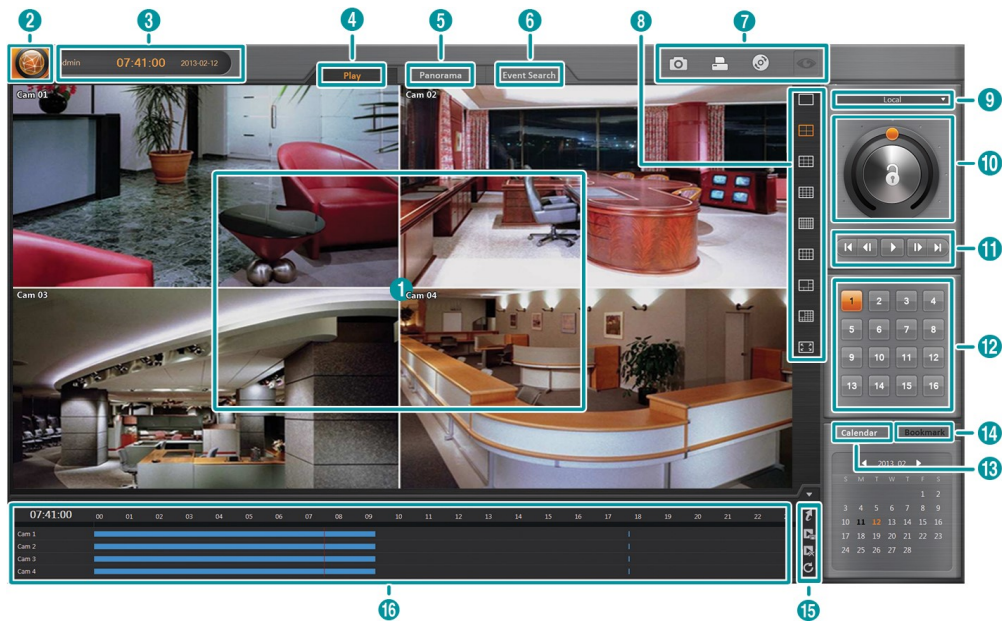
<b>Monitoring Screen</b>	<p>Displays monitoring video.</p> <ul style="list-style-type: none"> <li>• <b>OSD Display:</b> Go to <b>System</b> – OSD menu of SmartGuard, and enable OSD display to display the OSD information. <ul style="list-style-type: none"> <li>– : Recording schedule (time-lapse recording / event recording / time-lapse and event recording).</li> <li>– : A motion detection, object detection or video loss event has been detected.</li> <li>– : Recording status (time-lapse recording / pre-event recording / event recording).</li> <li>– : PTZ enabled.</li> </ul> </li> <li>• <b>Hover Menu:</b> Controls each camera. Selecting a camera screen displays the  button beside the camera title. Clicking the  button displays the hover menu. <ul style="list-style-type: none"> <li>–  (Zoom): Zooms in the image.</li> <li>–  (Color Control): Adjusts the brightness, contrast, saturation and hue of the current video. Clicking the  button cancels the adjustment and reloads the original image.</li> <li>–  (Audio Out): Controls audio out.</li> <li>–  (Local Microphone): Transmits audio through microphone connected to DVR. This is supported for network cameras that support two-way audio function.</li> <li>–  (Instant Play): Allows you to play back video on the camera screen. See the User's Manual for details.</li> <li>–  (PTZ Control): Controls PTZ.</li> <li>–  (Fit to screen / Original ratio): Changes the image aspect ratio.</li> </ul> </li> </ul>
<b>Menu Button</b>	<p>Displays the SmartGuard menu.</p> <ul style="list-style-type: none"> <li>• <b>Login/Logout:</b> Logs in or logs out the system. When <b>Use local login</b> is disabled in the SmartGuard program (<b>SYSTEM</b> – System Authority menu), the DVR does not ask login procedure. When you forgot the password, ask your dealer or distributor. When <b>Use password expire</b> is enabled in the SmartGuard program (<b>SYSTEM</b> – System Authority menu), you will be asked whether or not to renew the password when you log in if the password has not been changed during the password expiration period.</li> <li>• <b>SmartSearch:</b> Runs the SmartSearch program. This function will be disabled during dual display.</li> <li>• <b>Setup:</b> Displays a SmartGuard Setup screen. It allows you to change the settings of SmartGuard program.</li> <li>• <b>About:</b> Displays the information of the installed cards, driver, software, hard disk drive, OS and MAC address on the system.</li> <li>• <b>Help:</b> Displays the electronic file of user's manual.</li> <li>• <b>Log:</b> Displays system log list.</li> <li>• <b>Record Storage Setup:</b> Click the Recording Storage Setup to add the HDD or change or reset storage settings. Running the record storage setup displays the message that the SmartGuard program will exit. When record storage setup is complete, the SmartGuard program will run automatically.</li> <li>• <b>System shutdown:</b> Shuts down the system.</li> </ul>
<b>System Status</b>	<p>Displays user ID, date and time, the remaining hard disk space and the type of hard disk usage. Clicking the right mouse button allows you to change the time. If you change the time, the SmartGuard program restarts and recording stops during the time.</p>
<b>Utility Buttons</b>	<ul style="list-style-type: none"> <li>•  (Secondary Live Screen On/Off): Clicking the button displays a camera screen to an additional connected monitor (secondary monitor). This is not supported for the primary monitor that has less than 1920 x 1080. Also it is not supported for secondary monitor that has less than 1024 x 768.</li> <li>•  (Panic Recording): Starts recording video from all cameras regardless of the recording schedule. It may be used when you want to record manually during monitoring. Clicking the button again releases the panic recording. Recording speed for the panic recording is the same as that of the time-lapse recording.</li> <li>•  (Manual Alarm Output): In general, the alarm out is activated automatically when any event is detected if the event is associated with alarm out. However, the user can activate all the alarm out manually by clicking this button while it is released or deactivate all the alarm out by clicking this button while it is pressed.</li> <li>•  (Auto Sequencing): Starts sequencing the cameras in order. Clicking the button again releases the auto sequencing. Clicking the arrow button at the bottom-right allows you to change a sequence dwell time.</li> <li>•  (SmartSearch): Runs the SmartSearch program. This function will be disabled during dual display.</li> </ul>

