Video Recorder 600 Series

8/16 Ch. DVR

BOSCH

en Installation and Operation manual

Table of Contents

1   Safety

1.1   Safety precautions

DANGER!
High risk: This symbol indicates an imminently hazardous situation such as "Dangerous Voltage" inside the product.
If not avoided, this will result in an electrical shock, serious bodily injury, or death.

WARNING!
Medium risk: Indicates a potentially hazardous situation.
If not avoided, this could result in minor or moderate bodily injury.

CAUTION!
Low risk: Indicates a potentially hazardous situation.
if not avoided, this could result in property damage or risk of damage to the unit.

NOTICE!
This symbol indicates information or a company policy that relates directly or indirectly to the safety of personnel or protection of property.

1.2   Important safety instructions

Read, follow, and retain for future reference all of the following safety instructions. Heed all warnings on the unit and in the operating instructions before operating the unit.

1. **Cleaning -** Unplug the unit from the outlet before cleaning. Follow any instructions provided with the unit. Generally, using a dry cloth for cleaning is sufficient but a moist, fluff-free cloth or leather shammy may also be used. Do not use liquid cleaners or aerosol cleaners.

2. **Heat Sources -** Do not install the unit near any heat sources such as radiators, heaters, stoves, or other equipment (including amplifiers) that produce heat.

3. **Ventilation -** Any openings in the unit enclosure are provided for ventilation to prevent overheating and ensure reliable operation. Do not block or cover these openings. Do not place the unit in an enclosure unless proper ventilation is provided, or the manufacturer's instructions have been adhered to.

4. **Water -** Do not use this unit near water, for example near a bathtub, washbowl, sink, laundry basket, in a damp or wet basement, near a swimming pool, in an outdoor installation, or in any area classified as a wet location. To reduce the risk of fire or electrical shock, do not expose this unit to rain or moisture.

5. **Object and liquid entry -** Never push objects of any kind into this unit through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of any kind on the unit. Do not place objects filled with liquids, such as vases or cups, on the unit.

6. **Lightning -** For added protection during a lightning storm, or when leaving this unit unattended and unused for long periods, unplug the unit from the wall outlet and disconnect the cable system. This will prevent damage to the unit from lightning and power line surges.

7. **Controls adjustment -** Adjust only those controls specified in the operating instructions. Improper adjustment of other controls may cause damage to the unit. Use of controls or

adjustments, or performance of procedures other than those specified, may result in hazardous radiation exposure.

8. **Overloading -** Do not overload outlets and extension cords. This can cause fire or electrical shock.

9. **Power supply cord and plug protection -** Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, playing particular attention to cords and plugs, convenience receptacles, and the point where they exit from the appliance.

10. **Power disconnect -** Units have power supplied to the unit whenever the power cord is inserted into the power source. The power cord plug is the main power disconnect device for switching off the voltage for the unit.

11. **Power sources -** Operate the unit only from the type of power source indicated on the label. Before proceeding, be sure to disconnect the power from the cable to be installed into the unit.

12. **Servicing -** Do not attempt to service this unit yourself. Opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

13. **Damage requiring service -** Unplug the power unit from the main AC power source and refer servicing to qualified service personnel when any damage to the equipment has occurred, such as:
    - the power supply cord or plug is damaged;
    - exposure to moisture, water, and/or inclement weather (rain, snow, etc.);
    - liquid has been spilled in or on the equipment;
    - an object has fallen into the unit;
    - unit has been dropped or the unit cabinet is damaged;
    - unit exhibits a distinct change in performance;
    - unit does not operate normally when the user correctly follows the operating instructions.

14. **Replacement parts -** Be sure the service technician uses replacement parts specified by the manufacturer, or that have the same characteristics as the original parts. Unauthorized substitutions could void the warranty and cause fire, electrical shock, or other hazards.

15. **Safety check -** Safety checks should be performed upon completion of service or repairs to the unit to ensure proper operating condition.

16. **Installation -** Install in accordance with the manufacturer's instructions and in accordance with applicable local codes.

17. **Attachments, changes or modifications -** Only use attachments/accessories specified by the manufacturer. Any change or modification of the equipment, not expressly approved by Bosch, could void the warranty or, in the case of an authorization agreement, authority to operate the equipment.

1.3   Important Notices

Accessories - Do not place this unit on an unstable stand, tripod, bracket, or mount. The unit may fall, causing serious injury and/or serious damage to the unit. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer. When a cart is used, use caution and care when moving the cart/apparatus combination to avoid injury from tip-over. Quick stops, excessive force, or uneven surfaces may cause the cart/unit combination to overturn. Mount the unit per the manufacturer's instructions.

All-pole power switch - Incorporate an all-pole power switch, with a contact separation of at least 3 mm in each pole, into the electrical installation of the building.If it is needed to open the housing for servicing and/or other activities, use this all-pole switch as the main disconnect device for switching off the voltage to the unit.

Battery replacement - For qualified service personnel only - A lithium battery is located inside the unit enclosure. To avoid danger of explosion, replace the battery as per instructions. Replace only with the same or equivalent type recommended by the manufacturer. Dispose of the replaced battery in an environmentally friendly way and not with other solid waste. Refer all servicing to qualified service personnel.

NOTICE!
Batteries must not be disposed of in household waste. Dispose of batteries only at suitable collection points and, in the case of lithium batteries, mask the poles.
For further information refer to: *http://www.BoschSecurity.com/standards*

CAUTION!
Class I Laser Product
Invisible laser radiation when open. Avoid exposure to beam.

Coax grounding:
– Ground the cable system if connecting an outside cable system to the unit.
– Connect outdoor equipment to the unit's inputs only after this unit has had its grounding plug connected to a grounded outlet or its ground terminal is properly connected to a ground source.
– Disconnect the unit's input connectors from outdoor equipment before disconnecting the grounding plug or grounding terminal.
– Follow proper safety precautions such as grounding for any outdoor device connected to this unit.

U.S.A. models only - *Section 810* of the *National Electrical Code, ANSI/NFPA No.70*, provides information regarding proper grounding of the mount and supporting structure, grounding of the coax to a discharge unit, size of grounding conductors, location of discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

Disposal - Your Bosch product was developed and manufactured with high-quality material and components that can be recycled and reused. This symbol means that electronic and electrical appliances, which have reached the end of their working life, must be collected and disposed of separately from household waste material. Separate collecting systems are usually in place for disused electronic and electrical products. Please dispose of these units at an environmentally compatible recycling facility, per *European Directive 2002/96/EC*.

CAUTION!
Electronic Surveillance - This device is intended for the use in public areas only.
U.S. federal law strictly prohibits surreptitious recording of oral communications.

Electrostatic-sensitive device - Use proper CMOS/MOS-FET handling precautions to avoid electrostatic discharge.

NOTE: Wear required grounded wrist straps and observe proper ESD safety precautions when handling the electrostatic-sensitive printed circuit boards.

Environmental statement - Bosch has a strong commitment towards the environment. This unit has been designed to respect the environment as much as possible.

Fuse rating - For protection of the device, the branch circuit protection must be secured with a maximum fuse rating of 16A. This must be in accordance with *NEC800 (CEC Section 60)*.

Grounding and polarization - This unit may be equipped with a polarized alternating current line plug (a plug with one blade wider than the other blade). This safety feature allows the plug to fit into the power outlet in only one way. If unable to insert the plug fully into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the polarized plug.

Alternately, this unit may be equipped with a 3-pole grounding plug (a plug with a third pin for earth grounding). This safety feature allows the plug to fit into a grounded power outlet only. If unable to insert the plug into the outlet, contact a locally certified electrician to replace the obsolete outlet. Do not defeat the safety purpose of the grounding plug.

Moving - Disconnect the power before moving the unit. Move the unit with care. Excessive force or shock may damage the unit and the hard disk drives.

Outdoor signals - The installation for outdoor signals, especially regarding clearance from power and lightning conductors and transient protection, must be in accordance with *NEC725* and *NEC800 (CEC Rule 16-224* and *CEC Section 60)*.

Permanently connected equipment - Incorporate a readily accessible disconnect device external to the equipment.

Pluggable equipment - Install the socket outlet near the equipment so it is easily accessible.

Rack-mount

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

– 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.

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

– 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.

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

SELV - All the input/output ports are Safety Extra Low Voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits.

Video loss - Video loss is inherent to digital video recording; therefore, Bosch Security Systems cannot be held liable for any damage that results from missing video information. To minimize the risk of lost digital information, Bosch Security Systems recommends multiple, redundant recording systems, and a procedure to back up all analog and digital information.

1.4   FCC and UL

FCC Information

(U.S.A. and Canadian Models Only)

This equipment has been tested and found to comply with the limits for a **Class B** digital device, pursuant to *part 15* of the *FCC Rules*. These limits are designed to provide reasonable protection against harmful interference in a **residential installation**. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

–   reorient or relocate the receiving antenna;

–   increase the separation between the equipment and receiver;

–   connect the equipment into an outlet on a circuit different from that to which the receiver is connected;

–   consult the dealer or an experienced radio/TV technician for help.

Intentional or unintentional modifications, not expressly approved by the party responsible for compliance, shall not be made. Any such modifications could void the user's authority to operate the equipment. If necessary, the user should consult the dealer or an experienced radio/television technician for corrective action.

The user may find the following booklet, prepared by the Federal Communications Commission, helpful: *How to Identify and Resolve Radio-TV Interference Problems*. This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

Disclaimer

Underwriter Laboratories Inc. ("UL") has not tested the performance or reliability of the security or signaling aspects of this product. UL has only tested fire, shock and/or casualty hazards as outlined in UL's *Standard(s) for Safety for Information Technology Equipment, UL 60950-1*. UL Certification does not cover the performance or reliability of the security or signaling aspects of this product.

UL MAKES NO REPRESENTATIONS, WARRANTIES, OR CERTIFICATIONS WHATSOEVER REGARDING THE PERFORMANCE OR RELIABILITY OF ANY SECURITY OR SIGNALING-RELATED FUNCTIONS OF THIS PRODUCT.

1.5   Bosch notices

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Trademarks

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NOTE!

This manual has been compiled with great care and the information it contains has been thoroughly verified. The text was complete and correct at the time of printing. The ongoing development of the products may mean that the content of the user guide can change without notice. Bosch Security Systems accepts no liability for damage resulting directly or indirectly from faults, incompleteness or discrepancies between the user guide and the product described.

More information

For additional information, please contact the nearest Bosch Security Systems location or visit our web site at:

www.boschsecurity.com

2   Introduction

2.1   Digital video recorder applications

The Bosch Digital Video Recorder 600 Series is a video and audio recording system that records multiple camera and audio signals while simultaneously providing live multiscreen viewing and playback.

The unit has comprehensive search and playback facilities for viewing stored video. Once configured, all recording takes place in the background without requiring operator intervention. Maximum recording rates for CIF resolution of 30 (NTSC) and 25 (PAL) images per second, per channel, are guaranteed. For 2CIF and 4CIF, recording is possible by recording at a lower images per second setting. The recording rate and quality are selectable per camera. Two internal hard disks provide various storage capacities for recording.

All models have extensive alarm handling functions and telemetry control. Alarm functions include motion detection in user-definable areas of the image on any camera input.

The unit can be easily operated and programmed via the front panel control keys, mouse, and the on-screen display menu system. Two monitor outputs provide full-screen, quad, multi-screen and sequenced viewing.

Looping auto-terminating video inputs and outputs, audio inputs and outputs, and alarm inputs and outputs are on the rear panel. A VGA connector provides output for an A monitor. Another VGA video output is provided for Monitor B. Monitor A displays full-screen or quad digital pictures that can be frozen and zoomed. Monitor B displays live full-screen or multi-screen pictures.

Use the Control Center software and Web application via a network for live viewing, playback, and configuration. Four simultaneous users can control the DVR 600 Series. The DVR 600 Series includes an authenticity check for both local and remote playback. A dedicated PC player is provided for playback of secure video files.

2.1.1   Versions

There are various DVR 600 Series models; the most extensive model has 16 channels and a built-in DVD writer.

2.1.2   Manuals

This manual contains information about:
–   Quick Installation - a brief overview on how to set up and install the product.
–   Hardware Setup - a detailed description for installers on how to install the product.
–   Operation - a detailed description for end-users on how to operate the unit.
–   Web Control and Archive Player - a detailed description for end-users and administrators on how to set up and operate the Web Control and Archive Player software.

2.1.3 Features

The DVR 600 Series has the following features:

– 8/16 looped-through, auto-terminating camera inputs
– 4 audio inputs
– Simultaneous recording and playback
– H.264 compression
– 10/100Base-T Ethernet port for Ethernet connection and networking
– RS485 serial port for serial communication
– VGA monitor output (Monitor A)
    – Multi-screen capability in live and playback modes
– VGA monitor output (Monitor B)
    – Full-screen or multi-screen in live mode with sequence
– 4:3, 5:4, 16:9 and 16:10 aspect ratio video display
– Two audio outputs (mono)
– Motion detection
– 8/16 switching (alarm) inputs and 4 alarm outputs
– Video loss detection
– Audible alarm
– Pan/tilt/zoom camera control via RS485
– Supports Bosch and Pelco protocols
– Local archiving via USB
– Local archiving via built-in DVD burner
– Intuikey keyboard connection via RJ11

2.2 Unpacking

Inspect the package for visible damage. If any items appear to have been damaged during transport, notify the shipping company. Unpack carefully. This is electronic equipment and should be handled with care to prevent damage to the unit. Do not attempt to use the unit if any components are damaged. If any items are missing, notify your customer service representative or Bosch Security Systems sales representative. The shipping carton is the safest container in which to transport the unit. Save it and all packing materials for future use. If the unit must be returned, use the original packing materials.

2.2.1 Package contents

Check for the following items:

– Digital Video Recorder (DVR 600 Series unit)
– Quick Install guide
– Installation and Operation manual (this manual)
– CD-ROM containing the Control Center software, the Archive Player and operation manuals in different languages
– Power supply cords/power adapter
– USB Mouse
– Terminal blocks for external I/O connectors
– Remote Control with 2 AAA Batteries
– 19-inch rack mount brackets
– Hard disk mounting material (if not already built-in)

2.3   Installation environment

2.3.1   Mounting
The DVR 600 Series is supplied as a desktop unit.

2.3.2   Ventilation
Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vent in the unit's enclosure and ensure that they are not obstructed as this might cause the unit to fail and void the warranty.

2.3.3   Temperature
Observe the unit's ambient temperature specifications when choosing an installation space. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail and void the warranty. Do not install the unit on top of hot equipment.

2.3.4   Power Supply
Ensure that the site's AC power supply is stable and within the rated voltage of the unit. If the site's AC power is likely to have spikes or power dips, use power line conditioning or an uninterrupted power supply (UPS), as otherwise the unit may fail.

2.3.5   Environment
The unit is designed to operate in a clean office environment. Elevated levels of dust may cause the unit to failand void the warranty.

2.4   Associated equipment
A typical system could contain the following components (not included with the unit):
–   Primary VGA monitor for multiscreen monitoring (monitor A)
–   Second VGA monitor for spot/alarm monitoring (monitor B)
–   Cameras with 1 Vpp composite video outputs
–   Amplified microphone(s)
–   Audio amplifier with speaker(s)
–   Video coaxial cable with BNC connectors for connecting the video signals
–   Audio cable with RCA connectors for connecting audio signals.
–   AC power supply outlet for the power supply unit that allows for secure isolation (for operational reasons, the unit has no on/off switch)
–   PC and network for the Control Center web-based application
–   Pan/tilt/zoom control units
–   Intuikey keyboard

2.5   Warranty
Failure to follow the Safety Instructions, Installation Instructions, and any other instructions noted in this manual may result in damage to the unit and void the warranty.

3   Quick install

To get the unit quickly operational, make the connections described below and then enter the relevant data in the Quick install menu. The Quick install menu appears the first time the unit is started.
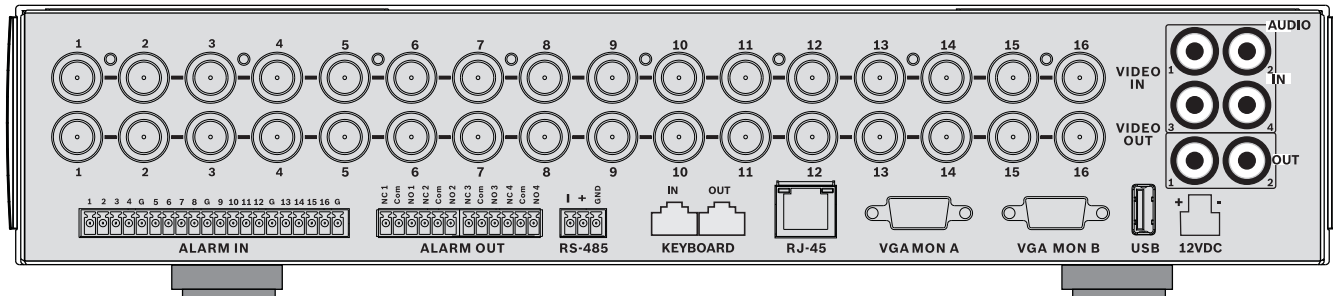
3.1   Connections

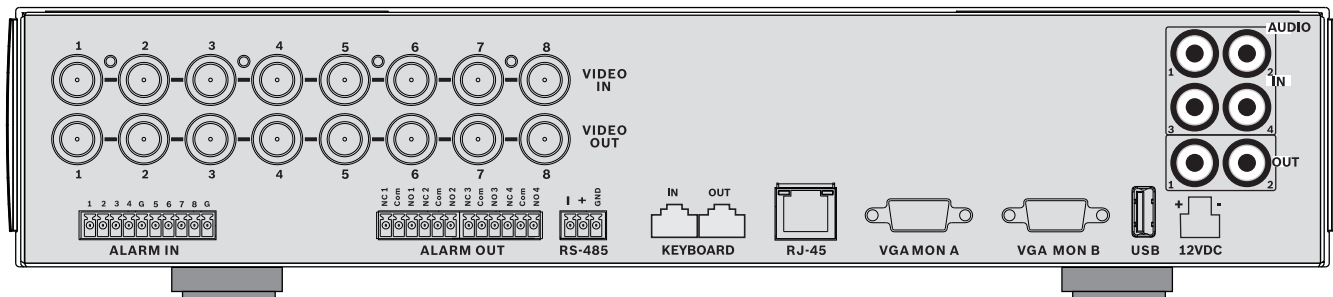**Figure 3.1**   Back panel connections for 16-channel model

Figure 3.2   Back panel connections for 8-channel model

3.1.1   Primary connections

1. Connect the cameras to the **VIDEO IN** BNC connectors (automatically terminated).
2. Connect monitor A to the **VGA MON A** output supporting 800x600 (4:3), 1024x768 (4:3), or 1280x1024 (5:4), 1366x768 (16:9) and 1440x900 (16:10).
3. Connect USB mouse to a **USB** port.

