



DIVAR AN 3000 / DIVAR AN 5000

Digital Video Recorder



BOSCH

en Operations Manual

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1 Safety

This safety section describes safety requirements and the format used for warnings and cautions.

1.1 Safety precautions

**Danger!**

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

**Warning!**

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

**Caution!**

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

**Notice!**

Indicates a situation which, if not avoided, could result in damage to the equipment or environment, or data loss.

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, into the electrical installation of the building. If it is needed to open the housing, 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 2012/19/EU*.

**Caution!**

Electronic Surveillance - This device is intended for 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 16 A. 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 (only DIVAR AN 5000)

- Elevated Operating Ambient - If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the maximum ambient temperature (T_{ma}) 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 & ICES 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 and ICES-003 of Industry Canada. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a **residential installation**. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. 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 the 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.

UL 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 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

Copyright

This manual is the intellectual property of Bosch Security Systems and is protected by copyright.

All rights reserved.

Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

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.

2 Short information

The Bosch Video Recorder DIVAR AN 3000 and DIVAR AN 5000 The DIVAR can record multiple video and audio signals while simultaneously providing live multi-screen viewing and playback. Comprehensive search and playback functions provide quick recall and viewing of recorded video.

2.1 960H high resolution

960H refers to a new class of advanced imaging sensors that provide the highest levels of image quality available for the PAL and NTSC standards. Bosch cameras with these sensors serve as the bridge between standard resolution and high definition solutions. Ideal for capturing fine scene details, they provide the DIVAR with images that are 976 pixels wide with 30 percent higher resolution than previous generation analog 760H sensors.

2.2 Compression technology

The DIVAR 3000/5000 takes advantage of the latest H.264 (video) and G.711 (audio) compression technology to dramatically reduce storage and bandwidth required while still producing superb image and audio quality.

3 Introduction

3.1 Digital video recorder applications

Recording

The DIVAR 3000/5000 is very easy to use – simply connect the camera(s), apply power, and let the unit record automatically in the background with no further intervention required.

The H.264 compression function significantly reduces the file size of recordings without sacrificing image quality. The DIVAR can record at up to 25 (PAL) / 30 (NTSC) images per second, per channel at 960H resolution.

Dome Control

The DIVAR can control pan/tilt/zoom (PTZ) equipment via RS-485 / RS-232 serial communications. PTZ devices, including the Bosch AutoDome and a number of third party domes, are supported.

Alarms

All models have extensive alarm handling functions and telemetry control. Alarm functions include local inputs and relay outputs, plus motion detection in user-defined areas. If an alarm is detected, the DIVAR can:

- send an e-mail notification and/or FTP push
- display an on-screen message
- sound a buzzer and/or show a warning light

Local control

The unit can be locally operated and programmed via the on-screen display menu system using the front panel control keys, the supplied mouse, or the supplied remote control. A choice of monitor outputs provides full-screen, multi-screen and sequenced viewing.

Video inputs/outputs, audio inputs/output, and alarm inputs/outputs are located on the rear panel. Three video connectors (CVBS/VGA/HDMI) provide simultaneous output for monitor A for full-screen or multi-screen live display and playback (the display can be zoomed). A single CVBS connector provides output to monitor B (spot monitor) for live viewing.

Network control

Use the Web Client application (loaded on a PC) for live viewing, playback, and configuration via a network.

Archive player

An Archive Player is provided for local playback of exported video recordings, and to check if recordings are authentic.

Smartphone App

The DIVAR Viewer App for iOS and Android devices is available for live viewing and PTZ control from anywhere in the world. Watch live video from all cameras connected to the DVR, and control focus, pan, tilt and zoom on PTZ-enabled cameras.

3.1.1

Versions

The DIVAR 3000/5000 models are available in 4, 8 and 16 channel versions with a variety of hard drive capacities (max. four for DIVAR AN 5000 or two for DIVAR AN 3000), and if required, an internal DVD writer.

3.1.2

This manual

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 Client and Archive Player - a detailed description for end-users and administrators on how to set up and operate the Web Client and Archive Player software.
- Maintenance and troubleshooting

3.1.3

Features

The DIVAR 3000/5000 has the following features:

- 4, 8 or 16 auto-terminating camera inputs with 960H resolution
- 4 audio inputs (plus 1 MIC input) and 1 audio output
- Simultaneous live viewing, recording, playback, and remote streaming
- Choice of CVBS/VGA/HDMI monitor A outputs
- 10/100/1000Base-T Ethernet port for local or wide area network connection
- RS-485 / RS-232 serial ports to control movable cameras (PTZ)
- IR remote control, front panel keyboard and mouse support for camera control
- Secret (covert) recording channel that can be locked for unauthorized viewing
- Full-screen and multi-screen display capabilities in live and playback modes for monitors
- Maximum 16 switching (alarm) inputs and maximum 6 alarm outputs
- Alarm notification (screen, audible, FTP, e-mail) and automatic record activation
- Motion detection and video loss detection
- DIVAR Viewer App for live and PTZ control on Smartphone (iOS and Android)
- Supports Bosch and Pelco protocols
- Video loop-through (only DIVAR AN 5000)
- Intui keyboard support (only DIVAR AN 5000)
- e-SATA support (only DIVAR AN 5000)

3.2

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.

3.2.1

Package contents

Check for the following items:

- Digital Video Recorder (DIVAR AN 3000 or DIVAR AN 5000 DIVAR AN 3000 / Quick Installation Guide
- CD-ROM containing software licenses, the Archive Player and documentation (including this Operations Manual)
- Power supply cables
- External 12 VDC power adaptor (only for DIVAR AN 3000 19-inch rack mount brackets + screws (only for DIVAR AN 5000 RJ11 adapter cable to connect Bosch Intuikey keyboard (only for DIVAR AN 5000

Dependent on local requirements, the following items are also supplied in the package:

- Split cable for 16-ch loop-through to 25-pin D connector (only for DIVAR AN 5000 16-ch)
- HDD mounting material (if not already built-in) – this material includes brackets, rubber spacers, screws, SATA cables and tie wraps
- Terminal blocks for external I/O connectors
- IR remote Control with 2 AA (1.5 V) Batteries

3.3 Installation environment

3.3.1 Mounting

The DIVAR 3000/5000 is supplied as a desktop unit (the DIVAR AN 5000 can also be optionally rack mounted with the supplied brackets).

3.3.2 Ventilation

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

3.3.3 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.

3.3.4 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 uninterruptible power supply (UPS) to prevent unit failure.

The DIVAR is **not** intended for use over a PoE switch.

3.3.5 Environment

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

3.4 Associated equipment

A typical system could contain the following components (not included with the unit):

- Primary CVBS, VGA or HDMI input monitor for multiscreen monitoring (monitor A)
- Second CVBS input monitor for spot/alarm monitoring (monitor B)
- Cameras with 1 Vpp composite video outputs
- Amplified microphone
- 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
- PC and network for the remote application
- Pan/tilt/zoom control units
- Bosch keyboard (only for DIVAR AN 5000)

3.5 Warranty

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

The DIVAR is **not** intended for use over a PoE switch.

4 Quick install

To get the unit operational, perform the following quick install steps:

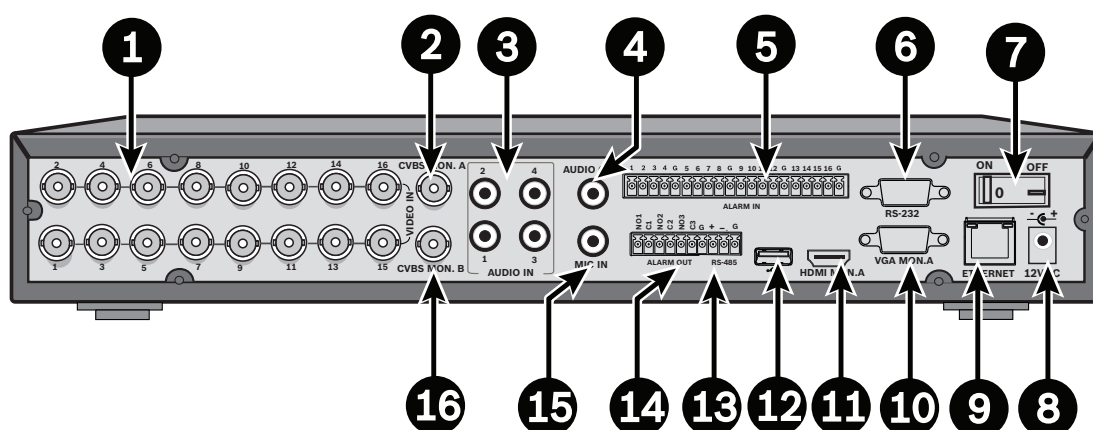
1. Make all the hardware connections – see *Connections*, page 17.
2. Power up the system – see *Powering up*, page 20.
3. Log in – see *Login*, page 21.
4. Correctly configure your system software with the Startup wizard (this appears the first time the unit is started) – see *Startup Wizard*, page 22.

After completing this initial setup, the system is ready to run and will show a live view of the camera image(s). If required, you can alter the settings later using the menus and/or factory defaults, or you can run the Startup wizard again.

4.1

Connections

Connections on back of DIVAR AN 3000



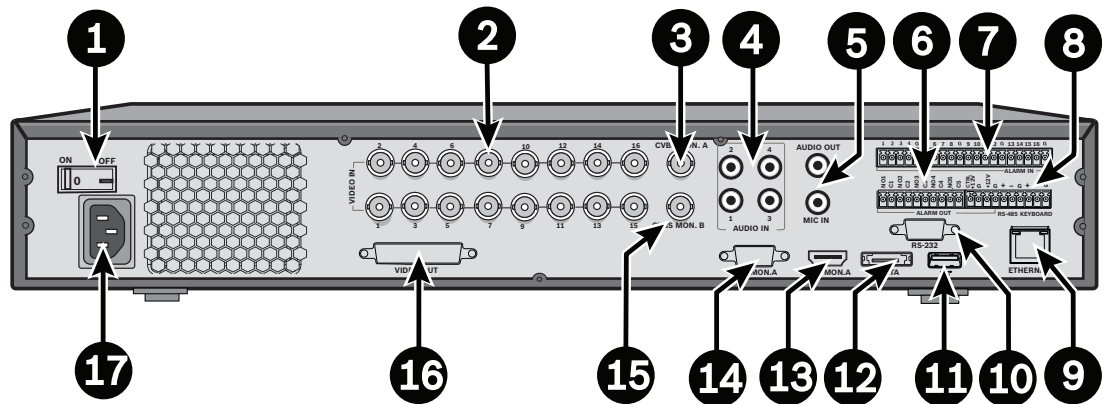
1	Camera VIDEO IN BNC connectors	9	RJ45 ethernet connector
2	CVBS output - Monitor A	10	VGA output - Monitor A
3	Audio inputs	11	HDMI output - Monitor A
4	Audio output	12	USB connector
5	Alarm inputs	13	RS485 connector for Dome control
6	RS232 connector for Dome control	14	Alarm outputs
7	Power ON/OFF switch	15	Microphone input
8	12 VDC Power connector	16	CVBS output - Monitor B



Notice!

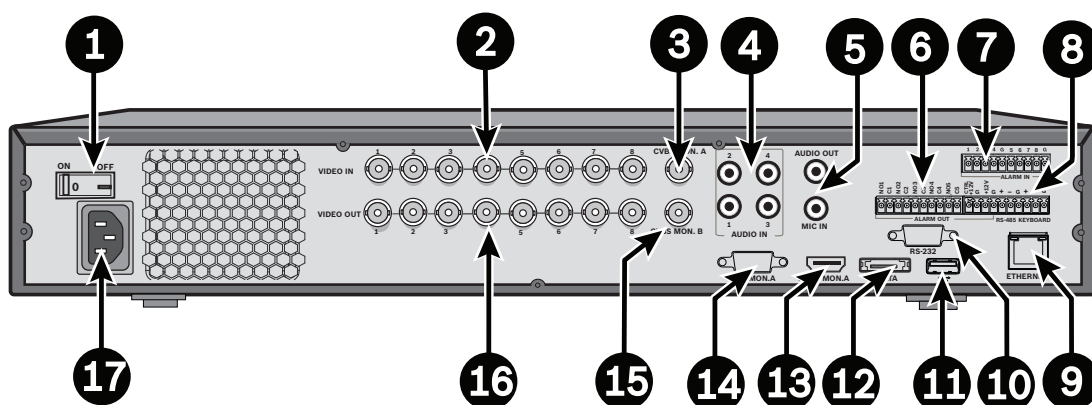
The 4- and 8-channel DIVAR AN 3000

Connections on back of DIVAR AN 5000 (16-channel)



1	Power ON/OFF switch	10	RS232 connector for Dome control
2	Camera VIDEO IN BNC connectors	11	USB connector
3	CVBS output - Monitor A	12	e-SATA connector
4	Audio inputs	13	HDMI output - Monitor A
5	Audio output and MIC IN connector	14	VGA output - Monitor A
6	Alarm outputs	15	CVBS output - Monitor B
7	Alarm inputs	16	VIDEO OUT connectors (loop through)
8	RS485 and keyboard connectors	17	Power connector
9	RJ45 ethernet connector		

Connections on back of DIVAR AN 5000 (4/8-channel)



1	Power ON/OFF switch	10	RS232 connector for Dome control
2	Camera VIDEO IN BNC connectors	11	USB connector
3	CVBS output - Monitor A	12	e-SATA connector
4	Audio inputs	13	HDMI output - Monitor A
5	Audio output and MIC IN connector	14	VGA output - Monitor A
6	Alarm outputs	15	CVBS output - Monitor B
7	Alarm inputs	16	VIDEO OUT (loop through)
8	RS485 and keyboard connectors	17	Power connector
9	RJ45 ethernet connector		

**Notice!**

The 4-channel DIVAR AN 5000 models have a slightly different back panel (VIDEO IN/OUT connectors 5 to 8 are disabled).

4.1.1**Primary connections**

1. Connect the cameras to the **VIDEO IN** BNC connectors.
2. Connect monitor A to the **VGA MON A** output, or the **HDMI MON A** output, or the **CVBS MON A** output.
3. Connect the USB mouse to a **USB** port (front or back panel).

For first time use, the NTSC or PAL selection is determined by the camera type connected to VIDEO IN 1 in step 1. If no camera is connected to VIDEO IN 1 during first time use, the video standard is default and can be set in the Startup Wizard.

4.1.2**Optional connections**

1. Connect monitor B to the **CVBS MON B** connector.
2. Connect up to 4 audio signals to the **AUDIO IN** RCA (CINCH) inputs.
3. Connect 1 microphone to the **MIC IN** RCA (CINCH) output.
4. Connect 1 **AUDIO OUT** RCA (CINCH) output to the monitor or an audio amplifier.
5. Connect up to 16 **ALARM IN** inputs (via the supplied terminal blocks).

6. Connect up to 6 **ALARM OUT** outputs (via the supplied terminal blocks).
7. Connect a pan/tilt/zoom control unit to the **RS-485** or **RS-232** port.
8. Connect to your network via the **ETHERNET** connector.
9. Connect extra video out cables to the **VIDEO OUT** ports if loop through is required to other devices (only for DIVAR 5000).
10. If required, connect a Bosch Intuikey keyboard cable to the **KEYBOARD** connector using the supplied adaptor (only for DIVAR 5000).

4.2 Powering up

For the DIVAR AN 3000

1. Switch on all connected equipment.
2. Connect the supplied external power adaptor to the AC power outlet.
3. Connect the DC power cord to the **12 VDC** connector on the unit.
4. Turn on the unit power ON/OFF switch on the rear of the unit.

For the DIVAR AN 5000

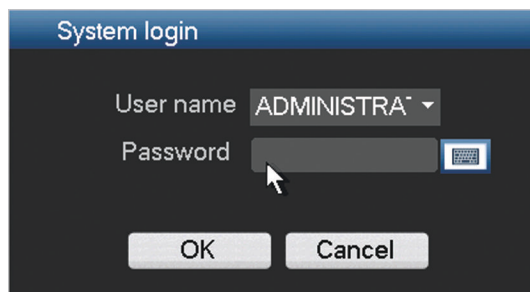
1. Switch on all connected equipment.
2. Connect the power cable to the AC power outlet.
3. Turn on the unit power ON/OFF switch on the rear of the unit.

Normal power up

For normal day-to-day operation, leave the rear power switch on, and use the convenient **Power On/Off** button on the front of the unit to switch on the system.

4.3 Login

The system login interface is shown in the following figure:



When you startup the system for the first time, the Startup Wizard appears where you can setup the system software. Here the default User ID is **administrator** and the default password is **000000** (six zeros).

Use the supplied USB mouse, front panel, remote control or keyboard to input data and commands. See Mouse controls for how to use the mouse.



Notice!

Unauthorized system use

For security reason, please alter your password after you first login.

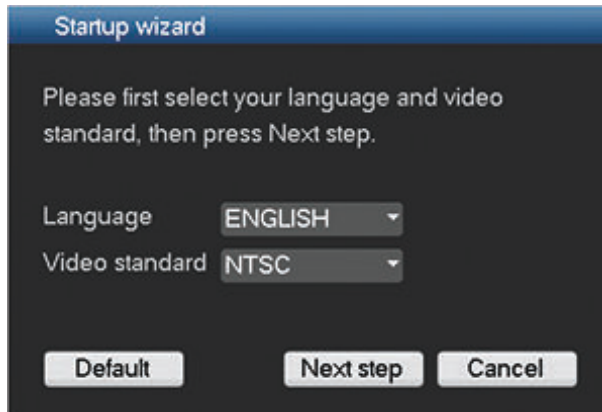
When required, you can logout from the user interface using the Shutdown menu – see *Shutdown/Logout, page 27*.

See also

- *User controls and menus, page 83*

4.4 Startup Wizard

The Startup Wizard opens automatically after you log in for the first time. See following screen:



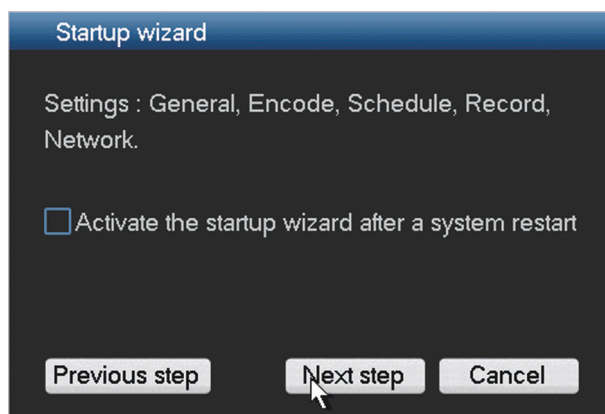
Select a language and video standard from the drop-down menus and click **<Next step>**. The wizard will guide you through the following steps:

1. Choose to reset the startup wizard to run after the next system restart – see *Reset startup wizard*, page 23.
2. Assign General settings – see *General*, page 23.
3. Assign Encoder settings – see *Encode*, page 24.
4. Assign Schedule settings – see *Schedule*, page 25.
5. Assign Record settings – see *Record*, page 25.
6. Assign Network settings – see *Network*, page 26.
7. Finish the startup by clicking **<Finished>**.
8. Confirm the setup by clicking **<OK>**.

Use the following buttons to navigate through the wizard screens and assign your correct user settings:

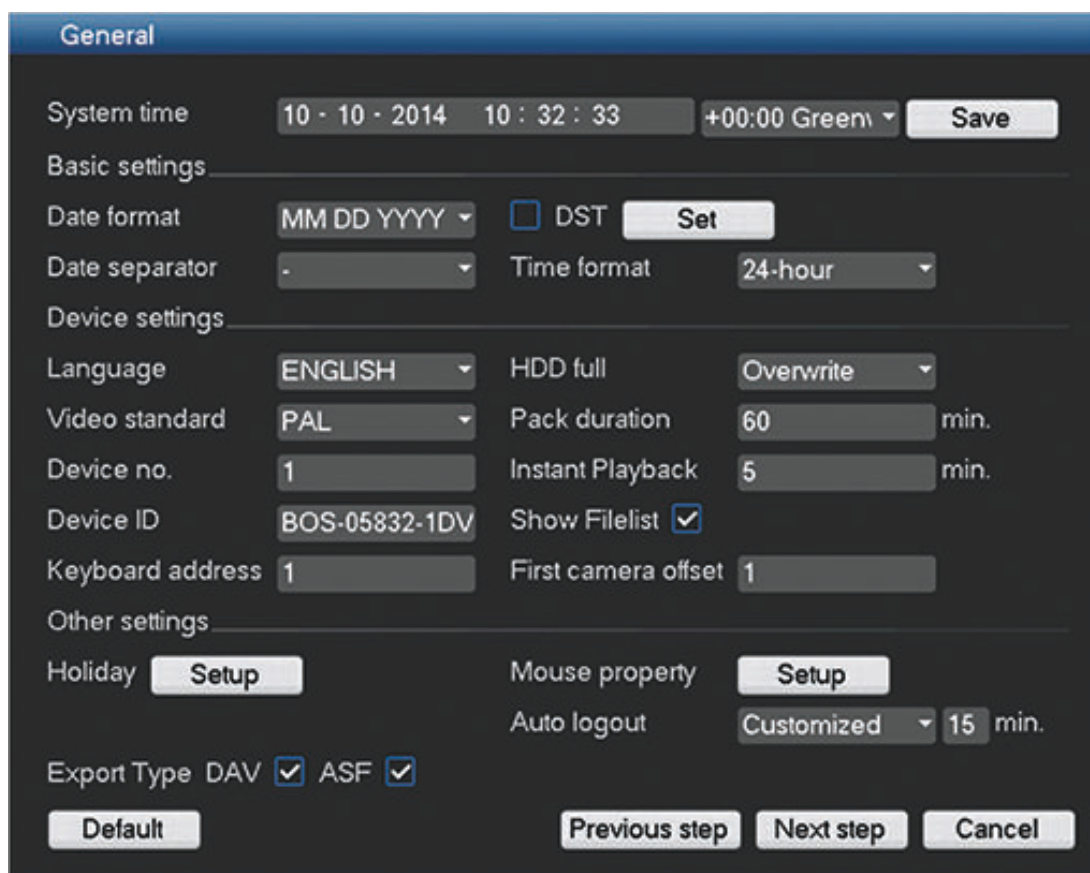
- **<Cancel>** exit the Startup wizard and immediately access the DIVAR user interface (this action will automatically install all factory defaults for the remaining Startup wizard screens)
- **<Next Step>** go to the next wizard screen.
- **<Previous step>** return to the previous Startup wizard screen
- **<Default>** assign the factory defaults for the current setup screen
- **<Copy>** copy the current screen settings for a channel to other channels

4.4.1 Reset startup wizard



If required, select the check box here to activate the Startup wizard after the next system restart (this is only useful if you need to reconfigure the system during the next startup). Later, during operation, you can also reset this mode in the **General** screen. Click **<Next step>** for the next Startup wizard screen (**General** settings).

4.4.2 General



Check the general settings on this screen:

- If they are correct, click **<Next step>** to go to the next Startup wizard screen (**Encoder** settings).
- If changes are required, use the drop-down menus and entry fields to assign the correct settings (if you change the system time and/or date, click **<Save>** before continuing).

- When ready, click **<Next step>** to move to the **Encoder** Startup wizard screen.

4.4.3

Encode

Encode	
Channel	1
Type	Regular
Compression	H.264
Resolution	960H
Frame rate(FPS)	30
Bit rate type	CBR
2nd stream	2nd stream
Bit rate (Kb/S)	1280
Reference bit rate	1280-2048Kb/S
Audio/Video	Audio ☐ Video ☒
Audio format	G711a
Overlay Snapshot	
Default Copy Previous step Next step Cancel	

Assign here the encoder settings and click **<Next step>** for the next Startup wizard screen (**Schedule** settings). To save time when setting up channels, use **<Copy>** to copy settings from one channel to other(s).

4.4.4

Schedule

Schedule

Channel **1** Pre record **4** sec. Snapshot ☐

Period	Wed	Record type	Regular	MD	Alarm	MD & alarm
Period 1	00 :00 -24 :00		☒	☐	☐	☐
Period 2	00 :00 -24 :00		☐	☐	☐	☐
Period 3	00 :00 -24 :00		☐	☐	☐	☐
Period 4	00 :00 -24 :00		☐	☐	☐	☐
Period 5	00 :00 -24 :00		☐	☐	☐	☐
Period 6	00 :00 -24 :00		☐	☐	☐	☐

■ Regular
 ■ MD
 ■ Alarm
 ■ MD & alarm

Timeline: 3 6 9 12 15 18 21 24

Default Copy Previous step Next step Cancel

Assign here all the schedule settings and click **<Next step>** for the next Startup wizard screen (**Record** settings). Use **<Copy>** to copy settings from one channel to other(s).

4.4.5

Record

Record

Record mode All 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Schedule ☐ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒ ☒

Manual ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Stop ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Previous step Next step Cancel

Assign here all the record settings and click **<Next step>** for the next Startup wizard screen (**Network** settings):

- Schedule: The selected channels will record according to the schedule setup (see previous setup screen)
- Manual: selected channels will automatically begin recording
- Stop: No recording on the selected channels

4.4.6

Network

Network

IP version: IPv4

IP address: 192 . 168 . 1 . 108 ☒ DHCP

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 1 . 1

TCP port: 37777 HTTP port: 80

UDP port: 37778 RTSP port: 554

Max connection: 4 MTU: 1500

Bandwidth limit (Kbps): No ☐ Auto encode setting for 2nd stream

Bandwidth limit clients: 1 Internal port: 7892

Preferred DNS: 8 . 8 . 8 . 8

Alternate DNS: 8 . 8 . 4 . 4

☐ LAN download

Network setting

Default Previous step Finished

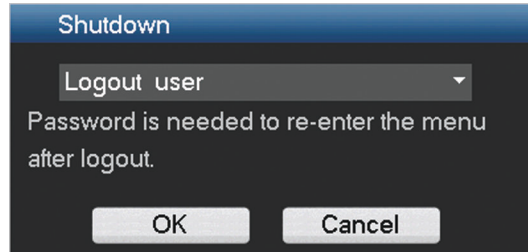
Assign here all the network settings and click **<Finished>** to complete the Startup wizard (you will need to confirm the setup by clicking **<OK>**).

The system will automatically display the active view mode (with a maximum 16 camera views). From here you can operate your system using the mouse, remote control or front panel. See the following sections.

When you eventually need to log off from your system (or shut down completely), use the Shutdown menu – see *Shutdown/Logout*, page 27.

4.5 Shutdown/Logout

1. Right-click the mouse to access the **Quick menu**; from here choose the option **Main menu**.
2. Select the **Shutdown** option on the **Main menu** for the following dialog box.



3. Use the drop-down menu to choose from the following options:
 - Logout user**
 - Shutdown**
 - Restart system**
 - Switch user**
4. Click **<OK>** to confirm the selection.

Shut down with power button

Another way to shut down the system is to press the power button on the front panel for at least 3 seconds (the system will automatically backup video recordings and settings). Start up the system again (and access login screen) by briefly pressing the power button.

Power Failure

The system will automatically backup video recordings and settings after a power failure.

5 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 (see *Connections, page 17*). 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.

5.1 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 on the DIVAR AN 5000 **VIDEO OUT** connectors (or the video out D-connector on the 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 DIVAR can be configured as a PAL or NTSC unit by manually setting the TV standard to PAL or NTSC in the **General setup menu**.

Specifications

Input signal: Composite video 1 Vpp, 75 ohm

TV standard: PAL/NTSC, menu select

Connector type: BNC looped-through, automatic termination

5.2 Audio connections

The DIVAR supports up to 4 audio inputs and 1 audio output, plus a Mic in port. Connect using audio cable with RCA (CINCH) compatible connectors.

Specifications

Input signal: Mono RCA (CINCH), 1 Vpp, 10 kOhm

Audio output signal: Mono RCA (CINCH), 1 Vpp, 5 kOhm

Bidirectional (MIC IN): Mono talk input RCA, 200 to 3000 mV, 10 kOhm

5.3 Monitor connections

Up to three monitors can be simultaneously connected through the VGA MON. A, HDMI MON. A or CVBS MON. A connections for live viewing, playback and user menus. A single monitor can be connected through the CVBS MON. B connection for live viewing.

5.3.1 VGA output

Connect the unit to a VGA monitor using standard VGA cable. It is recommended to use 17" monitors or larger when using LCD.

Specifications

Output signal: VGA

Resolution: 1024x768 (4:3), 1280x720 (5:4), 1280x1024 and 1920x1080 for Monitor A

Color: True color (32 bit)

Connector type: D-SUB

5.3.2 CVBS

Connect the monitor A CVBS and/or monitor B CVBS output to monitors using 75 ohm video coaxial cables with BNC connectors.

Specifications

Output signal: Composite video 1 Vpp, 75 ohm, Sync. 0.3 Vpp $\pm 10\%$

Resolution: 704x576 PAL, 704x480 NTSC

Connector type: BNC

5.3.3**HDMI**

Connect the unit to a HDMI equivalent monitor using standard HDMI cable.

Specifications

Output signal: Digital RGB, 165 MHz

Resolution: 1920x1080, 1280x1024, 1280x720, 1024x768

Connector type: HDMI

5.4**Keyboard connection (only DIVAR 5000)**

The keyboard connection is used to connect a Bosch Intuikey keyboard to a DIVAR AN 5000. For short distances (up to 30 m), standard 6-core telecom flat cable can be used to supply signal connections for the keyboard (LTC 8558/00). Always use the Keyboard Extension Kit (LTC 8557) for distances over 30 m between the keyboard and the DVR; this kit provides junction boxes and cables. The appropriate power supply to externally power the keyboard must be purchased separately. The recommended cable type is Belden 8760 or equivalent.

Connection

There are 2 possible ways to connect your Bosch Intuikey keyboard:

- Using the RJ11 adaptor – see following figure.