<b>PTZ Control Panel</b>	Displays a PTZ control buttons.
<b>Alarm Control Panel</b>	Displays alarm control buttons. You can check the alarm status and control the alarm out. The user can activate or inactivate alarm out manually by clicking the button when it is released or pressed. You can change the alarm out setting values at the <b>ALERT – Alarm Out</b> menu of SmartGuard.
<b>Screen Mode Buttons</b>	Click the desired screen mode. Double clicking the left mouse button over a camera screen displays video from the camera in the single-screen mode and double clicking the left mouse button again returns to the previous screen mode. You can change the camera arrangement manually for each screen mode.
<b>Camera Buttons</b>	Clicking a individual camera button displays video from the camera.
<b>Log Panel</b>	Displays system log list.
<b>POS Panel</b>	Displays text-in data from a text in device.

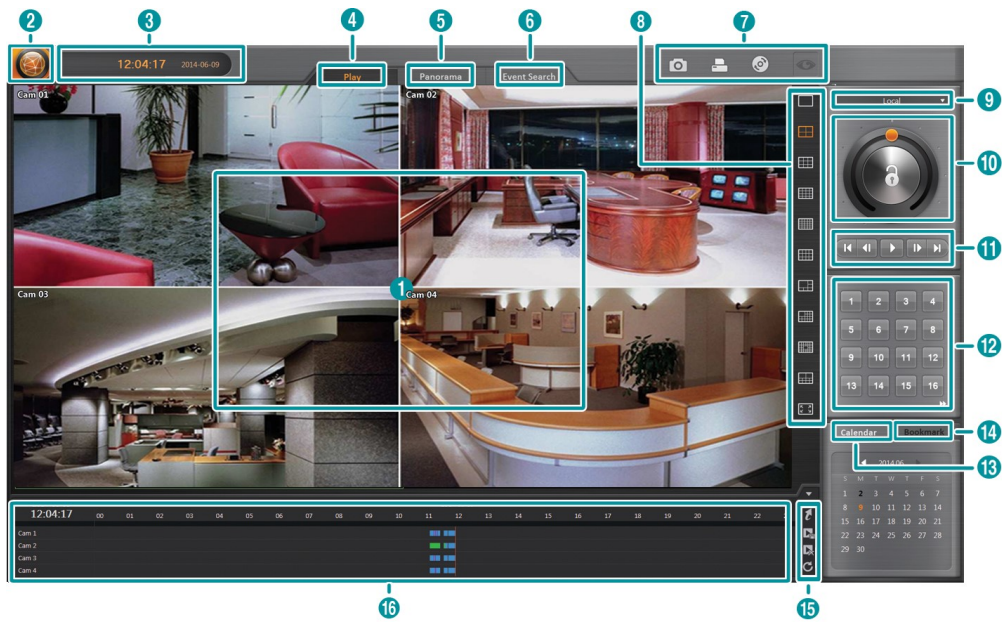
# Searching Video

SmartSearch is a powerful tool for SmartGuard. It features playback and search functions for recorded data and consists of Playback Screen, Timetable, Status Window and Utility Buttons. Each area displays or controls recorded information. Click the 🍷 (Menu) button and SmartSearch menu of SmartGuard to get into the SmartSearch mode. To return to the SmartGuard mode, click the 🍷 (Menu) button and SmartGuard menu of SmartSearch.

## 16-Channel Model



## 32-Channel Model



- ① Playback Screen
- ② Menu Button
- ③ System Status
- ④ Playback Panel
- ⑤ Panorama Playback Panel
- ⑥ Event Search Panel
- ⑦ Utility Buttons

⑧ Screen Mode Buttons

⑨ Data Source

⑩ Jog Shuttle

⑪ Playback Buttons


























⑫ Camera Buttons







⑬ Calendar Panel

⑭ Bookmark Panel

⑮ Search Buttons

⑯ Timetable

<b>Playback Screen</b>	<p>Displays the current playback image. Selecting a camera screen displays the  button beside the camera title. Clicking the  button displays the camera screen menu.</p> <ul style="list-style-type: none"> <li>•  (Zoom): Zooms in the image.</li> <li>•  (Audio Playback): Plays back audio.</li> <li>•  (Aspect Ratio): Changes the image aspect ratio.</li> </ul>
<b>Menu Button</b>	<p>Displays the SmartSearch menu.</p> <ul style="list-style-type: none"> <li>• Login/Logout: Logs in or logs out the system. When Use local login is disabled in the SmartGuard program (SYSTEM – System Authority menu), the DVR does not ask login procedure. When you forgot the password, ask your dealer or distributor.</li> <li>• SmartGuard: Runs the SmartGuard program. This function will be disabled during dual display.</li> <li>• About: Displays the information of the days of recorded dates, software version, etc.</li> <li>• Help: Displays the electronic file of user's manual.</li> <li>• Exit: Finishes the system.</li> </ul>