3.1.2   Optional connections

1. Connect monitor B to the **VGA MON B** connector (supporting 800x600).
2. Connect up to 4 audio signals to the **AUDIO IN** RCA (CINCH) inputs.
3. Connect 2 **AUDIO OUT** RCA (CINCH) outputs to the monitor or an audio amplifier.
4. Connect up to 8/16 **ALARM IN** inputs (via the supplied terminal blocks).
5. Connect up to 4 **ALARM OUT** outputs (via the supplied terminal blocks).
6. Connect a pan/tilt/zoom control unit to the **RS-485** port (via the supplied screw terminal block).
7. Connect to your network via the **Ethernet** port.
8. Connect a Bosch Intuikey keyboard cable to the **Keyboard-IN** port if required.

3.1.3   Powering up

Switch on all connected equipment.
– Connect the power unit to the AC power outlet.
– Connect the DC power cord to the **12VDC** connector on the unit.

3.2   First-time use

The Quick install menu opens the first time the unit is used. Fill in the basic settings in the three tabs to get the unit operational. The unit begins recording automatically when the Quick install menu is closed.

To open the Quick install menu at any other time:

1.   Press the menu ▣ key to bring up the System Control Bar.

2.   Press the menu ▣ key again to enter the main menu.

–   The main menu appears on monitor A.

3.   Select System, then the Configuration submenu, and finally Quick install.

Navigating

Use the supplied USB mouse. Alternatively, use the following front panel keys:

–   Use the enter ⬑ key to select a submenu or item.

–   Use the arrow ▲ ▼ ◄ ► keys to move through a menu or list.

–   Use the exit ⬐ key to go back or to switch off the menu.

After bootup, the unit presents the log in screen over a quad display. The default User ID is ADMINISTRATOR, the default password is 000000 (six zeros).

3.3   Quick install menu

The Quick install menu contains three tabs: International, Continuous Recording, and Network. Click the **Exit** button to exit the Quick install menu. Changing Quick install settings overwrites customized settings.

3.3.1   International

Figure 3.3   Quick install - International

Language	Select the language for the menu from the list.
Time zone	Select a time zone from the list.
Time format	Select either a 12 or a 24 hour clock format.
Time	Fill in the current time.
Date format	Select from three date formats which show either the month (MM), the day (DD), or the year (YYYY) first.
Date	Fill in the current date.

3.3.2   **Continuous Recording**

Figure 3.4   Quick install - Continuous Recording

Set the Continuous Recording Resolution, Quality, Frame rate, Covert, and Audio for each profile in the table.

3.3.3   Network

Figure 3.5   Quick install - Network

Fill in the settings that control the behavior of the unit with respect to a network.

DVR name	Enter a unique DVR name to be used in the network.
DHCP	Enable DHCP to have IP address, subnet mask, and default gateway assigned automatically by the network server. The actual values are displayed.
IP address, Subnet mask, and Gateway	Fill in the IP, subnet mask, gateway addresses, and DNS server addresses when DHCP is not enabled.

4   Hardware setup

This chapter contains detailed information about the hardware installation and connection of external equipment to the unit. The connector types and their pin signals are described. Most of the connectors are located at the rear panel of the unit. For convenience, one USB port is located on the front of the unit to connect a mouse or memory device.

All the input/output ports are Safety Extra Low Voltage (SELV) circuits. SELV circuits should only be connected to other SELV circuits.

4.1   Camera connections

Connect cameras to the **VIDEO IN** connectors on the back of the unit using 75 ohm video coaxial cables with BNC connectors. Optionally, this signal can be looped through to other equipment via the corresponding **VIDEO OUT** connector. The camera input connectors are auto-terminating. There is no need to add a terminator to the output connector if no additional equipment is connected.

If the camera signal is looped through to additional equipment, make sure that the end of the video connection is terminated with 75 ohm termination.

The DVR 600 Series automatically configures itself as a PAL or NTSC unit. The unit determines the TV standard by detecting the signal format of the VIDEO IN 1 during startup. The unit can also be manually set to PAL or NTSC in the **Camera menu** under **Video format**.

Specifications

Input signal: Composite video 1 Vpp, 75 ohm

TV standard: PAL/NTSC, auto-detect

Gain control: Automatic gain control for each video input

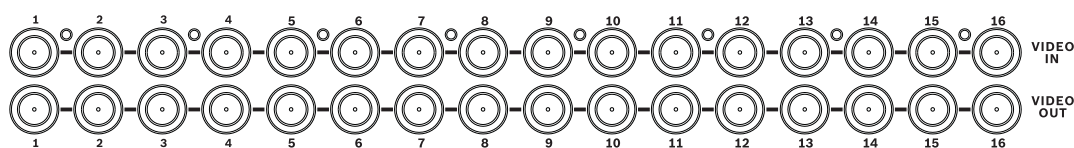Connector type: BNC looped-through, automatic termination

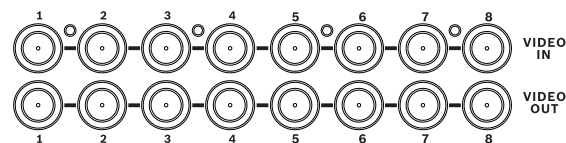**Figure 4.1**   16 video inputs with loop-through outputs

Figure 4.2   8 video inputs with loop-through outputs

4.2 Audio connections

The DVR 600 Series supports up to 4 audio inputs and 2 audio outputs. Connect using audio cable with RCA (CINCH) compatible connectors.

Specifications
Input signal: Mono RCA (CINCH), 1 Vpp, 10k ohm
Output signal: Mono RCA (CINCH), 1 Vpp, 10k ohm
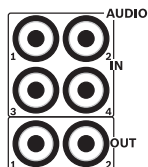
Figure 4.3 Audio output and input connectors

4.3 Monitor connections

Up to two monitors can be connected through the VGA connections.

4.3.1 VGA (Monitor A and Monitor B)

Connect the unit to one or two VGA monitors using standard VGA cable. It is advised to use 17" monitors or larger when using LCD(s).

Specifications
Output signal: VGA
Resolution: 800x600 (4:3), 1024x768 (4:3), or 1280x1024 (5:4), 1366x768 (16:9) and 1440x900 (16:10) for Monitor A; 800x600 (4:3) for Monitor B
Color: True color (32 bit)
Connector type: DE-15

VGA MON A   **VGA MON B**

Figure 4.4 VGA monitor connectors

4.4   Keyboard connections

The keyboard input and output connectors are used to connect a Bosch Intuikey keyboard to one or more DVR 600 Series units.

For one unit, connect the keyboard to the **Keyboard in** connector. For more units, connect a cable between the **Keyboard out** connector of the first unit and the **Keyboard in** connector of the following DVR 600 Series unit. Up to 16 DVR 600 Series units can be connected and controlled in this way with one keyboard.

For short distances (up to 30 m), standard 6-core telecom flat cable can be used to supply power and signal connections for the keyboard (LTC 8558/00). For distances over 30 m between the keyboard and the DVR, the Keyboard Extension Kit (LTC 8557) must be used. This kit provides junction boxes, cables, and the appropriate power supply for the external keyboard. The recommended cable type is Belden 8760 or equivalent.

Termination

Connect the keyboard terminator (supplied with the Intuikey keyboard) to the **Keyboard out** connector of the last DVR in the circuit. If multiple DVR 600 Series units are controlled with a single keyboard, the **Keyboard out** connector of the last DVR 600 Series unit must be terminated.

Specifications
–   Communicaton protocol: RS485
–   Maximum signal voltage: ± 12 V
–   Power supply: 11 - 12.6 VDC, maximum 400 mA
–   Maximum cable length: 30 m (using standard 6-core telecom flat cable), or 1.5 km (using Belden 8760 or equivalent in combination with the LTC 8557).
–   Cable type: black (cross-over) cable (supplied with keyboard)
–   Termination: 390 Ohm terminator
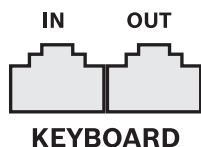–   Connector: RJ11 (6-pin)

Figure 4.5   Keyboard input and output connectors

4.5　　　　Ethernet connection

The standard RJ-45 Ethernet socket is used to connect the unit directly to a PC or to a network. To connect directly to a network hub or switch, use a straight-through network cable. To connect directly to a PC, use a cross-over network cable. Consult with your local IT personnel for the specific type of cable needed. The maximum cable length from node to node is limited to 100 meters (300 feet).

Specifications
- 1000 Base-T IEEE 802.3ab compliant, 100Base-TX IEEE 802.3u Compliant, 10Base-T IEEE 802.3 Compliant
- IEEE 802.3 Compliant RGMII/MII
- DSP processing
- Transmission rate up to 1Gbps over industry standard CAT.5 UTP cable with BER less than 10^{-10} in 1000Base-T
- Supports 3.3V or 2.5V signaling for RGMII
- Supports power down mode and supports Link Down Power Saving
- 64-pin QFN or 100-pin LQFP
- Connector: RJ45
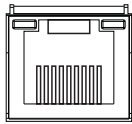
Ethernet

Figure 4.6 RJ-45 Ethernet connector

4.6   RS485 port

Connect Bosch, Pelco-P or Pelco-D controllable cameras to the unit for pan, tilt, and zoom control.

The Bosch protocol is supported with the following baud settings:

- 9600 baud
- 8 data bits
- 1 stop bit
- no parity
- no flow control
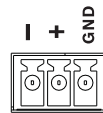
RS-485

Figure 4.7   RS-485 connector

Signal name	Pin number	Description
TX -	1	Data transmission
TX +	2	Data transmission
GND	3	Shield

Table 4.1   RS485 pin definition

The recommended cable cross section is AWG 28-16 (0.08-1.5 mm2).

4.7   USB connectors

A USB 2.0 connector is located at the rear panel of the unit to which a mouse, for example, can be connected. For convenience, the USB 2.0 port is located on the front of the unit to connect a mouse or USB memory device. (Recording to a USB-drive is not supported.)

USB

Figure 4.8   USB connector (on front and on rear)

4.8   External alarm I/O connection

Alarm inputs and outputs are supplied screw down terminal blocks. The screw terminal blocks are supplied with the unit.

Connecting the inputs

Each (alarm) input line can be switched by a contact from an external device between a numbered input and ground (**G**).

Wire them as either Normally Open (N/O) or Normally Closed (N/C). Configure the alarm inputs as N/O or N/C in the menu system. The default is N/O.

Specifications

Alarm input impedence: Internal pull-up 10 kOhm to +5 V

Input voltage range: -2 VDC minimum to 15 VDC maximum

Input voltage threshold: low voltage 0.5 V maximum, high voltage 2 V minimum

Cable cross section: AWG 26-16 (0.13-1.5 mm2)

Connecting the alarm outputs

The four alarm output relays respond to input alarms and triggers. Configure the alarm outputs as N/O or N/C in the menu system. Only connect resistive loads to the alarm output relays. Do not exceed 30 Vac, 40 Vdc, 500 mA (continuous), or 10 VA on an alarm output relay's contacts.

> **DANGER!**
> Electrical voltage.
> Risk of electric shock and damage to the unit.
> The contacts must not be used at AC line voltages.

Specifications

Switching current (resistive): 500 mA maximum

Switching voltage (resistive): 30 VAC/40 VDC maximum

Cable cross section: AWG 26-16 (0.13-1.5 mm2)

1 2 3 4 G 5 6 7 8 G 9 10 11 12 G 13 14 15 16 G
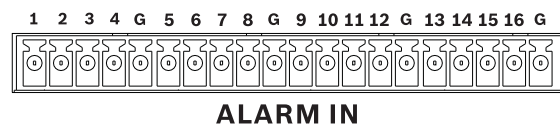
ALARM IN

Figure 4.9   Alarm input connector for 16-channel model

1 2 3 4 G 5 6 7 8 G

ALARM IN

Figure 4.10   Alarm input connector for 8-channel model

NC 1 Com NO 1 NC 2 Com NO 2 NC 3 Com NO 3 NC 4 Com NO 4
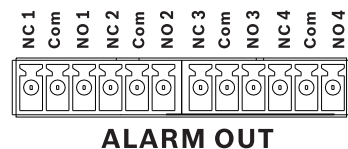
ALARM OUT

Figure 4.11   Alarm output connector

4.9   Power supply

DC power is supplied to the DVR 600 from an AC/DC power supply unit delivered with the unit. For operational reasons, the DVR 600 has no on/off switch . This means that the unit is always powered as long as the power cable from the power supply unit is connected to the **12VDC** socket.

Specifications:
–   External power supply unit:
  –   AC input: 100-240 VAC; 1.8 A; 50/60 Hz
  –   DC output: 12 VDC; 5 A
–   DVR power input: 12 VDC; 3.5 A
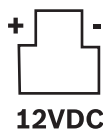

12VDC

Figure 4.12   12 VDC power supply socket

4.10   Maintenance

Maintenance of this unit is limited to external cleaning and inspection. Refer all servicing to qualified service personnel.

	DANGER! Electrical voltage. Risk of electric shock. Do not open the top cover or attempt to service the unit. No user serviceable parts inside. Refer all servicing to qualified service personnel.

5   Operating instructions

These instructions explain the purpose of the front panel keys. The functions available can be limited by setting passwords.

Access to the units functions are determined by the user level of the user logged in.

Function	**Administrator** level	**Advanced User** level	**Normal User** level
View live	Yes	Yes	Yes
Sequence	Yes	Yes	Yes
Quad	Yes	Yes	Yes
OSD	Yes	Yes	Yes
Zoom	Yes	Yes	Yes
Pan/Tilt/Zoom (PTZ)	Yes	Yes	Yes
Playback	Yes	Yes	No (configurable)
Search	Yes	Yes	No (configurable)
Export	Yes	Yes	No (configurable)
Acknowledge Alarm	Yes	Yes	No (configurable)
System Menus	Yes	No	No
Covert	Yes	No	No

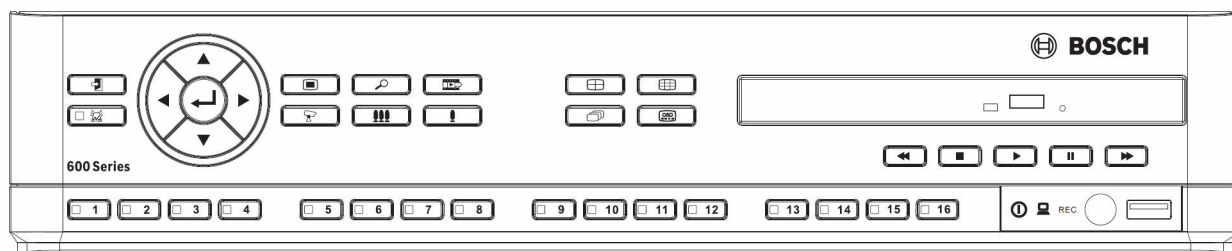**Table 5.1**   User Levels and permissions

5.1   Front panel controls

Figure 5.1   Front panel controls

Note:

8-channel models have only 8 camera keys on the front.

5.1.1   Keys

The keys on the front panel control all functions. Symbols on the keys show the functions. Inactive keys emit an audible beep when pressed.

Arrow keys:

▲ Up, ▼ Down, ◀ Left, ▶ Right
  – move around through menu items or values when in menu mode
  – in PTZ mode, the arrow keys can be used to control the pan or tilt functions of the selected camera
  – moves the visible area of the selected image in digital zoom mode

↵ Enter key
  – selects a submenu or menu item, or confirms selections made in menus
  – brings up the cameo submenu in full screen or quad modes

▣ Menu key
  – opens the system menu

🔍 Search key
  – press to open the date/time search menu to look for recorded images

▦ Export key
  – press to open the export menu

📹 PTZ key
  – enables or disables the PTZ mode

▯ Zoom in key
  – PTZ zoom in key
  – Digital zoom in key on active full-screen display

▮▮▮ Zoom out key
  – PTZ zoom out key
  – Digital zoom out key

⎆ Exit key
  – press to return to previous level or to exit the menu system

☒ Acknowledge key
  – press to acknowledge an alarm event; a red indicator light is located on the key

1 Camera keys (1-8/16)
  – press to see a full-screen display of the video input
  – the LED will be illuminated when the camera is recording
  – the LED will flash during an alarm on the camera

⊞ Quad key
  – press to go to quad mode
  – in quad mode, press to toggle to full screen

▱ Sequence key
  – view cameras in sequence on full-screen or quad displays

⊞ Multi-screen key
  – press to go to different multi-screen modes

▣ OSD key
  – press to view date/time and camera information, or date/time only

❚❚ Pause key
  – press to freeze the picture

◀◀ Reverse key
  – in live mode, press to start reverse playback of recordings for the displayed cameras
  – in playback mode, press to start or speed up reverse playback
  – in pause mode, press to step back one frame

▶ Play key
  – in live mode, press to resume playback from the last selected playback position
  – in pause or fast forward/reverse modes, press to resume playback

▶▶ Fast forward key
  – in live mode, press to start playback from one and a half minutes earlier
  – in playback mode, press to speed up the forward playback rate
  – in reverse playback mode, press to start forward playback
  – in pause mode, press to step forward one frame

■ Stop key
  – while in playback mode, press to return to live mode

5.1.2   Indicators
The indicators on the front panel display light or flash to alert of various operating conditions.

▭ Power - lights green when the unit is powered

▭ Network - lights green to indicate network activity

▲ Alarm - flashes red when an alarm is detected

REC Record - lights red when the unit is recording video

5.2   Mouse Controls

All functions controlled by the front panel can, alternatively, be accessed using the supplied USB mouse. All main DVR functions are accessible via the System Control Bar. To display the panel (on monitor A), move the mouse pointer to the bottom left of the screen or press the

menu ▣ key. To close the System Control Bar press the exit ⤵ key, or the left mouse button.

Figure 5.2 System Control Bar

The buttons and indicators of the System Control Bar work the same as the keys and indicators on the front panel.

–   The System Control Bar can also be controlled with the Arrow Keys and Enter Key.

5.3   Remote control

All functions controlled by the front panel and USB mouse can, alternatively, be accessed using the supplied remote control. The IR remote control allows control of up to nine units without interfering with one another.

An ID number must be set on the remote control and in the system. See Section 6.6.7 System for setting the system ID for the unit.

To set the ID on the remote control:

1.   Press the **ID** button on the remote control.
2.   Press a number between 1 and 9 that corresponds to the unit ID you wish to control.

Figure 5.3   Remote control

5.4   Viewing pictures

The unit has two monitor outputs, A and B. The way in which these monitors display pictures depends on how the system is configured.