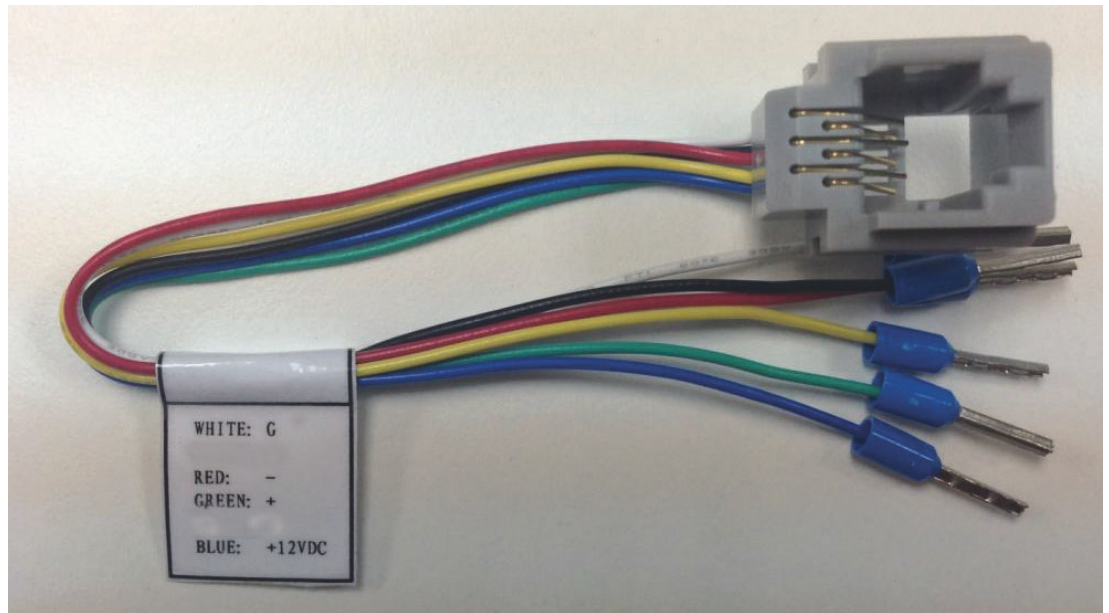


Figure 5.1: RJ11 adaptor

- Or, connect the keyboard RJ11 wires to the **Keyboard** connector on the DIVAR back panel as shown in the following figure.

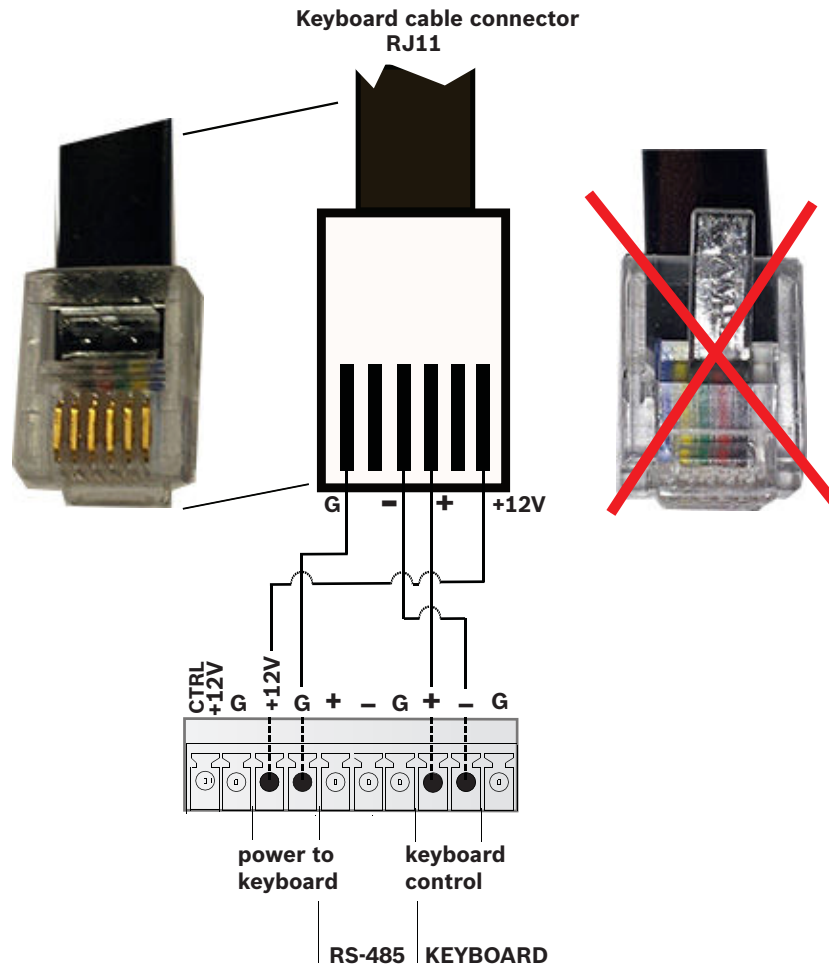


Figure 5.2: RJ11 adaptor connections

Specifications

- Communication 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)
- Connector: RS485

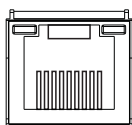
5.5 Ethernet connection

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 5.3: RJ-45 Ethernet connector

5.6

RS485 port connection

Use the RS485 connector to connect Bosch, Pelco-P or Pelco-D controllable cameras to the unit for pan, tilt, and zoom control. RS485 is a single-direction protocol; the PTZ device can't return any data to the unit.

Since RS485 is disabled by default for each camera, you must enable the PTZ settings as follows:

1. Connect a suitable cable to the RS485 connection on the DVR rear panel.
2. Connect the other end of the cable to the appropriate pins in the camera connector.
3. Follow the instructions in the Operation section of this manual to configure the camera for PTZ control.

The Bosch protocol is supported with the following baud settings:

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

+ - G

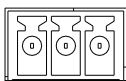


Figure 5.4: RS485 connector

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

Max. signal voltage is -8 to +12 V. The recommended cable cross section is AWG 28-16 (0.08-1.5 mm²).

5.7

RS232 port connections

The RS232 port can be used to connect different devices:

- Console
- PTZ Matrix - a pan and tilt control unit (using RS232 to Biphase converter)

The device type and required settings can be assigned in the menu (**Setting > Serial Port**) – see *Serial port*, page 45.

Specifications

Connector type: 9-pole D-type male connector

Maximum input voltage: ± 25 V

Communication protocol: Output signals according EIA/TIA-232-F

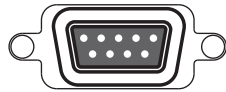


Figure 5.5: RS232 serial port

Signal name	Pin number	Description
DCD_in	1	Carrier detection signal (not used)
RX	2	RS232 receive signal
TX	3	RS232 transmit signal
N/C	4	No connection
System ground	5	System ground
N/C	6	No connection
RTS	7	RS232 request to send signal
CTS	8	RS232 clear to send signal
N/C	9	No connection

5.8

USB connectors

Two USB 2.0 connectors (one on front panel, one on rear panel) can be used on the unit to connect a mouse or USB memory device. (Recording to a USB drive is not supported.)

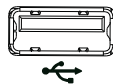


Figure 5.6: USB connector (on front and on rear)

Note:

USB memory sticks must have FAT32 formatting. See **Technical Specifications** for a list of compatible USB memory device types that are supported.

5.9

e-SATA connector (only DIVAR AN 5000)

An e-SATA connector is located at the rear panel of the unit to connect an e-SATA device. This can be used to expand the number of available hard disks.



e-SATA

Note:

The connected hard disks must be Bosch approved. See technical Specifications for a list of compatible HDDs models that can be connected to the e-SATA connection.

5.10 Alarm I/O connections

Alarm inputs and outputs are fitted as screw down terminal blocks on the unit. Cable cross section is AWG 26-16 (0.13 to 1.5 mm²).

DIVAR AN 3000

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Alarm inputs: max. 16. The alarm becomes active at low voltage. Max. input voltage 15 VDC.
NO1 C1, NO2 C2, NO3 C3	Three groups of normal open activation outputs (on/off button).
G	Ground cable.

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	Alarm inputs: max. 16. The alarm becomes active at low voltage.
NO1 C1, NO2 C2, NO3 C3, NO4 C4, NO5 C5	Groups of normal open activation alarm outputs (on/off button).
CTRL +12V	Control power output. Always close the device power to cancel the alarm.
+12V	External power output. Need the peripheral equipment to provide +12 V power (below 500 mA).
G	Ground cable.

5.10.1 Connecting the alarm input

Each (alarm) input line can be switched by a contact from an external device between a numbered input and ground (**G**). Wire the inputs as either Normally Open (NO) or Normally Closed (NC) and configure them as NO or NC in the system menu (**Settings > Alarm**). The default is NO.

See the following guidelines:

- Parallel connect the COM end and GND end of the alarm detector (provide external power to the alarm detector)
- Parallel connect the DVR ground and the alarm detector ground
- Connect the NC port of the alarm sensor to the DVR alarm input (ALARM)
- Use the same ground as the DVR if external power is used for the alarm device
- When connecting two DVRs (or one DVR and one other device), use a relay to separate them

5.10.2 Connecting the alarm output


Danger!

Electrical voltage

Risk of electric shock and damage to the unit.

The contacts must not be used at AC line voltages.

The alarm output relays respond to input alarms and triggers. Only connect resistive loads to the alarm output relays. To avoid overloading, always make sure the relay has the following specifications.

Relay Specification

Model	JRC-27F	
Touch material	Silver	
Rating (resistance load)	Rated switch capacity	30 VDC, 2 A; 125 VAC, 1 A
	Maximum switch power	125 VA, 160 W
	Maximum switch voltage	250 VAC, 220 VDC
	Maximum switch current	1 A

5.11 Power supply

DIVAR AN 3000

DC power is supplied from an AC/DC power supply unit delivered with the unit. The unit has its own on/off switch to turn power supply off and on.

Specifications:

- External power supply unit:
 - AC input: 100-240 VAC; 1.7 A; 50/60 Hz
 - DC output: 12 VDC; 5 A
- DIVAR power input: 12 VDC; 3.5 A

DIVAR AN 5000

Power is supplied from an AC power supply. The unit has its own on/off switch to turn power supply off and on.

Specifications:

Power supply: AC input: 100-240 VAC; 1.7 A; 50/60 Hz

6 Configuration

Your system can be specially configured to suit your individual users from the 'Setting' and 'Advanced' menus accessed from the Main menu shown below.

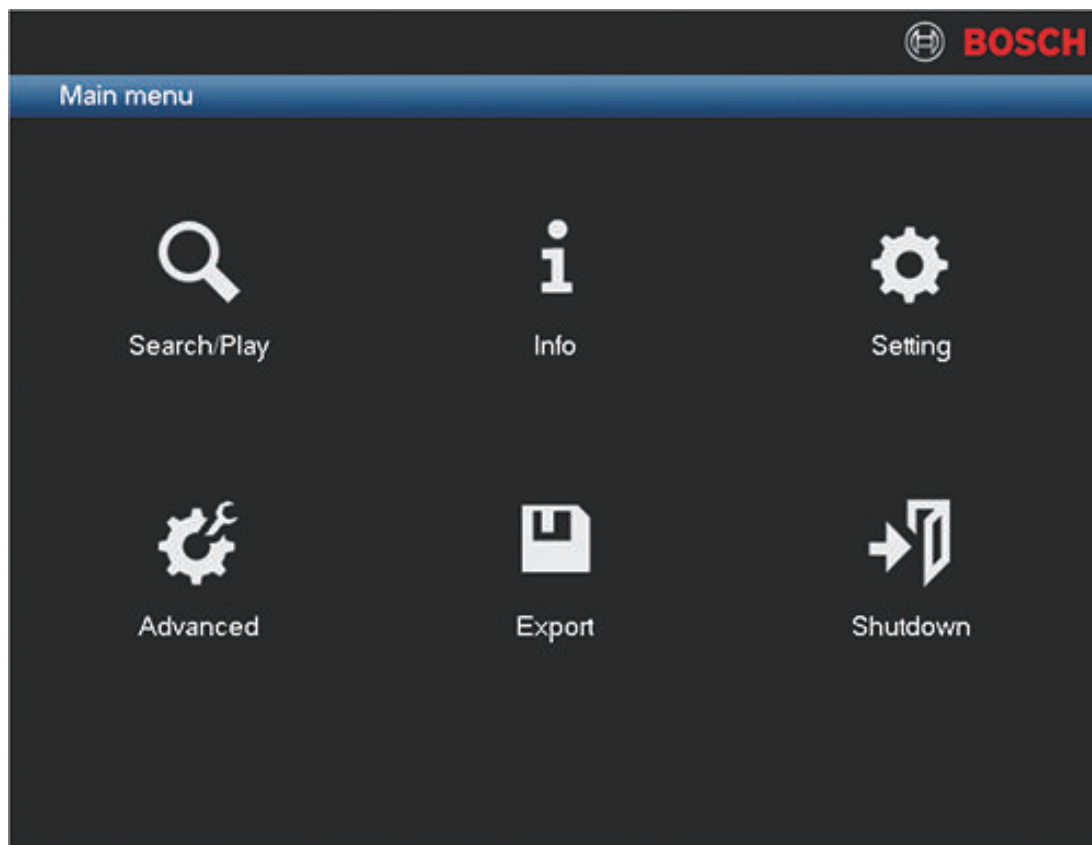


Figure 6.1: Main menu

Refer to *Main menu*, page 91 to see how to access the Main menu.

Administrator rights are required to access many of the functions in the menus.

For more information on all configurable items for the DIVAR:

- See *Setting*, page 36
- See *Advanced*, page 69

6.1 Setting

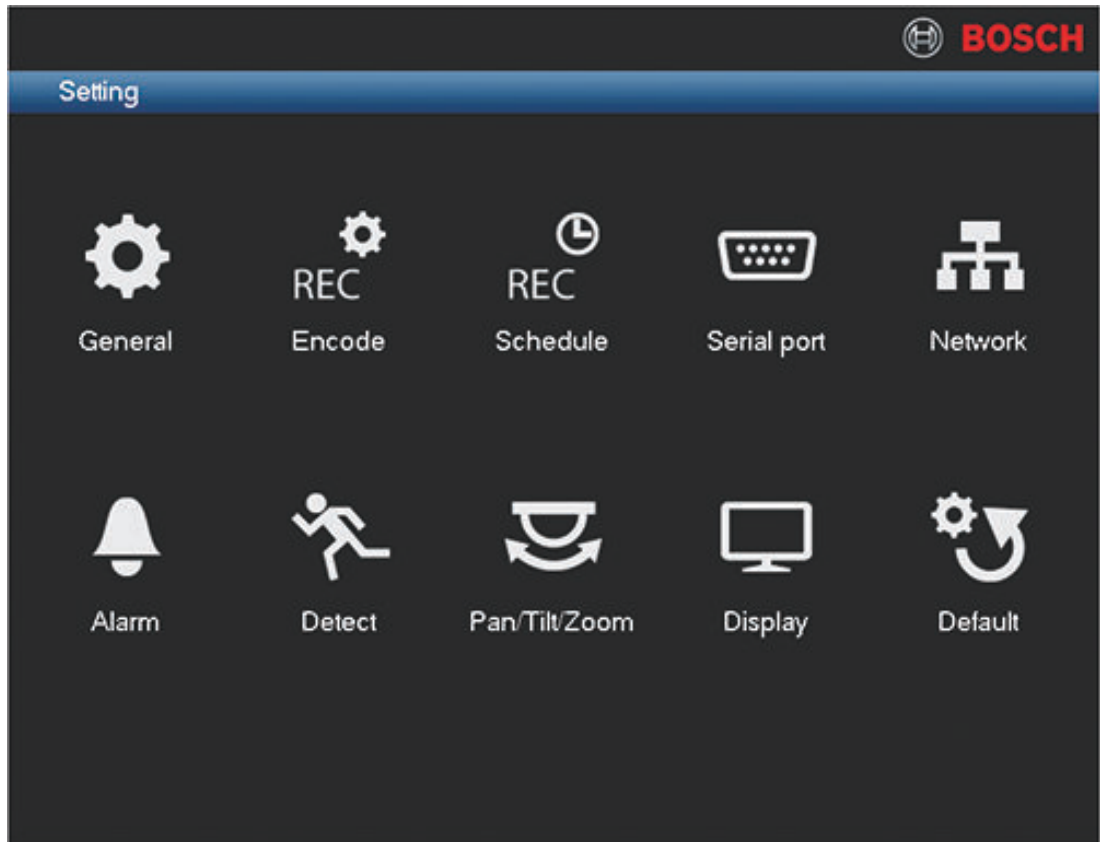


Figure 6.2: Settings

The Setting menu has ten major menu groups. Each of these groups provides access to a screen where specific values and functions can be selected and changed.

See the following sections for more information on these groups:

- *General, page 37*
- *Encode, page 39*
- *Schedule, page 43*
- *Serial port, page 45*
- *Network, page 47*
- *Alarm, page 57*
- *Detect, page 59*
- *Pan/Tilt/Zoom, page 64*
- *Display, page 65*
- *Default, page 68*

6.2 General

General

System time 2014 - 10 - 13 14 : 51 : 07 +00:00 Green Save

Basic settings

Date format YYYY MM DD DST Set

Date separator - Time format 24-hour

Device settings

Language ENGLISH HDD full Overwrite

Video standard NTSC Pack duration 60 min.

Device no. 1 Instant Playback 5 min.

Device ID DVR Show Filelist ☒

Keyboard address 1 First camera offset 1

Other settings

Holiday Setup Mouse property Setup

☒ Startup wizard Auto logout Never

Export Type DAV ☒ ASF ☒

Default OK Cancel

Figure 6.3: General

Here you can assign the following settings:

System time / GMT

Click on the appropriate number to change it with the numeric keypad popup. The number format and separator are changed in the fields below. The system is always started in default 24-hour mode. Select the correct GMT time zone. Click **<Save>** if you make any changes to the time.

Date format

Choose here between

- YYYYMMDD (year month day) this is the default
- MMDDYYYY
- DDMMYYYY

DST (daylight saving)

Select checkbox to automatically set daylight saving in the DVR internal clock. To set the Start/End times for daylight saving click **<Set>** and assign the relevant times as a set 'Date' or as a set 'Day of the week'.

Date separator

Choose here between . / -

Time format

Choose here between 12- and 24-hour.

Language

Select here your desired language for the user interface (you will need to restart the system to display the user interface in the chosen language).

Video standard

Choose here between PAL (default) and NTSC.

Device no.

Assign here an identification number (between 0 and 998) to be used by the remote control to control multiple DVRs.

Device ID

If required, assign here a unique identification name for this DVR.

Keyboard address (only for DIVAR AN 5000)

Only required if this DIVAR is attached to an Intuikey keyboard, together with other DIVARs.

Assign here a unique address (between 1 and 16) for each DIVAR.

First camera offset (only for DIVAR AN 5000)

Set here an offset (between 1 and 9999) for every camera (channel) connected to the DIVAR.

Camera 1 of the DIVAR will be called on the keyboard by selecting the programmed 'First camera offset' number. For example, set the offset to 101 so when you select 101, camera 1 is displayed in full screen on monitor A. Select 112 to display camera 12 in full screen.

HDD full

Assign here the action to take when the HDD becomes full: (Stop recording or Overwrite existing files starting from the oldest).

Pack duration

Assign here the maximum record duration: 1 to 120 minutes (default is 60 minutes).

This setting is useful for easy selection of recording files (from 'File list') during playback and archiving.

Instant playback

Assign here the playback time for the preview function: 5 to 60 minutes (default is 5 minutes).

Show File list

Select to allow the possibility to display a file list on the Search/Play screen.

Holiday

Assign here the specific holiday dates for different months and years (selected dates will be highlighted). These dates are used later if you choose 'Holiday' in the **Schedule** screen (see *Schedule*, page 43).

If required, press on a selected holiday to cancel it.

Startup wizard after system restart

Select to force the user to assign settings requested by the Startup wizard after each system restart.

Mouse property

Set here the mouse double-click speed required for selections.

Auto logout

Set here a time for automatic logout if a user is inactive for a period of time: 1 to 60 minutes (default is 10 minutes). If you choose 'Never', the user remains permanently logged on until logout or shutdown.

Export Type

Choose here the file type for exported files: DAV and/or ASF (default is both)

6.3 Encode

Enter here the relevant settings for each connected channel. In most cases you can encode 2 streams for each connected channel. If required, use the **Default** button to reset all encode fields to the factory default. Use the **Copy** button to copy identical settings from one channel to other channel(s); this is described further in *Copy*, page 41.

Channel	1	2nd stream
Type	Regular	2nd stream
Compression	H.264	H.264
Resolution	960H	CIF
Frame rate(FPS)	25	6
Bit rate type	CBR	CBR
Bit rate (Kb/S)	2048	160
Reference bit rate	1024-2048Kb/S	40-256Kb/S
Audio/Video	Audio ☐	Audio ☐ Video ☒
Audio format	G711a	

Buttons: Overlay, Snapshot, Default, Copy, OK, Cancel

Figure 6.4: Encode

Encode settings are:

- Channel: Select a connected channel (default is 1)
- Type: Select from Regular/MD/Alarm (default is Regular)
- Compression: Default is H.264
- Resolution: System
 - main stream supports 960H/4CIF/2CIF/CIF/QCIF (default is 960H)
 - extra stream supports CIF/QCIF (default is CIF)
- Frame rate (per second):
 - 1 to 30 in NTSC mode (default = 30; second stream default = 7.5)
 - 1 to 25 in PAL mode (default = 25; second stream default = 6)
- Bit rate type: CBR (default) and VBR (video quality)
- Bit rate in Kb/second (this will depend on the setting for **Resolution** above):
 - main stream supports 56 to 2048 (default is 1024 with resolution of 960H)
 - extra stream supports 12 to 320 (default is 160 with resolution of CIF)
- Audio/Video: Enable or disable the audio (main stream); video and/or audio (extra stream)
- Audio format: G711a (default), PCM or G711u
- <Overlay> - see *Overlay*, page 40

- <Snapshot> - see *Snapshot*, page 41

6.3.1

Overlay

Click <Overlay> for the following interface:

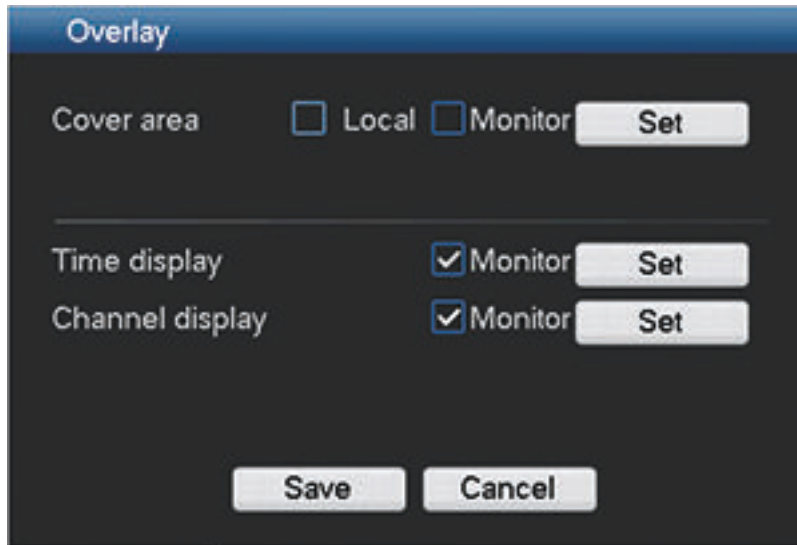


Figure 6.5: Encode overlay

- Cover area (Privacy mask): To set the area, press <Set> then drag the mouse to set a section size per channel (system supports max 4 zones per channel)
- Local/Monitor:
 - Preview means the privacy mask zone can not be viewed by user when system is in preview status
 - Monitor means the privacy mask zone cannot be viewed when the system is in monitor status.
- Time display: Select system displays time or not when you playback. Please click set button and then drag the 'Time display' to the corresponding position in the screen.
- Channel display: You can select system displays channel number or not when you playback. Please click set button and then drag the title to the corresponding position in the screen.

6.3.2

Snapshot

Click <Snapshot> for the following interface:

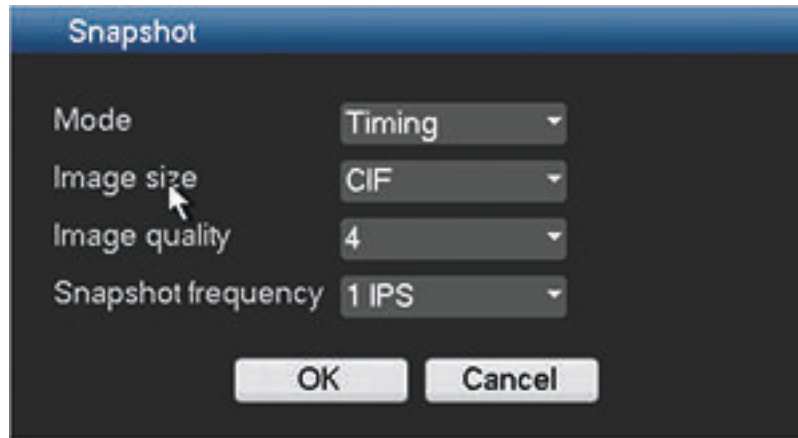


Figure 6.6: Encode snapshot

Here you can configure how a snapshot will look:

- Mode: Set the frequency of a snapshot (see also below for how to eventually activate the snapshot):
 - Timing - set a time for each snapshot activation (do this in menu **General > Schedule**)
 - Trigger (activate a snapshot every time an alarm or detect trigger is signaled)
- Current series product supports 960H, D1, HD1, 2CIF, CIF, QCIF resolution
- Quality: Six image quality levels ranging from 1 to 6 (highest); default = 4
- Snapshot frequency: from 1 to 7 images per second; default = 1 IPS

Activate Snapshot

Once you have configured the snapshot settings, you will need to enable the snapshot function in one or more of the following interfaces before it is activated when a corresponding alarm occurs:

- FTP interface (see *FTP server*, page 55)
- Detect interface (see *Detect*, page 59).
- Alarm interface (see *Alarm*, page 57)
- Schedule interface (see *Schedule*, page 43)

Priority

An activation snapshot has a higher priority than a schedule snapshot. If you have enabled these two types at the same time, the system will activate the activation snapshot when an alarm occurs; otherwise the system just operates the schedule snapshot.

6.3.3

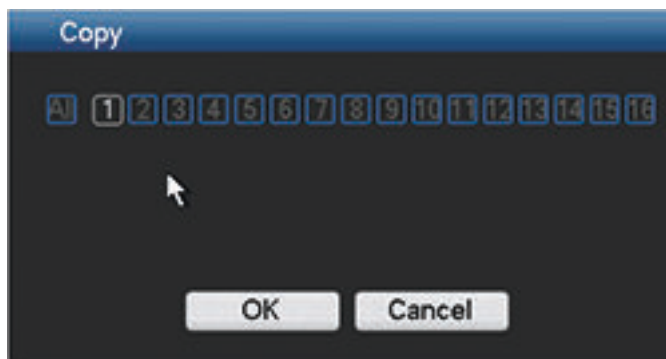
Copy

The Copy function allows you to quickly copy one channel setup to more channels (or all channels). This obviously saves repeating common settings for each channel. The channel setups that can be copied are:

- schedule
- encoder
- Alarm
- Detect
- Pan/Tilt/Zoom

For example:

After setting values in the “Encoder” or “Schedule” screen for channel 1, click <Copy> to go to the **Copy** screen. See following figure.



1. You see the currently copied channel name is highlighted (in this example, channel 1).
2. Now select the channel(s) you want to paste to, such as channel 5, 6 and 7. (If you want to save the current setup of channel 1 to all channels, click the box **All**.)
3. Click <OK> to save the copied setup.
4. Click <OK> in the **Encoder** or **Schedule** screen to complete the copy function.

6.4 Schedule

The settings in the Schedule menu allow you to plan and set up schedules for efficient use of the channels while effectively covering most recording needs.

Period	Wed	Record type	Regular	MD	Alarm	MD & alarm
Period 1	00 :00 - 24 :00	☒	☐	☐	☐	☐
Period 2	00 :00 - 24 :00	☐	☐	☐	☐	☐
Period 3	00 :00 - 24 :00	☐	☐	☐	☐	☐
Period 4	00 :00 - 24 :00	☐	☐	☐	☐	☐
Period 5	00 :00 - 24 :00	☐	☐	☐	☐	☐
Period 6	00 :00 - 24 :00	☐	☐	☐	☐	☐

☒ Regular
 ☐ MD
 ☐ Alarm
 ☐ MD & alarm

3 6 9 12 15 18 21 24

Default Copy OK Cancel

Figure 6.7: Schedule

Configuration:

Recording is scheduled in a weekly calendar, with the possibility to change the behavior of each day for a maximum six different time periods (this is useful for weekends or nights). This calendar is then repeated for subsequent weeks.

Four different recording modes can be assigned

- **Regular**
- **MD (Motion Detection)**
- **Alarm**
- **MD & Alarm** - If you choose this combined option, the system will not separately record if an MD or an alarm occurs simultaneously

Each record mode changes the quality and frame rate settings according to their settings in the menu **Setting > Encoder**. A mode is specified in intervals of 1 hour for each day of the week.

When scheduled times are assigned, the record modes are graphically shown as color bands on the bottom of the screen over the selected 24-hour period:

- green for regular recording
- yellow for MD
- red for alarm recording
- blue for MD and alarm recording

Edit a schedule

1. Select the required channel number (select “all” if you want to schedule all the channels).
2. If required, choose **Pre record** to start the video recording a few seconds before the event occurred in the file (from 1 to 30 seconds depending on the bit stream).
3. If required, choose **Snapshot** to take a snapshot of the image when an alarm occurs (see *Encode*, page 39 for more information on setting up the snapshot).
4. Choose **Period** - Monday to Sunday, or all (if the same period is required for each weekday).
5. Enter the times required for different periods (maximum six) for different modes.
6. Assign the mode for each different time period - choose **Regular**, **MD**, **Alarm** and/or **MD & alarm**.
7. If holiday(s) occur in the current week, choose **Holiday** (holiday dates can be assigned in the **General** menu):
 - Repeat steps 5 and 6 to assign the holiday settings.
8. After completing the setup, click **<OK>** to save the settings and return to the previous menu.

6.5 Serial port

The screenshot shows a 'Serial port' configuration window. It is divided into two main sections: 'RS232' and 'Bosch keyboard'. Each section contains five dropdown menus for configuration. The 'RS232' section is currently set to: Function: Console, Baud rate: 115200, Data bits: 8, Stop bits: 1, and Parity: None. The 'Bosch keyboard' section is set to: Function: Bosch_Keybo, Baud rate: 19200, Data bits: 8, Stop bits: 1, and Parity: None. At the bottom of the window, there are three buttons: 'Default', 'Save', and 'Cancel'.

Figure 6.8: Serial port

Use the **Serial port** menu to configure the connections for a **Console** connected to the RS232 port, and an optional **Bosch keyboard (Intuikey series)** connected to the extra RS485 port (DIVAR AN 5000 only). Configure the settings for **Console** or **Bosch keyboard** as described below.