<b>System Status</b>	Displays user ID and the recorded time of playback video.
<b>Playback Panel</b>	Displays the current playback image.
<b>Panorama Playback Panel</b>	Displays the panorama playback image. It displays images from one camera image by image in multi-screen mode.
<b>Event Search Panel</b>	Allows you to set up search condition for event search.
<b>Utility Buttons</b>	<ul style="list-style-type: none"> <li>•  (Save Image): Saves the images currently displayed on the screen as an image file. The image can be saved only under the C:\IDR-Series\temp directory or on the USB storage.</li> <li>•  (Print Image): Prints the images currently displayed on the screen.</li> <li>•  (External Saving): Saves the recorded data on the CD or DVD using the CD/DVD burning program.</li> <li>•  (SmartGuard): Runs the SmartGuard program. This function will be disabled during dual display.</li> </ul>
<b>Data Source</b>	<p>Selects the data source to be searched.</p> <ul style="list-style-type: none"> <li>• Local: Searches video saved in the current DVR.</li> <li>• Remote: Searches video saved in the other DVR.</li> <li>• Archive: Searches video saved in the archive storage set up in the SmartGuard program (SYSTEM – Archive menu).</li> </ul>
<b>Jog Shuttle</b>	<p>You can adjust the playback direction and speed by using the jog shuttle. The  icon in the jog shuttle indicates the current playback direction and speed. Video is played backward when the  icon is to the left of center and video is played back forward when the  icon is to the right of center. The farther the position is from the center, the faster video is played back. Clicking the  icon and dragging it to the desired position on the jog shuttle and holding it plays video at a constant speed. Releasing the mouse button causes the  icon to return to the center position. Clicking the  (Play) button plays video at normal speed. Clicking the  (Shuttle Lock) button and dragging and dropping the  icon to a desired position fixes the  icon in that position.</p>
<b>Playback Buttons</b>	<p>Controls playback of recorded video.</p> <div>  Go to First Image          Rewind One Image          Play       </div> <div>  Forward One Image          Go to Last Image       </div>
<b>Screen Mode Buttons</b>	Click the desired screen mode. Select a camera button and select a desired screen mode for multi-screen playback. Then click any playback-related button.
<b>Camera Buttons</b>	It indicates a camera number.
<b>Calendar Panel</b>	Goes to the specific dates and times by using the calendar. Select recorded data from the calendar. The calendar provides access to single day recorded data. Click the date you want to search. Scroll through the months by clicking  and  .