5.4.1   Monitor A

Monitor A is the main monitor. It shows full-screen, quad or multiscreen live or playback camera pictures. Status messages, alarms, motion, and video loss warnings are also displayed on this monitor. When the menu system is activated, it is displayed on this monitor. Monitor A is the default monitor for keyboard and mouse commands.

Changing the full-screen display on Monitor A

To control the display on monitor A with mouse control:

1.   Bring up the System Control Bar.

2.   Click the Monitor A [A] button.

3.   From the pop-up menu, select the display for Monitor A
     –   Select 1-8/16 for the corresponding Camera

     –   Select the sequence ▭ key to sequence channels 1-8/16

Changing the quad display on Monitor A

To control the quad display on monitor A with mouse control:

1.   Bring up the System Control Bar.

2.   Click the Monitor A [A] button.

3.   From the pop-up menu, select the display for Monitor A

     –   Select the quad key ⊞ to select the quad mode

     –   Select the sequence ▭ key to sequence the quad mode

5.4.2   Monitor B

Monitor B displays full-screen, quad or multiscreen (with or without sequence) of live pictures. When an alarm or motion input is detected, the camera picture with the Alarm/Motion indicator can be displayed on monitor B. When multiple alarms or motion occur, camera pictures are sequenced on monitor B.

Changing the full-screen display on Monitor B

To control the display on monitor B with mouse control:

1.   Bring up the System Control Bar.

2.   Click the Monitor B [B] button.

3.   From the pop-up menu, select the display for Monitor B
     –   Select 1-8/16 for the corresponding Camera

     –   Select the sequence ▭ key to sequence channels 1-8/16

Changing the quad display on Monitor B

To control the quad display on monitor B with mouse control:

1.   Bring up the System Control Bar.

2.   Click the Monitor B [B] button.

3.   From the pop-up menu, select the display for Monitor B

     –   Select the quad key ⊞ to select the quad mode

     –   Select the sequence ▭ key to sequence the quad mode

5.4.3   **Viewing**

The tables show all possible views for monitor A. The set of muti-screen views available depends on the resolution (aspect ratio) setting and the model type (8 or 16 channels).

Resolution (aspect ratio) 800x600 (4:3), 1024x768 (4:3), 1280x1024 (5:4)
Full screen
Quad
1+5
1+7
1+12
3x3
4x4 (Not for 8-channel model)

Table 5.2   Multi-screen viewing in 4:3 and 5:4

Resolution (aspect ratio) 1366x768 (16:9), 1440x900 (16:10)
Full screen
Quad
3x2
4+4
1+8
1+2+6
4x3
4x4 (Not for 8-channel model)

Table 5.3   Multi-screen viewing in 16:9 and 16:10

Quad screen

To view quad displays:

–   Press the quad ⊞ key.

    –   A quad display of camera pictures appears on the active monitor.

Full-screen

To view a full-screen shot of a camera:

–   Press a camera key.

    –   A full-screen shot of the camera that was selected appears.

Multi-screen

To view multi-screen displays on monitor A:

–   Press the multi-screen ⊞ key.

    –   A multi-screen display of camera pictures appears on the active monitor.

Sequence

To view a sequence of live camera pictures of several cameras:

1. Press the sequence ⧉ key.

    –   A sequence of camera pictures appears, each for a pre-programmed dwell time.

2. Press the sequence ⧉ key to stop sequencing.

Cameo assignment

Assigning cameras to cameos in a quad or multi-screen view:

1. The cameo with the yellow border is the selected cameo.

2. Use the arrow keys to select a cameo.

3. Press the enter ⏎ key to display the Cameo Menu.

1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
Playback			
Live			
Zoom			
Freeze			
PTZ			
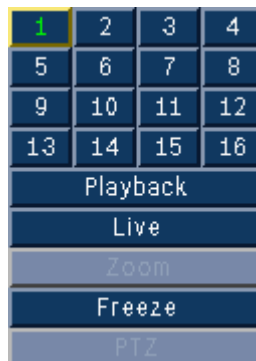
4. Use the arrow keys to select a camera to put in the cameo and press the enter ⏎ key.

5. Alternatively, right click a cameo with the mouse and choose a video input from the Cameo Menu.

This cameo assignment is used in playback mode as well as in live mode.

Freeze image

Freezing a camera shot on monitor A:

1. Press the pause ▐▐ key to freeze all the picture in the active cameo.
2. Press the stop ▐ key to return to live viewing.
3. Alternatively, right click in the active cameo and select **Freeze** or **Unfreeze** from the context menu using the mouse.

Zoom

To zoom in on a video image:

1. Press the zoom in ▮ key.
    –   The picture is enlarged by a factor of 2.
2. Use the arrow keys to select the area of the picture to be displayed.

3. Press the zoom out ▮▮▮ key to return to a full picture and leave the zoom mode.

Alternatively, right click and select **Zoom** or **Exit zoom** to enable or disable zoom mode with the mouse. While in zoom mode, move the mouse pointer to select the area of the picture to be displayed.

5.5   Live and playback

5.5.1   Live mode

The live mode is the normal operating mode of the unit where live pictures are viewed from the cameras. From live mode, switch to playback mode or the system menu.

5.5.2   Playback mode

Access to playback functions requires the right user level. Discuss this with your administrator. To enter playback mode:

1. To switch the unit from live to playback mode:

    – press the play ▶ key

    – press the forward ▶▶ key for instant playback, which will cause the unit to enter playback at 90 seconds before the current time

    – perform a search

    – perform an action from the cameo menu.

2. In playback mode the video control keys operate as follows:

–   Press the rewind ◀◀ key to start reverse playback of recordings. Pressing it again and again increases the display rate to a maximum before returning it back to normal speed again. Press the rewind ◀◀ key in the pause mode to step back one frame at a time.

–   Press the pause ❚❚ key to freeze the picture.

–   Press the forward ▶▶ key to start playback of recordings. Pressing it again and again increases the display rate to a maximum before returning it back to normal speed again.

    Press the forward ▶▶ key in the pause mode to step forward one frame at a time.

–   Press the play ▶ key to resume playback.

Press the stop ■ key to switch back to live viewing. An alarm also switches the unit back to live viewing.

5.6   Overview of the menu system

The Main menu gives access to several functions to help use the unit. Access to the Main menu is only possible with a User Account at the Administrator User Level. There are three ways of accessing the Main menu:

– via the front panel keys,
– a USB mouse,
– via the remote control.

Slight differences in navigation and selection are only due to the differences between the keys on the unit and the mouse. The menu structure is the same in all cases.

The top menu consists of six menus with drop-down submenus.
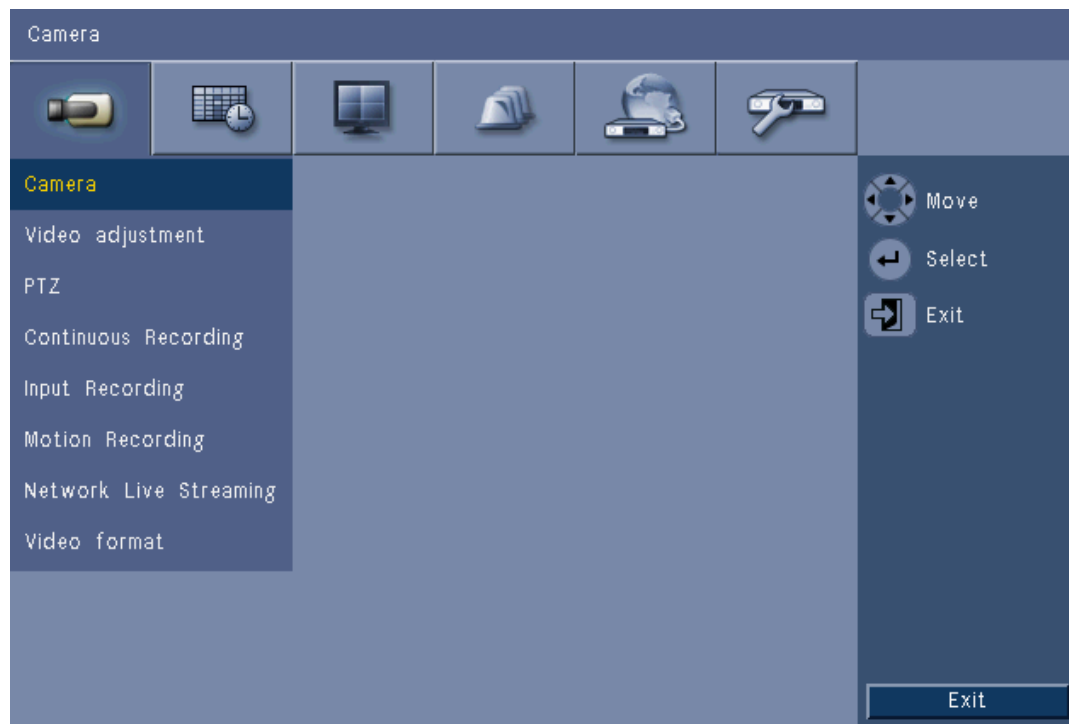
Figure 5.4 Main menu

5.6.1   Access using the front panel keys

To open the Main menu, press the menu ▣ key twice.

– On the first press the System Control Bar appears on monitor A.
– On the second press the Main menu appears on monitor A.

To move through a menu or list, use the arrow ▲ ▼ ◀ ▶ keys on the front panel.

To select a submenu or item, use the enter ↵ key.

To go back, use the exit ⏎ key.

To exit the menu, press the exit ⏎ key.

5.6.2   Access using the mouse

To open the menu, move the pointer to the bottom of the screen.

– The System Control Bar appears on monitor A.

To open the menu, click the menu ▣ icon.

5.6.3   Main menu

Camera

The Camera menu is used to configure recording settings for the unit. The menu contains eight submenus:

- Camera - per camera Enable, Name of the camera, Covert, and Audio
- Video Adjustment - per camera Brightness, Contrast, and Color
- PTZ - per camera Port, Address, Protocol, and Baud Rate
- Continuous Recording - per camera Resolution, Quality, and Frame Rate
- Input Recording - per camera Resolution, Quality, Frame Rate, Pre-event, and Post-event
- Motion Recording - per camera Resolution, Quality, Frame Rate, Pre-event, and Post-event
- Network Live Streaming - per camera Enable, Resolution, Quality, and Frame Rate
- Video Format - NTSC, PAL, or Auto Detect; VGA Output - select required VGA resolution for monitor A.

Schedule

The Schedule menu is used to set recording types according to the hour and day of the week and for exception days.

Display

The Configuration menu contains three submenus:

- Language - set the language option for the unit
- Monitor A - show Camera Name and Status, Date and Time, Playback and HDD Status, Event Pop-up, and configure Sequence Dwell Times
- Monitor B - show Camera Name and Status, Date and Time, Event Pop-up, and configure Sequence Dwell Times

Event

The Event menu contains four submenus:

- Input - per input Input Type, Camera, Relay Output, and PTZ preset
- Motion - per camera Sensitivity, Relay Output, and Area setup
- Alarm Acknowledge - Toggle between Post-event time and Manual
- System - enable alarms for Disk fail, Disk full, Fan fail, System/Disk temperature, Administrator Password change, Video loss, and Power On.

Network

The Network information menu contains four submenus:

- TCP/IP - enable DHCP, set IP Address, Subnet, Gateway, DNS, HTTP Port, Bandwidth limit, and Enable RTSP and set RTSP port for 3GPP function.
- DDNS - set dynamic DNS for dyndns.org, sitesolutions.com, and tzo.com
- Notification - send e-mail notification on Input, Motion detect, Disk fail, Disk full, Fan fail, System/Disk temperature, Administrator Password change, Video loss, Power On
- Mail - set SMTP server, SSL, User name, Password, To 1-3, From, and Subject.

System

The System information menu contains seven submenus:

- Date/Time - set Date, Time, Date format, Time format, Time zone, and Daylight Savings
- NTP - set NTP Time Server and Sync interval
- Beeper - set unit to beep on Button, Input, Motion, System, or Video loss
- User - set Usernames, Passwords, and User Levels for Users 1-10

- Configuration - Import and Export configuration, reset to Factory defaults, Update firmware and Quick install
- Hard Disk - set Overwrite, Disk full warning, Event partition, Auto delete, and format the disk
- System - set the IR remote control, DVR ID, Auto user logout time.

5.7   Search

To Search, press the search 🔍 key.

To Search using the mouse:

1.   Move the cursor to the bottom of the screen to access the System Control Bar.

2.   Click the search 🔍 icon.
      - The default search is a **Date/time** search.
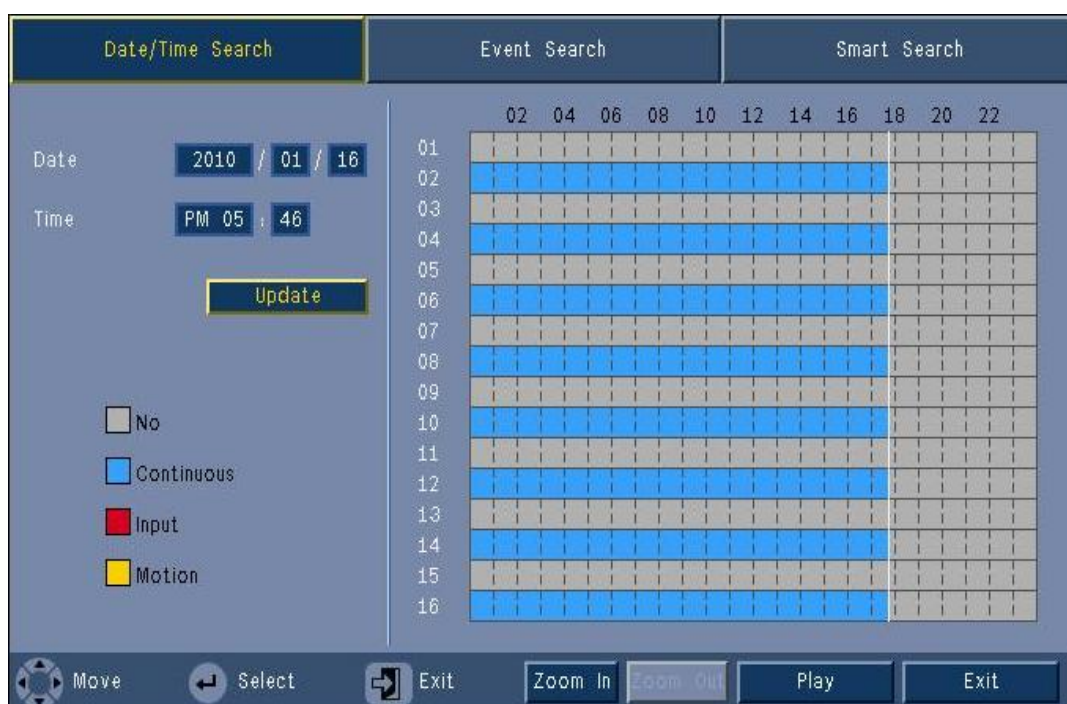
Figure 5.5   Default menu - Search

5.7.1   Date/time search

Select the start date. Once the start date has been selected, the timeline will update to show the full 24 hour period.

1.   Use the **Zoom In** button to magnify the timeline.
2.   Enter the start time:
        –   Enter the hour and minute.
        –   With a mouse, click directly on the timeline to set the start time.
3.   Click Play to start playback:
        –   Playback in all displayed cameos will start.
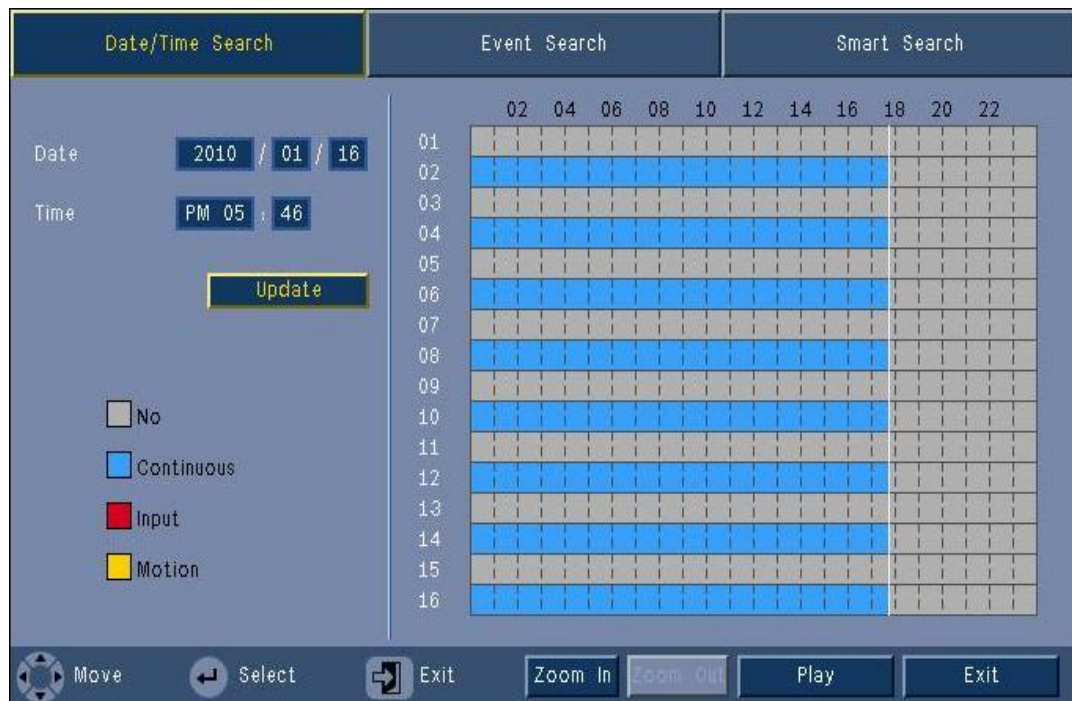
Figure 5.6   Search menu - Date/Time Search options

5.7.2   Event search
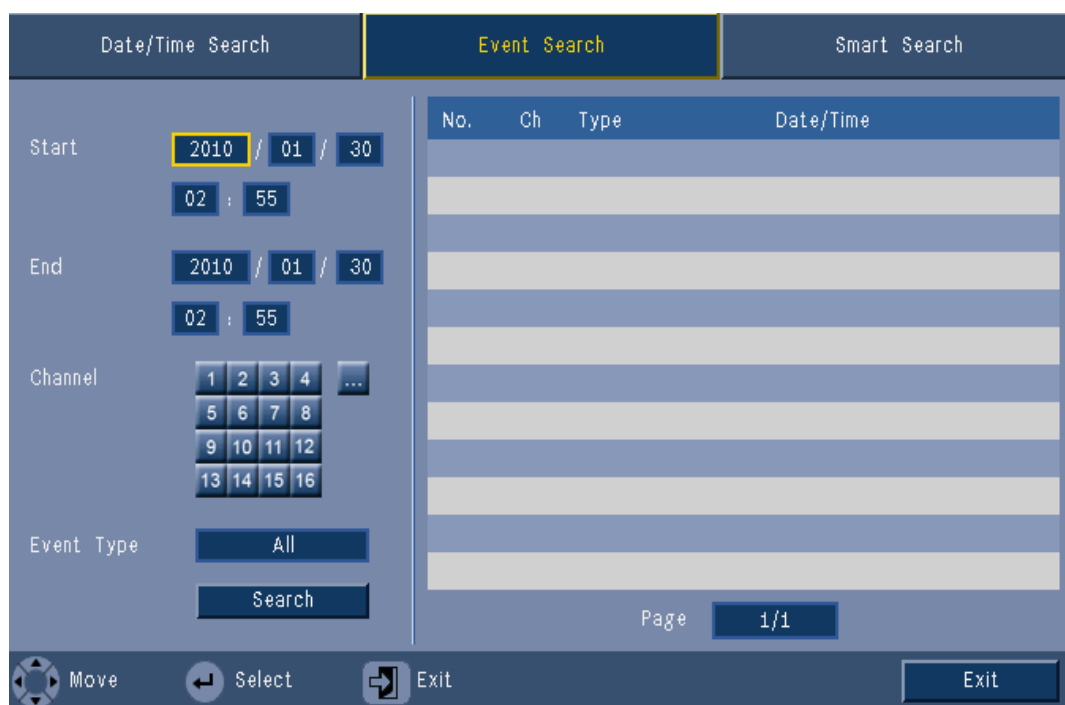
1. From a Date/Time search, press the exit ⤵ key to select the Search Tabs.
2. Press the left/right arrow keys to select Event Search.
3. Press the enter ⏎ key to activate the search.
    –   With the mouse, click the Event Search tab to make it active.