RS232 serial port

- Function - **Console** for the COM or end user software to upgrade or debug the program
- Baud rate: from 1200 to 115200 (default)
- Data bit: from 5 to 8 (default)
- Stop bit: 1 (default) or 2
- Parity: none/odd/even/space/mark (default is none)

Note: If the console connection to the RS232 port is not working, the RS232 port may already be selected for PTZ control – this is done in the PTZ configuration screen (see *Pan/Tilt/Zoom*, page 64). If so, go first to this screen and reset the **Com connection** field to RS485.

Bosch keyboard

- Function - **for the special Bosch Intuikey series keyboard**
- Baud rate: from 1200 to 115200 (default is 19200)
- Data bit: from 5 to 8 (default)
- Stop bit: 1/2 (default is 1)
- Parity: none/odd/even/space/mark (default is none)

Press **<Save>** to enter changes and go back to the previous menu.

Note:

One Intuikey keyboard can communicate with a maximum 16 DIVAR AN 5000 units. If assigning multiple DIVARs to a keyboard:

- Set the **Keyboard address** (in **General** screen) for every DIVAR AN 5000 - see *General*, page 37
- Set the **First Camera offset** field (in **General** screen) for every DIVAR AN 5000 . Camera 1 of the DIVAR AN 5000 will be called on the keyboard by selecting the programmed '**First camera offset**' number. For example, set the offset to 101 so when you select 101, camera 1 is displayed in full screen on monitor A of that selected DIVAR. Press 112 to display camera 12 in full screen.

6.6 Network

Network

IP version: IPv4

IP address: 192 . 168 . 1 . 108 ☒ DHCP

Subnet mask: 255 . 255 . 255 . 0

Default gateway: 192 . 168 . 1 . 1

TCP port: 37777 HTTP port: 80

UDP port: 37778 RTSP port: 554

Max connection: 4 MTU: 1500

Bandwidth limit (Kbps): No ☐ Auto encode setting for 2nd stream

Bandwidth limit clients: 1 Internal port: 7892

Preferred DNS: 8 . 8 . 8 . 8

Alternate DNS: 8 . 8 . 4 . 4

☐ LAN download

Network setting

Default Save Cancel

Figure 6.9: Network

Input here the following network information:

- IP version: IPv4 (default) or IPv6. This is the IP address access format.
- DHCP (only for IPv4 option): Select this to automatically search for IP details. If this field is enabled, you cannot modify IP / Subnet mask / Gateway and these values are displayed as zero (if PPPoE is operating, you also cannot modify IP/Subnet mask /Gateway). To view the current IP information, you first need to disable the DHCP function.
- IP address: Enter here your IP address. (For the IPv6 version, default gateway, preferred DNS and alternate DNS, the default value shall be 64-digit.
- Subnet mask (only for IPv4 option): Enter here your subnet mask address
- Default gateway: If required, enter here the default gateway address.

Important: The system needs to check the validity of all IPv6 addresses. The IP address and the default gateway must be the same in each IP section (i.e. the specified length of the subnet prefix must have the same string).

- TCP port: Default is 37777.
- UDP port: Default is 37778.
- HTTP port: Default is 80.
- RTSP port: Default is 554.
- MTU: Maximum transmission unit to be used with above ports. Default is 1500

Important: The system always needs to reboot if any of the above ports are changed. Make sure the port values here do not conflict.

- Max connection: System supports a maximum 4 users (default). Set to 0 to disable the network connection.

- Bandwidth limit: Default is No.

The bandwidth limit only applies to network connections outside the sub-net of the DVR (WAN). Bandwidth limit does **NOT** apply to network connection on the same sub-net as the DVR (LAN). The DVR will check automatically if a BVC or Web Client network connection request is sent from a PC located in the same sub-net as the DVR (no bandwidth limitation), or from outside its sub-net (bandwidth limitation).

Note: IP addresses starting in the range of 10.0.0.0 to 10.255.255.255, and 172.16.0.0 to 172.31.255.255, and 192.168.0.0 to 192.168.255.255 are always considered LAN addresses.

This means that, when the bandwidth limitation is active, all DVR network communication outside the sub-net will be limited to the selected bandwidth setting. For example, if bandwidth limitation is set to 256 Kbps, then network traffic to connections outside the DVR sub-net will not exceed the 256 Kbps.

When the bandwidth limit is set to a value, the encoding settings for the 2nd stream will be optimized to stream live video for the selected bandwidth value. For example if bandwidth limit is set to 256 Kbps then encoding settings for all cameras will be set to 64 Kbps for the 2nd stream to optimize viewing of four cameras. For 512 Kbps this will be 128 Kbps for all cameras.

Check the 'Auto encode setting for 2nd stream' box to enable automatic selection (the 2nd stream settings can always be manually changed)

- Bandwidth limit clients: Default is 1.

The option "Bandwidth limit clients" reflects the number of WAN clients that are allowed in the bandwidth limit configuration. Every WAN connection used is maximized to the configured maximum. For example if max bandwidth usage is set to 256Kbps and the bandwidth limit clients value is 4, then the total WAN bandwidth consumption can be 1M

- Internal port: if required, enter here the preferred internal communication port to be used by the firmware. Default is 7892.
- Preferred DNS: if required, enter here the preferred DNS server IP address.
- Alternate DNS: if required, enter here an alternative DNS server address.
- LAN download: Select this option to assign priority to remote downloading (exporting) data. The download speed is 1.5x or 2.0x the normal speed (this can have a negative effect on remote live and playback performance in web client and BVC, but will improve the LAN download speed).

Once all fields are correctly entered, click <Network setting> to assign other network settings

– see *Network settings*, page 49.

When ready, click **<Save>** to enter values and go back to the previous menu.

6.6.1 Network settings

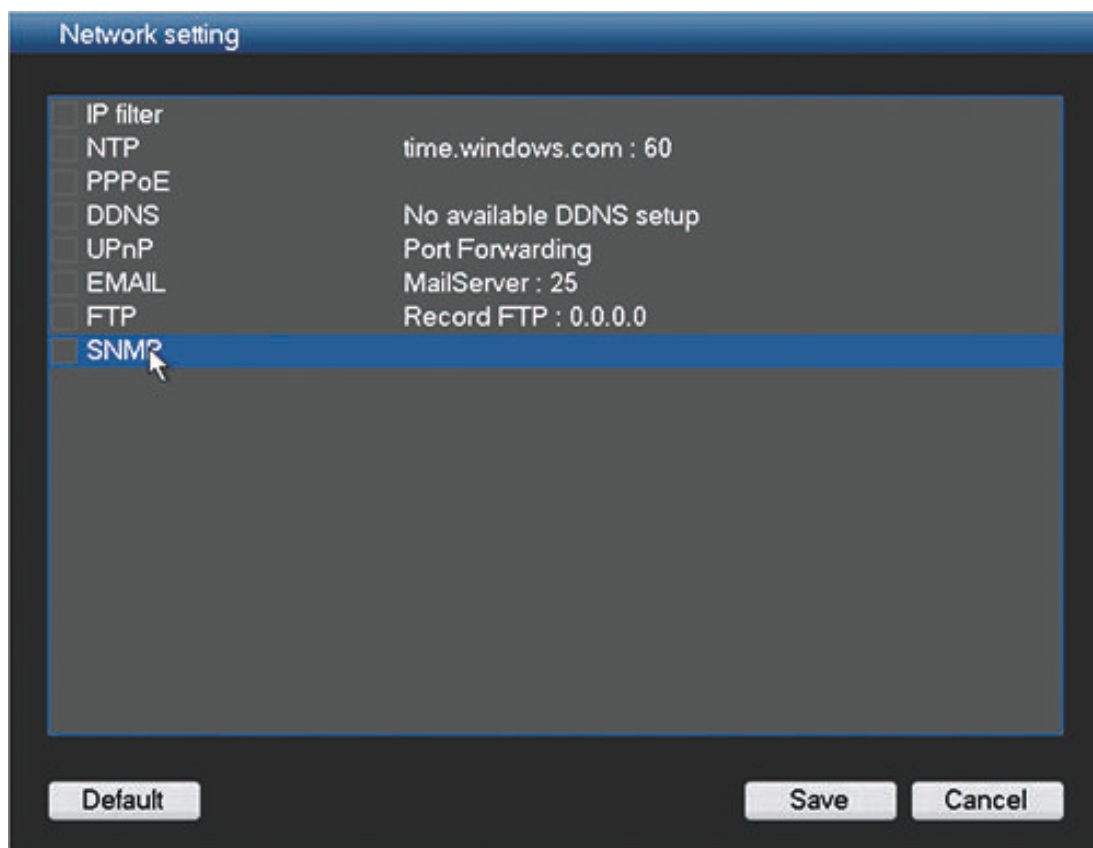


Figure 6.10: Network setting

This example screen shows an example Network setting interface. Please check a box to enable the corresponding function, and then double-click current item to go to setup interface. See the following sections for examples of possible network functions.

6.6.2

IP filter

Figure 6.11: Network IP filter

The system supports IPv4 and IPv6 address format.

Enable

Select to choose for access to 'Trusted' or 'Blocked' sites IP addresses. If you disable this function, all IP addresses can access the current DVR

Type

Choose from Trusted or blocked sites.

Start address / End address

Add IP addresses to the list displayed at the bottom half of the screen (the list supports a maximum 64 IP addresses). If you input the IPv6 address format, system needs to check its validity and optimize its format. For example, it can optimize IP: "fe80::0054:0cff:fefa:1682" to "fe80::54:cff:fefa:1682".

6.6.3

NTP

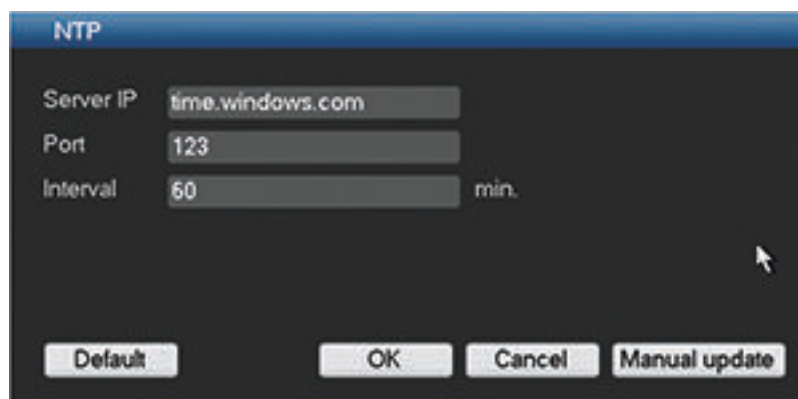
A screenshot of the NTP configuration window. The window has a blue header bar with the text 'NTP'. Below the header, there are three input fields: 'Server IP' with the value 'time.windows.com', 'Port' with the value '123', and 'Interval' with the value '60' and a 'min.' label to its right. At the bottom of the window, there are four buttons: 'Default', 'OK', 'Cancel', and 'Manual update'.

Figure 6.12: Network NTP

You must first install an SNTP server (such as Absolute Time Server) into your PC. Enter here:

- Your Server IP
- Port - this system only supports TCP transmission. Default is port 123
- Time zone (your specific time zone in relation to GMT). If required, press **<Manual update>** to manually synchronize the time with the server.
- Interval – this is the update interval (1 to 65535 minutes). Default is 60 minutes.

6.6.4

PPPoE

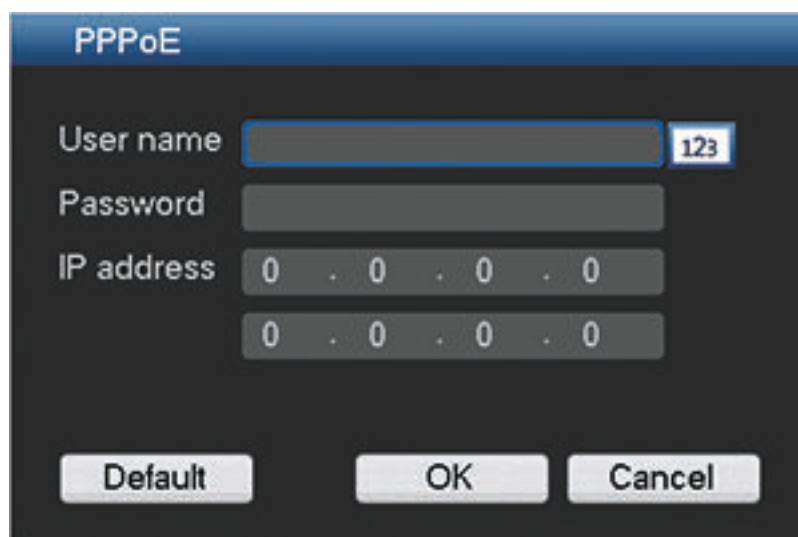
A screenshot of the PPPoE configuration window. The window has a blue header bar with the text 'PPPoE'. Below the header, there are three input fields: 'User name' with a text box and a '123' button to its right, 'Password' with a text box, and 'IP address' with two rows of four '0' buttons each, separated by dots. At the bottom of the window, there are three buttons: 'Default', 'OK', and 'Cancel'.

Figure 6.13: Network PPPoE

Enter here your PPPoE 'User name' and 'Password' supplied by your internet service provider, and click <OK>.

You will need to restart your system to automatically connect to the internet (the IP address will be automatically assigned).

6.6.5

DDNS

DDNS

DDNS type: NO-IP DDNS ☐ Enable

Server IP: dynupdate.no-ip.com

Port: 80

Domain name:

User name:

Password:

Interval: 300 sec.

Default OK Cancel

Figure 6.14: Network - DDNS

Select a DDNS provider from the list and complete the details with the configuration information assigned by the provider. The providers supported are: CN99 DDNS, NO-IP DDNS and DynDNS DDNS. All the DDNS types can be valid at the same time; you only need to select the required type from the drop-down menu.

You need a PC of fixed IP in the internet and there is DDNS software running in this PC (in other words, this PC is a DNS (domain name server)).

In network DDNS, please select DDNS type and highlight enable item. Then please input the PPPoE name you get from your IPS and server IP (PC with DDNS). Click <OK> and then reboot system.

After rebooting, open the IE and input as follows:

http : //(DDNS server IP)/(virtual directory name)/webtest.htm (e.g.: http : //10.6.2.85/DVR_DDNS/webtest.htm.)

Now you can open the DDNS Server web search page.

6.6.6

UPnP

The image shows a 'UPnP' configuration window. At the top, there's a title bar 'UPnP'. Below it, the 'PAT' section has two radio buttons: 'Enable' (unselected) and 'Disable' (selected). The 'UPnP status' is shown as 'Searching'. Below that, 'Router LAN IP' and 'WAN IP' are both set to '0 . 0 . 0 . 0'. A 'PAT table' section contains a table with 6 columns: an index, a checkbox, a service name, a protocol, an internal port, and an external port. The table lists six entries: HTTP, TCP, UDP, RTSP, RTSP, and SNMP. At the bottom, there are buttons for 'Default', 'Add to the list', 'Delete', 'OK', and 'Cancel'.

		Service name	Protocol	Int. port	Ext. port
1	✓	HTTP	TCP	80	80
2	✓	TCP	TCP	37777	37777
3	✓	UDP	UDP	37778	37778
4	✓	RTSP	UDP	554	554
5	✓	RTSP	TCP	554	554
6	✓	SNMP	UDP	161	161

Figure 6.15: Network UPnP

This protocol enables a mapping relationship between the LAN and the WAN

Enter here:

- PAT Enable/Disable - enable or disable the UPnP function on this device
- Status – Can be Success, Searching or Unknown (when the system is offline)
- Router LAN IP
- Router WAN IP

The bottom table shows the PAT (port mapping list) with a one-to-one relationship with the router port mapping setting:

- Click the relevant checkbox to enable a port.
- Double-click a port to change a setting
- Select a port and click **<Delete>** to remove a port setting
- Click **<Add to the list>** to open a 'Port info' dialog box to add a new port setting

6.6.7

EMail

Figure 6.16: Network - EMAIL

Use this screen for the email settings (address, sender, etc.) if you have enabled the field 'Send email' in the menus Alarm, Detect and System events.

See the following descriptions for the field settings in this screen:

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.

Anonymous

Select this option to hide the sender details.

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.

Receiver

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

Sender

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

Subject

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

Encrypt type

Some mail servers require encryption to transmit e-mail. If required, use SLL or TLS encryption when sending e-mail. If not required, select 'NONE'.

Event interval

This is the email send interval – it can range from 0 to 3600 seconds (0 seconds means there is no send interval. This interval can be useful if many emails are being generated simultaneously for system events and the system becomes increasingly busy.

Health enable

Check this box to command the system to send out a test email to check the connection is OK. This will be done at a regular interval – see below.

Interval

Used together with 'Health enable' to set a time for a regular email connection test. A dialog box will appear to display if the connection is OK or not.

Another option is to click **<Test>** to manually check the email connection.

6.6.8**FTP server**

Please first boot up the corresponding FTP server before activating the following menu.

The screenshot shows the 'FTP' configuration window. It has a dark background with white text. The fields are as follows:

- Server IP: 0 . 0 . 0 . 0
- Port: 21
- User name: [empty field]
- Password: [empty field] ☐ Anonymous
- Remote directory: [empty field]
- File length: 0 M
- Image Upload Interval: 2 sec.
- Channel: 1 (dropdown)
- Week day: Wed (dropdown)
- Time period 1: 00 :00 - 24 :00
- Time period 2: 00 :00 - 24 :00
- Alarm: ☐
- Motion: ☐
- Regular: ☐
- Buttons: Default, OK, Cancel, Test

Figure 6.17: Network FTP server

If uploading snapshot images to the FTP server (e.g. in an alarm situation), first input snapshot mode, size, quality and frequency in the Encode screen (see *Encode*, page 39) so the system can correctly upload the image files. The snapshot upload can be triggered in the following menu settings:

- Schedule
- Detect (motion, camera masking, video loss)

- Alarm

6.6.9

SNMP

The image shows a configuration window titled 'SNMP'. It contains the following fields and controls:

- SNMP enable:** A checkbox that is currently unchecked.
- V1:** A checkbox that is checked.
- V2:** A checkbox that is checked.
- SNMP port:** A text field containing the value '161'.
- Read community:** A text field containing the value 'public'.
- Write community:** A text field containing the value 'private'. A mouse cursor is pointing at this field.
- Trap address:** An empty text field.
- Trap port:** A text field containing the value '162'.

At the bottom of the window, there are three buttons: 'Default', 'Save', and 'Cancel'.

Figure 6.18: Network - SNMP

SNMP (Simple Network Management Protocol) provides the basic network management frame of the network management system.

Here you require software tools (MIB Builder and MG-SOFT MIB Browser), plus two MIB files to connect to the device (contact Bosch or your system administrator for more details on these tools).

Use the following steps to configure:

1. Select the 'SNMP enable' box.
2. Enter the IP address of the PC that is running the software in the field 'Trap address'.
3. Use defaults for the remaining items.
4. Compile the two MIB files using 'MIB Builder'.
5. Run 'MG-SOFT MIB Browser' to load the compiled MIB files to the software.
6. Input the device IP you want to manage in the 'MG-SOFT MIB Browser' (set the corresponding version for future reference).
7. Open the tree list on the MG-SOFT MIB Browser to view the device configuration (how many video channels, audio channels, application version, etc.).

6.7 Alarm

Figure 6.19: Alarm

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

- Event type: Choose from Local alarm (default) or Net alarm (a Net alarm means the alarm signal comes from the TCP/IP. You can enable the network alarm function via the net SDK (Software Development Kit). The network alarm does not have a ‘device type’, ‘anti-dither’ and ‘alarm upload’ function. The other items are the same).
- Alarm in: Select a specific channel number (or all channels).
- Enable: select to activate the alarm function (default is enable)
- Type (only used for **Local alarm**): The event behavior can be configured independently for each channel:
 - **N.O.** - Normally Open causes an alarm to trigger only when the circuit closes (this is the default)
 - **N.C.** - Normally Closed causes an alarm to trigger only when the circuit is opened
- Period: Click **<Setup>** for a new interface screen where you can organize time periods for alarm activation – see *Period*, page 62.
- De-bounce time: Set here a timer for how long the alarm alert should stay active after it is first activated (default is 5 seconds). During this time, the system will activate the alarm display, alarm output, tour, PTZ, snapshot, channel recording and buzzer (if they are all selected). An alarm upload and email will also be sent (if selected). If a new alarm is detected within the **De-bounce time**, the timer will be reset for the alarm display, alarm output, tour, PTZ, snapshot, channel recording and buzzer (no new alarm upload or email are sent).

- Alarm out: If an alarm occurs, the system will enable a peripheral alarm device connected to any of the selected outputs (default is output 1).
 - Latch: When the 'De-bounce time' is ended, the alarm output relay you selected in 'Alarm out' will remain activated for this extra 'latch' period (from 1 to 300 seconds - default is 10). The latch is still valid even if you manually disable the alarm event.
 - Show message: Select to display an alarm message in the local host screen.
 - Alarm upload: Select to upload the alarm signal to the network (including a central alarm point).
 - Send email: Select to send an email if an alarm occurs.
 - Record channel: Select the appropriate channel(s) to record alarm video. You first need to do the following:
 - Set the alarm record mode as 'Scheduled' in the Record interface (**Main Menu > Advanced > Record**). Please note the manual record has the highest priority. If you select Manual mode, the system will record continuously no matter if there is an alarm or not.
 - Now go to the Schedule interface (**Main Menu > Setting > Schedule**) to set the record type, corresponding channel number, week and date.
 - Select the record type: Regular/MD/Alarm/MD&Alarm. Please note: you cannot simultaneously select **MD&Alarm** and **MD** (or **Alarm**).
 - Now go to the Encode interface to select the alarm record and set the encode parameter (**Main Menu > Setting > Encode**).
 - Finally, set the alarm input as the local alarm and then select the record channel. The select channel begins alarm record when an alarm occurred. Please note: the system begins the alarm record instead of the MD record if the local alarm and MD event occurred simultaneously.
 - PTZ activation: When an alarm occurs, the system can activate the PTZ operation. See *PTZ activation, page 63*.
 - Delay: Set here an extra timer for channel recording to remain active (from 10 to 300 seconds - default is 10) after the 'De-bounce time' has elapsed.
 - Display Mon. A: Select to enable the tour function (a sequence of camera views) when an alarm occurs. The system supports only single-window tour for alarms. See *Display, page 65* for how to set up the sequence interval. Choose also which channels to display in the tour sequence.
 - Snapshot: Enable this function to snapshot an image from the chosen camera(s) when an alarm occurs. For snapshot operation, see *Encode, page 39*.
 - Display Mon. B: Select both check boxes here to enable a tour function on Monitor B when there is an alarm signal. Choose also which channels to display in the tour sequence.
 - Buzzer: Select here to activate the buzzer when an alarm occurs.
- After completing setup, click **<Save>** to save your settings and go back to the previous menu.

See also

- *Sequence Mon B, page 82*

6.8 Detect

Here you can set events that can be used to trigger alarms. If required, use the **Default** button to reset all detect fields to the factory default. Use the **Copy** button to copy identical settings from one channel to other channel(s); this is described further in *Copy*, page 41.

Note:

For Motion detect mode, you cannot use <Copy> for channel setup since the video in each channel may be different.

The screenshot shows the 'Detect' configuration window. At the top, 'Event type' is set to 'Motion detect' and 'Channel' is '1'. 'Enable' is checked, and 'Sensitivity' is 'Standard'. There is a 'Region' section with a 'Setup' button. Below this, 'Period' has a 'Setup' button, 'De-bounce time' is 5 seconds, 'Alarm out' is checked, 'Latch' is 10 seconds, 'Show message' is checked, 'Alarm upload' is checked, and 'Send email' is unchecked. 'Record channel' is checked, and 'PTZ activation' is checked with a 'Setup' button and a 'Delay' of 10 seconds. There are checkboxes for 'Display Mon. A', 'Snapshot', 'Display Mon. B', and 'Buzzer', each followed by a row of 16 numbered checkboxes (1-16). At the bottom, there are buttons for 'Default', 'Copy', 'Test', 'Save', and 'Cancel'.

Figure 6.20: Detect

This screen is an example for **Motion detect**; not all of the detect fields are required for **Video loss** and **Camera Masking**.

See the following descriptions for the full list of detect settings:

- Event types: Here you can choose three different events to detect:
 - Motion detect – detect movement in set regions
 - Video loss – detect any loss of video
 - Camera masking – the system will alert you if someone maliciously masks the lens or the output video is in one-color due to light change.
- Channel: select the channel to activate the recording function when a detection alarm occurs. Please make sure you have set MD record in encode interface (**Main Menu > Setting > Schedule**) and schedule record in the manual record interface (**Main Menu > Advanced > Record**)
- Region: Here you can set motion detection zone. See *Motion detect region setup*, page 61
- Sensitivity: Set the threshold for motion detection from minimum to highest sensitivity.

- Period: Click **Setup** for a new interface screen where you can organize time periods for detect activation – see *Period*, page 62.
- De-bounce time: Set here a timer for how long the detect alert should stay active after it is first activated (default is 5 seconds). During this time, the system will activate the alarm display, alarm output, tour, PTZ, snapshot, channel recording and buzzer (if they are all selected). An alarm upload and email will also be sent (if selected). If a new alarm is detected within the De-bounce time, the timer will be reset for the alarm display, alarm output, tour, PTZ, snapshot, channel recording and buzzer (no new alarm upload or email are sent).
- Alarm out: If an alarm occurred, the system will enable a peripheral alarm device connected to the selected outputs (default is 1).
- Latch: When the 'De-bounce time' is ended, the alarm output relay you selected in 'Alarm out' will remain activated for this extra 'latch' period (from 1 to 300 seconds - default is 10). The latch is still valid even if you manually disable the alarm event.
- Show message: The system will pop up a message in the local host screen to alert you.
- Alarm upload: The system will upload an alarm signal to the network (including a central alarm location).
- Send email: An alert email is sent if an alarm is detected.
- PTZ activation: Here you can set PTZ movement when an alarm occurs. See *PTZ activation*, page 63.
- Delay: Set here an extra timer for channel recording to remain active (from 10 to 300 seconds - default is 10) after the 'De-bounce time' has elapsed.
- Display Mon. A: Here you can enable a tour function (a sequence of camera views) when an alarm occurs. The system supports only one-window tour for alarms. See *Display*, page 65 for how to pre-select the tour sequence and interval. Choose also which channels to display in the tour sequence.
- Snapshot: Select to snapshot an image from the chosen camera(s) when an alarm occurs. For snapshot operation, see *Encode*, page 39.
- Display Mon. B: Select both check boxes here to enable a tour function on Monitor B when there is an alarm signal. Choose also which channels to display in the tour sequence.
- Buzzer: Select here to activate the buzzer when an alarm occurs.

After completing setup, click **<Save>** to save your settings and go back to the previous menu.

Note: In the Detect menu, the **Copy** function is only valid for the same event type, which means you cannot copy a channel setup in video loss mode to camera masking mode.

6.8.1 Motion detect region setup

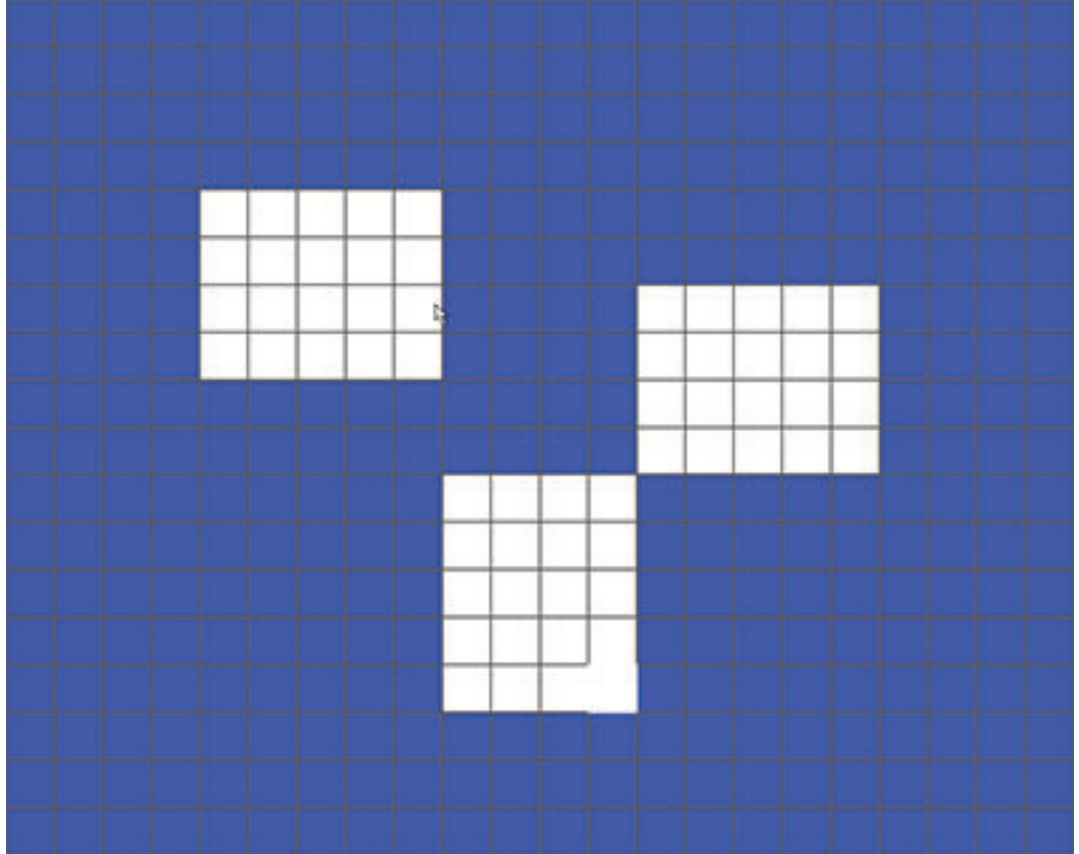


Figure 6.21: Motion detect region

See here that there are a collection of small rectangular zones on the screen (396 zones for PAL; 330 zones for NTSC). The normal default when you open this screen for each camera channel is that the complete screen is colored and 'armed' (activated for motion detection). A black (or dark) area signals a disarmed zone.

To set up motion detect on this screen:

1. Left-click the mouse and drag it over a region where you want to disable (disarm) motion detection. Notice that the selected zones become dark.
2. Release the mouse button when you have selected a complete area to be disabled for motion detection.
3. Now repeat this action for other areas on the screen to be disabled. If you want to 'rearm' a disabled area again, or you make a mistake, simply select the region again with the left-mouse button (the region will be colored again). Another way to arm/disarm zones is to use the Fn button on the front panel, or on the remote control, and select zones with the direction buttons.
4. After setting all the motion detection zones for a channel, return to the 'Detect' screen by right-clicking the mouse (or click the 'Enter' button). If you click the ESC button to exit the region setup screen, the zone setup will not be saved.