<b>Bookmark Panel</b>	<p>You can review the specific image fast and easily by adding bookmarks for recorded images. Click the  button to bookmark the currently displayed image. If you want to delete the bookmark, select the target information and then click the  button. A bookmark lists the camera number, date and time, and bookmark description. The bookmark description will be shown automatically when the mouse cursor is not moving on a bookmark data for a while.</p>
<b>Search Buttons</b>	<ul style="list-style-type: none"> <li>•  (Go To): Displays a time setup window. Entering a specific time moves to the image for that time.</li> <li>•  (Export Video File): Saves recorded video as a clip file (.exe).</li> <li>•  (Partial Delete): Deletes recorded data for a specific period.</li> <li>•  (Reload): Reloads data.</li> </ul>
<b>Timetable</b>	<p>The timetable window consists of a record timetable, camera label. Various functions of the timetable window enable fast searches.</p>



# Remote Program

## WebGuard

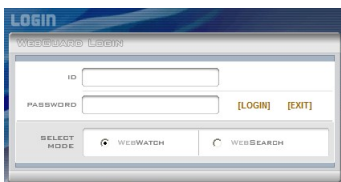
WebGuard allows you to access a remote DVR, monitor live video images and search recorded video using Internet Explorer web browser anytime from virtually anywhere.

Computer system requirements for using the WebGuard program are:

- Operating System: Microsoft® Windows® XP (Service Pack 3), Microsoft® Windows® Vista (Service Pack 1), Microsoft® Windows® 7 (Home Premium, Professional, Ultimate) or Microsoft® Windows® 8 (Pro, Enterprise)
- CPU: Intel Pentium III (Celeron) 600MHz or faster
- RAM: 128MB or higher
- VGA: 8MB or higher (1024x768, 24bpp or higher)
- Internet Explorer: Version 6.0 or later 32-bit

Start Internet Explorer on your local PC. You can run the WebGuard program by entering the following information in the address field.

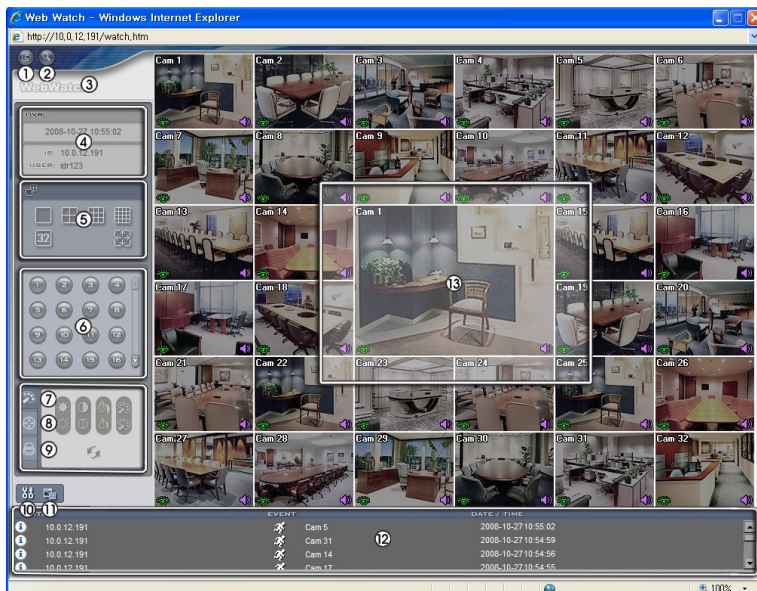
- “http://IP address” (The DVR IP address)
- Or, “http://DVRNS server address/DVR name” (The DVRNS server address and the DVR name registered on the DVRNS server)
- Or, “http://www.dvronline.net” (Entering the DVR IP address or the DVR name will be required when logging in)



Select between the WEBWATCH (Web monitoring) and WEBSEARCH (Web search) modes. Enter ID and PASSWORD and click the [LOGIN] button.