Search criteria
–   Under **Start** and **End**, fill in date and time values to determine the time span of the search.
–   Under **Channel**, specify the camera input to search for. The selected input will be shown.
–   Set **Event Type** to search for alarm events, motion events, or both. Set to **All** so that the search is not restricted by an event type.
–   Select **Search** to start the search.

Search results
–   The recording fitting the filter and closest to the selected date and time is shown first.
    –   If more events than can be shown on the page are found use Page to see more results.
–   Use the up/down arrow keys to move through the list.
–   Press the Play button for a full-screen playback of the selected recording.

Figure 5.7   Search menu - Event Search options

Event Search results
The event search results are indicated by a start and stop time of a small period of video.
Within this period of video the event search results can be found.

5.7.3   Smart search
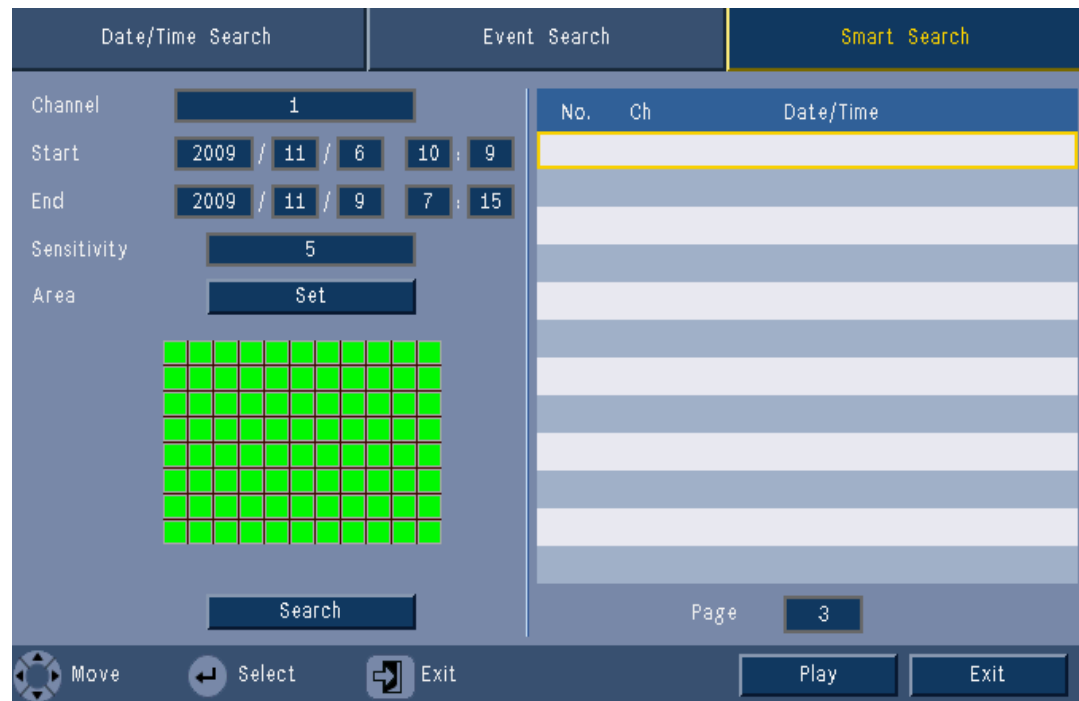
1.   From a Date/Time search, press the exit ↴ key to select the Search Tabs.
2.   Press the left/right arrow keys to select Smart Search.
3.   Press the enter ↵ key to activate the search.
     –   With the mouse, click the Smart Search tab to make it active.

Search criteria
–   Under **Channel**, specify the camera input to search for. The selected input will be shown.
–   Under **Start** and **End**, fill in date and time values to determine the time span of the search.
–   Set **Sensitivity** to determine the threshold for detecting change in the video.
–   Set **Area** to limit the smart search to only the area effected.
–   Select **Search** to start the search.

Search results
–   The recording fitting the filter and closest to the selected date and time is shown first.
     –   If more events than can be shown on the page are found, use Page to see more results.

Figure 5.8   Search menu - Smart search options

–   Use the up/down arrow keys to move through the list.
–   Press the Play button for a full-screen playback of the selected recording.

Smart Search results
The smart search results are indicated by a start and stop time of a small period of video.
Within this period of video the smart search results can be found.

5.8   Export

The export menu is accessed by pressing the Export ⬚ key on the Front Panel or from the System Control Bar. It allows writing segments of recorded video and audio to a USB storage device or recordable DVD.

Figure 5.9   Export menu

1.   Choose to record to either USB or CD/DVD from the **Target Device** selection box.
2.   Select the **Channel** to archive (... for all channels).
3.   Fill in a **Start time** and **End time** for the video segments to archive.
4.   Click **Export** to create the archive.
     –   To open the CD/DVD burner, click the **Eject** button.
     –   To erase a USB drive after it has been inserted, click the **Format** button.
     If the total size of the video segments is greater than the memory device's free space, then only the first segments that fit are archived.
5.   Click **File** to save 'Export history log file' to USB.

5.9   System information

The System information screen is accessed from the System Control Bar by pressing the

System Information ⓘ icon. The System information menu contains:

–   Model Name
–   Serial Number
–   Video Format
–   MAC Address
–   IP Address
–   Software Version
–   Hard Drive size and usage data

Figure 5.10   System Control Bar - System information

Note:

Only Bosch hard disks with a signature can be used. If the hard disk is not certified, it cannot be used for recording.

5.10   Log

The Log displays historic system events and is accessed from the System Control Bar by

pressing the Log ▦ icon.
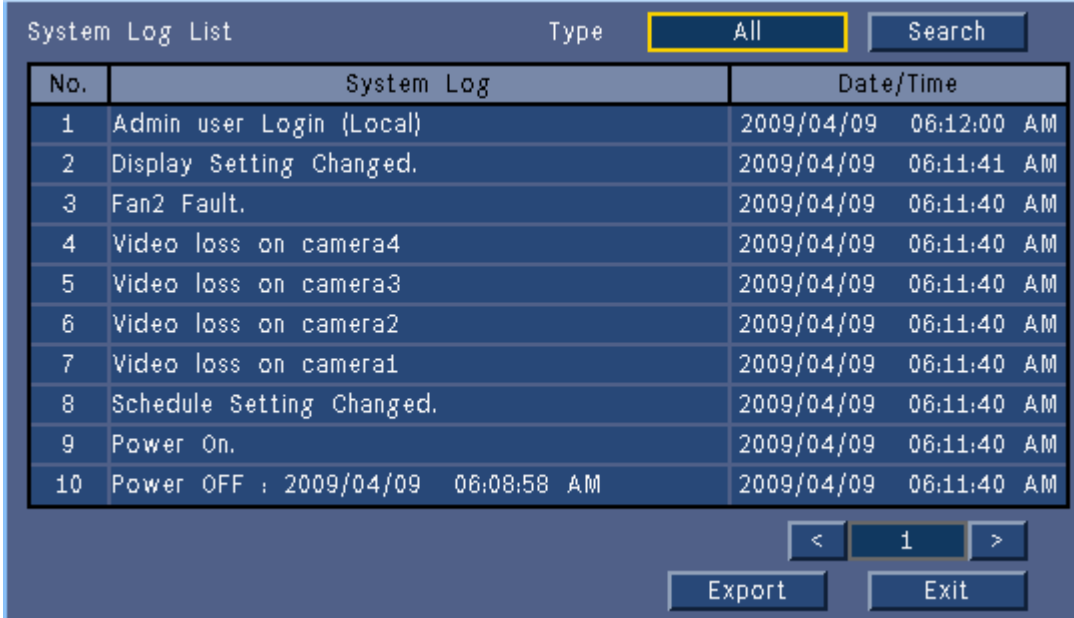
Logbook filter

From the Log display, make a selection of which system events to show.
–   The Log shows the date, time, and event type of various system events.
–   Log contents are ordered from latest to earliest.

Export log

click **Export** to save the log file to a USB device.

System Log List	Type	All	Search

No.	System Log	Date/Time
1	Admin user Login (Local)	2009/04/09 06:12:00 AM
2	Display Setting Changed.	2009/04/09 06:11:41 AM
3	Fan2 Fault.	2009/04/09 06:11:40 AM
4	Video loss on camera4	2009/04/09 06:11:40 AM
5	Video loss on camera3	2009/04/09 06:11:40 AM
6	Video loss on camera2	2009/04/09 06:11:40 AM
7	Video loss on camera1	2009/04/09 06:11:40 AM
8	Schedule Setting Changed.	2009/04/09 06:11:40 AM
9	Power On.	2009/04/09 06:11:40 AM
10	Power OFF : 2009/04/09 06:08:58 AM	2009/04/09 06:11:40 AM

<	1	>

Export	Exit

Figure 5.11   Logbook - Logbook filter

5.11   Triggers and alarms

Various types of events change the way the unit works. These events are:
– an alarm input signal applied to the unit
– motion detection in a camera signal
– a loss of video from one of the cameras
– an internal alert from the unit itself (i.e. disk failure, temperature alarm)

The way the unit reacts to events depends on how it is programmed.

An event can cause either a trigger or an alarm. A trigger changes the way the unit works but does not require a response from the user. An alarm also changes the way the unit works but, in addition, usually activates several indicators and requires the user to acknowledge the alarm situation.

The unit reacts to an event in any one of the following ways:

Alarms
– A beeper sounds.
– A status message is displayed.
– An alarm icon is displayed.
– The border around a cameo changes color to red.
– An alarm 🚨 or video loss 🔇 indicator flashes.
– An output relay is activated.

Triggers
– A motion 🏃 indicator flashes.
– The view modes on the monitors change.
– A controllable camera might be moved to a pre-defined position.
– Recording behavior changes.
– The unit changes the way it operates via pre-defined profiles.

Background events

Triggers and alarms can change background tasks that a user may not notice. Unit responses that are not visible to the user are, for example, a change in recording speed, the activation of the output relay, and event logging. The unit can also be configured to record upon the activation of an alarm input. A trigger may change the way the camera images are displayed on the monitors without requiring intervention.

5.11.1   Alarm inputs

If an input causes an alarm
– Monitors A and B can switch to a pre-programmed view mode.
– Monitor A: The border around the displayed cameos is red. The alarm icon is displayed in the corresponding cameo. An alarm status message is displayed.
– Monitor B: Full screen or sequenced display of pre-programmed cameras.
– The alarm beeper sounds. The alarm 🚨 indicators flash.
– A controllable camera might be moved to a pre-defined position.

Acknowledging an input alarm

Press the acknowledge ⊠ key to acknowledge the alarm.
- The beeper is silent.
- The alarm 🚨 indicators are no longer lit.
- The alarm status message disappears.
- The last-used view mode is restored.

The alarm icon remains visible as long as the input causing the alarm is active.

If an alarm is not acknowledged, the beeper switches off after the dwell time but the alarm still needs to be acknowledged.

If auto-acknowledge is enabled, the beeper and the alarm 🚨 indicators switch off after the dwell time.

5.11.2   Motion events

If a motion detection signal causes an event
Monitors A and B can switch to display the motion events.
- The motion icon is displayed in the corresponding cameo. An alarm status message is displayed.
- The motion 🚶 indicator on the front panel flashes.

5.11.3   Video loss alarm

If the loss of a video signal causes an alarm:
Monitor A and B will show the video loss indicator.
- Monitor A can switch to a multiscreen view. The lost camera signal is displayed as a black cameo with the video loss message. The border around the camera with the video loss is red. An alarm status message is displayed.
- The alarm beeper sounds.
- The video loss 📵 indicator is displayed until the video signal is restored.

Acknowledging a video loss alarm

Press the acknowledge ⊠ key to acknowlede a video loss alarm.
- The beeper is silent.
- The alarm status message disappears.
- The last-used view mode is restored.

If the camera with video loss is visible, the black cameo and the video loss message continue to be displayed as long as there is no video present.

5.11.4   Multiple alarms

Monitor A can switch to a multiscreen view if more than one alarm occurs. The latest alarm status message is always shown. Press the acknowledge ⊠ key to deactivate all alarms.

6   Configuration menu

Access all the parameters that are used to configure the unit via the menu system. The large number of available parameters gives the opportunity to program extensive functionality. Administrator rights are required to access the configuration menus.

There are four ways to access the menu system:

–   the front panel keys,
–   a USB mouse,
–   the IR Remote Control,
–   remotely via the Web-based Configuration application.

In all cases, the parameters available are the same. Slight differences in navigation and selection are due only to the differences between the keys on the unit, the mouse, and the interface of the Web browser. The menu structure is the same in all cases.

This chapter explains how to access the menus locally on the unit. It also documents the structure of the configuration menu system.

The configuration menu is accessed from the top menu. The settings submenus give access to all configurable items for the unit.
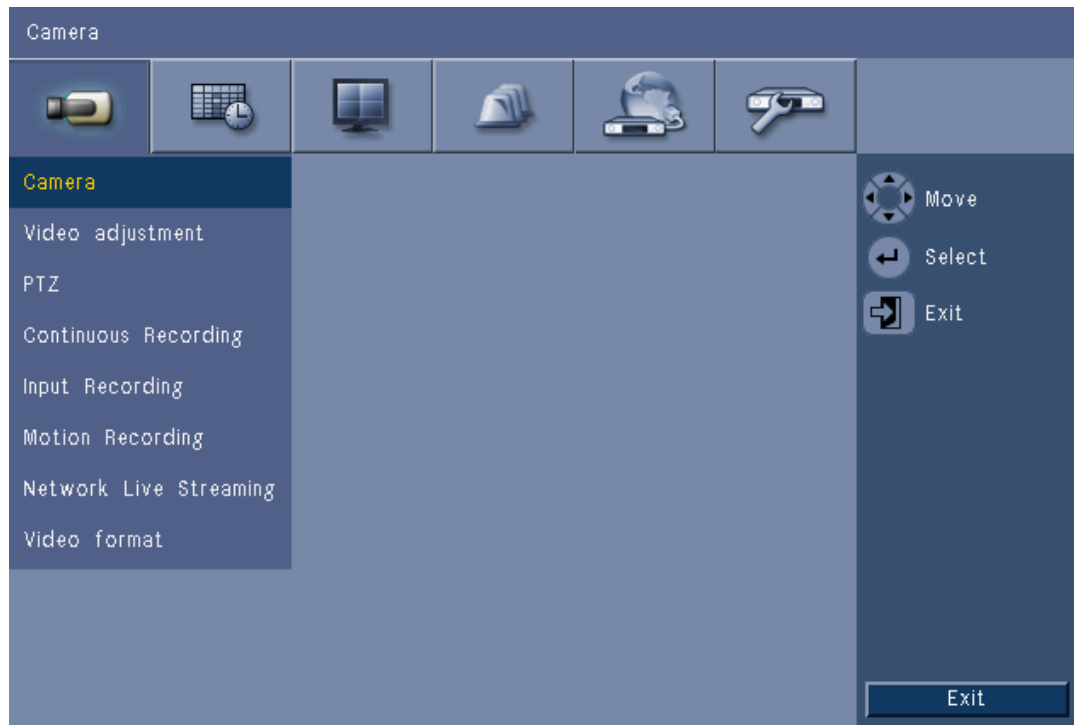
Figure 6.1   System Configuration menu

The configuration menu has six major menu groups listed across the top. Each of these groups has a set of drop-down submenus which provide access to a screen where the values and functions can be selected and changed.

Top tabs	Submenus
Camera	Camera
	Video Adjustment
	PTZ
	Continuous Recording
	Input Recording
	Motion Recording
	Network Live Streaming
	Video Format
Schedule	Sunday
	Monday
	Tuesday
	Wednesday
	Thursday
	Friday
	Saturday
	Exception Days
Display	Language
	Monitor A
	Monitor B
Event	Input
	Motion
	Alarm Acknowledge
	System
Network	TCP/IP
	DDNS
	Notification
	Mail
System	Date/Time
	NTP
	Beeper
	User
	Configuration
	Hard Disk
	System

Table 6.1   System Configuration menu structure

6.1 Camera

Use the **Camera** menu to configure the recording set up for each of the three profiles.

1. Configure the settings for **Continuous**, **Input**, and **Motion** recording.
   - Continuous recording - the default recording mode
   - Input recording - activated upon an input contact event
   - Motion recording - activated upon a motion event
2. Choose an input channel to configure the settings for an individual video and audio input.

Note:

For 16-channel units, use the **ch09 to ch16** or **ch01 to ch08** button to display the required cameras.

6.1.1 Camera

Figure 6.2   Camera - Camera

Use this menu to enable the video and audio inputs.

Enable

This setting enables or disables the video and corresponding audio inputs.

Name

Enter a name for the selected input. The name can be up to 16 characters long.