Note: Always remember to click <Save> on the 'Detect' interface to save the current setup.

6.8.2

Period

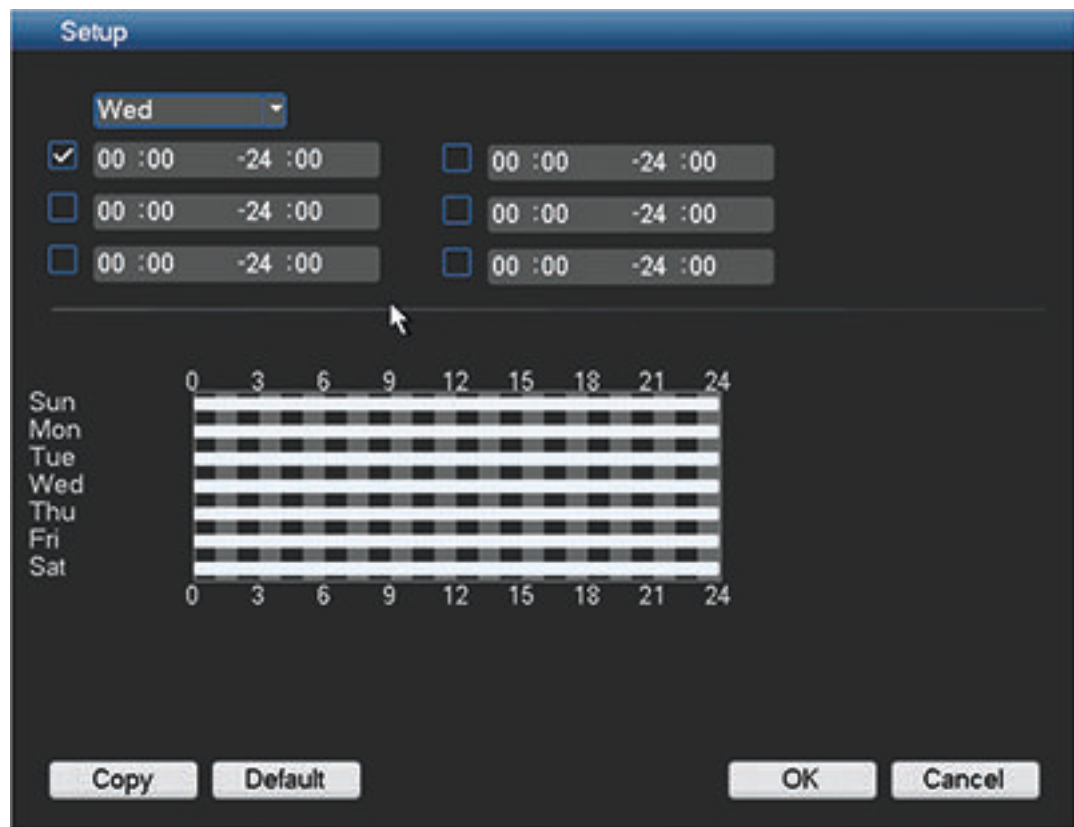
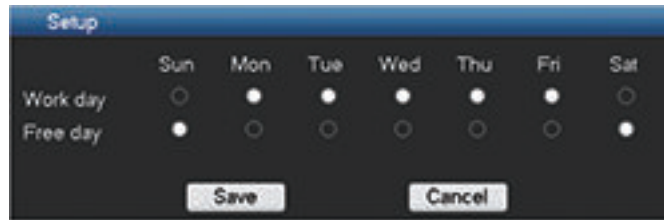


Figure 6.22: Period setup

See here the period setup screen for assigning periods for alarms and detection. Configure a period as follows:

1. Choose a day of the week from the drop down menu in the top field.
2. Select the check box for one of the six time periods and use the keypad to enter a begin time and end time for activating detect/alarm (the default is 24-hour activation).
3. Repeat step 2 for any other required time periods; notice that the time bar for that day (see bottom half of screen) will show a graphical representation of the active times for each weekday.
4. When you have correctly assigned a day, continue with the next day. If the time periods are the same as the first day, then a quick way to do this is:
 - click <Copy> to access a Copy screen
 - here you see that the assigned day is grey
 - select each of the days that have a similar setup (checkbox is ticked) and click <OK>
 - the same time periods for the first day now apply to all selected days
5. If you wish to assign active time(s) for a work day or a free day (holiday) that are the same for each work day or free day, do this as follows:
 - choose either **Work day** or **Free day** from the drop down menu and press <Setup> – the following screen appears:



- Select here the days you want to assign as free days or work days and click <Save>
 - Now assign the active time periods for the work day or free day – these same time periods will be copied to all the assigned work days or free days
6. When ready, click <OK> to return to the Alarm or Detect screen. Do not forget to click <Save> here to save your settings.

6.8.3

PTZ activation

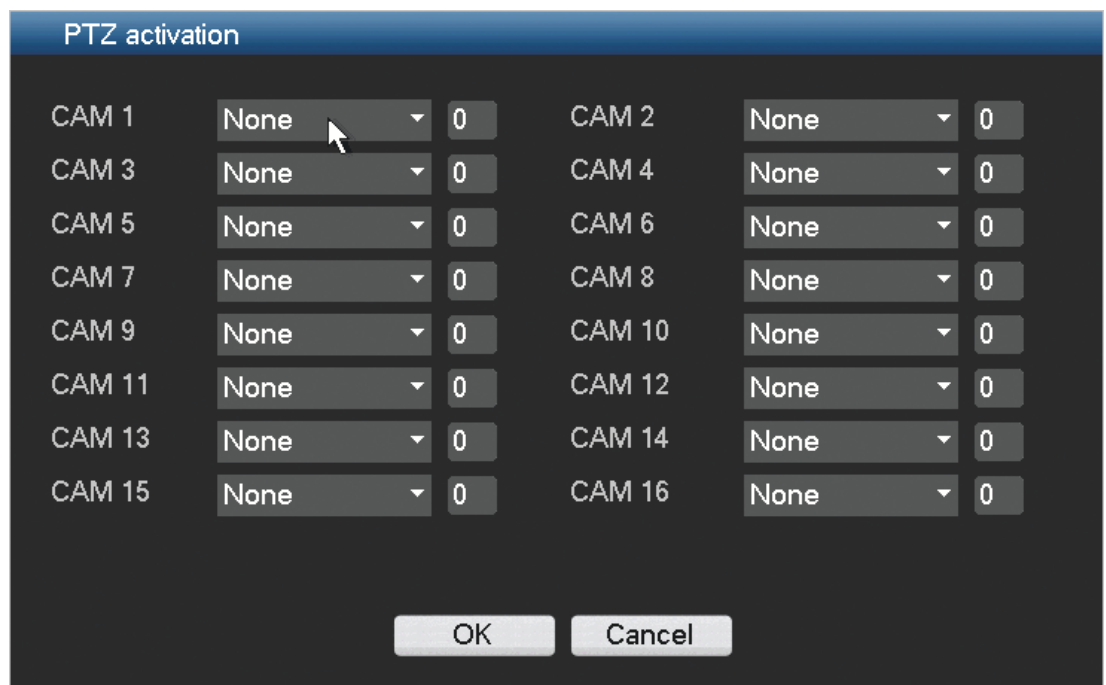


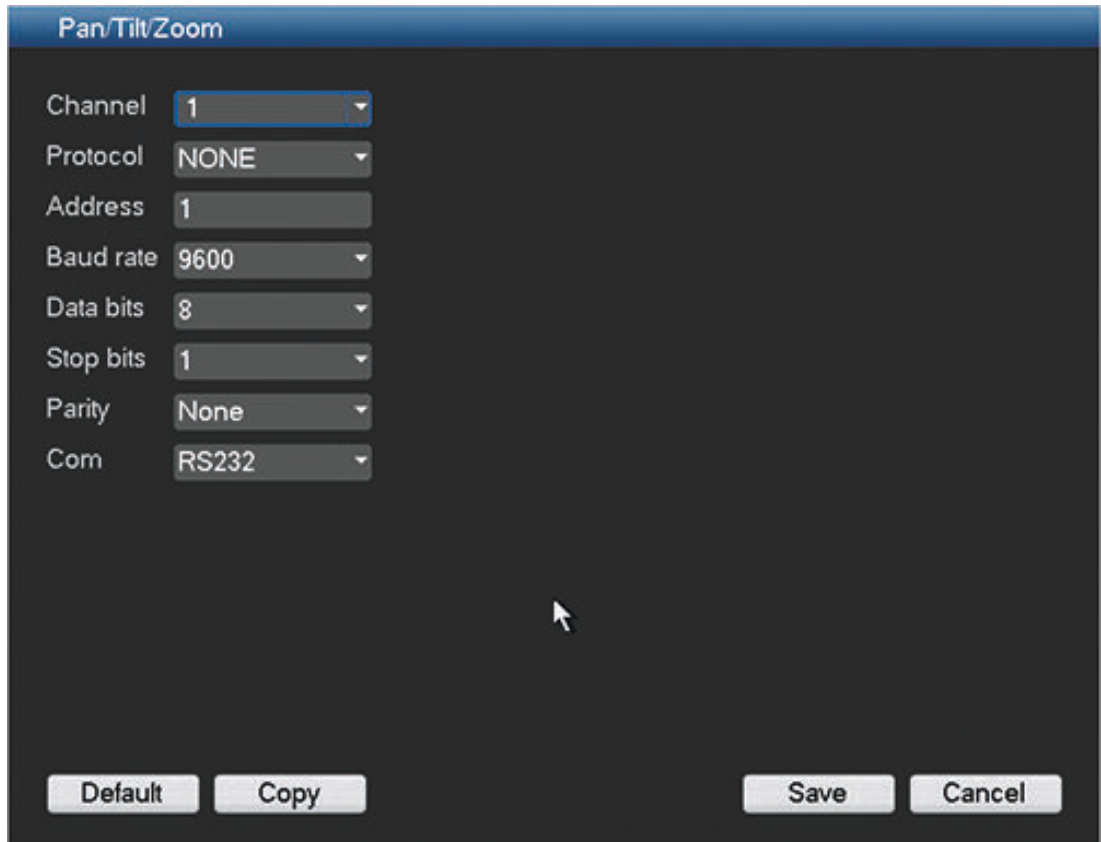
Figure 6.23: PTZ activation

Setup the PTZ as follows for each camera associated with the input:

1. Click on the drop-down menu (the default is None). Here you can set the activation operation for
 - Shot – this will swivel the channel camera to a preset PTZ position this is setup in the PTZ submenu (see *PTZ*, page 95)
 - Tour – this will switch the channel views in a preset sequence
 - Pattern – this will swivel the camera in a pre-assigned pattern
2. Click on the next field to enter a pre-position number from 0 (default) to 255 to send the camera to a specified pre-position.
3. Repeat these steps for each of the PTZ cameras that require a preset.

If required, access the Pan/Tilt/Zoom menu (**Main menu > Setting > Pan/Tilt/Zoom**) to setup the video channel, baud rate, dome protocol, etc. See *Pan/Tilt/Zoom*, page 64.

6.9 Pan/Tilt/Zoom



The screenshot shows a configuration window titled "Pan/Tilt/Zoom". It contains the following settings:

- Channel: 1
- Protocol: NONE
- Address: 1
- Baud rate: 9600
- Data bits: 8
- Stop bits: 1
- Parity: None
- Com: RS232

At the bottom of the window, there are four buttons: "Default", "Copy", "Save", and "Cancel".

Figure 6.24: Pan/Tilt/Zoom

The pan/tilt/zoom setup includes the following items.

- Channel - select first the applicable channel (these settings can later be copied to other channels using <Copy>.
- Protocol: Select corresponding PTZ protocol such as BOSCH or PELCOD.
- Address: input corresponding PTZ address.
- Baud rate: Select baud rate.
- Data bit: Select data bit.
- Stop bit: Select stop bit.
- Parity: There are three choices: none/odd/even.

After completing setup, click **<Save>** to go back to the previous menu.

For a detailed description of how the PTZ is operated, please refer to *PTZ*, page 95.

6.10 Display

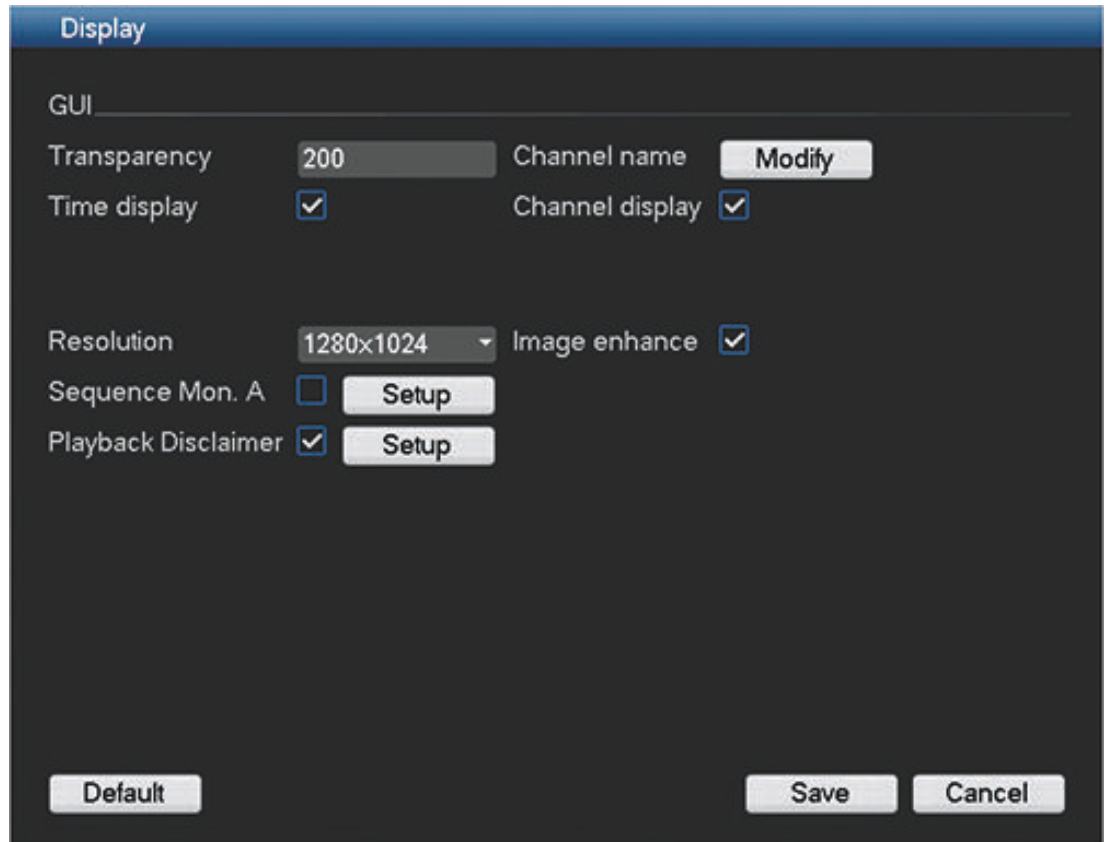


Figure 6.25: Display

Use the Display menu to setup the appearance of your screen:

- Transparency: Adjust this value from 128 to 255 (default is 200).
- Channel name: If required, modify the channel name (max 25 characters). All modifications here also modify the web or client interface channel names.
- Time display: Select to display time during playback and live/web viewing.
- Channel display: Select to display channel name during playback and live/web viewing.
- Resolution: Choose from four options: 1280×1024 (default), 1280×720, 1024×768, 800×600. The system needs to reboot to activate a new setup.
- Image enhance: Select to optimize the margin of the preview video.
- Sequence Mon. A: Activate or access the Sequence Mon. A menu to activate and setup the tour function (sequence of camera views) – see *Sequence Mon. A*, page 66.
- Playback disclaimer: Activate or setup a disclaimer dialog box to appear automatically on the screen before you can search or play video recordings – if the disclaimer is activated, you must always press <Accept> before you can continue with search or play. See *Playback Disclaimer*, page 67.

When ready, click **<Save>** to save settings and return to previous menu.

See also

- *Sequence Mon. A*, page 66
- *Playback Disclaimer*, page 67

6.10.1 Sequence Mon. A

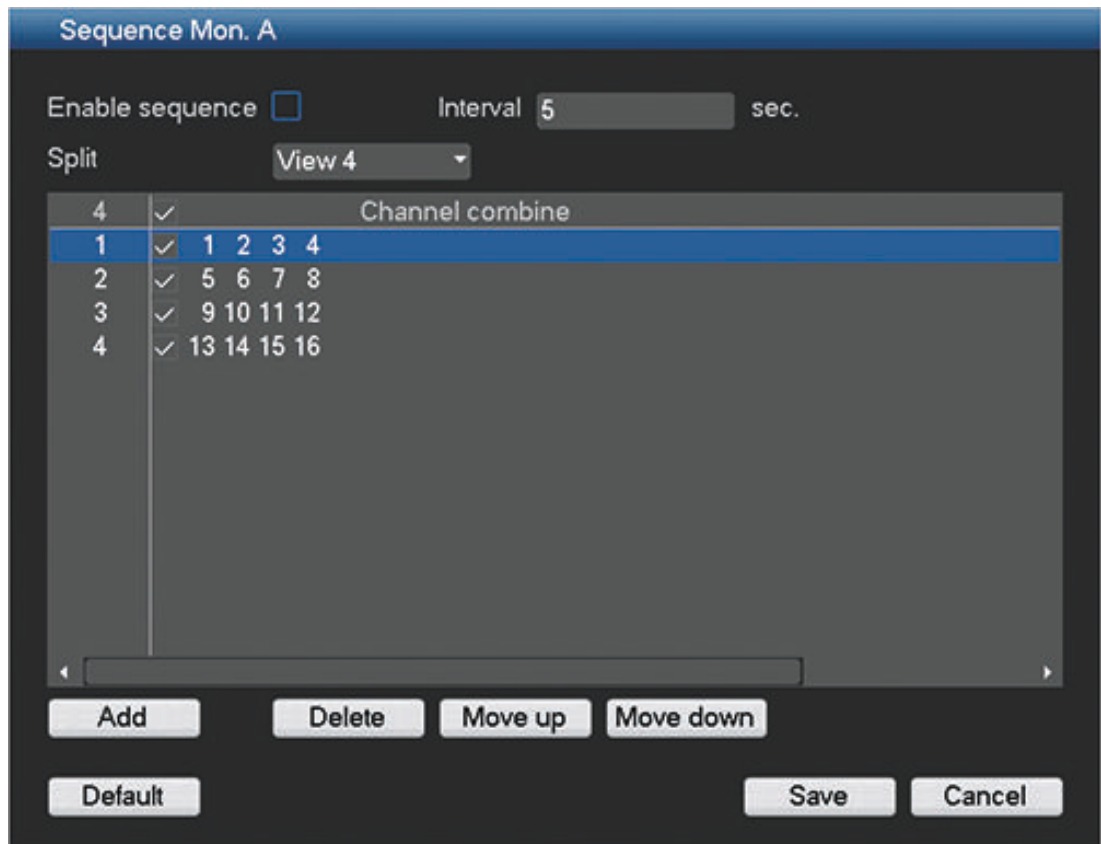


Figure 6.26: Camera sequence setup

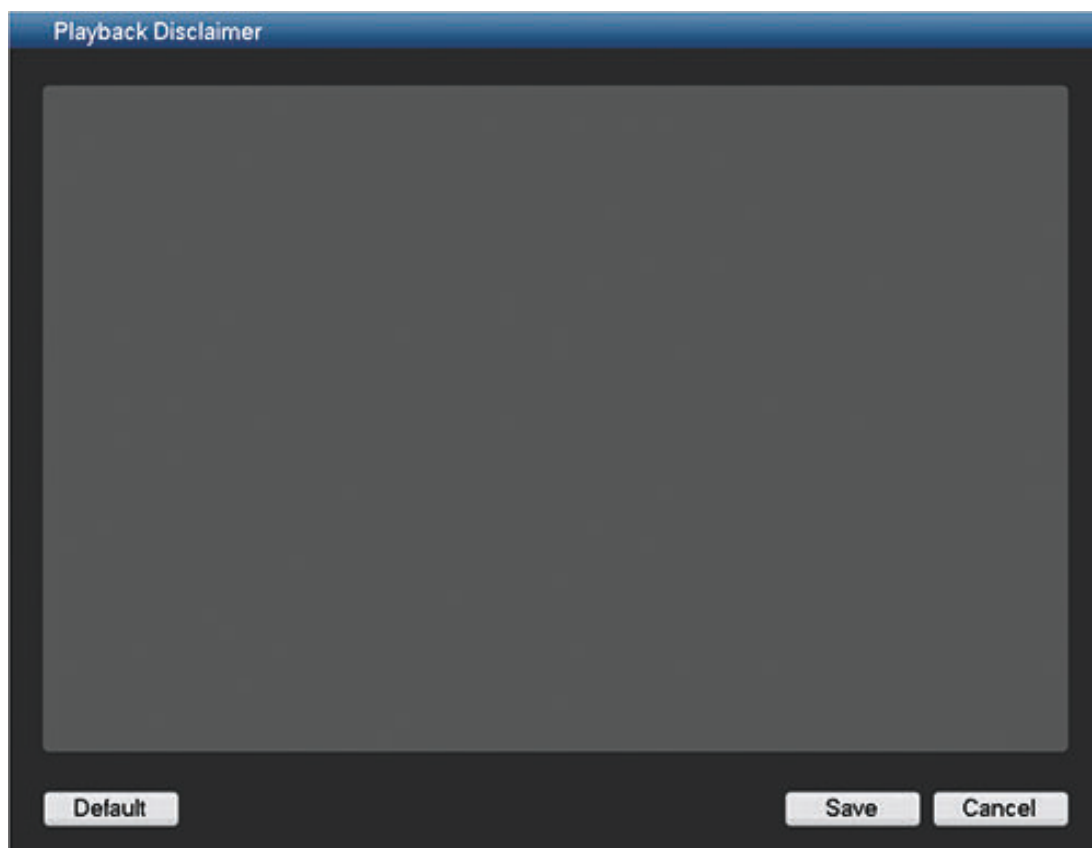
Setup a camera sequence as follows:

- **Enable sequence:** Select check box to enable sequence.
The sequence will automatically start when the system is in live view. To stop and start a camera sequence on Monitor A, use the Sequence on/off option on the Quick menu (right-click mouse button) or click the sequence button on the remote control or front panel (only DIVAR AN 5000).
- **Interval:** This value ranges from 5 (default) to 120 seconds.
- **Split:** Choose here which view combinations are displayed (1, 4, 8, 9 and/or 16 windows) and which combination of cameras to use in the camera sequence. If required, use the **Add**, **Delete**, **Move up** or **Move down** buttons to add or delete views, or to adjust the order of view settings.
For example: Choose camera 1 and 2 in View 1, plus cameras 1 to 8 in View 9 – the sequence will sequence between a single window and 9-window display.

Note 1: Use **Default** to select all camera sequences for all possible view types (the **Enable sequence** will be deactivated, and the **Interval** will be reset to 5 seconds).

Note 2: An enabled alarm/event will override a sequence and briefly display the event before returning to the sequence.

6.10.2 Playback Disclaimer



Setup the Playback Disclaimer as follows:

1. Enter the required text in the text box using the alphanumeric keypad.
2. Press <Save> to save the text.

Note 1: Use **Default** to clear the current disclaimer text and de-select the Enable disclaimer setting (no disclaimer appears).

Note 2: The Playback Disclaimer text is language dependent; i.e. disclaimer text saved for the English language setting will not display for the Spanish setting.

6.11 Default

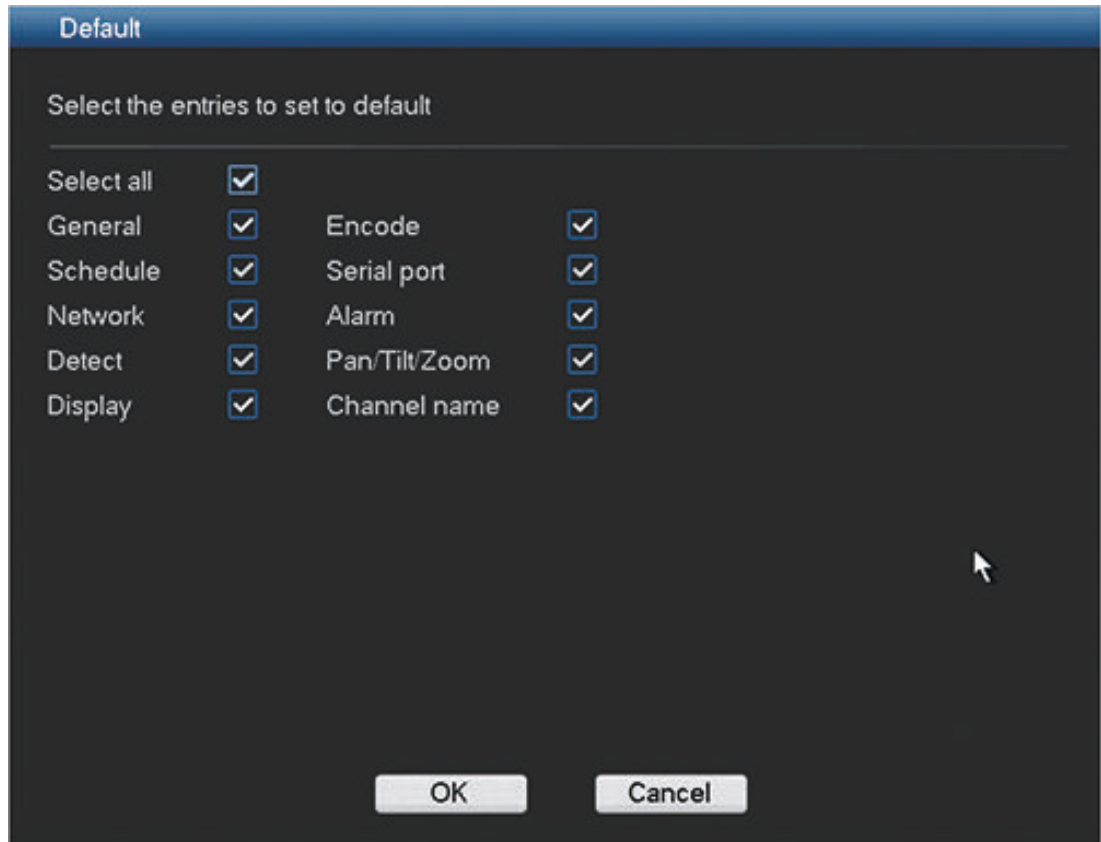


Figure 6.27: Default



Notice!

User settings will be lost

The system menu display, language, time display mode, video format and IP address will all lose their user defined setup after the factory defaults are restored.

To restore the unit to its factory default:

1. Select the check box for the settings you wish to return to the factory default (or choose the checkbox **Select All** to return all the settings to the factory default.
2. Click **<OK>** to reset the chosen defaults.

6.12 Advanced

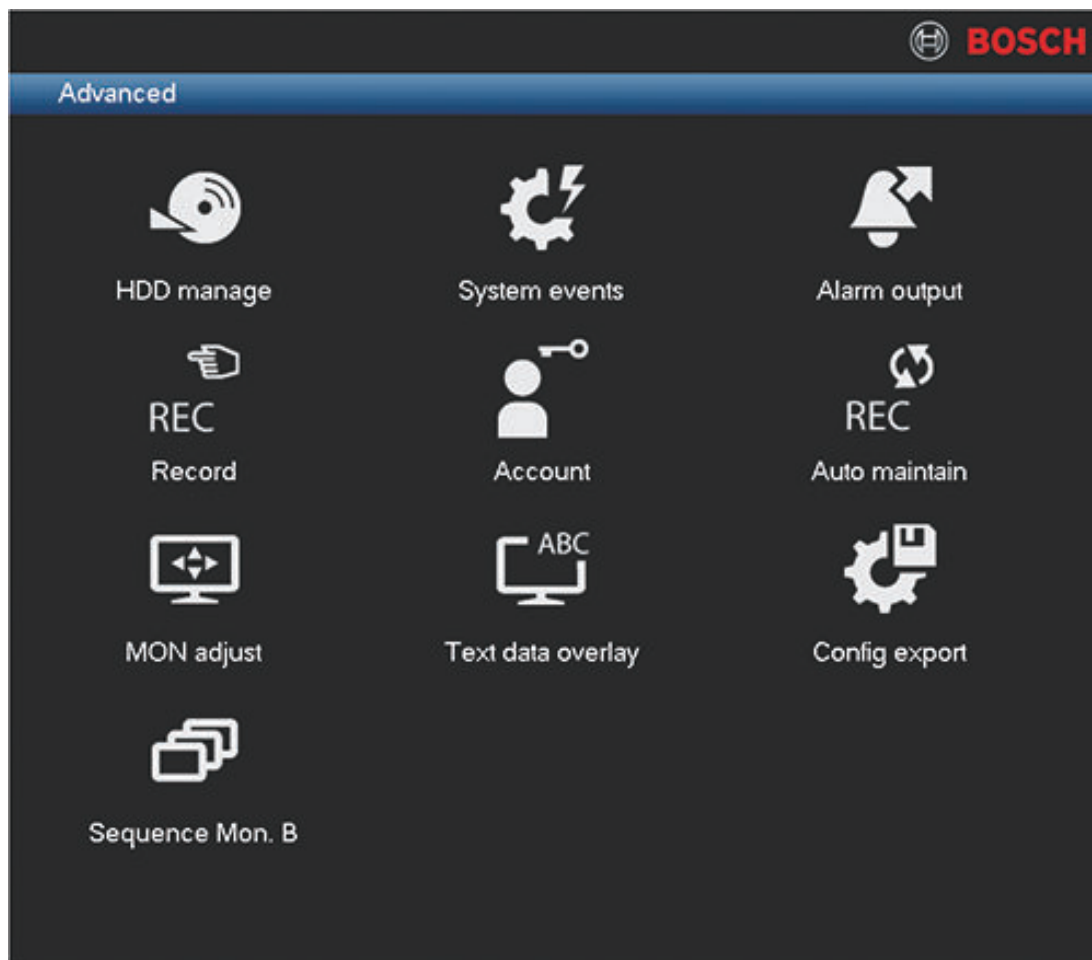


Figure 6.28: Advanced

The Advanced menu has ten major menu groups. Each of these groups provides access to a screen where specific values and functions can be selected and changed.