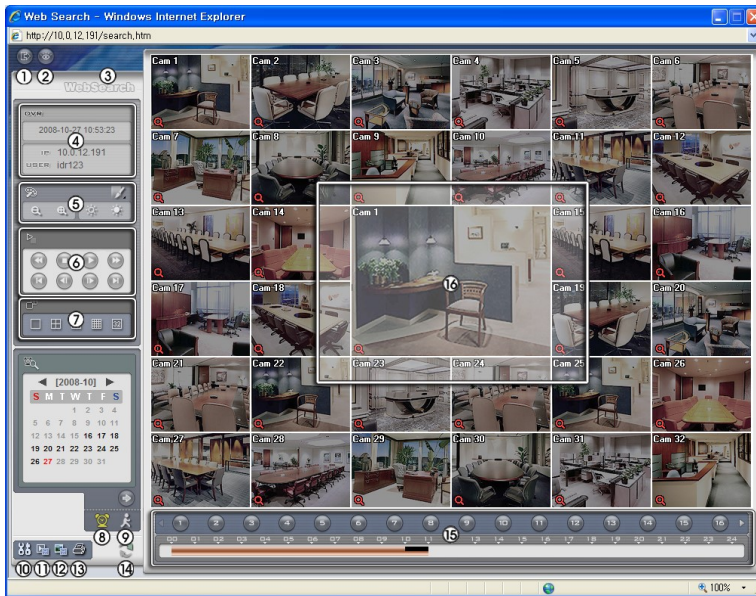
You will need to enter the DVR IP address in the DVR ADDRESS field when running the WebGuard program by entering <http://www.dvronline.net>. Selecting the Use DVRNS option allows you to enter the DVR name registered on the DVRNS server instead of the IP address. It is required to enter the DVRNS server address and port number during the SETUP setting when selecting the Use DVRNS option.

## Web Monitoring



- ① Log Out
- ② Web Search Mode
- ③ Version
- ④ Information
- ⑤ Screen Format
- ⑥ Camera Button
- ⑦ Image Adjustment
- ⑧ PTZ Control
- ⑨ Alarm Out Control
- ⑩ Setup
- ⑪ Save Image
- ⑫ Event Status Window
- ⑬ Screen

## Web Search



- ① Log Out
- ② Web Monitoring Mode
- ③ Version
- ④ Information
- ⑤ Image Processing
- ⑥ Playback Buttons
- ⑦ Screen Format
- ⑧ Time-Lapse Search
- ⑨ Event Search
- ⑩ Setup
- ⑪ Save Video
- ⑫ Save Image
- ⑬ Print Image
- ⑭ Reload Data
- ⑮ Timetable
- ⑯ Screen

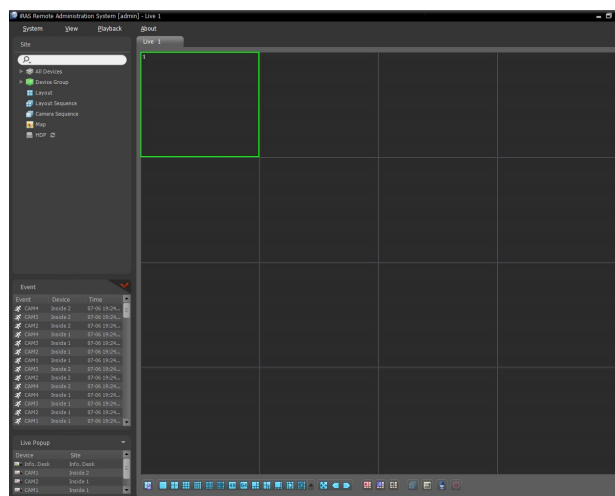
## iRAS

iRAS program, which is designed to be used with remote digital video recorder, is an integrated software program that controls system management, video monitoring, video recording and image playback of multiple remote sites.