Covert

This setting enables or disables the hiding video from unauthorized users. When enabled Advanced, Normal and unauthenticated Users will be shown only a blank screen, equivalent to the camera being disabled. Administrator level users are able to view live, playback, and archive covert video.

Audio

Enable Audio input when an audio source is connected for the specified channel.

Note:
Disabling channels allows you to increase the frame rate or resolution on the remaining enabled channels.

Channels Enabled	CIF	2CIF	4CIF
16	25/30	12.5/15	6.25/7.5
15	25/30	12.5/15	6.25/7.5
14	25/30	12.5/15	6.25/7.5
13	25/30	12.5/15	6.25/7.5
12	25/30	12.5/15	6.25/7.5
11	25/30	12.5/15	6.25/7.5
10	25/30	12.5/15	6.25/7.5
9	25/30	12.5/15	6.25/7.5
8	25/30	25/30	12.5/15
7	25/30	25/30	12.5/15
6	25/30	25/30	12.5/15
5	25/30	25/30	12.5/15
4	25/30	25/30	25/30
3	25/30	25/30	25/30
2	25/30	25/30	25/30
1	25/30	25/30	25/30

Table 6.2   Maximum Frame Rates (PAL/NTSC IPS) by Resolutions for enabled Channels

6.1.2   Video adjustment
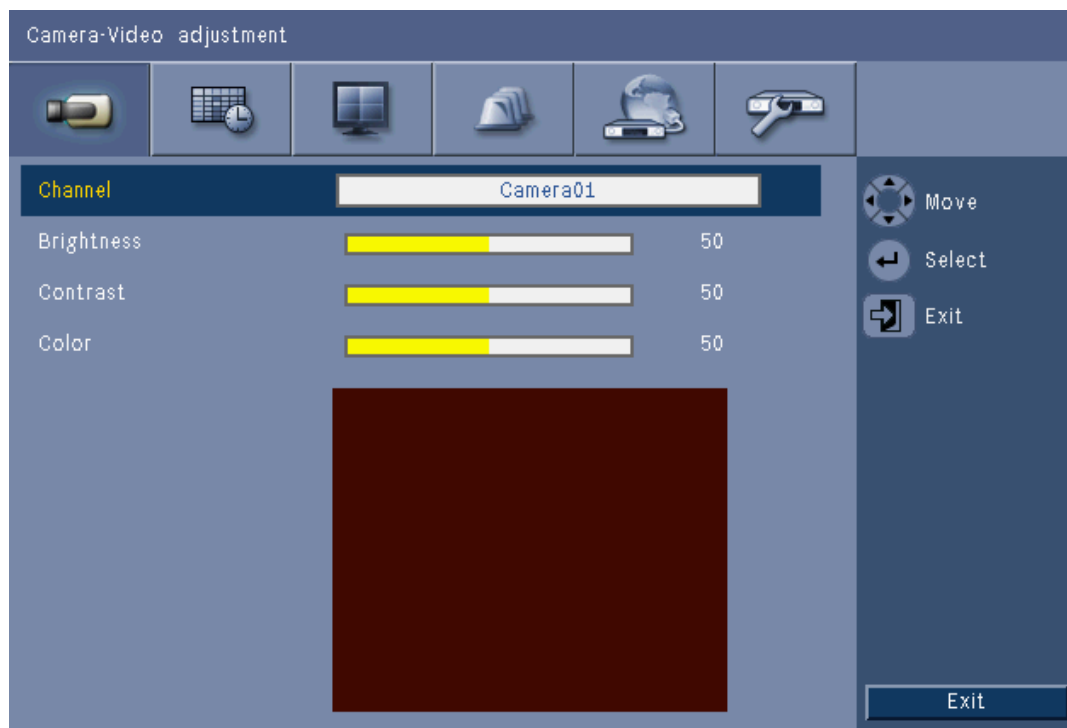
Figure 6.3   Camera - Video adjustment

Channel
Select the camera channel for adjustment. The preview will display the channel indicated.

6.1.3 PTZ
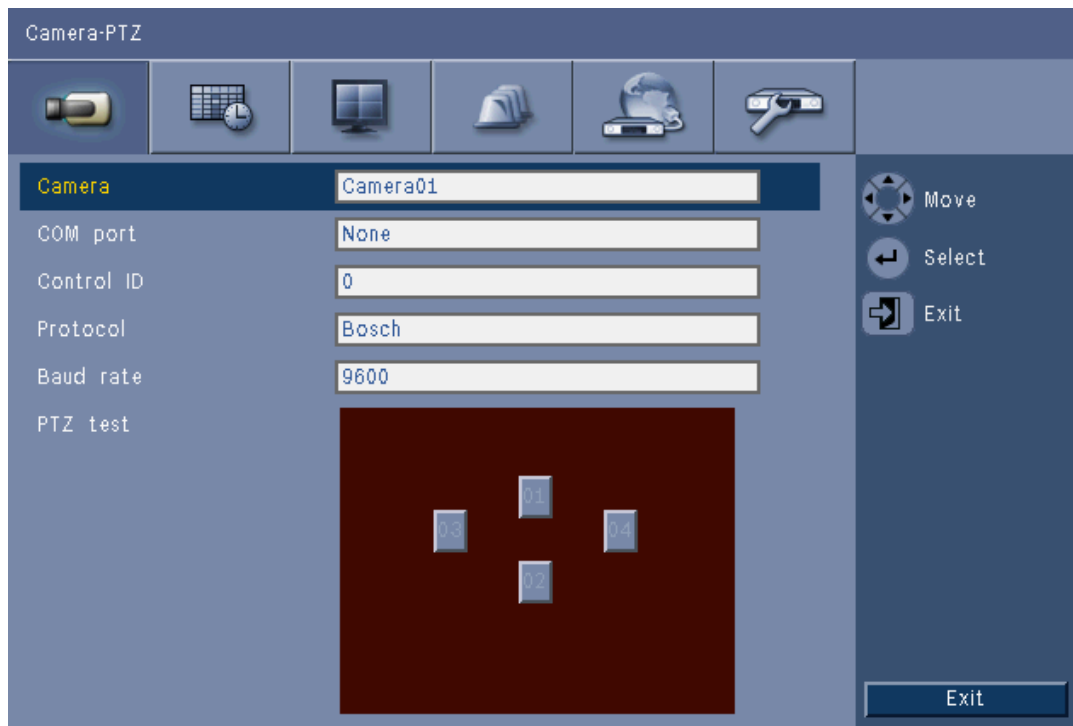
Figure 6.4 Camera - PTZ

Select a **COM port**, **Control ID**, and **Protocol** for PTZ when a controllable camera is connected.
– Pan and Tilt can be tested within the menu.
– By default, PTZ is disabled (Com port is set to **None**) for all inputs.

6.1.4   Continuous Recording
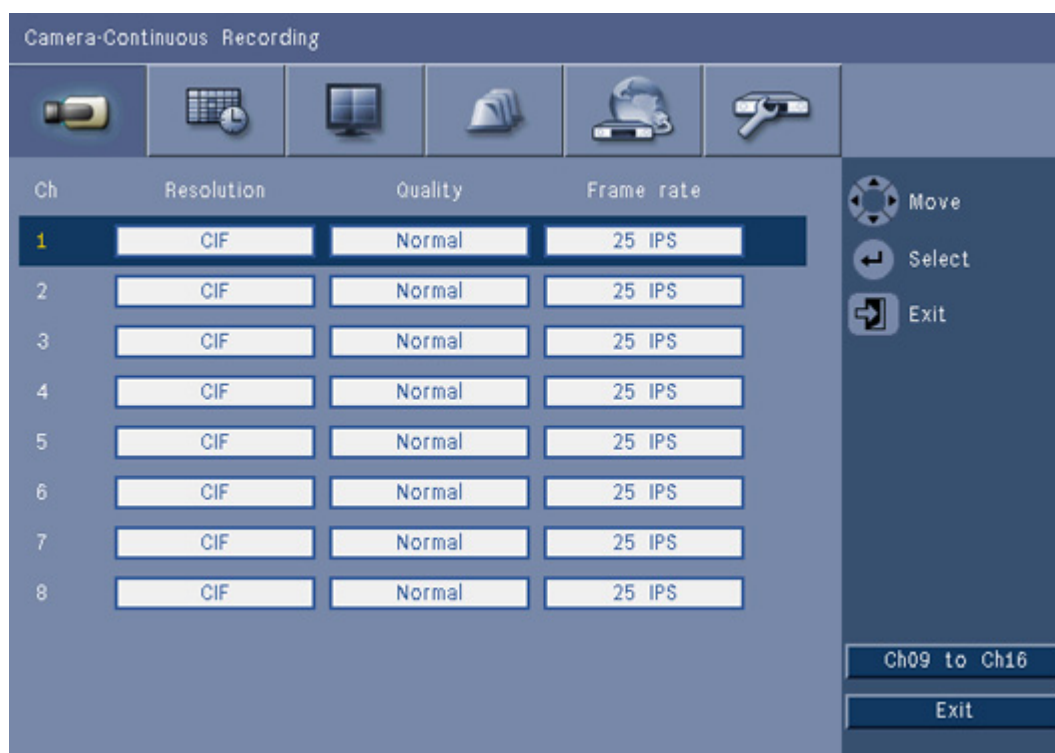
Figure 6.5   Camera - Continuous Recording

Continuous recording mode:

– **Resolution** - set the video resolution to 4CIF (704x576/480 PAL/NTSC), 2CIF (704x288/240 PAL/NTSC), or CIF (352x288/240 PAL/NTSC).
– **Quality** - set the video quality setting to Best, High, Normal, Low, or Lowest.
– **Frame rate** - set the video frame rate to 25/30, 12.5/15, 6.25/7.5, 5/6, 2.5/3, or 1/1 IPS (Images Per Second in PAL/NTSC).

Note:

For 16-channel units, use the **ch09 to ch16** or **ch01 to ch08** button to display the required cameras.

6.1.5   Input Recording

Figure 6.6   Camera - Input Recording

Use the same procedure as in Continuous Recording.

Pre-event

Pre-event recording can be switched off or to a displayed pre-event recording time by input and motion recording. The pre-event recording time is dependent on video complexity, resolution, quality, and frame rate settings.

Post-event

Post-event recording duration can be set between 10 seconds and 10 minutes, or set to **Follow** the alarm state.

6.1.6   Motion Recording

Figure 6.7   Camera - Motion Recording

Use the same procedure as in Input Recording.

6.1.7   Network Live Streaming
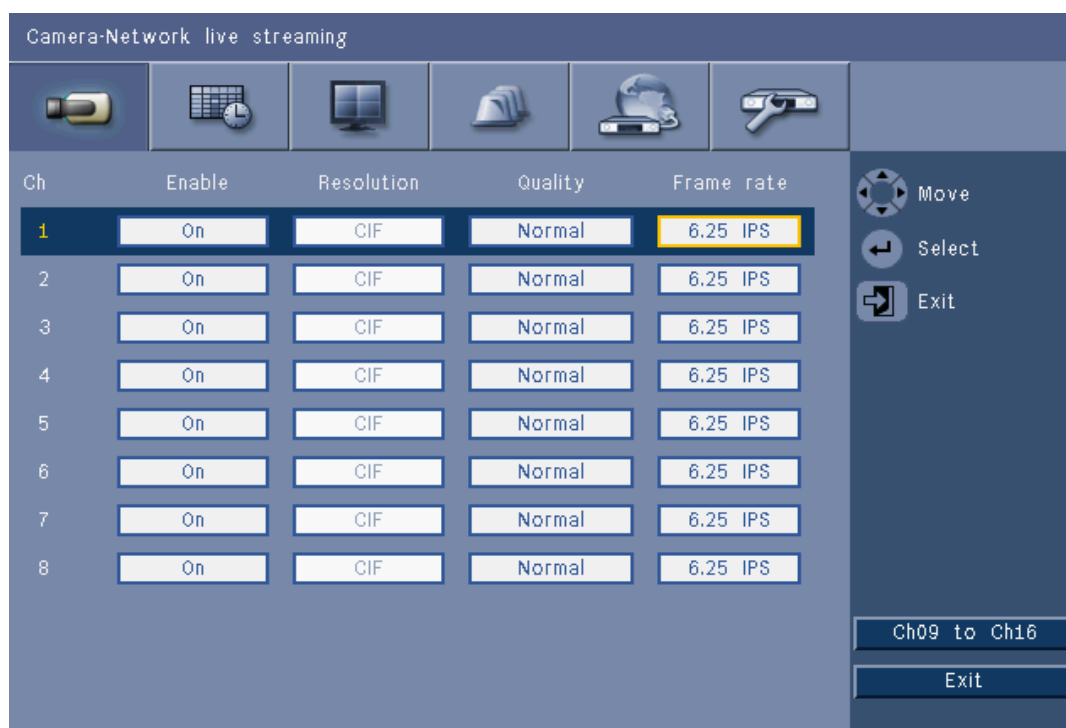
Figure 6.8   Camera - Network Live Streaming

Use the same procedure as Continuous Recording to set the values for cameras that will be streamed over the network.

–   Network streams are not recorded.

- Network streaming performance is limited by the total bandwidth between the unit and the PC running the Web-based control application.
- Network stream resolution setting is CIF only and the frame rate is equal or less than the recording streams.

Note:

Disabling channels allows you to increase the frame rate on the remaining enabled channels.

6.1.8   Video format
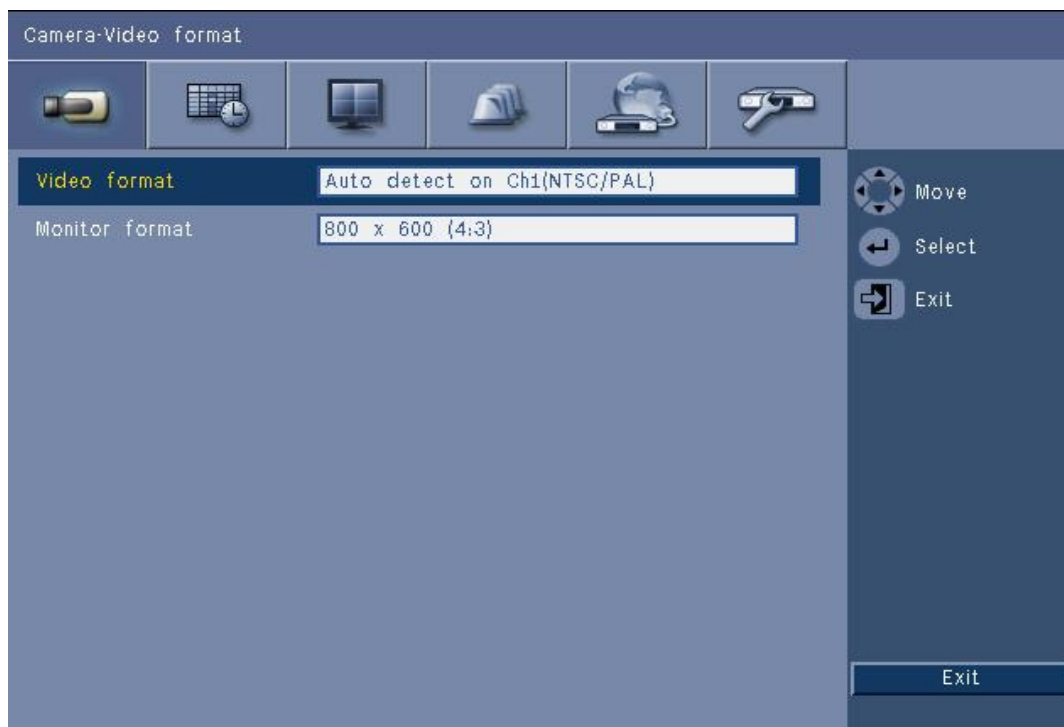
Figure 6.9 Camera - Video format

Select the **Video format**, NTSC, PAL, or Auto detect, that the unit will operate with. When set to Auto detect, the format during startup of the video on channel 1 will be used to set the DVR to either PAL or NTSC.

Select the **Monitor format** to match the best VGA resolution on the used VGA monitor (monitor A).

6.2   Schedule

Setting the dynamic characteristics

The settings in the Schedule menu provide the opportunity to tap the powerful functionality of the unit. By spending some time in planning and setting up the schedules, efficient use of resources is achieved while effectively covering most types of working situations.

Recording is scheduled in a weekly calendar, changing the behavior at a particular date or time (for example, weekends or nights).

Eight different record modes can be stored. Each record mode changes the quality and frame rate settings according to the settings in **Continuous**, **Input**, and **Motion** Recording.
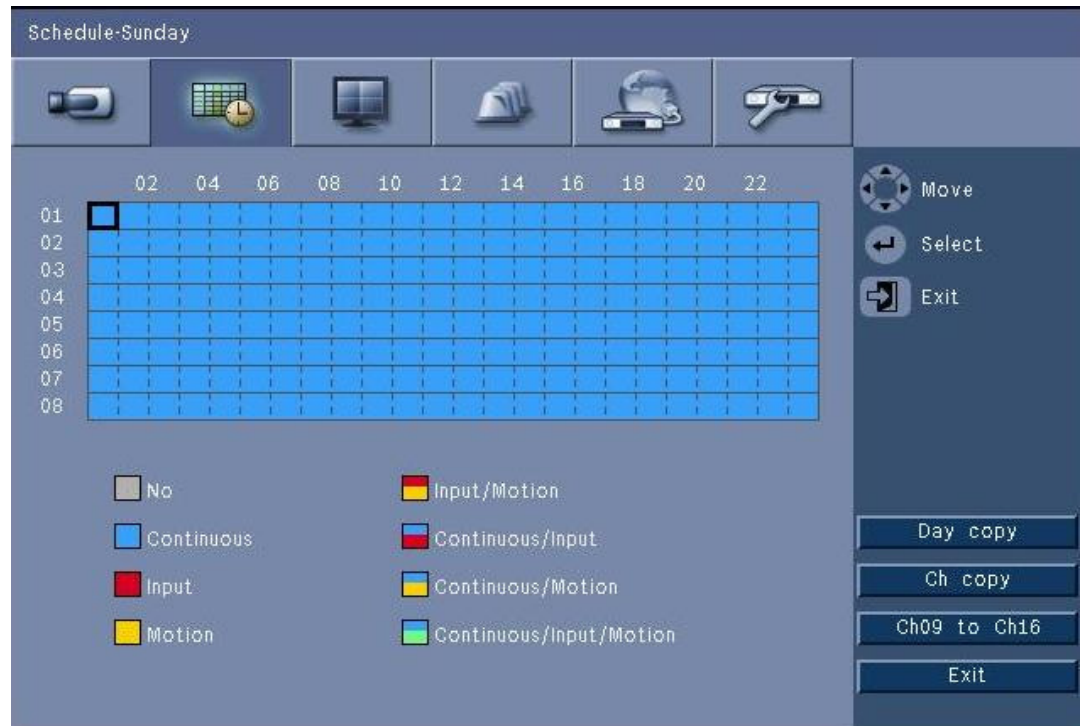
Figure 6.10 Schedule - Schedule

The eight record modes are represented by four colors and four striped bands in a graphical representation of the weekly schedule. The schedule can be changed by selecting a time to select a recording mode.