See the following sections for more information on these groups:

- *Hard Disk (HDD), page 70*
- *System events, page 71*
- *Alarm Output, page 72*
- *Record, page 73*
- *Account/Users, page 74*
- *Auto maintain, page 78*
- *MON adjust, page 79*
- *Text data overlay, page 80*
- *Configuration/Export, page 82*
- *Sequence Mon B, page 82*

6.13 Hard Disk (HDD)

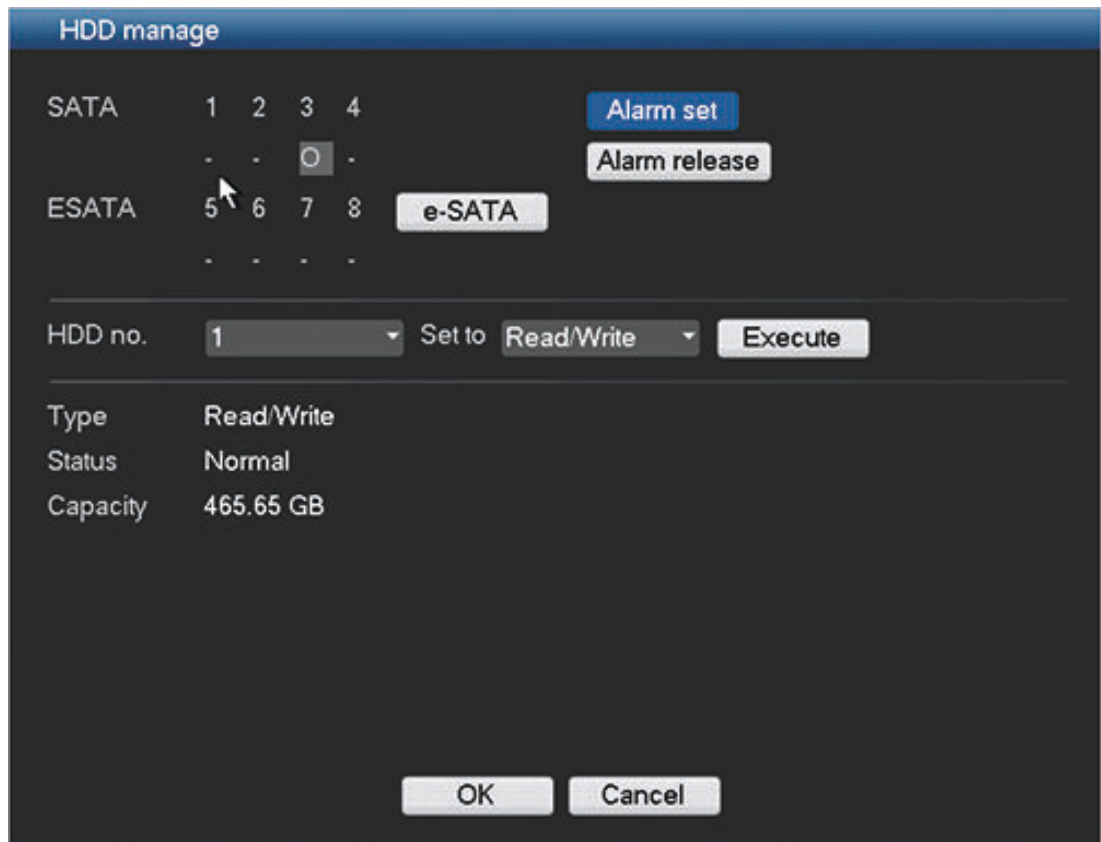


Figure 6.29: Hard disk

Here you can view the current HDD status, and manage it with the following settings:

- **SATA:** shows the current selected hard disk where the system will continuously record, overwriting the oldest unprotected video on the hard disk with newer video. When an HDD is working properly, it is shown as O; if an HDD error has occurred, it is shown as X
- **ESATA (only available on the DIVAR 5000):** shows the current selected hard disk where the system will continuously record. If required, press the **ESATA** button to access a new status screen where you can detect ESATA connections.
- **Alarm set:** Click this button to access the '**System events**' menu to set how the system will react to an HDD error. See *System events*, page 71 for more on this menu.
- **Alarm release:** Click this button to turn off the alarm settings for the HDD.
- **HDD no.:** Select an HDD from the dropdown list to change its setting – see below.
- **Set to:** Select an HDD mode from the dropdown list:
 - Read/Write
 - Read-only
 - Format all data on the HDD – here you will need to also click **<Execute>** to confirm the format process



Notice!

System reboot required

You must reboot the system to activate any modifications

The bottom half of the screen shows the current HDD type, status, capacity and the recording time(s).

6.14 System events

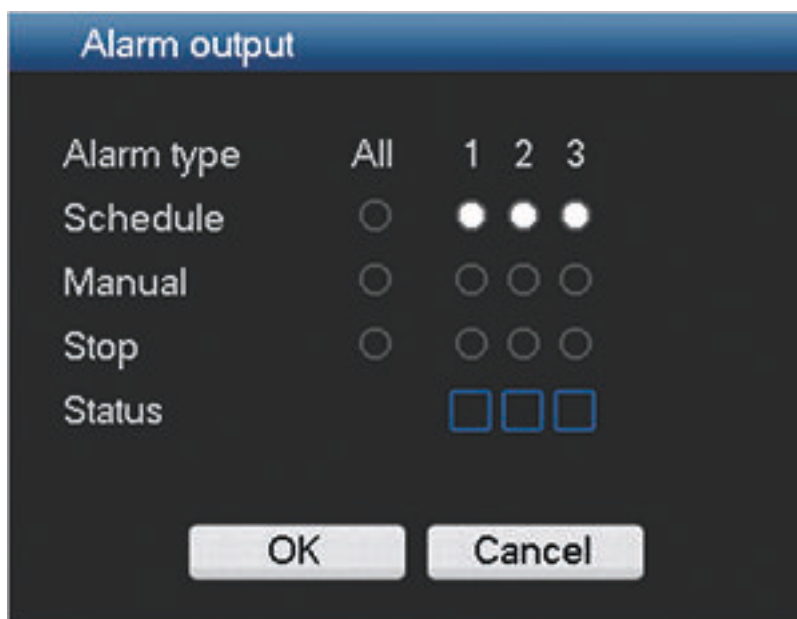
The screenshot shows the 'System events' configuration window. The 'Event type' dropdown is set to 'No disk'. The 'Enable' checkbox is checked. Below a separator line, the 'Alarm out' checkbox is checked. The 'Show message' checkbox is checked. The 'Alarm upload' checkbox is checked. The 'Send email' checkbox is unchecked. The 'Latch' checkbox is checked, and the delay time is set to 10 seconds. The 'Buzzer' checkbox is checked. The 'Save' and 'Cancel' buttons are at the bottom right.

Figure 6.30: System events

Use this menu to setup how the system reacts to different system events.

- Event type: choose from disk error, no disk, no space on disk, NET disconnection, IP conflict, MAC conflict.
- Enable: select to enable the system event.
- Alarm out: select the alarm activation output port(s) (maximum of 3 on DIVAR 3000; 6 on DIVAR 5000).
- Latch: set a delay time (from 10 seconds (default) to 300 seconds) before the system automatically turns off the alarm and the activated output after the external alarm is cancelled.
- Show message: system will pop up a message on the local screen to alert you when an alarm occurs.
- Alarm upload (this option is only shown for the events 'no disk' and 'no space on disk'): system will upload the alarm signal to the network.
- Send email: system will send an email to alert you when an alarm occurs.
- Buzzer: the buzzer alerts you when an alarm occurs.

6.15 Alarm Output



The image shows a configuration screen titled "Alarm output". It has a dark background with white text. The screen is divided into two main sections. The top section has a header "Alarm output" in a blue bar. Below this, there are five rows of settings: "Alarm type", "Schedule", "Manual", "Stop", and "Status". Each row has a label on the left and a set of controls on the right. "Alarm type" has a radio button labeled "All" and three radio buttons labeled "1", "2", and "3". "Schedule" has a radio button labeled "All" and three radio buttons labeled "1", "2", and "3". "Manual" has a radio button labeled "All" and three radio buttons labeled "1", "2", and "3". "Stop" has a radio button labeled "All" and three radio buttons labeled "1", "2", and "3". "Status" has three checkboxes labeled "1", "2", and "3". At the bottom of the screen, there are two buttons: "OK" and "Cancel".

Setting	All	1	2	3
Alarm type	☐	☐	☐	☐
Schedule	☐	☒	☒	☒
Manual	☐	☐	☐	☐
Stop	☐	☐	☐	☐
Status		☐	☐	☐

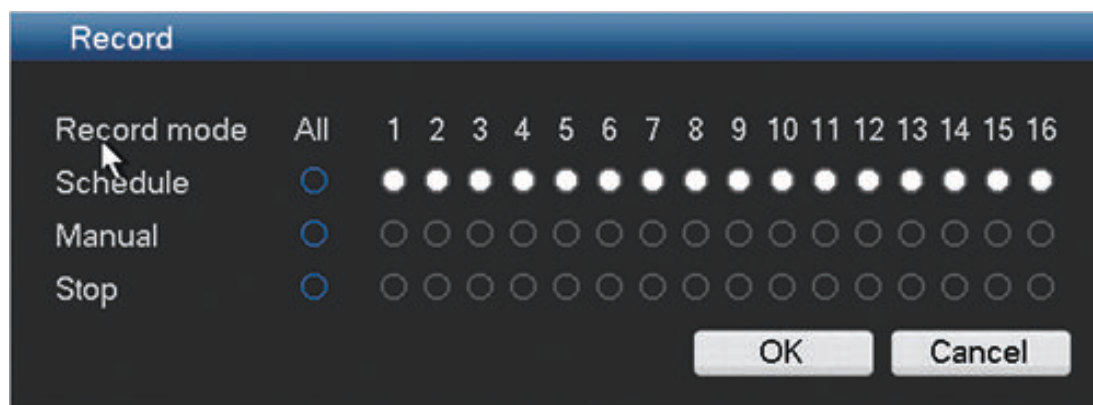
Figure 6.31: Alarm output

Assign here the settings for each of the alarm outputs (3 for the DIVAR 3000; 6 for the DIVAR 5000) or use the 'All' checkbox to select all outputs:

- Schedule: set the alarm to run at a predefined time. See *Schedule*, page 43.
- Manual: Set the alarm to react to a manual input.
- Stop: Turn off the alarm outputs for schedule and manual.
- Status: displays the current status of the external alarm (a checked box means the alarm is activated)

6.16

Record

**Figure 6.32: Record**

Here you need the correct user authority (see *Account/Users*, page 74), plus the HDD must be properly installed.

There are three possible choices for each of the channels (select each channel individually, or choose 'All' to select all channels):

- Manual: After normal startup, all selected channels will automatically begin recording unless recording is turned off with scheduled recording (see *Schedule*, page 43). In live view, a recording channel has a small red circle displayed.
- Schedule: The selected channels will record according to the schedule setup (see *Schedule*, page 43).
- Stop: Stop recording on the selected channels.

6.17 Account/Users

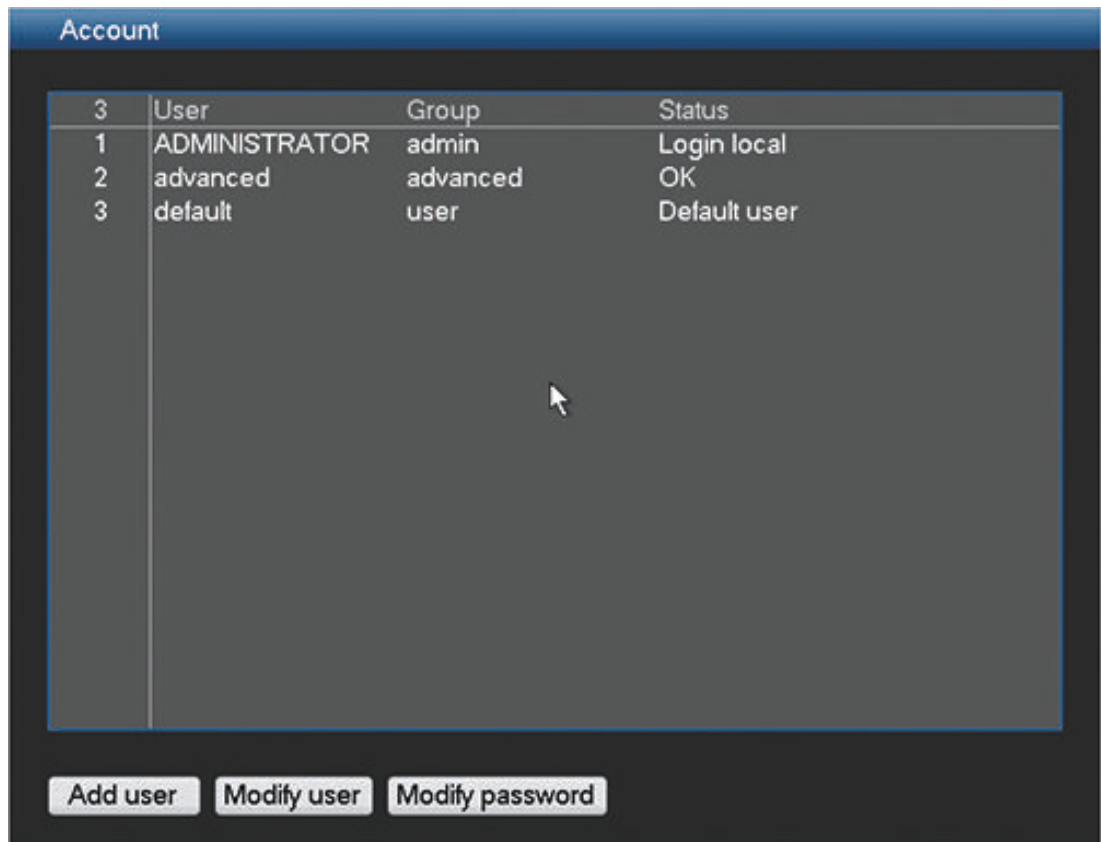


Figure 6.33: Account

General

The system contains a permanent 'Admin' account with Administrator permissions, plus 'Advanced' and 'User' login account levels:

- **User name:** ADMINISTRATOR. **Default password:** 000000 (six zeros)
- **User name:** Advanced. **Default password:** 000000
- **User name:** User. **Default password:** 000000

The operating functions available to each user can be limited by setting passwords (max. 12 characters) for user levels at the log in screen; see following table for the default user levels and available functions.

Administrator authority	Advanced User authority	User authority
View (all channels)	View (all channels)	View (all channels)
Pan/Tilt/Zoom Control	Pan/Tilt/Zoom Control	Pan/Tilt/Zoom Control
Color Setting	Color Setting	
Search/Play (all channels)	Search/Play (all channels)	Search/Play (all channels)
Playback on all channels	Playback on all channels	Playback on all channels
Sequence on/off	Sequence on/off	Sequence on/off
Alarm output		
Switch user	Switch user	Switch user

Main menu	Main menu	
Export	Export	
Info	Info	
Shutdown		
Setting menu		
Advanced menu		
Restrict/Protect		

6.17.1

Add user

Add user

User

Password Confirm

Group **admin** ▼

65	☐ Authority
1	☒ Control panel
2	☒ Shutdown the device
3	☒ Monitor
4	☒ Monitor_CH01
5	☒ Monitor_CH02
6	☒ Monitor_CH03
7	☒ Monitor_CH04
8	☒ Monitor_CH05
9	☒ Monitor_CH06

⏪ Page up ⏩ Page down Fn Enable/Disable authority

Save Cancel

Figure 6.34: Add user

Add a user as follows:

1. Enter a **User name** up to 16 characters.
2. Enter a **Password** up to 12 characters, and **confirm** this by entering the password again.
3. Control access to the system by selecting a user **Group** (Administrator, Advanced or Normal user).
4. If required, adjust the Authority (permissions) for the user.

6.17.2 Modify/Delete a user

Modify user

User name: ADMINISTRA* ▾

User: ADMINI

Group: admin ▾

65	☒ Authority
1	☒ Control panel
2	☒ Shutdown the device
3	☒ Monitor
4	☒ Monitor_CH01
5	☒ Monitor_CH02
6	☒ Monitor_CH03
7	☒ Monitor_CH04
8	☒ Monitor_CH05

⏮ Page up ⏭ Page down Fn Enable/Disable authority

Save Delete Cancel

Figure 6.35: Modify user

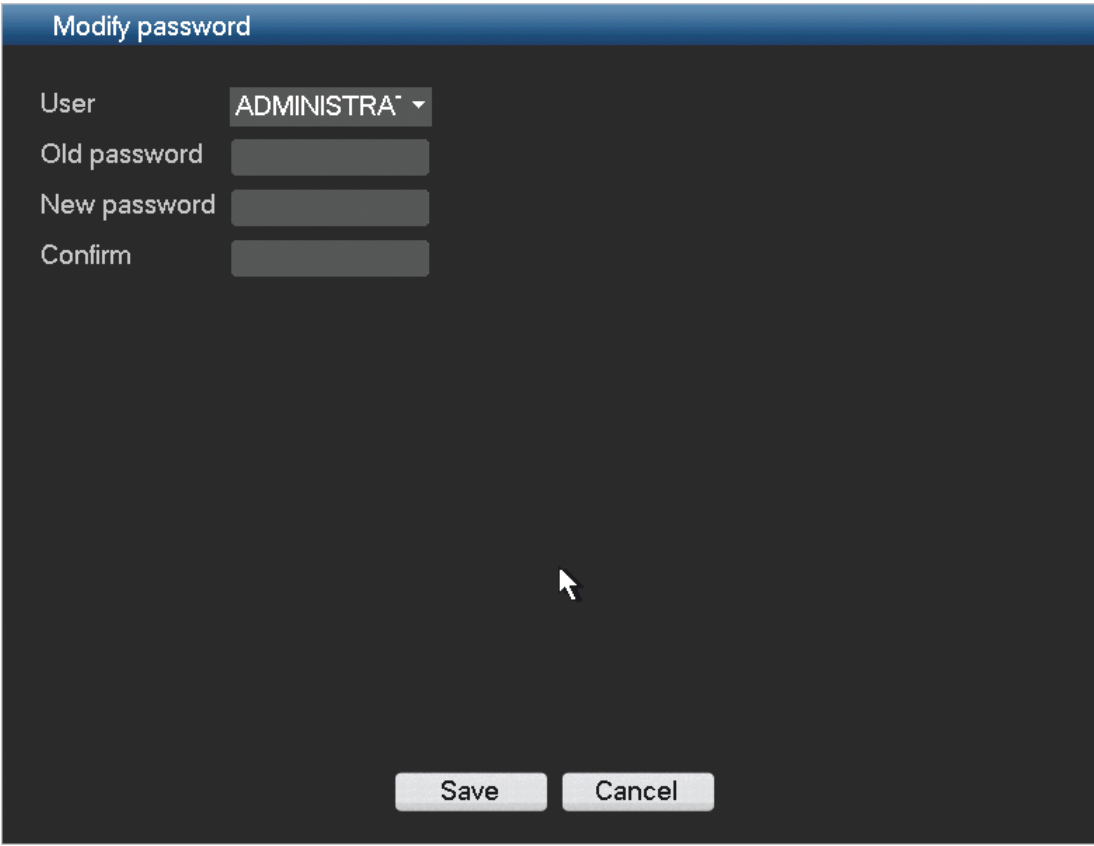
Modify a user as follows:

1. Choose the **User name** from the drop-down list.
2. If required, assign the user to a different **Group** by selecting from the drop down list.
3. Change the user authority by (de)selecting the check boxes.
4. Click **<Save>**.

Delete a user as follows:

1. Choose the **User name** from the drop-down list.
2. Click **<Delete>**.
3. Confirm the delete by clicking **<OK>**.

6.17.3 Modify password



The screenshot shows a 'Modify password' dialog box with a dark background and a blue title bar. The title bar contains the text 'Modify password'. Below the title bar, there are four input fields arranged vertically. The first field is labeled 'User' and is a dropdown menu showing 'ADMINISTRATOR'. The second field is labeled 'Old password'. The third field is labeled 'New password'. The fourth field is labeled 'Confirm'. At the bottom of the dialog, there are two buttons: 'Save' and 'Cancel'.

Figure 6.36: Modify password

1. Select the relevant user.
2. Enter the **Old password**.
3. Enter the **New password**.
4. Enter the New password again in the **Confirm** field.
5. Click **<Save>** to save the new password setting.

6.18 Auto maintain

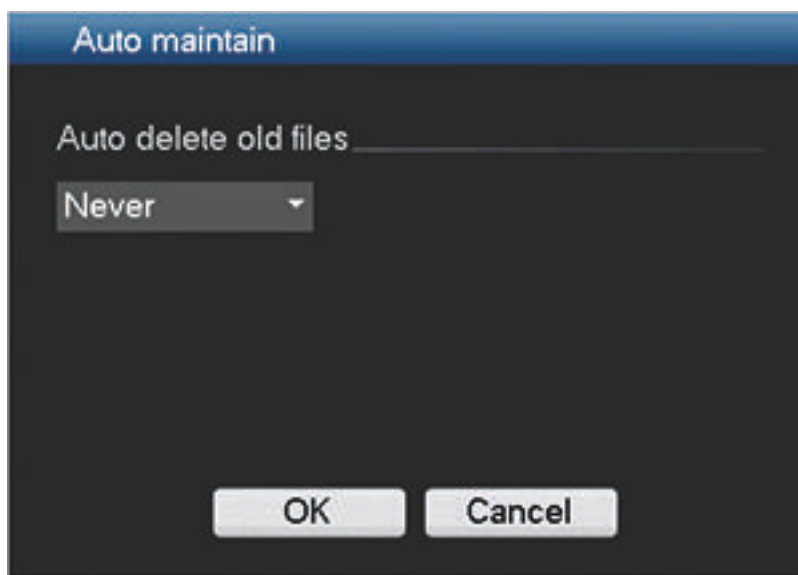


Figure 6.37: Auto maintain

Here you can set a time to automatic delete old files setup

- Never
- Customized: A new screen appears where you can assign the number of days that old files are retained on the system before they are automatically deleted

6.19 MON adjust

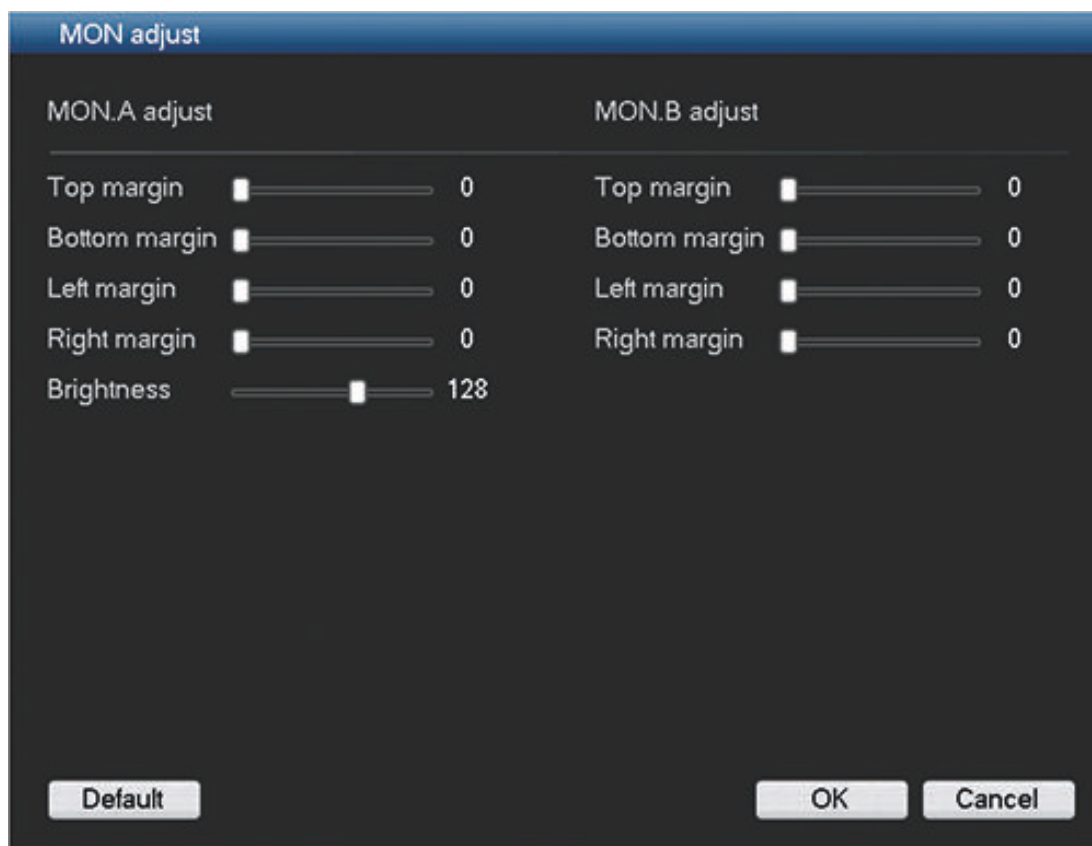


Figure 6.38: Monitor adjust

Adjust here the monitor output settings by dragging the slide bar for each item. When ready, click **<OK>** to save changes and go back to the previous menu.

6.20 Text data overlay

This function includes Sniffer, information analysis and title overlay function. The Sniffer mode can be either COM or NET (network).

NET Type

The network type interface is shown below.

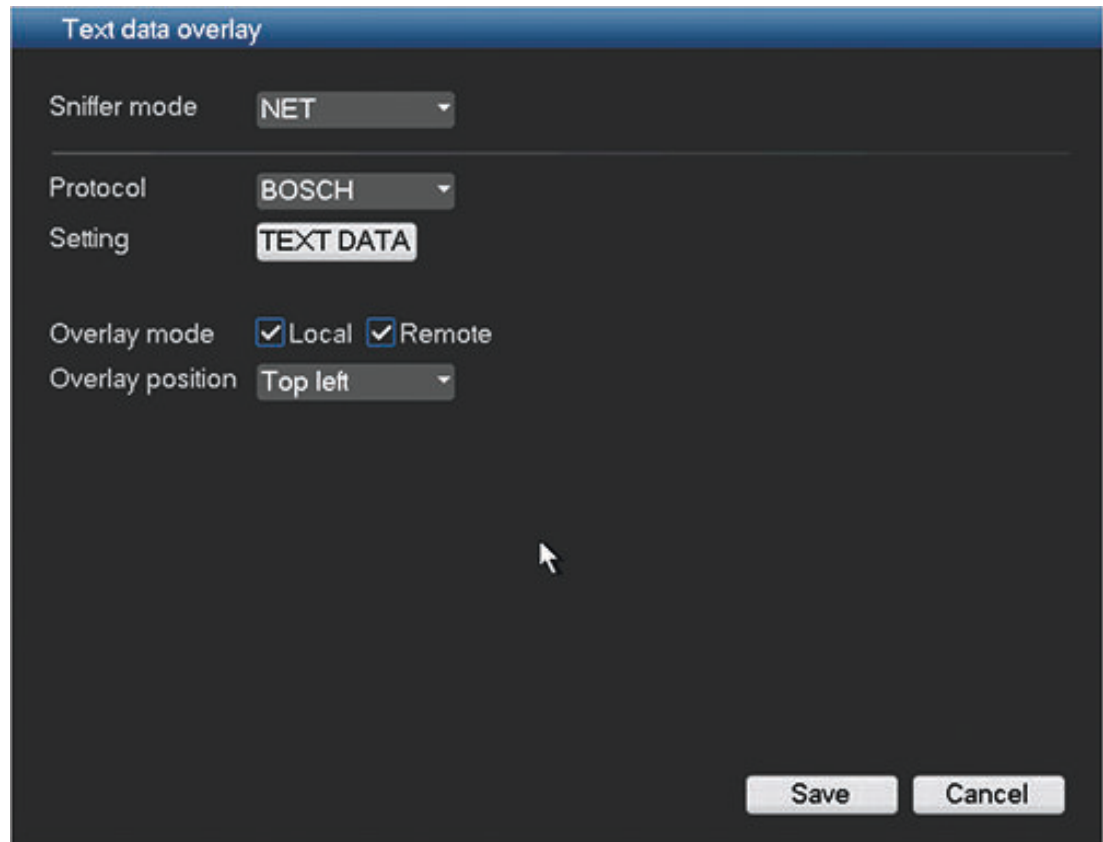
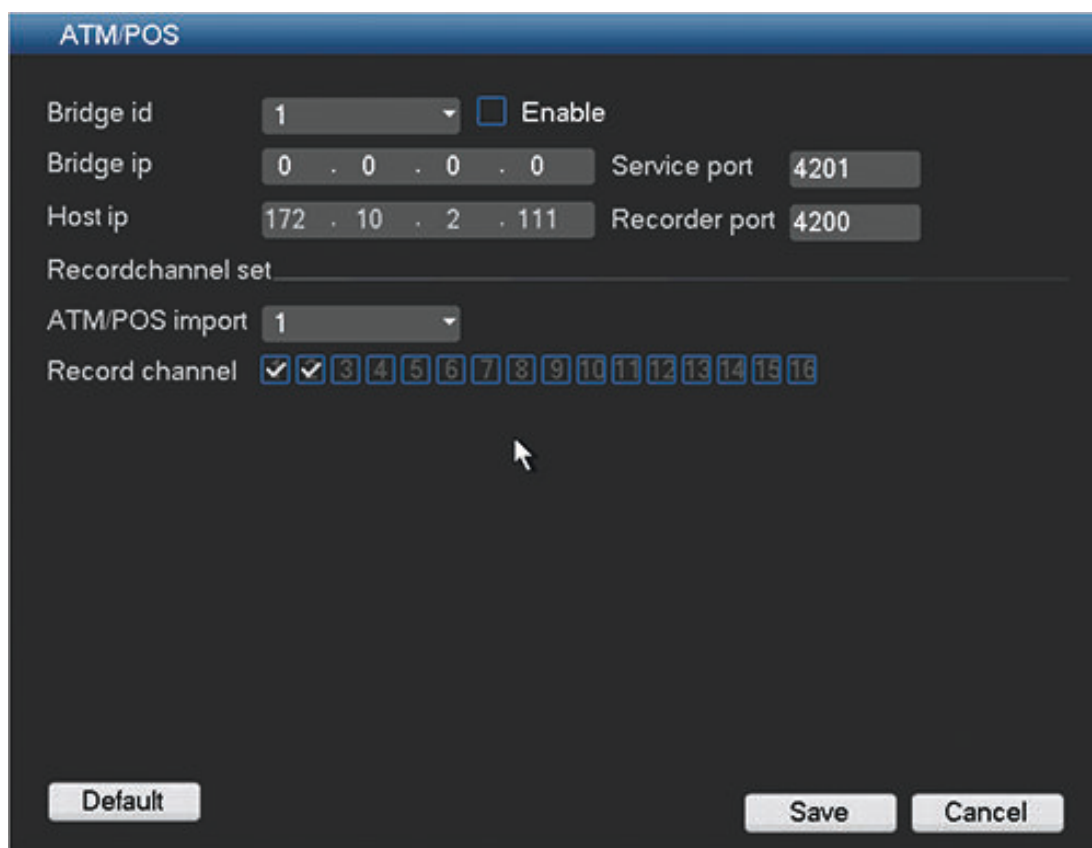


Figure 6.39: Text data overlay NET

- Protocol: Currently only the BOSCH protocol is available
- Setting: Click this button to access the ATM/POS screen – see below.
- Overlay mode: Choose from:
 - Local - overlay the card number in the local monitor video
 - Remote - overlay the record file
- Overlay position: Choose from Top left, Bottom left, Top right or Bottom right

COM Type

- Currently only the BOSCH protocol is available
- Setting: Click <COM setting> for a new interface as shown in the 'Serial port' interface. See *Serial port*, page 45.
- Overlay channel: Select the channel(s) you want to overlay
- Overlay mode: Choose from:
 - Local - overlay the card number in the local monitor video
 - Remote - overlay the record file
- Overlay position: Choose from Top left, Bottom left, Top right or Bottom right

ATM/POSThe image shows a configuration window titled "ATM/POS" with a dark background. It contains several input fields and checkboxes. At the bottom are three buttons: "Default", "Save", and "Cancel".