**CAUTION:** If an older version of iRAS software is installed on your computer, a screen appears asking you to upgrade the software. In this case, you are required to upgrade the software according to the instructions in the screen.

Insert the installation CD and install the iRAS software following the instructions.

After installing the iRAS software, run the iRAS program as follows: Go to the Start menu on the PC → Click iRAS → Enter login information.




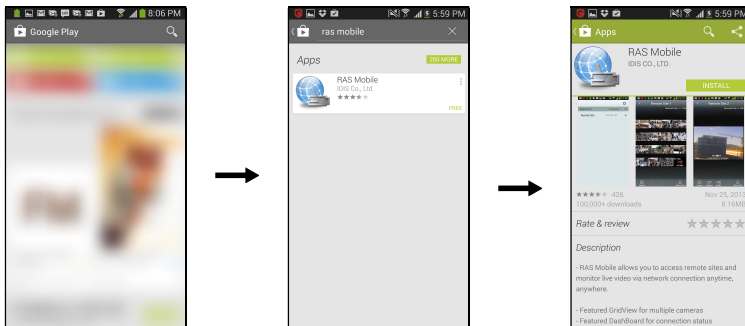
## RAS Mobile

RAS Mobile allows you to access remote sites and monitor live video using mobile devices anytime from virtually anywhere.

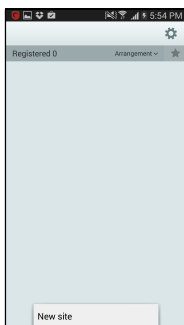
**CAUTION:** This program uses large amounts of data and you are responsible for all data charges. Please contact your service provider's customer service to confirm or add an unlimited data plan.

### Android based mobile devices

1. Run the  Play Store (Google Play) application in the device.
2. Enter RAS Mobile in the search field of the Play Store (Google Play) application.
3. Install the RAS Mobile program and run the program.

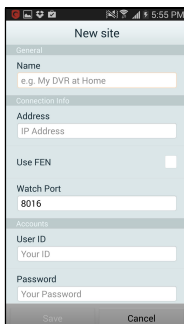


4. Run the RAS Mobile program. Press the Menu button on your mobile device. The following start-up screen will appear.




- New site: Registers device.
- Delete site: Deletes device. Only displayed when a registered device exists.

5. Tap the New site button and enter the DVR information to register the DVR.



- General: Enter a name of the device to be used in RAS Mobile.
- Connection Info: Configure FEN, remote address, and remote port settings.


**NOTE:** Deselect the checkbox if FEN is not enabled on the device. If using a separate FEN server, tap  (Settings) to configure FEN server settings. For more details, contact your FEN server administrator.

**NOTE:** If FEN feature is not enabled on the device, deselect *Use FEN* checkbox and enter the device's IP address under Address. Default value is recommended for the Port setting.


- Accounts: Enter the User ID and Password used to login to the device.

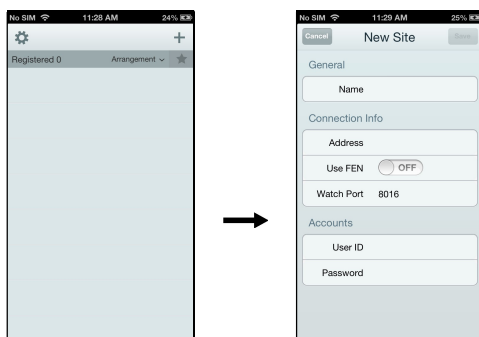


## Apple based mobile device


1. Open App Store  on your device.
2. In App Store, enter RAS Mobile I in the search field.
3. Install RAS Mobile I and open it.



4. Tap the  button on the title bar at the top. The following menu will appear.



- General: Enter a name of the device to be used in RAS Mobile I.
- Connection Info: Configure FEN, remote address, and remote port settings.

**NOTE: Deselect the checkbox if FEN is not enabled on the device. If using a separate FEN server, tap  (Settings) to configure FEN server settings. For more details, contact your FEN server administrator.**

**NOTE: If FEN feature is not enabled on the device, deselect *Use FEN* checkbox and enter the device's IP address under Address. Default value is recommended for the Port setting.**

- Accounts: Enter the User ID and Password used to login to the device.