6.2.1   Schedule

Configuration:

–   The use of a schedule is defined in a calendar that covers one week. This calendar is then repeated for subsequent weeks.
–   A mode is specified at intervals of 1 hour for each day of the week.
–   Program exception days to change profiles for special days and holidays.

Edit:

1.   Select the first time to change mode and press the enter ⏎ key to cycle the modes.
     –   Changing the mode sets the mode for all later time to the same mode.

2.   Move to the next chronological mode change and press the enter ⏎ key to cycle to the next mode.
     –   Use **Day copy** to copy the settings of the schedule to another day.
     –   Use **Ch copy** to copy the settings of the schedule to another channel.

3.   When finished, select **Exit** to save the updated schedule.

Exception days

– Up to 32 exceptions can be set that override the schedule.
– To add an exception, select **Add**. Choose the date from the Calendar.
– To edit an exception, select **List** and then select the value to edit.
– To remove an exception, select **List** and click the **Delete** button.

6.3 Display

6.3.1 Language

– Select a **Language** from the list.

6.3.2 Monitor A

Figure 6.11 Display - Monitor A

Note:

Use the **ch01 to ch04**, **ch05 to ch08**, **ch09 to ch12** or **ch13 to ch16** button to display the required cameras.

1. Select which items are displayed on Monitor A when the OSD is active.
2. Set the Sequence dwell time for each channel.
– The Sequence dwell time is used during Sequence or if multiple active events trigger the monitor.

6.3.3 Monitor B

Use the same procedure as Monitor A (playback items are not available).

6.4   Event

Use the **Event** menu to specify the desired behavior for an Input, detected Motion, or System failures; also define how alarms are acknowledged.

6.4.1   Input

Figure 6.12   Event - Input

Inputs are always active on the unit.

Note:

For 16-channel units, use the **ch09 to ch16** or **ch01 to ch08** button to display the required input.

Input Type

The Event behavior can be configured independently for each channel.

–   **N.O.** - Normally Open causes an alarm to trigger only when the circuit closes
–   **N.C.** - Normally Closed causes an alarm to trigger only when the circuit is opened

Camera

Set the camera between 1 and 8/16, which is set to an alarm based on the input.

Relay output

Select the relay to trigger in response to the input.

PTZ

–   For the camera associated with the input, a **PTZ preset** can be sent to the camera to move to a specified pre-position.
–   Enter a pre-position number from 1-255 for each of the PTZ cameras that should be moved.

6.4.2   Motion

The motion detection feature can be configured by selecting the camera channel for each individual video input.
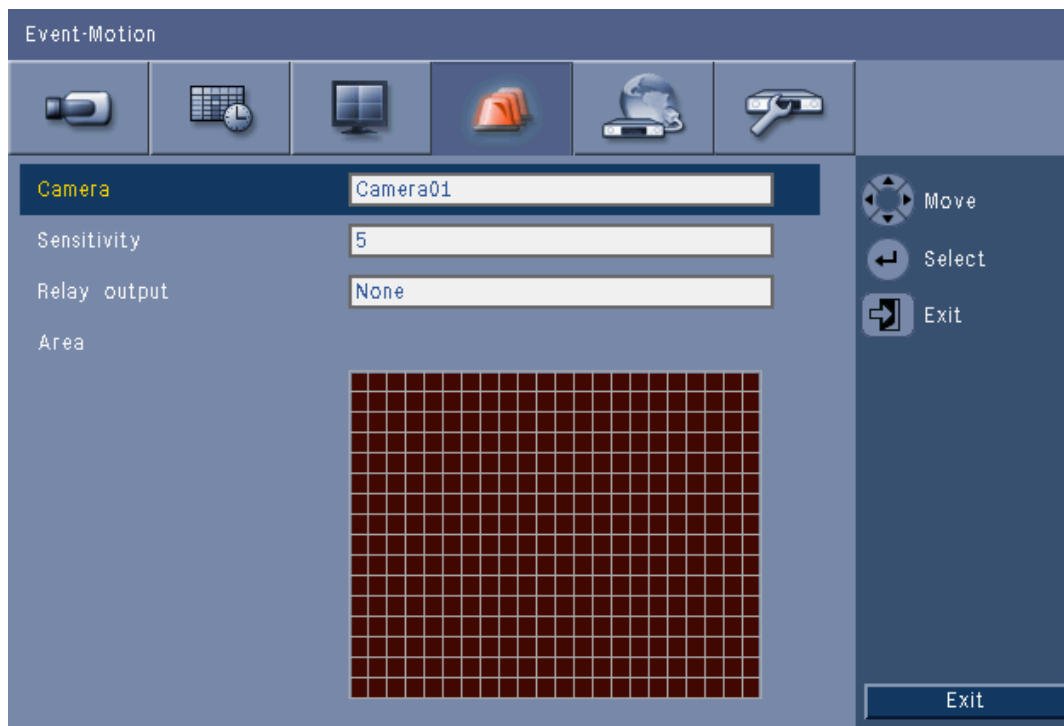
Figure 6.13 Event - Motion

1. Adjust the **Sensitivity** to set the threshold at which Motion is detected.
2. Select the **Relay Output** to trigger in the event of Motion.
3. To define the motion sensitive area in the **Area** preview cameo window:
    –   Draw in the preview cameo and press **Enter** to select a motion area.
    –   Use the arrow keys to move around the grid, pressing the enter key to toggle each grid block from active to inactive.
    –   Click **Set All** to set the selected area to its default value.
4. Click **Clear All** to delete the selected area.

6.5   Network

6.5.1   TCP/IP

Figure 6.14   Network - TCP/IP

1.   Enable **DHCP** to have the IP address, subnet mask, and default gateway assigned
       automatically by the network server.
       –   If DHCP is disabled, fill in the **IP address**, the **Subnet mask**, the default **Gateway**,
              and the **Primary DNS** server address. If required, change the default **HTTP port no.**
              (80) to a new value.
2.   Restrict the network **Bandwidth limit** by entering a Mbps value between 512 Kbps and
       100 Mbps.
3.   Enable the RTSP server to stream live video (for example, to a smart phone). If RTSP is
       enabled (on), enter a TCP/IP port number (default port 554).

6.5.2   Streaming to mobile devices

The Real Time Streaming Protocol (RTSP) feature allows live video streaming over the
network.

Attention:

If you enable this feature (RTSP server to On) and the firewall on a ADSL router is opened,
anybody can view the cameras. There is no log-on user ID or password to protect a camera
live image.

6.5.3   Connecting using a smart mobile phone

Your smart phone should support RTSP network protocol and includes a RTSP capable player
application that can display H.264 video streams. The RTSP transports the remote (network)
stream or the local recording stream if the remote stream is disabled.Performance depends
on the decoding performance of mobile device. Streaming may fail if the bandwidth of the
internet connection is too low.You can connect to the DVR 600 to view one live-view channel
as follows:

1.   Enable RTSP On in Network-TCP/IP menu for DVR 600.

2. Set the DVR IP address in DHCP or enable static IP for DVR 600.
3. Input the following on the smart phone.
   – rtsp:// xxx.xxx.xxx.xxx/cgi-bin/rtspStream/1
4. If the RTSP port is not the default port (554), use the following on the smart phone.
   – rtsp://xxx.xxx.xxx.xxx:firewall open port/cgi-bin/rtspStream/1

Note:

xxx.xxx.xxx.xxx is the DVR IP address; 1 refers to channel 1, 2 refers to channel 2, etc.

6.5.4	**DDNS**

Figure 6.15   Network - DDNS

Select a DDNS provider from the list of possible providers and complete the details with the configuration information assigned by the provider.

6.5.5	**Notification**

Figure 6.16   Network - Notification

Select the events that will trigger the unit to send an e-mail.

6.5.6   Mail

Figure 6.17   Network - Mail

1. Enable **Send Mail** to have an e-mail sent out from the system according to the settings in the Notification Menu.
2. Use **More E-mail Settings** to set the From, Subject, and up to three recipients.
    –   The E-mail Test button will immediately generate an e-mail to help verify that the unit settings are correct.

SMTP Server

Set to the mail server that processes outgoing e-mail for your network. This can be either an IP address or a Fully Qualified Domain Name (ex. `10.0.0.1` or `smtp.example.com`)

SMTP Port Number

This is the port the mail server receives e-mail on. The internet standard for e-mail is port 25, but some servers use different ports to protect against being used to transmit bulk, unsolicited e-mail.

SSL

Some mail servers require encryption to transmit e-mail. If required, this option allows SLL encryption to be used to send e-mail. If not required, do not enable this feature.

User name and Password

If authentication is required, regardless of encryption, enter the User name and Password provided by your administrator in each field respectively.

More E-mail Settings - From

This is the e-mail address that will appear as the sender of all e-mail originating from the unit.

More E-mail Settings - Subject

This is the subject that will appear in all e-mail sent by the unit.

More E-mail Settings - To

Enter up to three e-mail addresses that outgoing e-mail should be sent to.

6.6   System

6.6.1   Date/Time

Figure 6.18   System -Date/Time

1.   Enter the actual **Date**.
2.   Fill in the actual **Time**.
3.   Select a **Date format** which shows either the month (MM), the day (DD), or the year (YYYY) first.
4.   Select either a 12-hour or a 24-hour clock **Time format**.
5.   Select a **Time zone** from the list (daylight saving time must be set manually).
6.   Set **Daylight Saving** to On to enable it. Fill in the day, month, and time of both **Start** and **End time**, and the **Offset** if it differs from the information associated with your time zone.

6.6.2   NTP

The **Time server** function synchronizes the time of the unit with the time of a network time server or another NTP-capable device. Choose either a Public Server to use a calibrated NTP server on the Internet, or select a Private Server to set your own time source. Fill in the IP address of the private network time server. Ensure that firewalls do not block NTP traffic via UDP port 123.

1.   Press **NTP Test** to start time synchronization.
2.   Set the **Synchronization Interval** to keep the unit closly matched with the time source.
     –   Intervals can be as frequent as hourly, or as long as monthly.

6.6.3   Beeper

Select when the unit will Beep:
–   On every **Button** press
–   When the unit is triggered by an **Input**, **Motion**, **System failure**, or **Video loss**.

6.6.4 Users
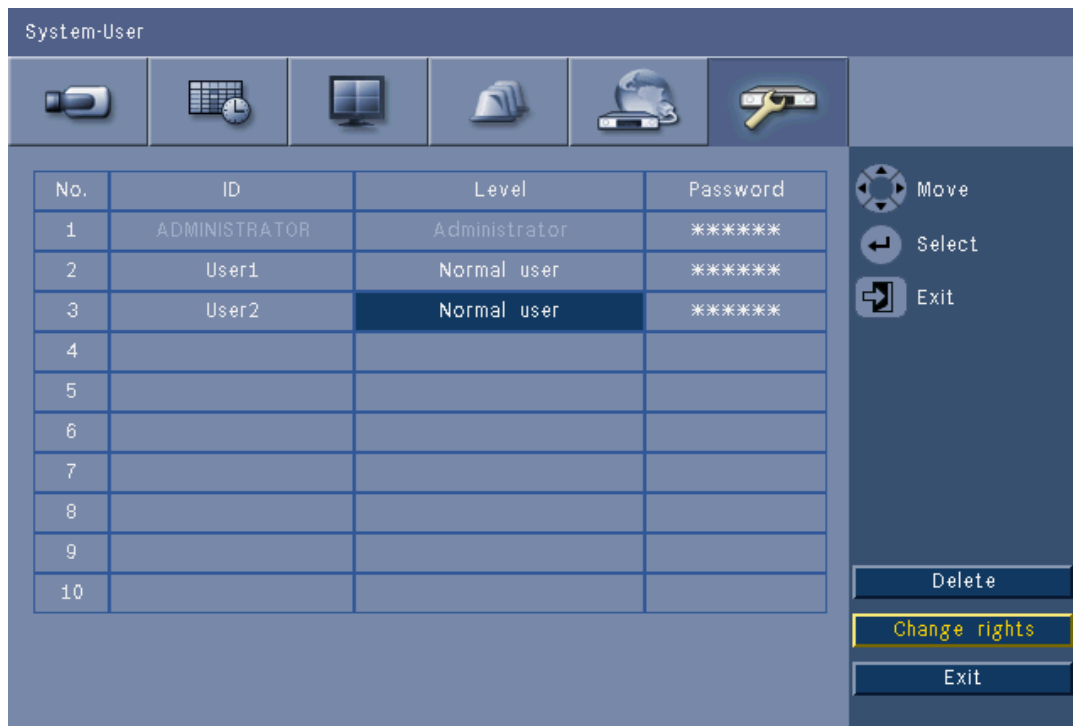
Figure 6.19 System -User

General

The system contains a permanent Admin account with Administrator permissions. This user is logged in by default, e.g. after powering up the unit.

Admin

Enter a **Password** that can be up to 12 characters. The default Administrator password is `000000` (six zeros).

User 1, 2... 9

Up to nine users can be defined.

3. Enter a **User name** up to 16 characters.
4. Enter a **Password** up to 12 characters.
5. Control access to the system by selecting a user **Level**.
   - User **Level** can be set to Administrator, Advanced or Normal user.

Figure 6.20 System - Change user rights for normal user

6.6.5   Configuration
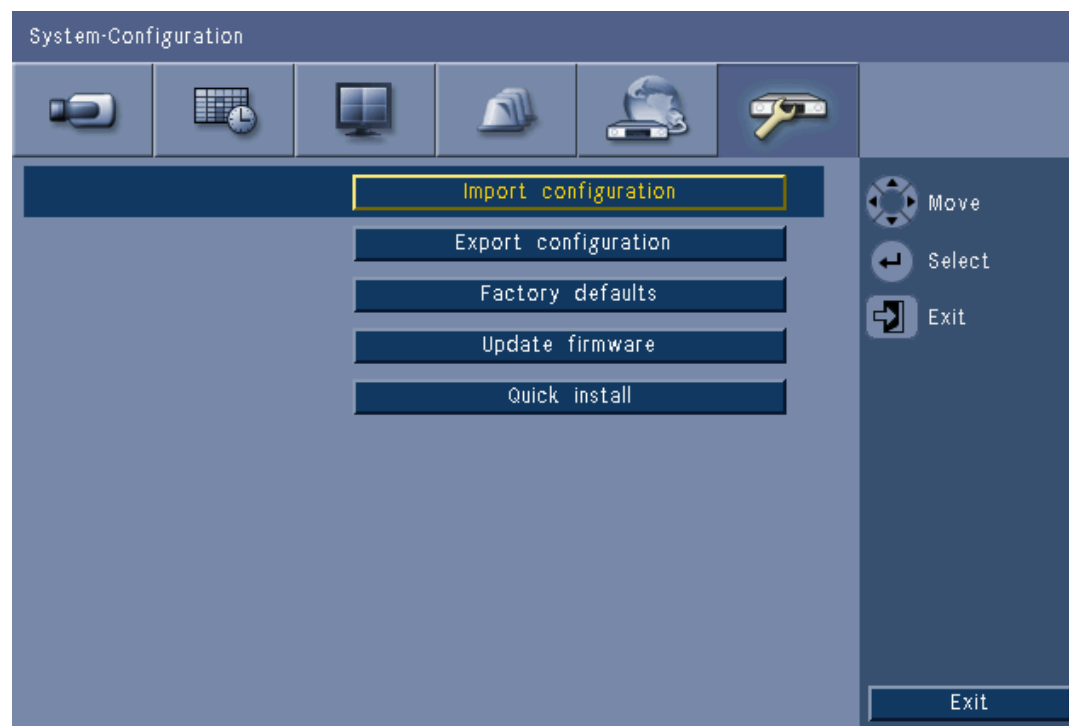
Figure 6.21   System - Configuration

– **Import configuration** will load previously saved system settings from a USB memory device.
– **Export configuration** saves a copy of the system settings to a USB memory device.
– Select **Factory defaults** to reset the settings in the menu system to their default values.
– **Update firmware** checks a USB memory device when connected for a new version of the unit software. Once started, the unit must not be powered off until the update is completed.
– **Quick install** opens the Quick install menu that was first presented when the unit was powered on when received from the factory.

6.6.6 Hard Disk

Figure 6.22 System - Hard disk

The Hard Disk menu gives access to settings that affect video retention as well as a means to format the hard disk.

– **Overwrite** allows the unit to continuously record, overwriting the oldest unprotected video on the hard disk with newer video.
– The **Disk full warning** sets the threshold as which point the unit triggers an alarm indicating the drive is nearly full. This setting has no effect when Overwrite is in use.
– By default, the disk has only one partition where Continous and Event recordings are stored. This is the case when **Event Partition** is set to 0%.
– The disk can be segmented into two partitions by setting the **Event Partition** to a value greater than 0%. The first partition then stores video from Continuous Recording; the second partition the events recording. The **Event Partition** specifies the percentage of the hard disk dedicated to preserving video from Inputs and Motion.
– **Auto delete** sets a time window outside of which all video will be deleted from the unit. This function is primarily reserved to meet legal requirement in some jurisdictions.
– **Format** erases all data from the selected partition.