Bridge id: 1 ☐ Enable

Bridge ip: 0 . 0 . 0 . 0 Service port: 4201

Host ip: 172 . 10 . 2 . 111 Recorder port: 4200

Recordchannel set: _____

ATM/POS import: 1

Record channel: ☒ ☒ 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Default Save Cancel

Figure 6.40: Text overlay ATM/POS

Here you can enter:

- Bridge id: enter the correct channel (and select **Enable**)
- Bridge IP / Host IP: destination ports (you may need to input the corresponding port number)
- Record channel set: assign the correct channels

See also

- *Text data overlay, page 80*

6.21 Configuration/Export

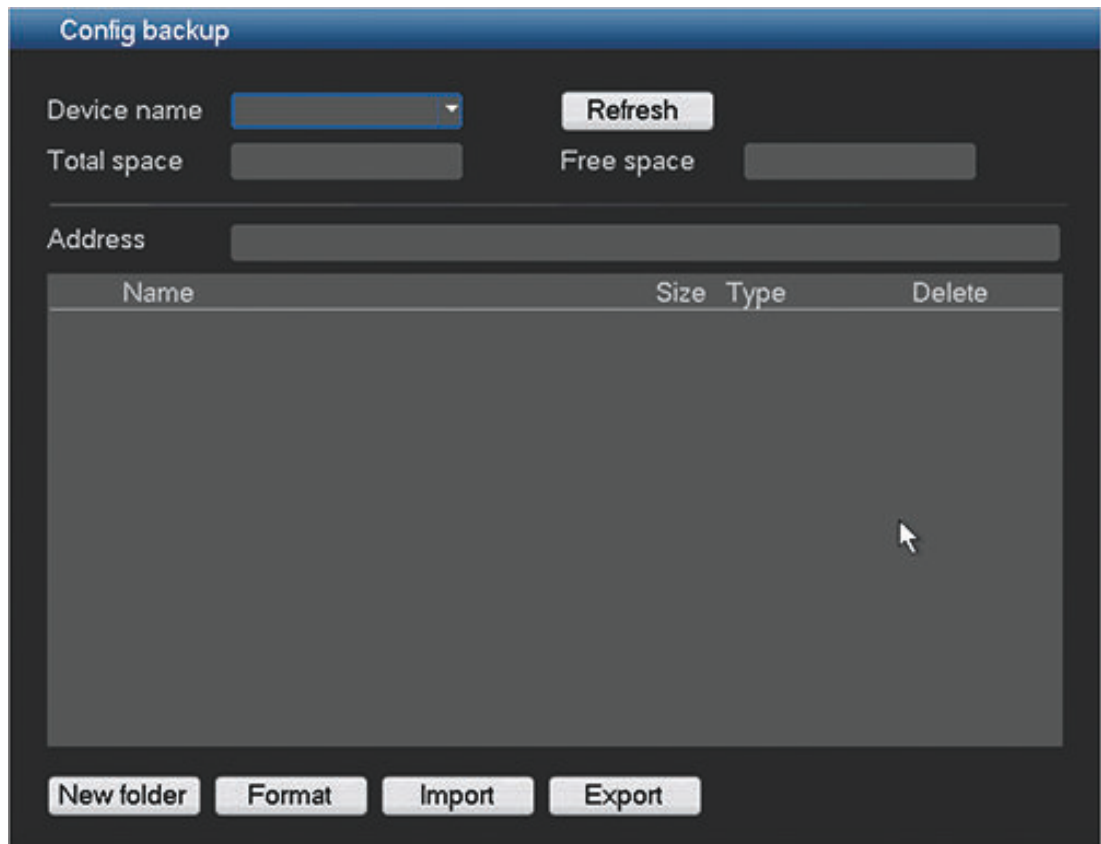


Figure 6.41: Config backup Import/Export

Use this function as follows:

1. Choose first a memory device from the drop-down menu (a list normally appears of the current folders and files available on the device).
2. Use the selection buttons (on the bottom of the screen) for your configuration backup:
 - **New folder** will create a new folder on the selected memory device
 - **Format** will ask to confirm a format of the selected memory device.
 - **Import configuration** will load previously saved system settings from a folder on the selected memory device
 - **Export configuration** saves a copy of the system settings to a selected memory device

6.22 Sequence Mon B

Use the same procedure here to setup the live display sequence as used for Monitor A - see *Sequence Mon. A*, page 66.

Note 1: The Search/Play function is not available on Monitor B.

Note 2: Monitor B can display a live multi-window view by enabling a multi-window sequence.

7 Operating instructions

Once all hardware connections have been made (see *Hardware setup*, page 28) and the system is correctly configured (see *Configuration*, page 35), you can choose for any of the following operating functions:

- Login – see *Login*, page 21
- View real time camera displays – see *Live and playback*, page 92
- Search and playback recorded files – see *Search/Play*, page 97
- Backup (export) recordings – see *Export*, page 103
- Set triggers and alarms - *Triggers and alarms*, page 112
- Shutdown / Switch user / Restart / Logout – see *Shutdown/Logout*, page 27

All of these functions are controlled via menus from connected monitor(s) using the mouse, front panel buttons or the remote control. For a detailed description of the menu structure and the controls – see *User controls and menus*, page 83.

7.1 User controls and menus

The following user controls are available:

- Mouse – see *Mouse Controls*, page 84 (the preferred input device when setting up the system and entering field values)
- Front panel – see *Front panel controls*, page 85
- Remote control – see *Remote control*, page 87
- Remotely via the Web-based Configuration application – see *Web Client Software*, page 114
- Connected keyboard (only on DIVAR AN 5000) – see relevant keyboard manual

The DIVAR uses a **Main menu** and a **Quick menu** to perform all operating steps and give access to several functions to help configure and use the unit. See following descriptions:

- *Main menu*, page 91
- *Quick menu*, page 90

Some menu options are only accessible with an Administrator login.

See also

- *Live mode*, page 92

7.1.1

Mouse Controls

Mouse	Function
Left button	In Live mode, click once to select channel and choose other functions
	In the Quick menu , use the left mouse button for the following options: – Go to the main menu (after selecting a menu item, left-click again to view menu content and make selections) – Modify a checkbox or motion detection status
	When inputting data, one of the following input keypads appears (depending on whether you need to enter alphanumeric or only numeric characters): Left click the corresponding button on the keypad to input the required characters (use Shift on alphanumeric keypad to switch between small/capitalized)
Double-click left button	Implement a special control operation, e.g. double-click an item in the file list to play the video
	In multiple window mode, double-click one channel to view in full-screen mode; double-click current video again to go back to previous multiple window mode
Drag mouse with left button pressed	Select motion detection zone
	Select privacy mask zone.
Middle scroll wheel	In numeral input box, increase or decrease numeric value
	Switch items in a check box
	Page up or page down in a list

Right button	In Live mode, the following Quick menu appears: View 1 ▶ View 4 ▶ View 8 ▶ View 9 ▶ View 16 Pan/Tilt/Zoom Color setting Search/Play Sequence on Alarm output Switch user Main menu
	If you are currently in a menu, right-click to exit the current menu without saving any modifications.

See also

- *Quick menu, page 90*
- *Live and playback, page 92*

7.1.2**Front panel controls**

All functions controlled by the USB mouse can, alternatively, be accessed using the front panel buttons.



Figure 7.1: Front panel DIVAR AN 3000



Figure 7.2: Front panel DIVAR AN 5000

Symbols on the buttons show the applicable function; see the following table:

Button	Symbol	Function
Power On/Off		Press briefly for 3 seconds to power up or power down the DIVAR. The button is lit green when power is on
Shift	Shift	When entering characters in a field, click to switch between numeral, text capitalized and text non-capitalized

		When selecting camera channels (on the DIVAR AN 3000), press first the Shift button and then the required channel number – see the keys below with number functions
Up / Down		In menu mode, move up and down through menu items or values
		Increase/decrease numeral in a numeric field
		In PTZ mode, use to control the tilt functions of the selected camera
		In text mode or when choosing a camera channel, input number 3 or 9 (only on DIVAR AN 3000)
Left Right		In menu mode, move around through menu items or values
		In PTZ mode, use to control the pan function of the selected camera
		In playback, click to control playback bar
		In text mode or when choosing a camera channel, input number 6 or 7 (only on DIVAR AN 3000)
ESC	ESC	Go to previous menu, or cancel current operation
		In playback, click to restore real-time monitor mode
Enter		Select a submenu or menu item, or confirm selections made in menus
		Go to default button
		Go to Quick menu
Window switch	Mult	Click to switch between one-window and multiple-window (2, 4, 9, and 16)
Assistant	Fn	In one-window monitor mode, click to display assistant function: PTZ control and image color
		In motion detection setup, use the Fn and direction keys for setup
		In text mode, click to switch between numeral, English character (small/capitalized), etc. Press for 1.5 seconds to delete the previous character before the cursor
		Realize other special functions
Slow forward		Multiple slow play speeds or normal playback In text mode or when choosing a camera channel, input number 5 (only on DIVAR AN 3000)
Fast play		Various fast speeds and normal playback In text mode or when choosing a camera channel, input number 4 (only on DIVAR AN 3000)

Play previous		In playback mode, playback the previous video In text mode or when choosing a camera channel, input number 7 (only on DIVAR AN 3000)
Reverse/Pause		In normal playback or pause mode, click to reverse playback In reverse playback, click to pause playback In text mode or when choosing a camera channel, input number 1 (only on DIVAR AN 3000)
Play Next		In playback mode, playback the next video In menu setup, scroll down the dropdown list In text mode or when choosing a camera channel, input number 8 (only on DIVAR AN 3000)
Play/Pause		In normal playback, click to pause playback In pause mode, click to resume playback In text mode or when choosing a camera channel, input number 2 (only on DIVAR AN 3000)
The DIVAR 5000 also has the following buttons		
Export		Export the currently selected files to an external device
Sequence		Activate the camera views in a pre-set sequence
Numeric keypad		Switch camera channels In text mode, enter characters in a field (use the Shift button to change the input mode)

The front panels also have the following status lights and a USB connector:

Status lights	Symbol	Function
Channel record	1-16	A channel number is lit if the channel is recording.
Hard disk		Is lit if an installed hard disk has an error or is full.
Network		Is lit if a user is connected to the DVR online.
USB port		Connect USB storage device or USB mouse to this port.

7.1.3

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 999 units without interfering with one another. An ID number must be chosen on the remote control and in the system (see menu **Setting > General** for setting a system ID for each unit).

To set the ID on the remote control:

1. Press the **Add** button on the remote control.

2. Press a number between **0** and **998** that corresponds to the unit ID you wish to control (this unit will remain as the default until you select another unit with the **Add** button).
3. Press the **Enter** button to set the unit ID.

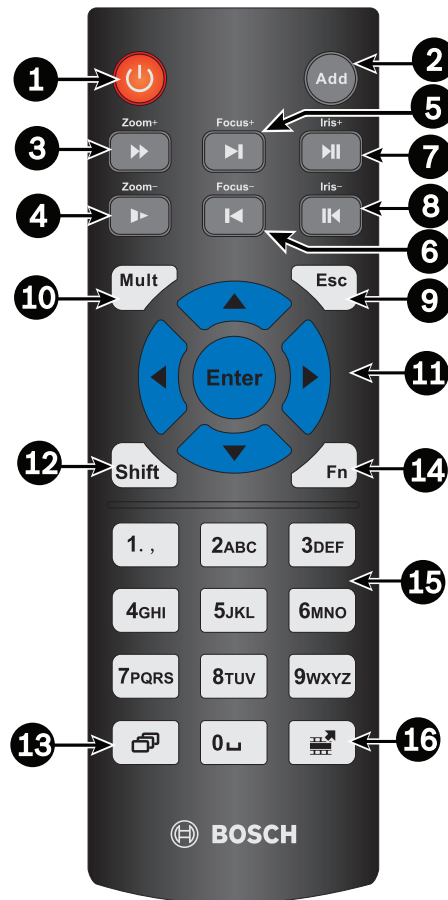


Figure 7.3: Remote control

See the following table for detailed information on each of the remote control buttons.

Button ID	Name	Function
1	Power button	Start up or shut down the device
2	Address	Input a device number to be controlled
3	Forward	Multiple fast-forward speeds or normal playback
4	Slow forward	Multiple slow-play speeds or normal playback
5	Play next	In playback mode, playback the next video
6	Play previous	In playback mode, playback the previous video
7	Play/Pause	In pause mode, click for normal playback
		In normal playback, click to pause playback
		In real-time monitor mode, click to enter video search menu
8	Reverse/pause	In reverse playback pause mode, click for normal playback

		In reverse playback mode, click to pause playback
9	Esc (Cancel)	Go back to previous menu or cancel current operation (close upper interface or control)
10	Mult	Switch between multiple-windows and single-window
11		In menu mode, move up and down through menu items or values Increase/decrease numeral in a numeric field In PTZ mode, use to control the tilt functions of the selected camera
		In menu mode, move around through menu items or values In PTZ mode, use to control the pan function of the selected camera In playback, click to control playback bar
	Enter	Go to default Go to the selected menu
12	Shift	Switch the input of characters between numbers, text capitalized and text non-capitalized
13	Sequence	Activate the camera views in a pre-set sequence
14	Assistant (Fn) key	In 1-ch monitor mode: pop up assistant function : PTZ control and image color
		In PTZ control mode, switch the PTZ control menu
		In motion detection mode, use together with the direction keys to complete setup
15	0-9 number key	Switch camera channels (for channels 10 to 16, press 1 then second number within
		In text mode, enter characters in a field (use the Shift button to change the input mode)
16	Export	Export the currently selected files to an external device

7.1.4

Quick menu

When in live viewing mode, right-click the mouse for the following quick menu:

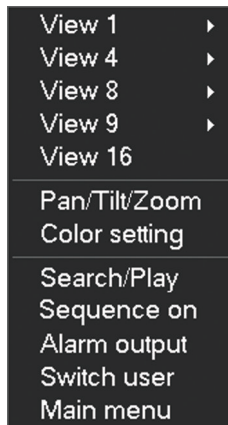


Figure 7.4: Quick menu

Here you can select:

- **View 1, 4, 9, 16** – choose here the number of view windows shown on Monitor A (one-window, four-windows, nine-windows or sixteen-windows). Press play to activate the new view.
- **Pan/Tilt/Zoom** – only possible if you have a PTZ camera attached and configured
- **Color setting** – to change the color settings of the viewed camera images – see below
- **Search/Play** – searching for records, and playing/exporting them – see *Search/Play*, page 97
- **Sequence on** – activate a camera tour sequence on Monitor A (to disable the sequence, access Quick Menu again and select ‘Sequence off’)
- **Alarm output** – access the alarm output screen to configure the alarm output relays – see *Alarm Output*, page 72
- **Switch user** – activate the Login screen where you can login as a different user
- **Main menu** – for settings and user modes – see *Main menu*, page 91



Notice!

Pan/Tilt/Zoom and color settings in multi-window mode

The Pan/Tilt/Zoom and Color setting applies for the currently selected channel. If you are in multiple-window mode, the system automatically switches to the corresponding channel.

Color setting

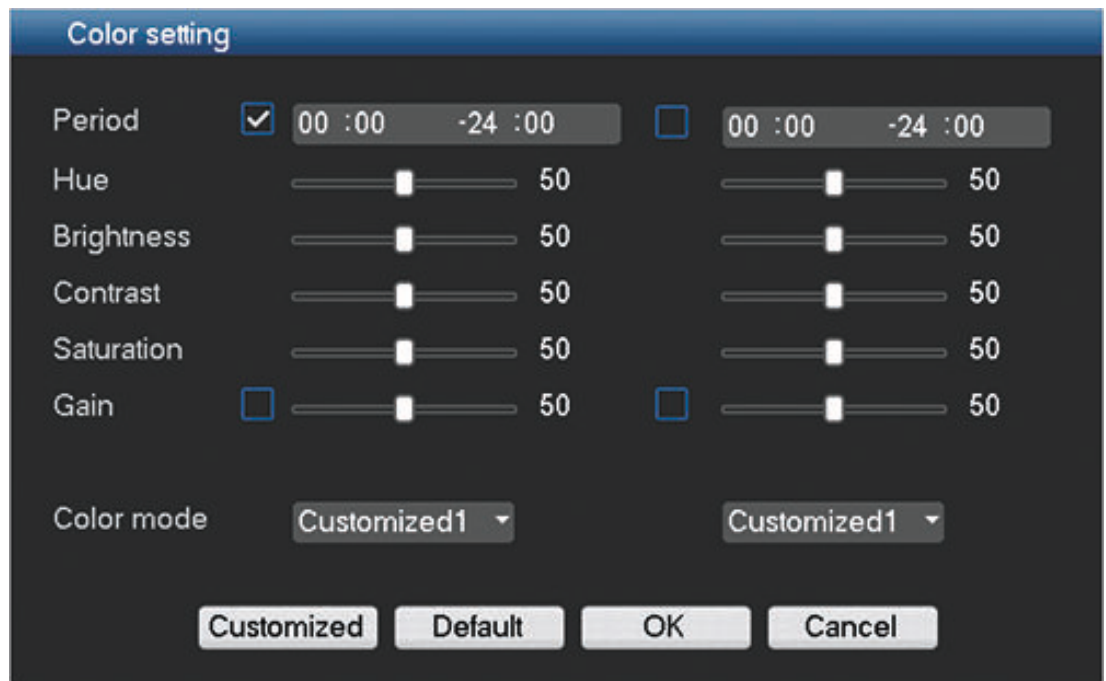


Figure 7.5: Color setting

Use the slider bars here to move the color settings to the desired levels for your display(s):

- You can setup two different time periods to adjust your settings (this is very useful to automatically change the screen brightness for day and night situations).
- You can create a maximum 4 customized settings to be stored and used later. See following steps:
 - Click **<Customized>**
 - In the new 'Customized color' dialog screen, choose Customized 1, 2, 3 or 4 from the drop-down menu.
 - Adjust the settings
 - Click **<OK>** to save the settings
 - Choose the desired Customized 1, 2, 3 or 4 from the drop-down menu in the field 'Color mode'

7.1.5

Main menu

Access the Main menu as follows:

- Use the Enter key and the direction buttons on the front panel or the remote control
- Right-click the mouse for the Quick menu and select **'Main menu'**

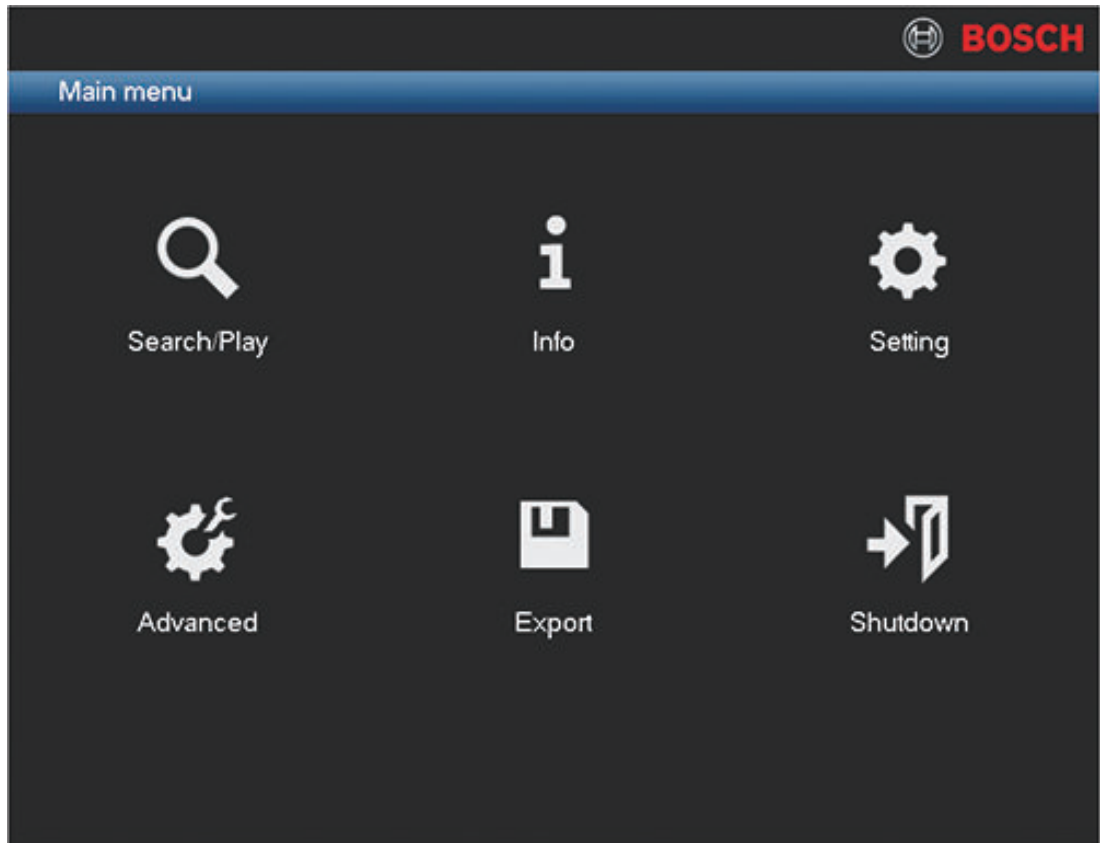


Figure 7.6: Main menu

Here you can select the following sub-menus:

- **Setting** and **Advanced** for system configuration
- **Search/Play** to search for and play recordings
- **Info** for relevant system status information
- **Export** to export your recorded files to a memory device
- **Shutdown** logout or switch user, and shutdown/restart your system

See also

- *Configuration, page 35*
- *Search/Play, page 97*
- *Info, page 104*
- *Export, page 103*
- *Shutdown/Logout, page 27*

7.2 Live and playback

The unit has four monitor outputs, three for monitor A (see *Monitor A, page 96*) and one for monitor B (see *Monitor B, page 96*). Refer to the descriptions below, and to *Display, page 65* to see how to configure the monitor displays.

7.2.1 Live mode

After you log in, the system is in live viewing mode with 1 to 16 live images on the display (from a maximum 16 connected cameras). See following example view.

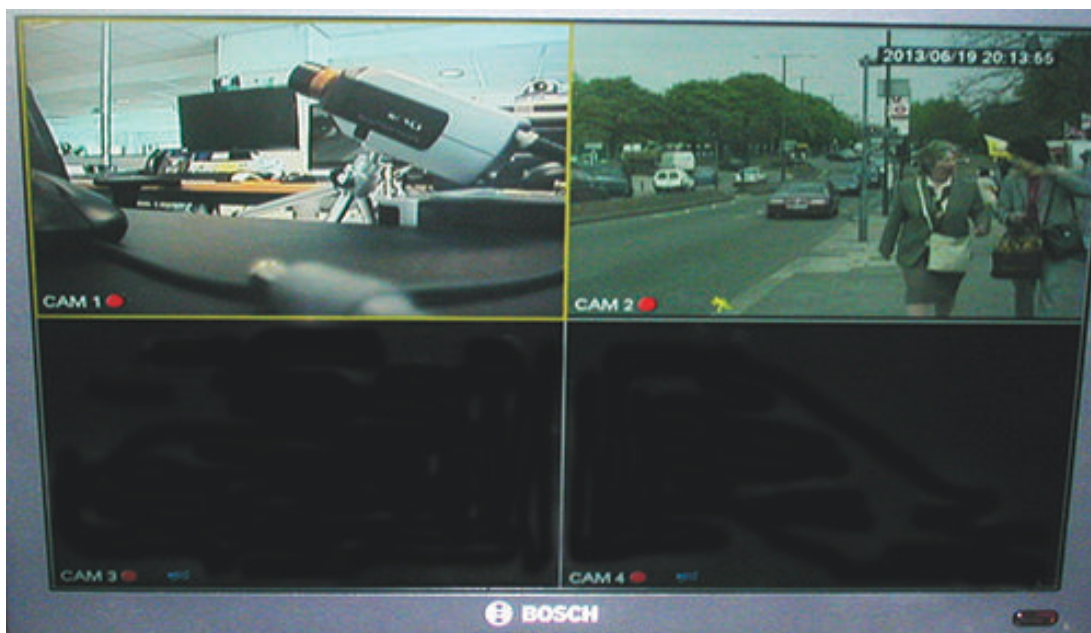


Figure 7.7: Live view (4 camera views displayed)

The system date and time is displayed in the top right corner of the screen, and the channel ID is shown in the bottom left of each channel display.

- To change system date and time, see general settings (**Main Menu > Setting > General**).
- To modify the channel ID, see display settings (**Main Menu > Setting > Display**).

Each channel view has one or more of the following icons displayed:

	Recording – this icon is displayed when a channel is recording		Camera masking – the camera has been blocked
	Motion detection – a movement has been detected in the camera view		No camera is attached to this channel or communication has been lost from this camera
	PTZ active If your camera is equipped with a PTZ function, you can pan, tilt and zoom the live viewing image as described in the PTZ function.		

If multiple channels are displayed, you can double-click on a particular channel to show this channel in full-screen (double-click on it again to return to multiple-channel view). The currently selected channel is shown with a yellow border. From live mode, you can switch to playback mode or access the main menu as described below.

Changing the display

1. Bring up the Quick menu.
2. Select View 1, 4, 8, 9 or 16 and choose the corresponding Camera configuration.

Other functions in Live mode are:

- Playback and zoom
- PTZ

- Sequence

Access to these functions requires the correct user level. Check with your administrator if you do not have access.

For more information:

- Playback and zoom – see below
- see *PTZ*, page 95
- see *Sequence*, page 95

Playback and Zoom

Move the mouse to the top centre of the video of the current channel; the system pops up the following playback and zoom control bar.



Figure 7.8: Playback and zoom

If your mouse stays inactive in this area for more than 6 seconds, the control bar automatically disappears. See the following table for detailed information on the buttons on this control bar.

	Icon name	Function
	Instant playback	Press to playback the previous 5-60 minutes recorded on the current channel (default is 5 minutes). The playback screen supports drag and play function - use your mouse to drag the play bar to any playback start time (use the pause and exit functions as required). During the instant playback: – you can not see the channel title and record status of current channel (they only reappear once you exit preview playback) – you can not switch the displayed channel or change current window-display mode Set the time for Instant playback in Main Menu > Setting > General. Note: The system may pop up a dialog box if there is no recorded data for the current channel, or you need to accept a disclaimer before playing.
	Digital zoom	Zoom in on a specified zone of current channel (zoom-in function is supported in multiple-channel view). When you click on the zoom icon it will change to a new icon ; you can now select an area by holding down the left mouse button and dragging an area on the screen. Release the mouse and the selected area will be zoomed. Right-click the mouse to exit the zoomed area. Exit the digital zoom function at any time by clicking on the icon again – it will change back to .

7.2.2

PTZ



Figure 7.9: PTZ control

To swivel the camera view, click on any of the eight direction arrows on the left of the screen

Use this menu to also setup the following PTZ properties:

- Speed: adjust the speed of the camera movements (value ranges from 1 to 8).
- Zoom
- Focus
- Iris

Click on icons  and  to increase or reduce the zoom, focus and iris

The other buttons on the bottom of the screen are used to assign and activate a set of movements for the camera as follows:

1. Enter a number (from 1 to 999) in the right field (this will be the ID for the preset PTZ movements for the camera).
2. Use the eight direction arrows to swivel the camera to a desired position.
3. Click **<Set>** to assign the final position to the ID.
4. You will be asked to save the preset (use the focus  button to save). This preset can be eventually added to the PTZ activation sequence if an alarm is detected – see *Detect*, page 59.
5. If required press **<Shot>** to move the camera immediately to a preset ID position.

The Aux buttons are used when activating an ID for special processes stored in the camera

- **Aux On:** refer to your camera manual for the Aux definition.
- **Aux Off:** switch off the special Aux definition

7.2.3

Sequence

Setup the camera sequence and interval times in the following configuration screens:

- For monitor A - see *Sequence Mon. A*, page 66
- For monitor B – see *Sequence Mon B*, page 82

Activate sequence on monitor A

1. To view a sequence of live camera pictures from several cameras:

- Right-click the mouse to access the Quick menu
 - Choose **Sequence on**
2. Check that a sequence of camera pictures appears,
 3. To stop sequencing, right-click the mouse to access the Quick menu, and choose **Sequence off**

7.2.4

Monitor A

Monitor A shows live pictures of connected cameras in full-screen or multiscreen, plus status messages and alarm events (e.g. motion and video loss warnings). When multiple events occur, camera pictures can also be sequenced on monitor A to follow the events. The search/play function and all user menus are also activated on this monitor.

7.2.5

Monitor B

Monitor B displays live pictures in full-screen (multiscreen is possible if a multiple-view sequence is enabled on Mon B). If an alarm/detect event is signaled, the camera picture with the event can be displayed on monitor B. When multiple events occur, camera pictures can also be sequenced on monitor B to follow the events.

7.3 Search/Play

Click **Search/Play** in the Main Menu (or from the Quick menu) for the following screen.

Note: A disclaimer screen may initially appear (click **<Accept>** to continue).