6.6.7   **System**
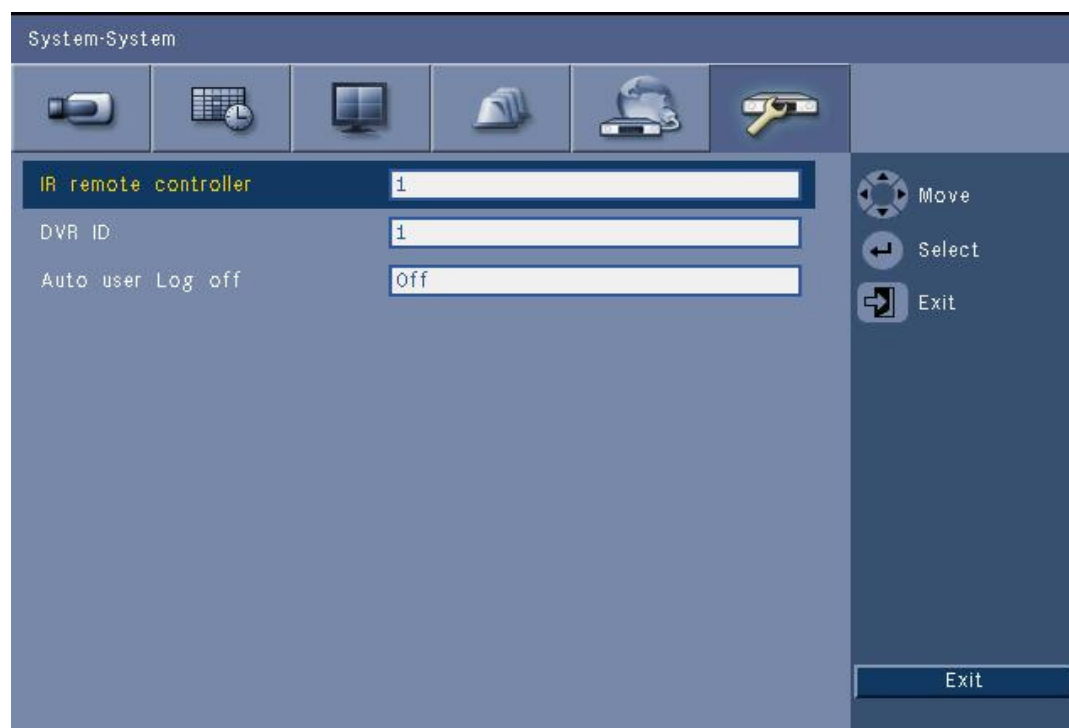
Figure 6.23   System - System

The System menu contains miscellaneous settings for the unit.

– **IR remote control** allows for up to nine units to receive commands from a single remote control without interfering with one another. Once the number has been selected, set the corresponding ID on the remote control to continue to operate the unit.

– Sets the **DVR ID** so that the intuikey keyboard can identify the DVR. This ID is embedded in meta data included in exported video.

– **Auto user logout** sets the period of inactivity after which the user will be automatically logged out from the unit.

7   Web Client Software

The Web Client Software gives full remote control of the DVR 600 Series using a PC. Up to four remote users can access and control the unit. Remote live viewing, search, playback, and system configuration are provided. Remote control functions include pan, tilt, and zoom control of cameras, and video archiving. An on-line status overview of the connected unit is also provided.

To access a unit, a user must log on using the same User ID and Password used for local access. The Web Client will follow the permissions of the user account, restricting the functions available to each remote user; for example, the ability to archive video. See *Section 5 Operating instructions, page 29* for more details on User Levels.

7.1   Getting started

To use the Web Client, the unit and the PC must be able to connect via a TCP/IP network connection. Follow the instructions in *Section 6.5 Network, page 63* to ensure the unit can be reached on the Network.

7.1.1   System requirements

Operating platform: A PC running Windows XP, Windows Vista, or Windows 7.

For the web support, the **recommended** PC requirements are:

– Processor: Intel Core Duo, 2.0 GHz or comparable
– RAM memory: 2048 MB
– Free hard disk space: 10 MB
– Graphics card: NVIDIA GeForce 8600 or higher
– Network interface: 10/100-BaseT
– Web Browser: Internet Explorer 7 or later

7.1.2   Connecting to the DVR 600 Series the first time

The video decoder and playback controller is automatically installed on the PC the first time the user connects the PC to the DVR:

1. Open Internet Explorer.
2. In the address bar, type the address of the unit.
   – This can be either the IP address or a DDNS address, if enabled on the unit.
3. Internet Explorer will prompt to install the OCX software that is used to show live and playback video.
4. Once installed, the screen will refresh and prompt for a User ID and Password.
   – Once installed on a PC, the Web Client will not need to install the OCX again unless a new version is released with a new unit firmware.

7.2   How to log on

When establishing a new connection to the unit, the **Log on** window appears.
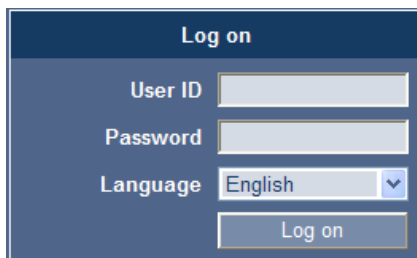
Figure 7.1   Web Client - Log on window via a network

1.   Type the User ID and Password.
     –   The User ID and Password are the same as those used to access the unit locally. The
          default User ID is ADMINISTRATOR, the default password is `000000` (six zeros).
2.   Click **Log on**.

Maximum number of users

If the maximum number of users for the Web Client is exceeded, a message window is
displayed.

7.2.1   Menu structure differences

The Web Client allows access to and use of unit menu items. These menu items are explained
in *Section 6 Configuration menu, page 50*. Although the structure is the same, menus and
settings behave differently because of the Web Browser.

7.3   Introducing the browser window

The browser window is built up of three main areas:

–   A mode bar across the top, containing buttons for changing between live and playback, export, system settings, and buttons to toggle video between full screen, quad, multi-screen or sequence.

–   A vertical side bar that changes based on the context of the Mode Bar.

–   The work space, showing video in the Live or Playback context, the export menu in the Export context, and system menus in the Configuration context.
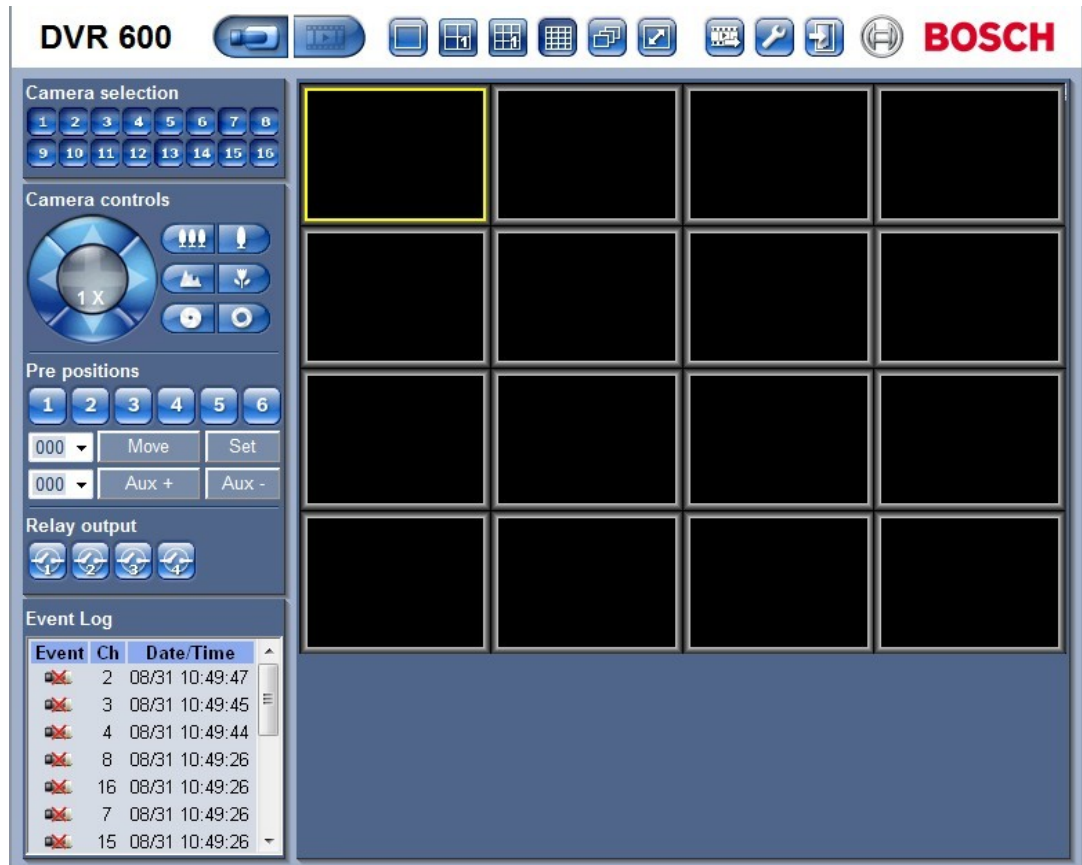
Figure 7.2   Web Client - Live

7.3.1   Live mode

The live video window is shown by clicking the Live [ ] button. On this screen, the user can:

–   view live video

–   select different multiscreen displays

–   assign cameras to cameos

–   control ptz cameras

–   monitor unit status and alarm conditions

7.3.2   **Camera views**

To switch the display mode, click one of the camera view buttons to change the cameo display configuration:

– Single ⬜ view, Quad ⊞ view, Multi-screen ▦ ▦ and Sequence 🗗 display modes are available.

– Full Screen ↗ expands the current display mode to fill the entire screen. Press ESC to exit Full Screen.

7.3.3   **Playback mode**

Click the Playback button to show the playback window. On this screen, the user can:
– jump to a specific date and time to view playback video;
– view a graphical timeline of the day for recording, input, or motion events.
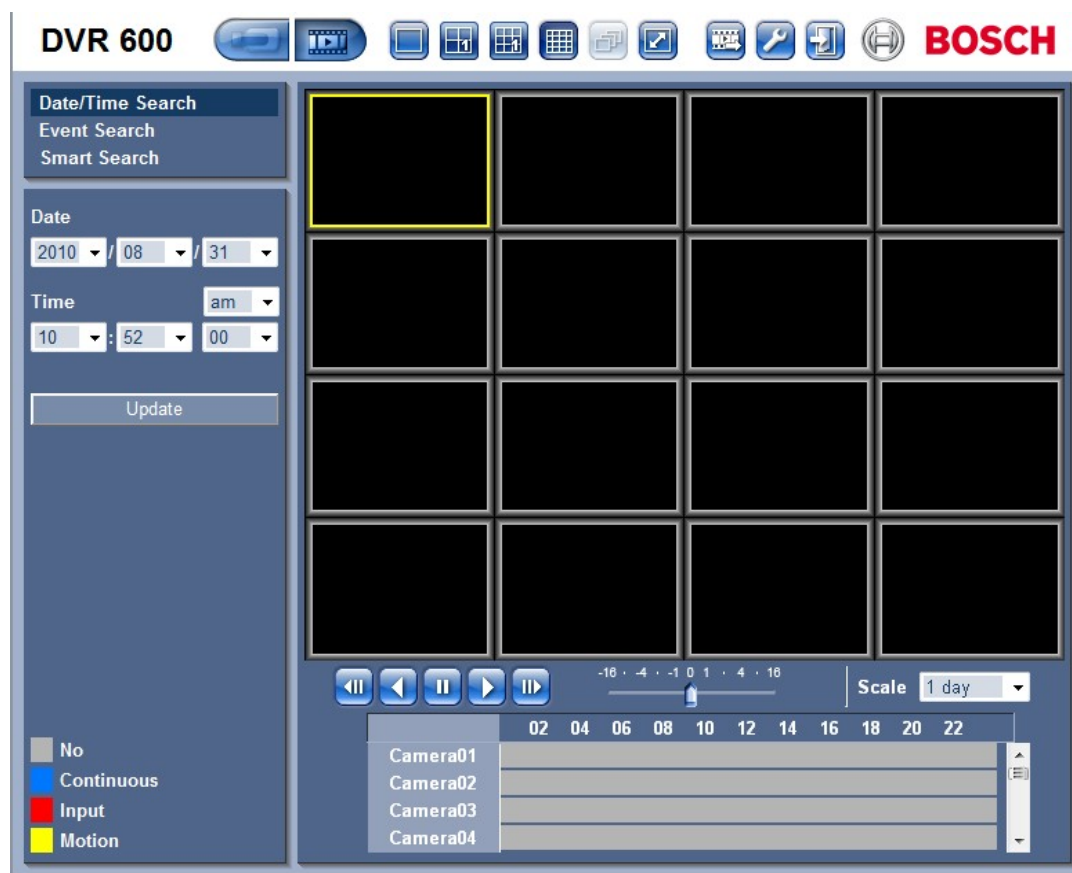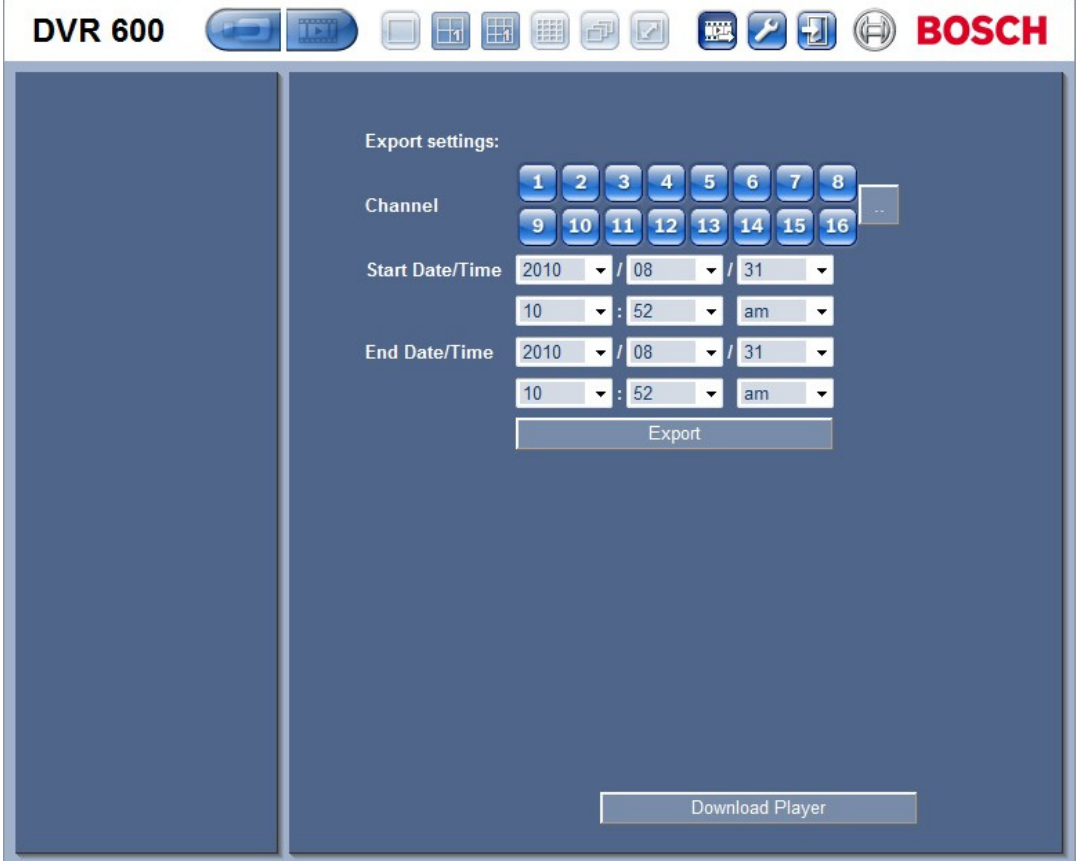
Figure 7.3 Web Client - Playback

7.3.4   Export mode

Click the Export [icon] button to show the export window. On this screen, the user can:
–   export a file remotely to the PC;
–   choose the channel, audio, start and end date/times to export.

Figure 7.4   Web Client - Export

7.3.5   Configuration mode

Click the Configuration 🔧 button to enter the Configuration menu. This allows set up of all the configuration settings for the unit.

Figure 7.5   Web Client - Configuration

8   Archive Player

8.1   Getting started

The DVR 600 Series Divar Archive Player allows viewing archived video recordings on a PC that have been archived from the DVR or Web Client. It also provides the opportunity to check the authenticity of the archived video.

8.1.1   System requirements

Operating platform: A PC running Windows XP, Windows Vista, or Windows 7.

For the Archive Player, the **recommended** PC requirements are:

–   Processor: Intel Core Duo, 2.0 GHz or comparable
–   RAM memory: 2048 MB
–   Graphics card: NVIDIA GeForce 8600 or higher

8.1.2   Installation

The Archive Player does not require installation to function. When a video is archived, the Archive Player is automatically copied to the same directory as the archive file. Separate installation of the Archive Player is not necessary. When copying the archive file to other media afterwards, make sure to also copy the `ArchivePlayer400 600.exe` file as well.

8.1.3   Starting the Program

Double-click the `ArchivePlayer400 600.exe` file to start the program.

To open a video archive

When starting the program, a list of available archive files are displayed. Archive files are identified by the `.600` extension for the DVR 600 Series.
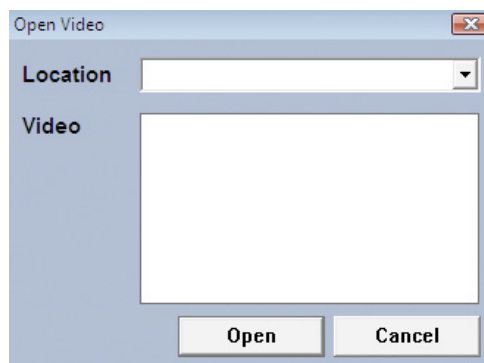
Figure 8.1   Archive Player - Openning a video archive on startup

1.   Select an archive file to view.
      –   If the file is not listed, scroll down the list or choose the right location.
2.   Click **Open**.

To exit the program, click **Cancel** or the close button.

8.2   Introducing the main window

The main window appears upon selection of an archive file. The window is built up of three main areas:
–   A horizontal top bar containing buttons for screen control.
–   A vertical side bar containing buttons for camera selection and playback control.
–   A video area displaying the video content and a playback slider bar.
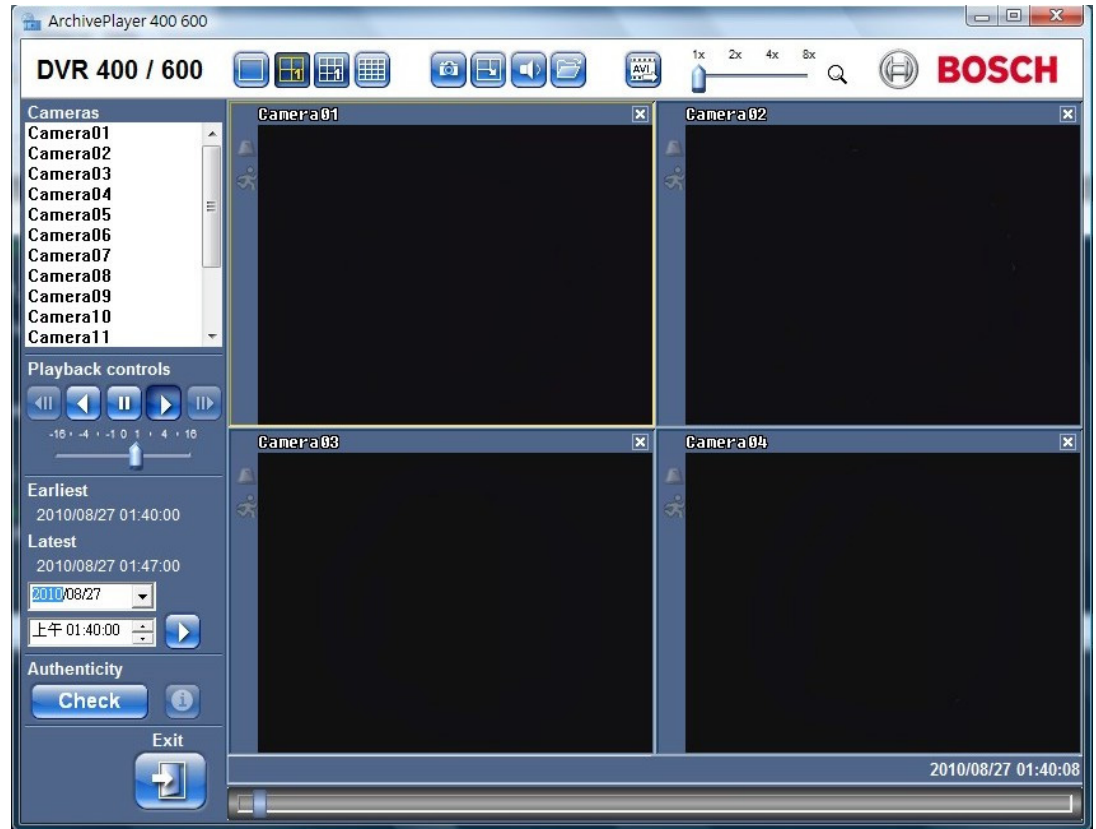
Figure 8.2   Archive Player - main window

8.2.1   Open button

To open an archive, click the Open ![open icon] button. The Open Video window appears. Select a different archive file and click Open.

8.3   Camera Views

To switch the display mode:

![display mode buttons]

1.   Click one of the camera view buttons to change the cameo display configuration.

–   Single ![single icon]

–   Quad ![quad icon]

–   Multi-screen ![multi-screen icons]

2.   To change the zoom factor, drag the zoom slider.
–   When zoom is selected, left click on the cameo to zoom out, right click to zoom in. Click, hold, and drag inside the cameo to move the image around.

8.4   Viewing Images

8.4.1   Assigning Cameos

A cameo is a single camera picture in a multiscreen display.

To assign a camera to a cameo:

1.   Click on a Cameo;
      –   the selected cameo has a yellow border.
2.   Double-click a camera from the list.

To undo a cameo assignment:

      –   Click the close button on the cameo.

If audio is present on the channel when a cameo is selected, it will be played.

8.5   Using the playback controls

Figure 8.3   Archive Player - playback controls

Play

Click the **Play** [▶] button to play recorded video forward in the playback window:

      –   The playback speed depends on the setting of the speed ▭▭▭▭ slider.
      –   Some frames may be dropped depending on the PC resources, selected playback
           speed, or insufficient network bandwidth.

Play Reverse

Click the **Play reverse** [◀] button to play recorded video in reverse in the playback window:

      –   The playback speed depends on the setting of the speed ▭▭▭▭ slider.
      –   Some frames will be dropped in Play Reverse as a result of the compression
           process. Additional frames may be dropped as a result of the selected playback
           speed or insufficient network bandwidth.

Playback Speed

The slider controls the speed of the continuous forward and reverse play.

Still

Click the **Still** [II] button to pause playback;

      –   The last image is shown as a still in the playback window.

Step forward

The step function is only enabled in the still mode.

1.   Click the **Step forward** [II▶] button to move the image forward one frame.
2.   Hold it down to continue stepping at a maximum rate of 3 images per second.

Step backward

The step function is only enabled in the still mode.

1.   Click **Step backward** [◀II] to move the image back one frame.
2.   Hold it down to continue stepping at a maximum rate of 3 images per second.

8.5.1 Capturing a still image

Capture still images from the full screen display of a camera and save them to the PC hard disk in a bitmap format.

To save an image from the active cameo to the PC hard disk:

1. Click the **Capture** button;
    –   The Snapshot pop-up window appears.
2. To change the default location, browse to the location in the PC file system where the image file is to be stored.
3. Type a new name for the file to change the file name.
4. Click **Save**.

Authentication information is shown under the image.

8.6 Find image
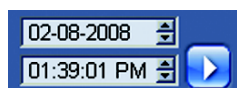
Figure 8.4   Archive Player - date and time fields and Go button

1. Fill in a date and time.

2. Click the **Go** button;
    –   Playback starts at the specified date and time.

8.7 Video slider bar

The video slider bar shows the relative playback time within the video interval and allows its adjustment.

8.8 Checking authenticity

1. Click the **Check** button to verify the authenticity of the archive:
    –   A progress bar will be displayed if the check takes some time.
    –   An information window indicates the authenticity of the archive.

Verifying individual frames

For authenticity verification of individual frames, pause playback and then click the

information button. This opens the Authenticity information window. This window shows details of the video frame shown in the cameo when it was clicked.

8.9 Exit button

Click the **Exit** button to stop using the Archive Player.

9 Menu default values

The following tables list the items of the menu system of the unit. The **Default value** column shows the values that are restored when the factory defaults item of the **System** settings menu is selected. An **N** in the **Reset** column means that this value is not reset when the factory defaults are recalled.

Table 9.1 Quick Install menu default values

Navigation		Setting	Default value	Reset
International		Language	English	Y
		Time zone	GMT+0	N
		Time format	12-hour	N
		Time	0:00	N
		Date format	YYYY-MM-DD	N
		Date	2010-01-01	N
Normal Recording	Cameras 1-8/16	Resolution	CIF	Y
		Video quality	Normal	Y
		Frame rate	30 (NTSC)/25 (PAL)	Y
		Covert	Off	Y
		Audio	None	Y
Network	Setup	DVR ID	01	Y
		DHCP	Enabled	N
		IP address	0.0.0.0	N
		Subnet mask	0.0.0.0	N
		Gateway	0.0.0.0	N

Table 9.2   Configuration menu default values

Navigation			Setting	Default value	Reset
Camera	Camera	Cameras 1 ~ 8/16	Enable	On	Y
			Name	Camera 01~08/16	Y
			Covert	Off	Y
			Audio	None	Y
	Video Adjustment	Cameras 1 ~ 8/16	Brightness	50	Y
			Contrast	50	Y
			Color	50	Y
	PTZ	Cameras 1 ~ 8/16	COM Port	None	Y
			Control ID	00	Y
			Protocol	Bosch	Y
			Baud Rate	9600	Y
	Continuous Recording	Cameras 1 ~ 8/16	Resolution	CIF	Y
			Quality	Normal	Y
			Frame rate	30 (NTSC) / 25 (PAL)	Y
	Input Recording	Cameras 1 ~ 8/16	Resolution	CIF	Y
			Quality	Normal	Y
			Frame rate	30 (NTSC) / 25 (PAL)	Y
			Pre-event	Off	Y
			Post-event	10 sec	Y
	Motion Recording	Cameras 1 ~ 8/16	Resolution	CIF	Y
			Quality	Normal	Y
			Frame rate	30 (NTSC) / 25 (PAL)	Y
			Pre-event	Off	Y
			Post-event	10 sec	Y
	Network Live Streaming	Channels 1 ~ 8/16	Enabled	On	Y
			Resolution	CIF	Y
			Quality	Normal	Y
			Frame rate	7.5 (NTSC) / 6.25 (PAL)	Y
	Video Format		Video format	Auto-Detect on Camera 1	Y
			Monitor format	800x600 (4:3)	N
Schedule	Sunday			Continous	Y
	Monday			Continous	Y
	Tuesday			Continous	Y
	Wednesday			Continous	Y
	Thursday			Continous	Y
	Friday			Continous	Y
	Saturday			Continous	Y
	Exception Days			None	Y

Table 9.2   Configuration menu default values

Navigation			Setting	Default value	Reset
Display	Language		Language	English	Y
	Monitor A		Camera Name	On	Y
			Camera Status	On	Y
			Date/Time	On	Y
			Playback Date/Time	On	Y
			Playback Status	On	Y
			HDD Status	Off	Y
			Event Popup	Off	Y
			Sequence Dwell Time		
			Camera 1 - 8/16	2 sec	Y
			Quad mode 01-06	2 sec	Y
	Monitor B		Camera Name	On	Y
			Camera Status	On	Y
			Date/Time	On	Y
			Event Popup	Off	Y
			Sequence Dwell Time		
			Camera 1 - 8/16	2 sec	Y
			Quad mode 01-04	2 sec	Y
Event	Input	Input 1 ~ 8/16	Input Type	N.O.	Y
			Camera	1 ~ 8/16	Y
			Relay Output	None	Y
			PTZ Preset	None	Y
	Motion	Camera 1 ~ 8/16	Camera	Camera01	Y
			Sensitivity	5	Y
			Relay Output	None	Y
			Area	All On	Y
	Alarm acknowledge			Post-Event Time	Y
	System		Disk Fail	None	Y
			Disk Full	None	Y
			Fan Fail	None	Y
			System/Disk Temp	None	Y
			Admin Password Changed	None	Y
			Video Loss	None	Y
			Power On	None	Y

Table 9.2 Configuration menu default values

Navigation			Setting	Default value	Reset
Network	TCP/IP		DHCP	Enabled	N
			IP Address	0.0.0.0	N
			Subnet Mask	0.0.0.0	N
			Gateway	0.0.0.0	N
			Primary DNS	0.0.0.0	N
			Secondary DNS	0.0.0.0	N
			HTTP Port No.	80	N
			Bandwidth Limit	100Mbps	N
			RTSP Server	Off	N
			RTSP Port	554	N
	DDNS		DDNS Server	Disabled	N
		dyndns.org	Host Name	EMPTY	N
			User Name	EMPTY	N
			Password	EMPTY	N
		tzo.com	Host Name	EMPTY	N
			Email	EMPTY	N
			Key	EMPTY	N
		sitesolutions.com	User Name	EMPTY	N
			Password	EMPTY	N
			Record ID	EMPTY	N
			FQDN	EMPTY	N
	Notification		Input	Off	Y
			Motion Detect	Off	Y
			Disk Fail	Off	Y
			Disk Full	Off	Y
			Fan Fail	Off	Y
			System/Disk Temp	Off	Y
			Admin Password Change	Off	Y
			Video Loss	Off	Y
			Power On	Off	Y
	Mail		Send Mail	Off	Y
			SMTP Server	EMPTY	Y
			SMTP Port	25	Y
			SSL	Off	Y
			User Name	EMPTY	Y
			Password	EMPTY	Y
	More Mail Settings		From	EMPTY	Y
			Subject	EMPTY	Y
			To (1)	EMPTY	Y
			To (2)	EMPTY	Y
			To (3)	EMPTY	Y

Table 9.2   Configuration menu default values

Navigation			Setting	Default value	Reset
System	Date/Time		Date	2010-01-01	N
			Time	12:00:00 AM	N
			Date Format	YYYY/MM/DD	N
			Time Format	12 hour	N
			Time Zone	GMT+0	N
			Daylight Savings	Off	N
			Daylight Savings Start	Jan 1st Sun 00	N
			Daylight Savings End	Jan 1st Sun 00	N
	NTP		NTP	Off	Y
			Time Server	Public server	Y
			Private Time Server	0.0.0.0	Y
			Sync Interval	1 day	Y
	Beeper		Button	Off	Y
			Input	Off	Y
			Motion	Off	Y
			System	On	Y
			Video Loss	Off	Y
	User	ADMINISTRATOR	Level	Administrator	N
			Password	000000	N
	Configuration	Import Configuration			
		Export Configuration			
		Factory Defaults			
		Update Firmware			
		Quick Install			
	Hard Disk		Overwrite	All	Y
			Disk Full Warning	90%	Y
			Event Partition	0% (no separate partition)	N
			Auto Delete	Off	Y
			Format	All	Y
	System		IR Remote Control	1	Y
			DVR ID	1	Y
			Auto User Logout	Off	Y

Table 9.3   Search menu default values

Navigation		Setting	Default value	Reset
Search	Date/Time	Date	Current Date	Y
		Time	Current Time	Y
	Event	Channel	1	Y
		Start	Start of Video	Y
		End	Current Time	Y
		Event Type	All	Y
	Smart	Channel	1	Y
		Start	Start of Video	Y
		End	Current Time	Y
		Sensitivity	5	Y
		Area	Off	Y

Table 9.4   Archive menu default values

Navigation	Setting	Default value	Reset
Archive	Channel	None	Y
	Start Time	None	Y
	End Time	None	Y

10 Technical specifications

10.1 Electrical

Voltage and Power

External power adapter AC input	100-240 VAC; 50/60 Hz; 1.8 A
External power adapter DC output	12 VDC; 5 A
DVR power input	12 VDC; 3.5 A; 145 BTU/h
Internal battery	Lithium: CR2032. 3 V, 225 mAh

Video

Inputs	Composite video 1 Vpp, 75 ohm, automatic termination PAL/NTSC auto-detect
Outputs	Monitor A - VGA RGB Monitor B - VGA RGB
Video standard	SVGA PAL/NTSC auto-detect or menu selectable
Resolution	SVGA 800 x 600 (4:3), 1024 x 768 (4:3), 1280 x 1024 (5:4), 1366 x 768 (16:9), or 1440 x 900 (16:10)
AGC	Automatic adjustment of gain for each video input
Digital Zoom	2 times
Compression	H.264

Audio

Inputs	Mono RCA, 1 Vpp, 10k ohm
Outputs	Mono RCA, 1 Vpp, 10k ohm
Sample rate	16 kHz per channel
Compression	ADPCM
Bit rate	8-bit

Alarm Handling

Inputs	8/16 configurable NO/NC max. input voltage 15 VDC min. input voltage -2 VDC
Outputs	4 relay outputs; configurable NO/NC max rated 30 VAC - 40 VDC - 0.5 A continuous or 10 VA

Control

RS485	Output signals according to RS485 max. signal voltage -8 V to +12 V
RS485 support	Bosch domes and Pelco-P and D
Keyboard	Intuikey; 12 VDC, 400 mA max.

Connectors

Video inputs	8/16 looping BNC, auto-terminating
Audio inputs	4 RCA (CINCH)
Ethernet	RJ45, 10/100/1000BaseT according to IEEE802.3

Monitors	VGA D-sub (2)
Audio outputs	2 RCA
Alarm connectors	Screw terminal inputs, cable cross section AWG 26-16 (0.13-1.5 mm2)
Keyboard input	RJ11 (6-pin), 12 VDC
Keyboard output	RJ11 (6-pin), conform RS485, 16 units
RS485	Screw terminal output, cable cross section AWG 28-16 (0.08-1.5 mm2)
USB	Type A connector (2) USB 2.0 on front and rear for mouse and USB memory device

Storage

Hard Disks	2 SATA hard drives, maximum 2TB
Record Rate (IPS)	PAL: 25 total, configurable per camera: 25, 12.5, 6.25, 5, 2.5, 1 NTSC: 30 total, configurable per camera: 30, 15, 7.5, 5, 3, 1
Record Resolution	4CIF: 704 x 576 PAL - 704 x 480 NTSC 2CIF: 704 x 288 PAL - 704 x 240 NTSC CIF: 352 x 288 PAL - 352 x 240 NTSC
Record Quality	Best High Normal Low Lowest

Display Modes

Monitor A	Full, full sequence, quad, quad sequence, multi-screen, alarm call-up (live and playback)
Monitor B	Full, full sequence, quad, quad sequence, multi-screen, alarm call-up (live)

Recording Modes

Linear, continuous

10.1.1   Mechanical

Dimensions (excluding cabling)	355 x 362 x 78 mm (W x D x H) 13.9 x 14.2 x 3.1 inch (W x D x H)
Weight (excluding hard disk)	approx. 4.3 kg / 9.46 lbs

10.1.2   Environmental

Temperature	Operating: 0 °C to +40 °C (+32 °F to +104 °F) Storage: -40 °C to +70 °C (-40° F to +158 °F)
Relative humidity	Operating: <93% non-condensing Storage: <95% non-condensing

10.1.3 Electromagnetic and Safety

EMC requirements	
USA	FCC Part 15, Class B
EU	EMC directive 2004/108/EC
Immunity	EN50130-4
Emission	EN55022 Class B
Harmonics	EN61000-3-2
Voltage fluctuations	EN61000-3-3
Safety	
USA	UL60950-1
EU	LV Directive 2006/95/EC, EN60950-1
Canada	CAN/CSA - C22.2 no. 60950-1
Australia	C-Tick

10.2 DVD compatibility

The following DVD media have been tested on the DVR 600 Series for video export. Other brands/types might also work but could give problems.

Brand	Type	Speed	Size
HP	+RW	4X	4.7 GB
Memorex	+RW	4X	4.7 GB
Philips	+RW	4X	4.7 GB
Sony	+RW	4X	4.7 GB
TDK	+RW	4X	4.7 GB
Verbatim	+RW	4X	4.7 GB
Maxell	+R	16X	4.7 GB
Philips	+R	16X	4.7 GB
Sony	+R	16X	4.7 GB
TDK	+R	16X	4.7 GB
Verbatim	+R	16X	4.7 GB

Table 10.1   DVD compatibility list

Note:

DVD -R and -RW are not supported.

10.3 USB memory sticks

The following USB memory sticks have been tested on the DVR 600 Series for firmware update and video export. Other brands/types might also work but could give problems.

Brand/type	Capacity
Apacer	2 GB
Corsair Flash Voyager	8 GB, 16 GB
Kingston DataTraveler II plus MIGO	8 GB

Table 10.2   Recommended USB memory sticks

A   Appendix

A.1   Software licenses

This product contains both software that is proprietary Bosch software licensed under the
Bosch standard license terms, and software licensed on the basis of other licenses.

A.1.1   Bosch software

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At the time of printing this manual, the following other licenses apply to the following
software components included in the DVR 600 Series:

Name software component	License (*)
uboot, linux kernel, smartmontools, busybox, nbsmtp, rp-pppoe, fdisk, kernel modules, findutil	GNU GPL v2
uclibc	GNU LGPL v2.1
dosfstools	GNU GPL v3
openssl	OpenSSL
cdrtools	CDDL v1.0, GNU GPL v2

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licensee is entitled to obtain the program or its source code, can be obtained through the

contact point in your region, indicated below, for the relevant period as mentioned in the relevant open source license.

That contact point can be reached at:

Americas
Telephone: +1 800 326 1450
– Press 4 - technical support
– Press 2 - video solutions
– Press 2 - IP video solutions
This will route the caller to the correct technical support team.
Email: *technical.support@us.bosch.com*

Europe, Middle East, and Africa
Telephone: +31 40 2577101
Email: *video.support@nl.bosch.com*

Asia Pacific Region
Telephone: +65 6571 2222
Email: *cctvsupport.apr@sg.bosch.com*

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