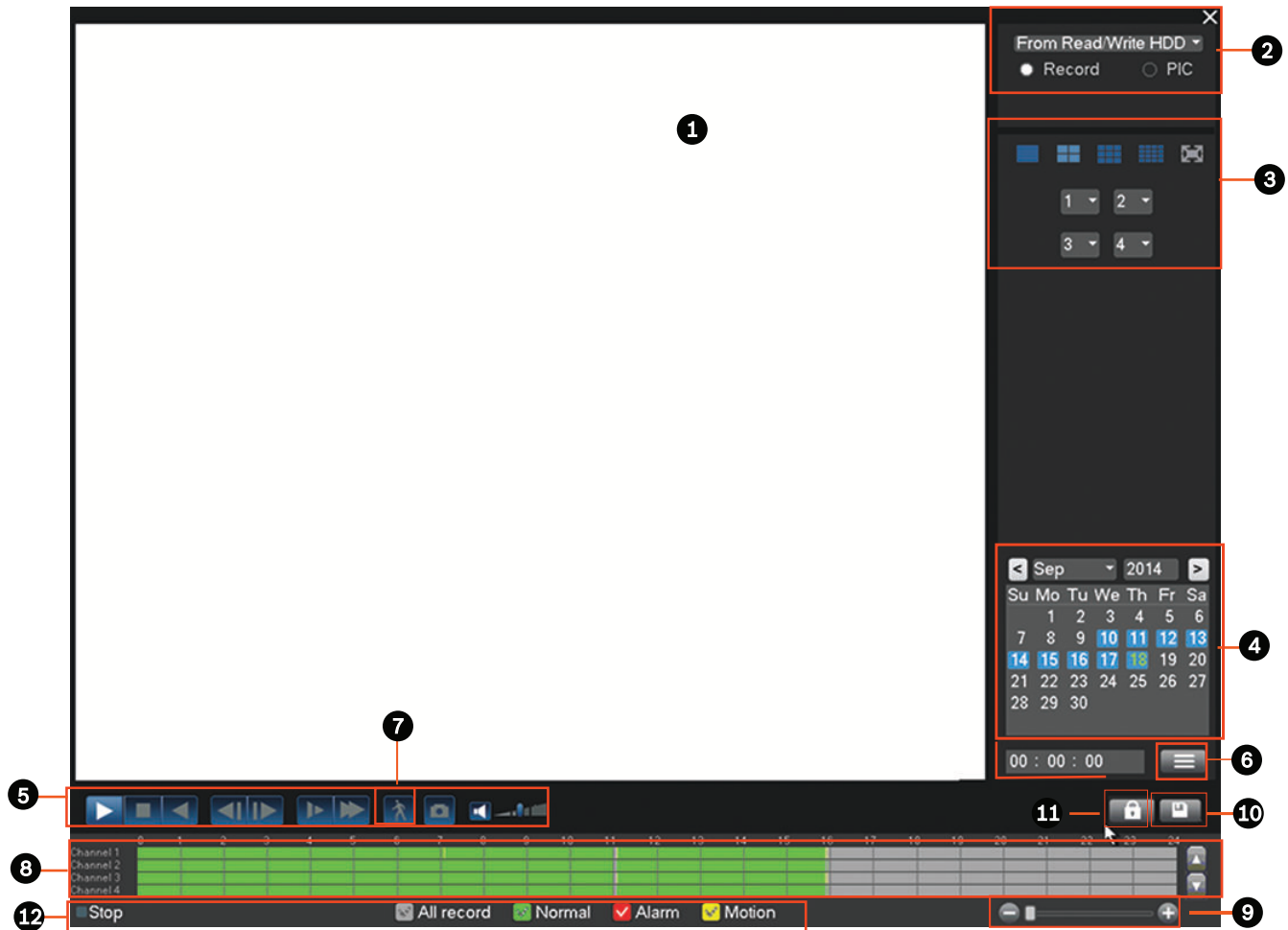
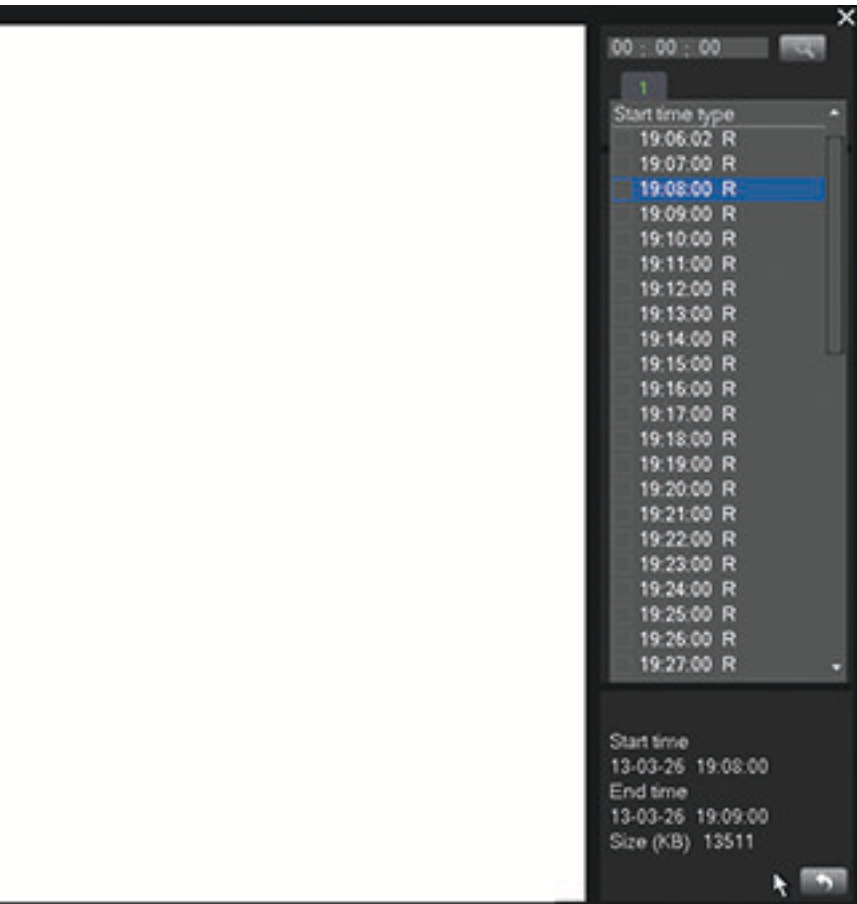
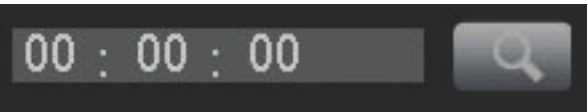


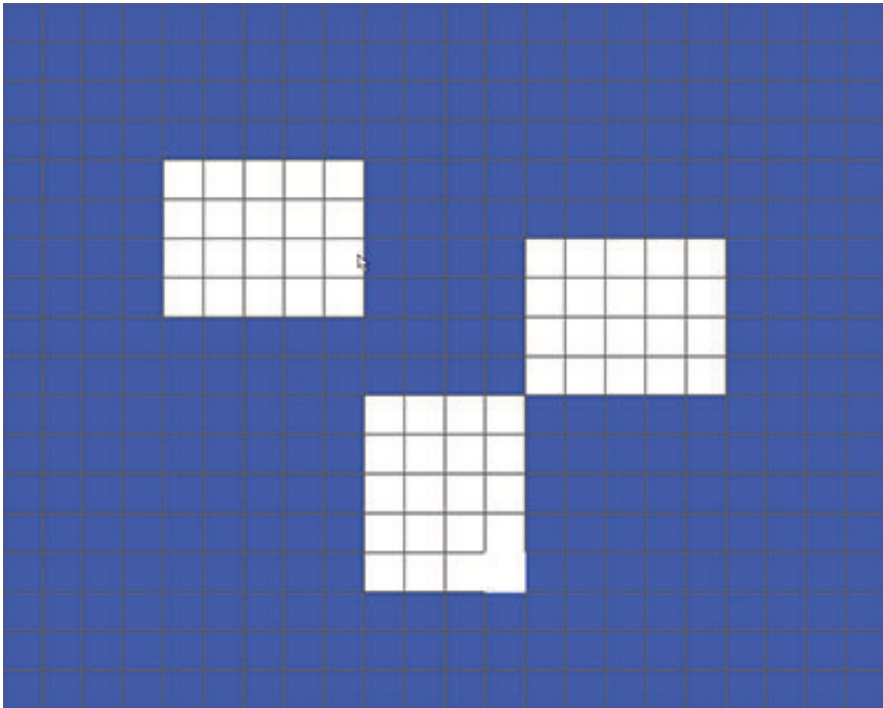
Figure 7.10: Search/Play screen

See the following table for an overview of the features on this screen.

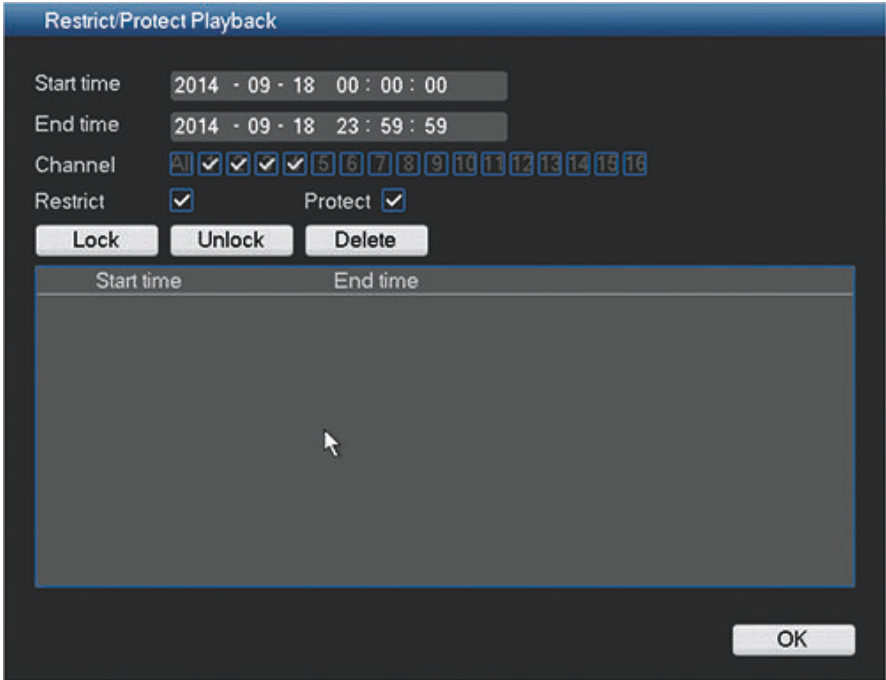
ID	Name	Function
1	Display window	Display of the currently chosen picture or file (supports 1/4/9/16-window playback.)
2	Search type	Here you can select to search for a picture (PIC) or a recorded file (REC). Select to play from the internal HDD or an optional connected external memory device.
3	Playback mode and channel selection pane	Choose between 1/4/9/16 window or full screen display: 1-window (select which channel to display from the drop-down menu) 4-window (select which 4 channels to display) 9-window (channels 1 to 9) 16-window (switch between 1-16 and 17-32 channels – only available for DIVAR AN 5000) - Full-screen (click right mouse button to exit full screen)

4	Calendar and time	Select a date to overview the recordings available for that day (dates highlighted in blue have recordings available for that day). The time bar on the bottom of the screen will show a 24-hour trace of the recordings available for the chosen date. If required, play a recording for a particular date as follows: – Assign a start time (hour, minute, second) in the time field (below the calendar) – Press the play button  – Click on a colored zone on the time bar (at the bottom of the screen) to start playing at that selected time
5		Play or Pause (the 'pause' button is displayed if the DVR is already playing and you wish to pause the play)
		Stop playback
		Backward play In normal play mode, left click the button, the file begins backward play. Click it again to pause current play. In backward play mode, click  to restore normal play.
	 	In playback mode, click to play the next or the previous section (click continuously to watch consecutive files from the same channel). In normal play mode, press pause then click  and  to begin frame-by-frame playback. In frame-by-frame playback mode, click  to restore normal playback.
		Slow play In playback mode, click for various slow play modes such as slow play 1, slow play 2, etc.
		Fast forward In playback mode, click to realize various fast play modes such as fast play 1, fast play 2, etc.
		Smart search – see description below
		Turn the audio on/off and adjust the volume during video playback
		Click in full-screen mode to export snapshot(s) to a memory device (scroll to the bottom of the full-screen to enable the snapshot button). Use the Export screen to setup the snapshot export settings - see <i>Export</i> , page 103.
	Digital zoom	When the system is in playback mode: 1. Left-click the mouse in the screen and hold down the mouse button. 2. Drag to select a section then release the mouse button. 3. Left-click in the selection for digital zoom of the selection. 4. Right-click to exit zoom.

6	File list	Double click to view a list of recorded files for the selected day.  The list displays the first channel of the recorded file (click the numbers above to select another channel). A maximum 128 files are shown at one time. The character shown beside each file has the following meaning: - R – regular recording - A – external Alarm recording - M – motion detect recording The time span of 'R' recorded files in a file list is determined by the defined 'Pack duration' set in the General menu screen. For example, if the file list is set with a pack duration of 1 hour, the file list will show a list of files that are all 1 hour long (i.e. from 8:00 to 9:00, 9:00 to 10:00, etc.). 'M' and 'A' files span the time that the motion/alarm occurred. Click once on a file to view the file details under the list, or double click a file to playback the file on the screen. You can also select the checkbox beside file(s), then select the 'Export' button to export files (See <i>Export</i>, page 103). For a precise search for a time period, stop the current file being played and enter a period in the time panel (shown above the list): 
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		When ready, return to the original calendar and channel setup interface by clicking 
7	Smart search	This function is only active when the system is playing a recording in 1-window mode.  Click  to activate smart search. See following figure.  Use your mouse to drag and select zone(s) in the window to detect motion.  Click  again to begin smart search. The system searches for motion in the chosen area(s).  When ready, click  again to stop smart search playback. Extra notes on smart search: – As default, the system will view the whole play zone as a motion detect region. – If you choose to play another file in the file list, the system will switch to motion detect play of the other file. – During motion detect play, you cannot implement operations such as changing the time bar, play backward, or play frame-by-frame. – System supports 396 (22x18 PAL) and 330 (22x15 NTSC) zones.

8	Time bar	Displays a maximum 16 channel time bars for the current search date (use the scroll bars on the right to scroll up and down through the available channels). The color of each channel bar changes depending on if a recording is present for the chosen date: – Green for a regular record file – Red for an external alarm record file – Yellow for a motion detect record file Click on a point in a colored zone in the time bar to begin playback at that point. Alternatively, hold down the left mouse button and select a region of the time bar (the region will be highlighted); left-click on the selected region to display a menu for the following functions (Export region; Restrict/Protect region; Clear region) – see separate descriptions here for Export and Restrict/Protect. When you first open Search/Play, the time bar begins at 0:00 hour, and will zoom to the period of the current playback when playing the file. If required, use the time bar unit to zoom in (see the following description).
9	Time bar unit	The option includes: 24H, 12H, 1H and 30 minutes (the smaller the unit, the higher the zoom rate). This helps you to precisely locate a time in the time bar when playing a recording.
10	Export 	Use to export recordings onto a memory device (recordable DVD or USB storage device). See <i>Export</i>, page 103.

11	Restrict/ Protect	Use this function to restrict playback of a recording and/or to protect that recording from being deleted. The restrict/protect permission can be individually set for each user account.  Restrict/Protect recording(s) as follows: – Assign a start and end time – Choose channel(s) – Choose checkbox for Restrict and/or Protect – Select <Lock> to lock the segment (the recording appears in a list with start and end time). Repeat these steps for new recordings as needed. – If required, unlock a recording by selecting its checkbox and select <Unlock>. Delete a recording permanently with <Delete> – Select <OK> to save the settings (depending on user access, all restricted/protected recordings will show a blank screen with a lock logo when playing) Important: When entering a start and end time for Restrict/Protect playback, be aware that the selected time may include a portion of a recorded file. In this case the complete file will be Restricted/Protected. For example, if you set a start time of 9:30 and an end time of 10:30 then both the recorded files 9:00 to 10:00 and 10:00 to 11:00 will be selected for restrict/protect because they both include portions of the selected time span. The same principle applies if you Delete a time period from 9:30 to 10:30 then both the files 9:00 to 10:00 and 10:00 to 11:00 will be deleted.
12	Record type	This status line shows the current play mode (or Stop) and a checked box shows the recording type (Motion, Alarm, Normal, All).

7.3.1

Export

The Export menu is accessed from the main menu or Search/Play screen (or by pressing the Export key on the Front Panel or on the remote control). Use this menu to write segments of recorded video to a USB storage device or recordable DVD.

The screenshot shows the 'Export' screen with the following fields and controls:

- Selected device:** A pull-down menu showing 'sdb1(USB DISK)'. To its right are 'Refresh' and 'Format' buttons.
- Path:** A text field showing '/', with a 'Browse' button to its right.
- Type:** A pull-down menu showing 'All'. To its right is a 'File format' pull-down menu showing 'DAV'.
- Start time:** A time selection field showing '2014 - 09 - 18 00 : 00 : 00'.
- End time:** A time selection field showing '2014 - 09 - 18 15 : 04 : 15'.
- Channel:** A row of buttons labeled 'All', '1', '2', '3', '4', '5', '6', '7', '8', '9', '10', '11', '12', '13', '14', '15', '16'. Below this is the text 'Expected Size : 0.00 KB'.
- Buttons:** 'Add' and 'Remove' buttons are located below the channel selection.
- Table:** A table with columns '0', 'Start time', 'End time', and 'Size'. It contains one empty row for adding recordings.
- Summary:** 'Total Size : 5.11 MB' and 'Remaining Size : 4.13 GB/7.45 GB' are displayed.
- Progress:** A progress bar is shown.
- Bottom Buttons:** 'Start' and 'Back' buttons are at the bottom right.

Figure 7.11: Export screen

1. Choose from the **Selected Device** pull-down list to export recording(s) to either a USB memory stick or CD/DVD. If required, <Refresh> the device selection, or <Format> the selected memory device.
2. Choose the save location on the memory device (<Browse> if necessary).
3. Select the **Type** of file to export (All, Alarm, MD, Alarm/MD, Card, Normal, PIC).
4. Select the File format (DAV or ASF).
5. Enter a **Start time** and **End time** for the video segments (files) to archive.
6. Select the **Channel** to archive (**All** for all channels). The expected size of the recorded file is shown below the channel selection.
7. Click <Add> to add the file to the export list.
8. If required, repeat steps 3 to 7 for more recordings. (Remove a selected recording by selecting its check box and pressing <Remove>.)
The total size of the selected recordings (and available space on the memory device) are shown.
9. Click <Start> to export the selected recording(s).
If the total size of the selected recordings is more than the free space on the memory device, then only the first recordings that fit are exported.

7.4

Info

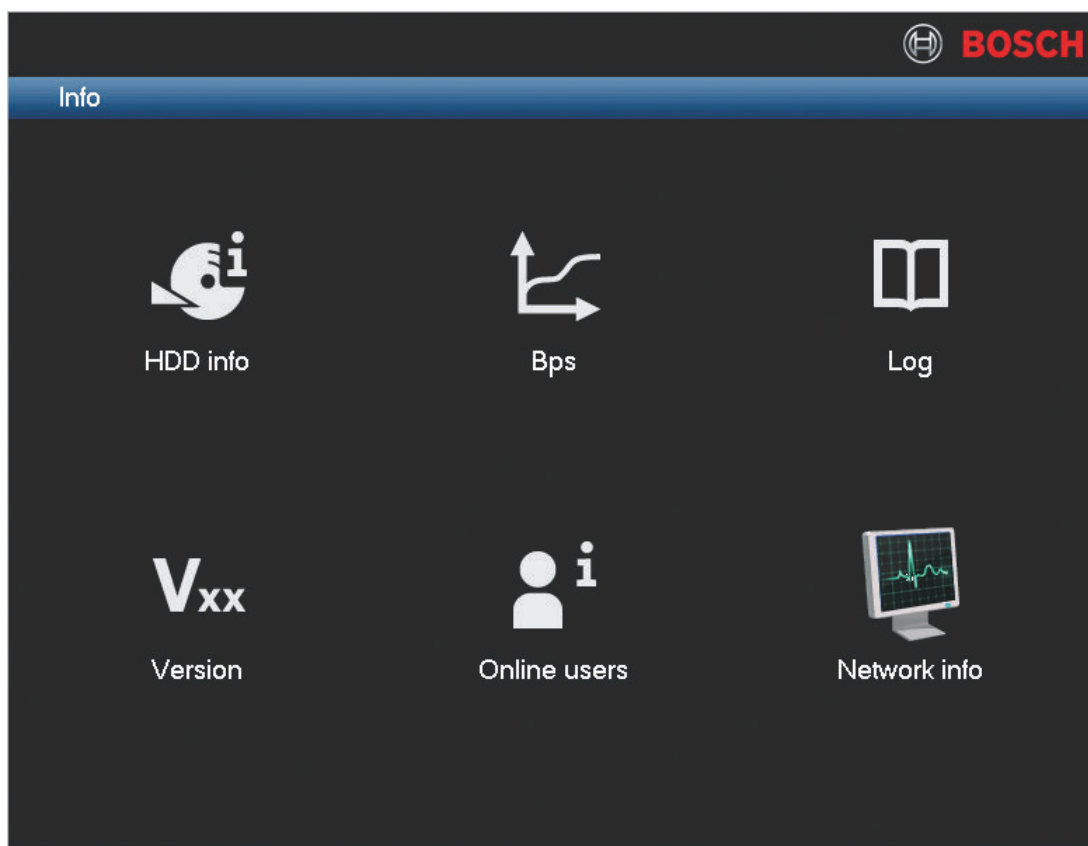


Figure 7.12: Info menu

Refer to the following sections for a description of these **System information** menus.

7.4.1

HDD info

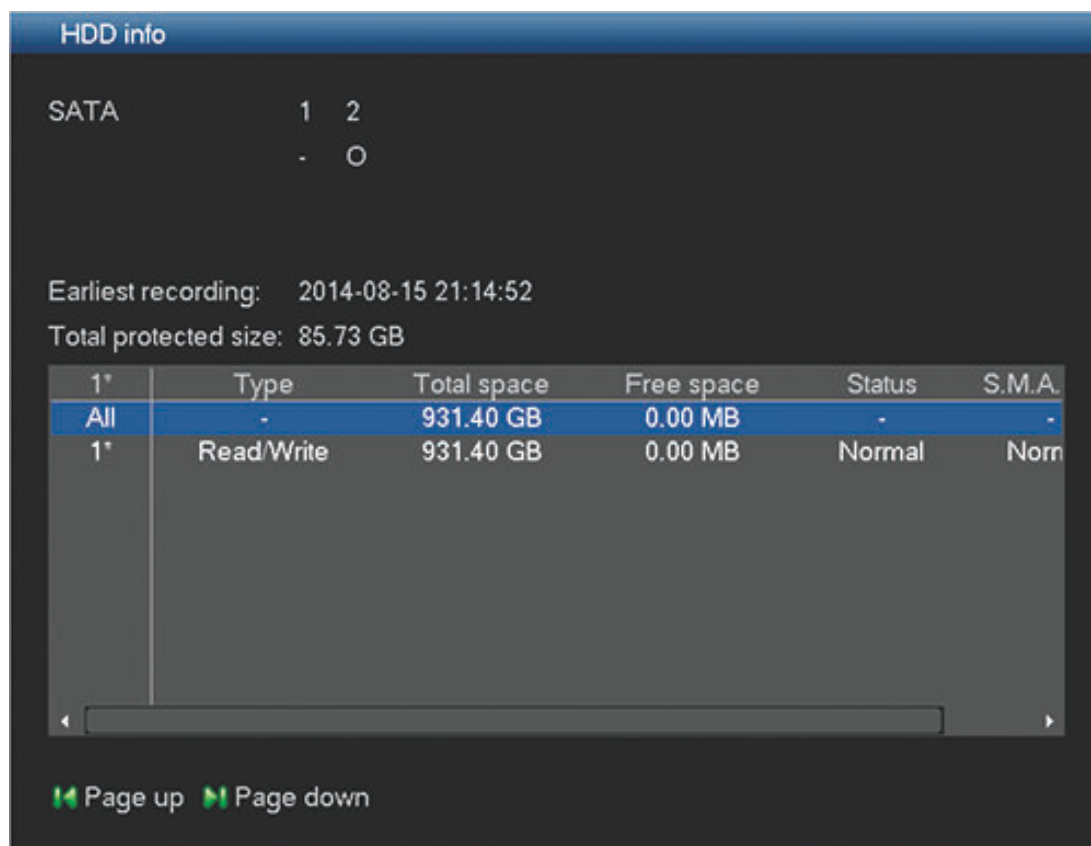


Figure 7.13: HDD info

This top of the screen provides information on the current status of each HDD (● means current HDD is normal; ✕ means there is a disk error; – means there is no HDD; ? means disk is damaged). After a system start, the system will first check for any HDD error. If an error (X) is shown:

1. Check the hard disk time and system time are the same (if necessary, modify system time in **Setting > General** and reboot the system).
2. If the error persists, format the HDD and reboot the system.

Earliest recording – shows the date and time of the oldest recording still available on the HDD.

Total protected size – shows the total size of all protected recordings stored on the HDD (you can protect a recording using the Protect Playback function available on the Search/Play screen).

The bottom half of the screen lists each HDD type, total size, and the free space remaining on the disk. Double-click on any item for more (Smart) information – see following example.

Smart info

Port 1

Model ST1000VM002-1CT162

Serial No. S1G6E9B7

Status OK

Describe :

Smart ID	Attribute	Threshold	Value	Worst
1	Read Error Rate	6	117	99
3	Spin Up Time	0	98	97
4	Start/Stop Count	20	100	100
5	Reallocated Sector Count	36	100	100
7	Seek Error Rate	30	72	60
9	Power On Hours Count	0	99	99
10	Spin-up Retry Count	97	100	100
12	Power On/Off Count	20	100	100
184	Unkown Attribute	99	100	100
187	Reported Uncorrect	0	100	100
188	Unkown Attribute	0	100	100
189	High Fly Writes	0	52	52

Figure 7.14: HDD smart info

This screen shows additional useful troubleshooting on the HDD such as:

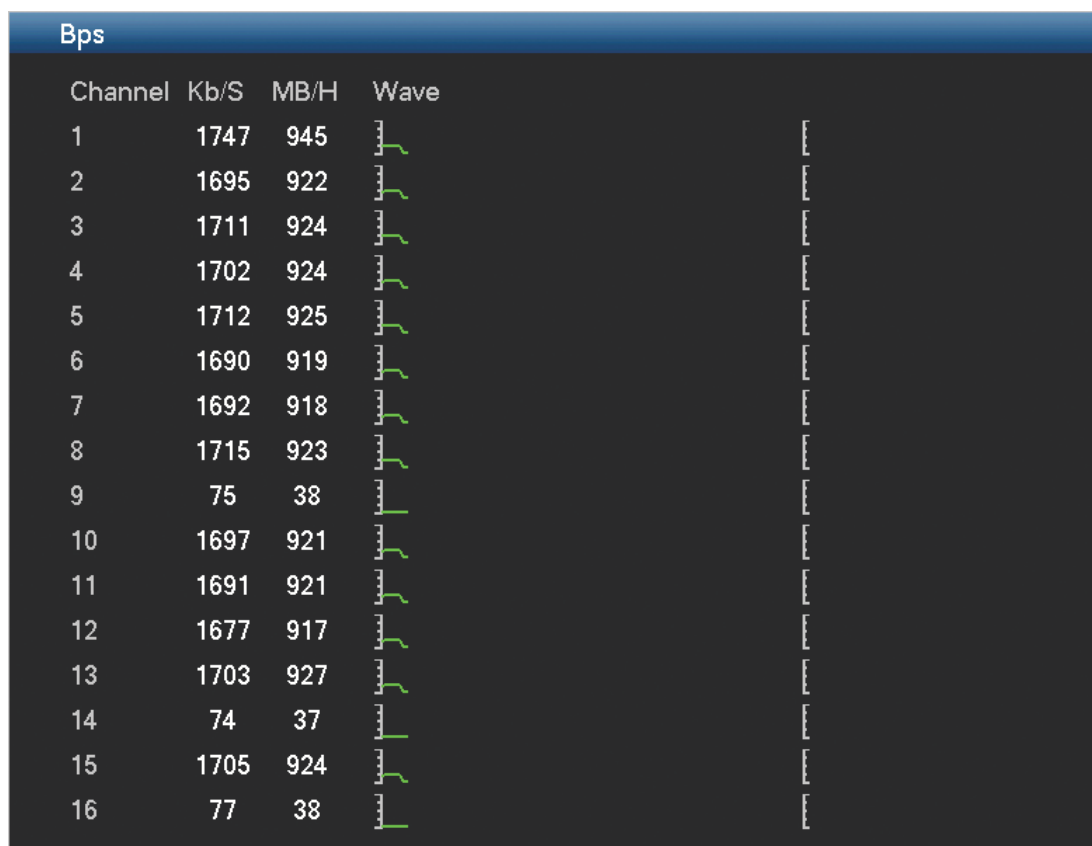
- Read Error rate
- Start stop time
- CRC error rate

See also

- *HDD compatibility, page 159*

7.4.2

Bps

**Figure 7.15: Bps**

View here the current video data stream for each channel. The stream is shown real-time in Kb/s and occupied hard disk storage (MB/h). A graphical representation of the stream is shown in the 'Wave' field.

7.4.3

Log

The screenshot shows a web-based interface for viewing system logs. At the top, there's a 'Log' title bar. Below it, there are filter options: 'Type' set to 'All', 'Start time' set to '2013 - 10 - 29 00 : 00 : 00', and 'End time' set to '2013 - 10 - 30 00 : 00 : 00'. To the right of these filters are 'Details' and 'Search' buttons. The main area is a table with three columns: 'Time', 'Event', and a third column that appears to be a list of log entries. The table shows a list of events, with the last entry highlighted: '2013-10-29 11:05:28 User logged in<ADMINISTRATOR>'. Below the table, there are navigation controls: 'Page up' and 'Page down' buttons, 'Previous page' and 'Next page' buttons, and a 'Jump to' field with the value '1' and a 'GO' button. At the bottom, it says '1/1(Current page/Total page)'.

	Time	Event
13	2013-10-29 11:04:09	<Video loss : 9>
14	2013-10-29 11:04:09	<Video loss : 10>
15	2013-10-29 11:04:09	<Video loss : 11>
16	2013-10-29 11:04:09	<Video loss : 12>
17	2013-10-29 11:04:09	<Video loss : 13>
18	2013-10-29 11:04:09	<Video loss : 14>
19	2013-10-29 11:04:09	<Video loss : 15>
20	2013-10-29 11:04:09	<Video loss : 16>
21	2013-10-29 11:04:09	Disk totals<1>, Current working disk<1>
22	2013-10-29 11:05:28	User logged in<ADMINISTRATOR>

Figure 7.16: Log info

View here the system log files containing the following system events:

- All
- System
- Configuration
- Storage
- Alarm
- record
- Account
- Clear
- Playback

The system can display a maximum 10 logs per page and a maximum 1024 log files (displayed in order of newest to oldest). Use the scroll bar or **Page up/down** or **Previous/Next page** to scroll through the events if there are more than ten events.

How to use log display

1. Select which system events to show from the drop-down menu in the **Type** field (choose **All** to display all events).
2. Enter a **Start time** and **End time** in the relevant field
3. Click **<Search>** to view the log for the event type.
4. If required, double-click on a log entry (or select the entry and click **<Details>**) to view more information on the event.
5. To save the log file to a USB stick, click **<Backup>** and enter the required fields in the **Log backup** dialog box.

6. To delete all the log files, click **<Clear>** and confirm the delete action.

7.4.4

Version

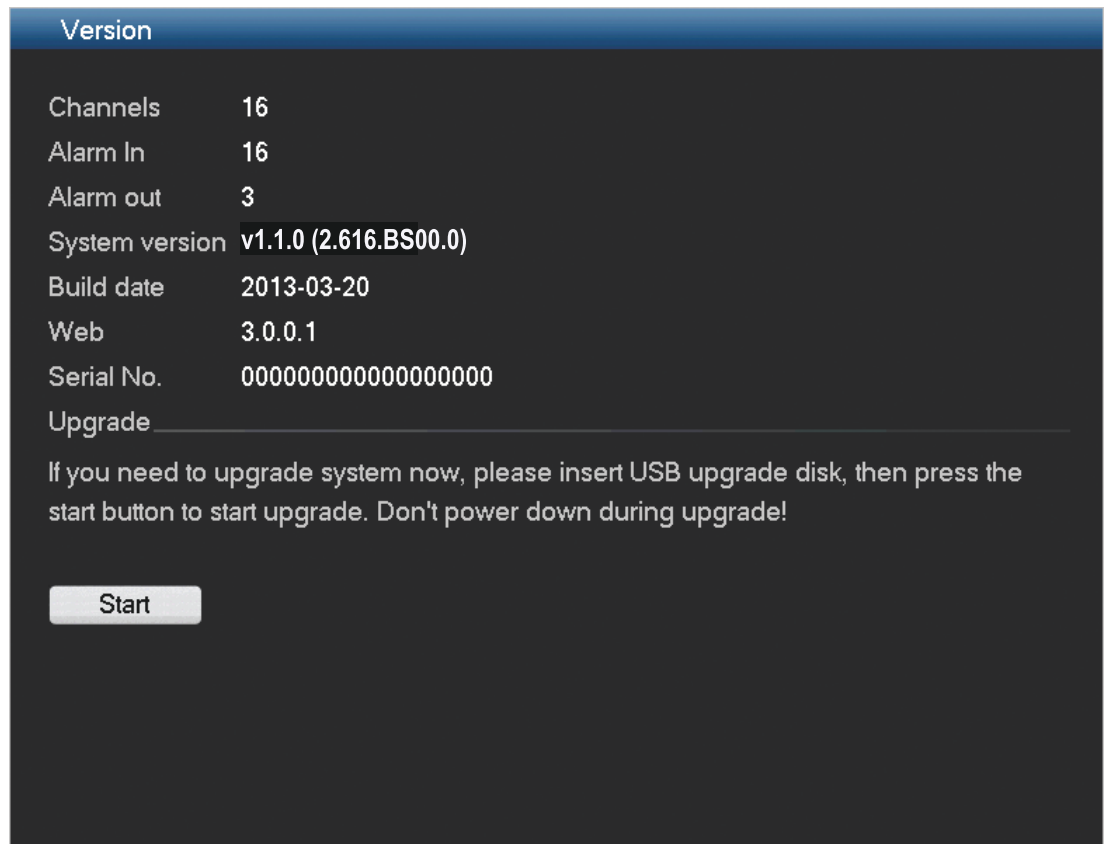


Figure 7.17: Version

View here the status of your installed system:

- hardware features (channels, alarms in/out)
- software features
 - system version of your currently installed firmware
 - build date of the firmware
 - web id
 - serial number

You can update the current system as follows:

1. Insert a USB stick with a preloaded update file (must be called **update.bin**).
2. Click **<Start>** to begin the update.
3. Wait until the update is complete and the system is restarted.

7.4.5

Online users

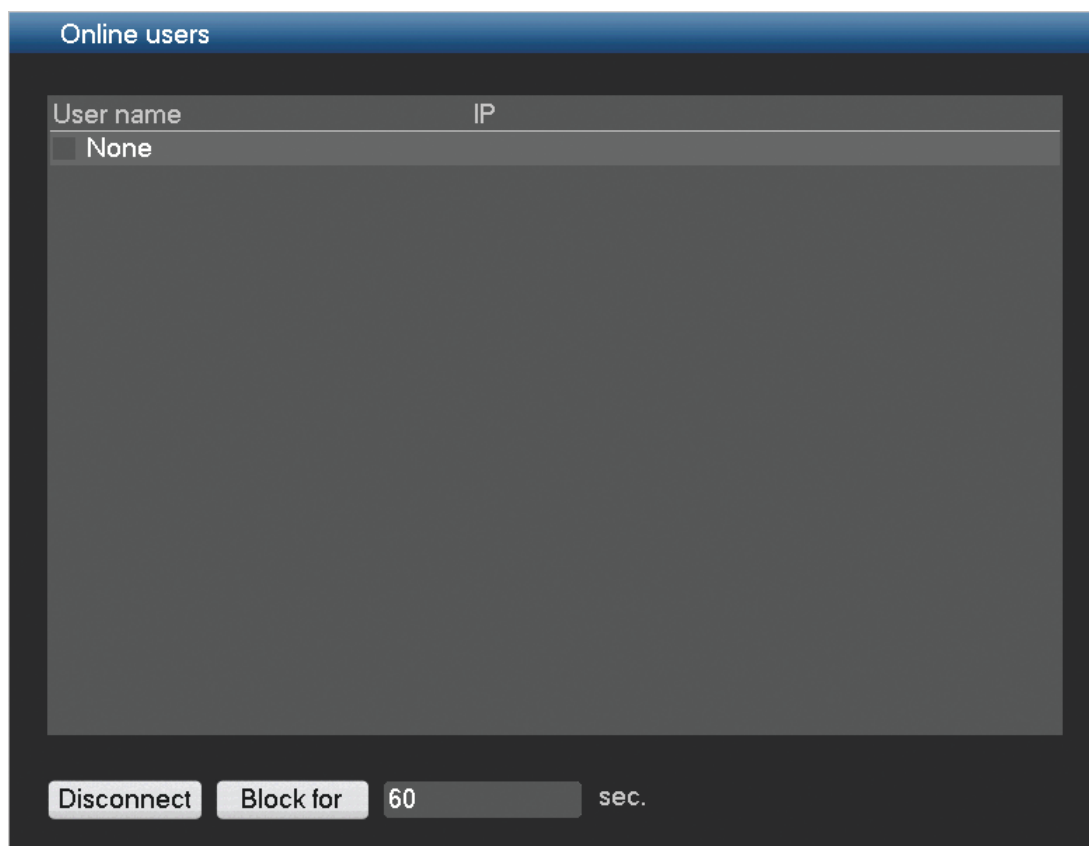


Figure 7.18: Online users

Manage here the online users:

- Disconnect a user by selecting the user and press **<Disconnect>**.
- Block a user for a max disconnection time:
 - Select the user
 - Click **<Block for>**
 - Enter a disconnection time up to a maximum 65535 seconds (default is 60 seconds)

The system refreshes every five seconds to detect any newly added or deleted users.

7.4.6

Network info

Choose from information screens Network test or Net load. See below for more details.

Network test

The screenshot shows a software interface for network testing. It has two main sections: 'Network test' and 'Network sniffer packet backup'.

Network test section:

- Destination IP:** A text input field containing '172.8.0.1' and a 'Test' button.
- Test result:** Two lines of text showing test results: '32 byte from 172.8.0.1 : seq=3 ttl=254 time=13.581ms' and '32 byte from 172.8.0.1 : seq=2 ttl=254 time=2.452ms'.

Network sniffer packet backup section:

- Device name:** A dropdown menu showing 'sdb1(USB DISK)' and a 'Refresh' button.
- Address:** A text input field containing '/' and a 'Browse' button.
- Table:** A table with four columns: 'Name', 'IP', 'Sniffer packet size', and 'Sniffer packet'. It contains one row: 'LAN1', '172.8.2.3', '0KB', and a green play button icon.

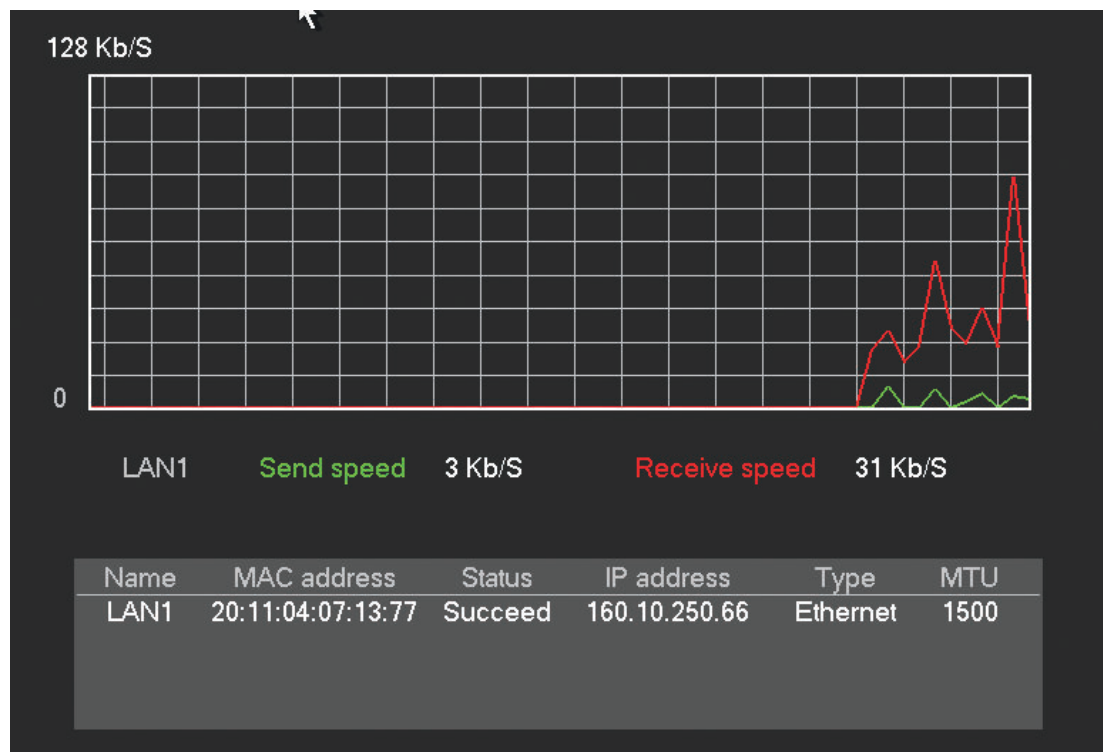
Figure 7.19: Network test

Choose here to do a **network test** as follows:

1. Enter a **Destination IP** address.
2. Click **<Test>**.
3. Check the test result in the **Test result** field.

Or choose to do a Network sniffer packet export as follows:

1. Enter a Device name (click **<Refresh>** if the device is not shown).
2. Enter an Address (click **<Browse>** to search for the correct path).
3. When the correct sniffer packet is shown, click  to start the export.

Net load**Figure 7.20: Net load**

See here a real time graphical display of the current load on the network for send and receive traffic.

7.5**Triggers and alarms**

Various types of events change the way the unit works. These events include:

- an alarm input signal applied to the unit
- triggers such as motion detection in a camera signal or a loss of video from one of the cameras or camera masking (the camera is covered or obstructed)
- an internal alert from the unit itself (e.g. disk failure, IP conflict)

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 always require a response from the user situation (triggers and their responses can be configured in *Detect*, page 59).

Possible settings are:

- A motion indicator or video loss 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.
- An alarm also changes the way the unit works but, in addition, usually activates several indicators and requires the user to solve the alarm situation (alarms and their responses can be configured in *Alarm*, page 57). Possible settings are:
 - A beeper sounds.
 - A status message is displayed.
 - An alarm icon is displayed.
 - Recording behavior changes.

- An output relay is activated.
- Monitor A can switch to a multiscreen view if more than one alarm occurs. The latest alarm status message is always shown.

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 (see *Log, page 108*). 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.

8 Web Client Software

The Web Client software (loaded on a PC) gives full remote control of the DIVAR over the web. 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/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 *Log, page 108* for more details on User Levels.

The **recommended** PC requirements for running Web Client are:

- Operating platform: A PC running Windows XP, Windows Vista, or Windows 7.
- 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: The current product series supports Internet Explorer, Firefox, and Google Chrome (QuickTime required; no playback supported).

8.1 Getting started

To use the Web Client, first connect your PC and the DIVAR via a TCP/IP network connection and load a new Web Client version as follows:

1. Go to the network setup (stored in **Main menu > Setting > Network**) and check the network settings are correctly assigned for the DIVAR (you can also see here the IP address for the DIVAR).
2. Execute ping *****.***.***.*****(IP address) to check the connection is OK (the return TTL value should be less than 255).
3. Open an internet browser on your PC and input the IP address for the DIVAR in the address column. For example, if the address is 10.10.3.16, then input **http:// 10.10.3.16** in the IE address column. See following example.



4. The browser will ask to download and run the latest Web Client webplugin.exe (or overwrite the previous version). Always check first with your system administrator that you have sufficient rights to install the web client software on your PC (the web client executables will be loaded into the directory Program Files (x86) \ webrec).
5. Follow the dialog boxes to correctly install the Web Client. Once installed, the screen will refresh and prompt for a User ID and Password – see *How to log on, page 115*.

Note: The Web Client will not need to install 'webrec' on a PC again unless a new version is released with new firmware.

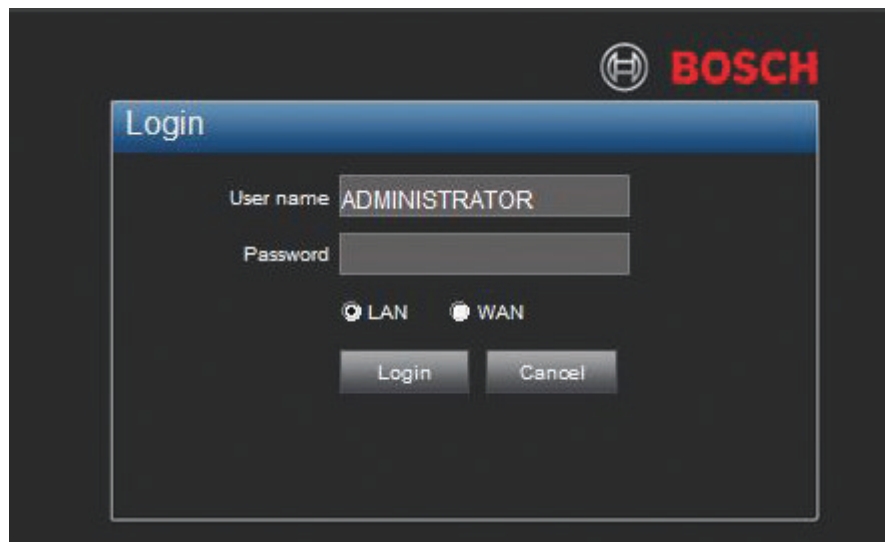
**Caution!**

The remote system access feature, designed to allow users to view their video via a PC or phone, may compromise their security devices and expose them to malicious use. To avoid putting your devices and personal information at risk, always consult your network specialist for advice on network security infrastructure (i.e. MAC filtering, Access Control List). Bosch accepts no responsibility for possible damage caused by unauthorized access

8.2

How to log on

1. Open your web browser and enter the IP address for the DIVAR in the address column. For example, if your DVR IP is 10.10.3.16, then enter http:// 10.10.3.16
2. If Web Client is already installed, the following Login screen is shown (if Web Client is not installed, see *Getting started*, page 114):



3. Input your user name and password (the default user name is **Administrator** with password **000000**).
4. Select the login mode: LAN or WAN (LAN is for smaller networks; WAN is best for larger networks and the internet – the differences are described in the following pages).
5. Click <Login> to access the Web Client 'Live' window – see *Introducing the Web Client 'Live' window*, page 116.

Note 1: A disclaimer screen may initially appear (click **<Accept>** to continue).

Note 2: For security reasons, always modify your password after you first login.

Note 3: If the maximum number of users for the Web Client is exceeded, a message is displayed.

8.2.1

Menu structure differences

The Web Client allows access to and use of unit menu items. These menu items are explained in *Configuration*, page 35. Although the structure is the same, menus and settings behave differently because of the Web Browser.

8.3 Introducing the Web Client 'Live' window

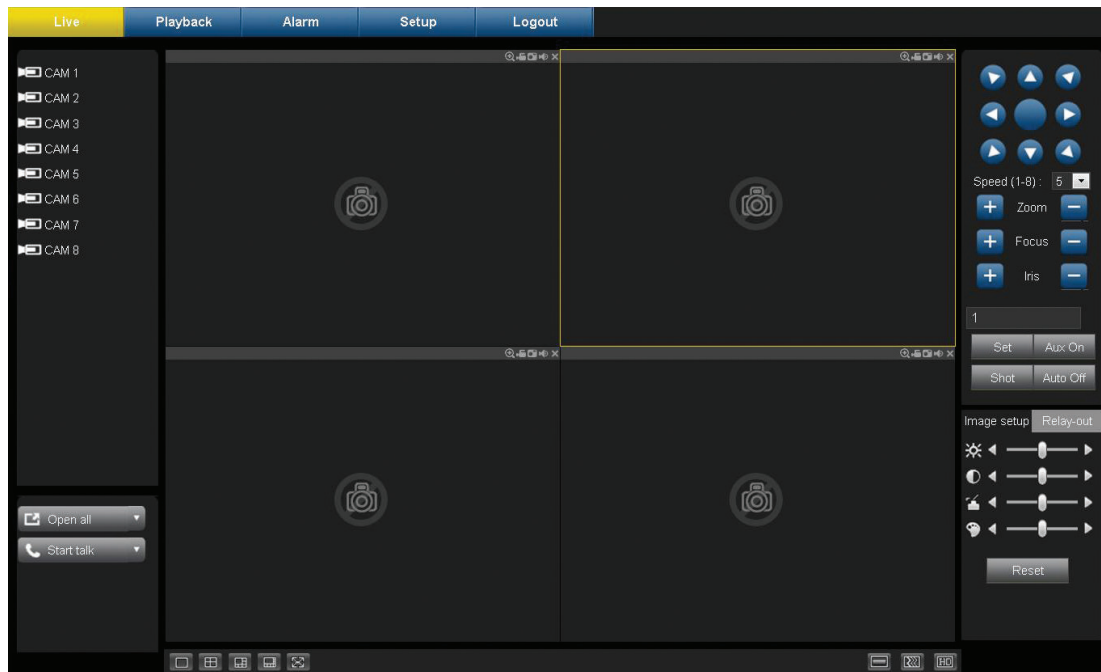


Figure 8.1: WEB live window

The Live window is built up of five main areas:

- A mode bar across the top, containing buttons for:
 - Live
 - Playback – see *Playback mode*, page 117
 - Alarm – see *Alarm*, page 118
 - Setup (system settings) – see *Setup mode*, page 117
 - Logout – to logout of the Web Client
- A vertical side bar on the left that shows a list of the cameras selected, plus buttons to <Show all> (show all camera channels on screen) and <Start Talk> (allow bi-directional audio communication). For main/secondary stream monitors, the system adopts the main stream to display by default (for LAN) and the secondary stream for WAN when there is insufficient bandwidth. If you click one of the CAM icons, you can choose between main stream or secondary stream to monitor in LAN. You will see the current selection as an M (main stream) or S (secondary stream) beside the CAM icon
- The work space in the middle of the screen showing live video on 1 to 16 selected camera channels. Small icons in the top of each live video channel allow you to control that video screen (close, zoom, record, snapshot, audio)
- A vertical side bar on the right for PTZ control, image setup and relay channel setup
- Icons on the base for selecting the number of channels (live cameras) to be displayed in the work area, plus the fluency and quality level of the displayed images

Important points when viewing live

- If you login via the WAN mode:
 - The <Open All> button on the left panel is inactive

- For multiple-channel live mode, the system displays the second stream to monitor by default. You cannot modify manually. All channels try to synchronize (the synchronization effect depends on your network environment). For single channel live mode, the system opens the main stream by default.
- The system does not support alarm activation to open the video function in the **Alarm** interface.
- The window display mode and the channel number are by default. For example, the max window split mode is 16 for the 16-channel.

8.3.1

Playback mode

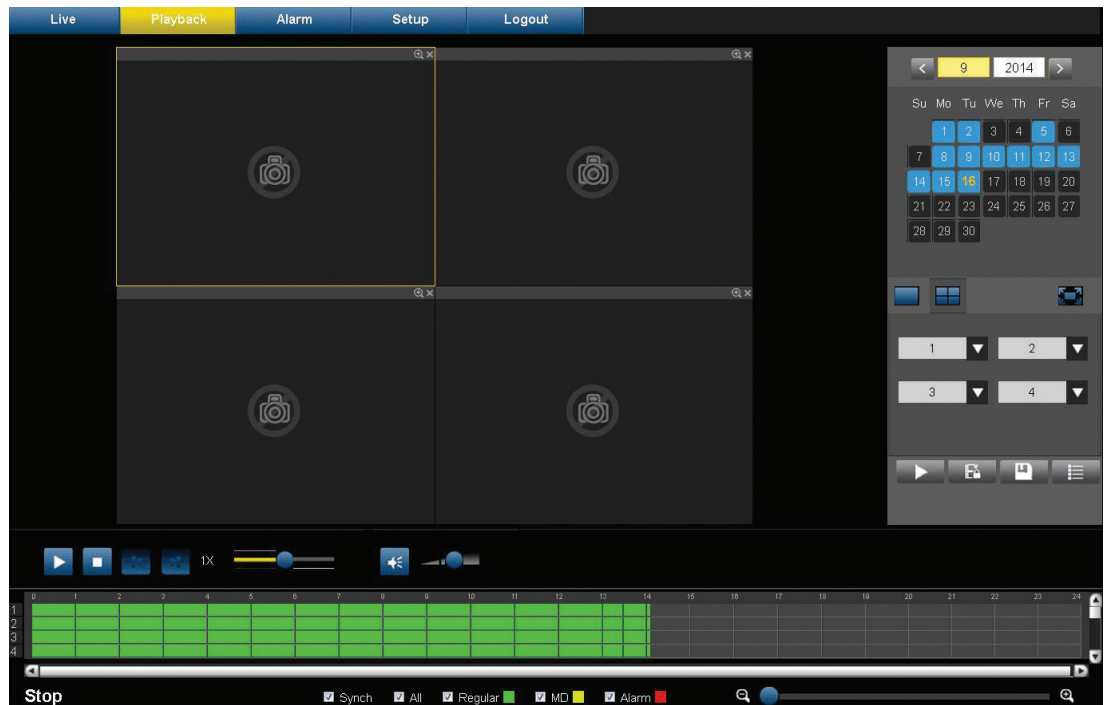


Figure 8.2: Web Client playback

The playback video window is shown by clicking the Playback button. Here you can:

- return to live video by clicking <Live>.
- select different display modes (1 or 4 cameo displays, full screen)
- assign cameras to cameos
- jump to a specific date and time to view playback video
- view a graphical timeline of the day for recording, input, or motion events
- see unit status and alarm conditions

All of these possibilities are described extensively in *Search/Play*, page 97.

If your web connection has low bandwidth:

- Only I-Frames are initially streamed to save bandwidth (in full screen, an I-Frame will be streamed every second).
- Playback starts at half-speed by default (the speed can be changed to single speed by pressing FWD).
- Exporting files may be slow.

8.3.2

Setup mode

Click <Setup> to enter the Setup menu where you can configure the settings for the unit.

Figure 8.3: Web Client – Setup

See *Configuration*, page 35 for a description of options available here.

8.3.3

Alarm

Figure 8.4: Web alarm

Here you can set device alarm type and alarm sound setup.

Always make sure the current device can upload the alarm.

Type	Parameter	Function
Alarm Type	Video loss	System alarm when video loss occurs.
	Motion detect	System alarm when motion detection alarm occurs.
	Disk full	System alarm when disk is full.
	Disk error	System alarms when disk error occurs.
	Video masking	System alarm when camera is maliciously masked.

	External alarm	Alarm input device sends out alarm.
Operation	Prompt	Automatically pops up an alarm dialog box.
Alarm sound	Play alarm sound	System sends out alarm sound when alarm occurs. Specify the type of sound - see 'Sound path'
	Sound path	Select an alarm sound file from the list.

8.3.4

Logout

Click Logout to go back to the log in interface.

9 Archive Player operation

9.1 Getting started

The Archive Player is used to view archived recordings on a PC (each recording is a video file that has been exported from the DVR or Web Client). If required, use the Player to also check the authenticity of an archived recording before viewing.

To easily identify an archived file, check the default export name for the recording time and date.

9.1.1 System requirements

Operating platform: A PC running Windows XP, Windows Vista, Windows 7 or Windows 8.

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

- Processor: Intel Core Duo, 2.0 GHz or comparable
- RAM memory: minimum 512 MB
- Graphics card: NVIDIA GeForce 8600 or higher

9.1.2 Installation

The Archive Player normally does not require installation to function. When a video is archived, the Archive Player application file (play.exe) is automatically copied to the same directory as the archived file (except when using the Web Client – see Notice below). When copying the archive file to other media afterwards, make sure to also copy the play.exe file.

NOTICE! The Archive Player will not be downloaded from the DVR when archiving is performed via Web Client. Use the Archive Player available on the Bosch website, the product CD, or download it by performing a local archive. When copying the archive file to other media afterwards, make sure to also copy the Archive playernode:106123408751015 file.

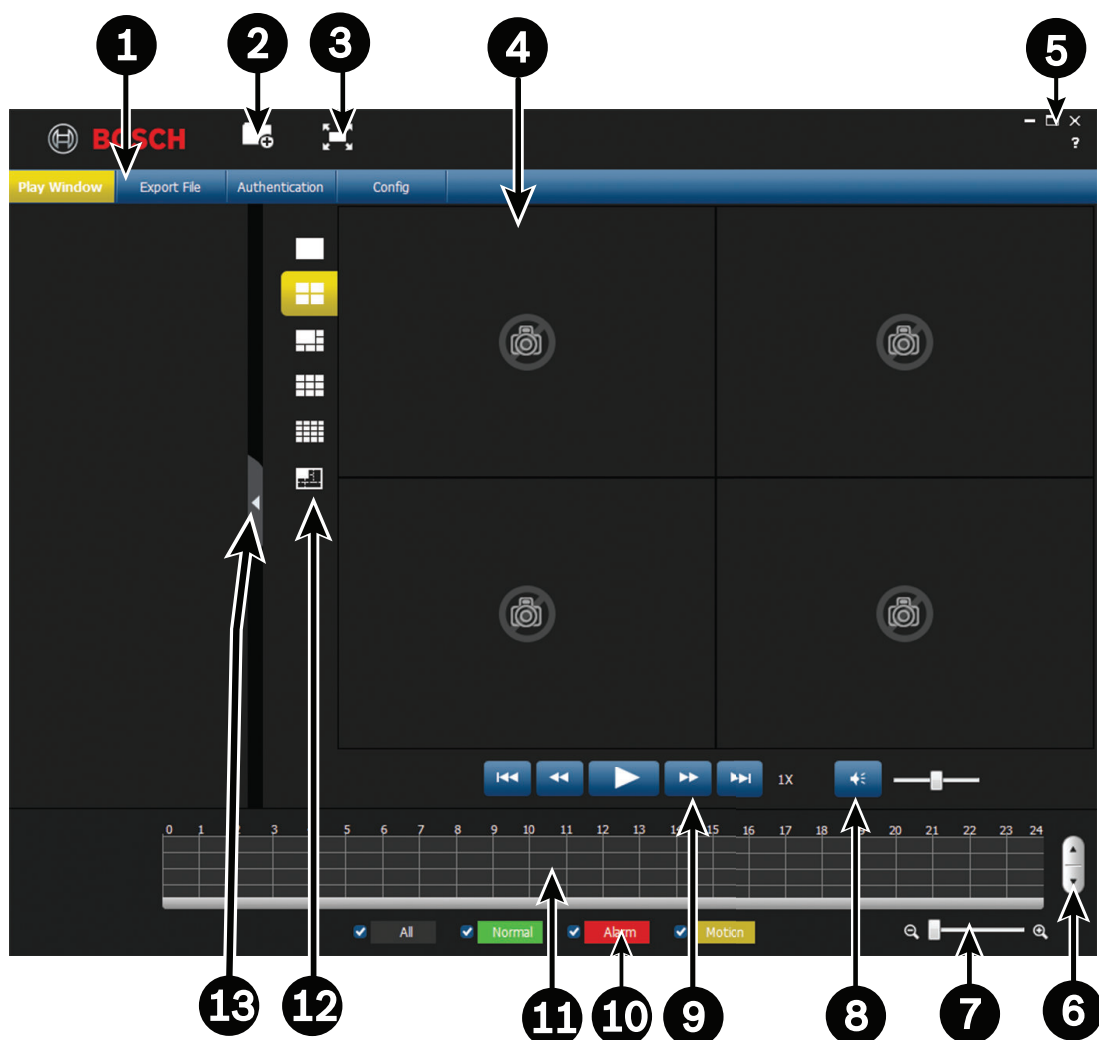
9.1.3 Starting the Player

The Player application (play.exe) is normally loaded into the same directory as the archived files and can be simply started by double-clicking on the 'play.exe' file to start the program. Another way to start the player interface (if you have installed it on your PC) is to double-click



the icon in the installation path or on your desktop (if it is stored there).

Once started, the player interface screen appears; see the following figure and table for an overview of the screen and its functions:



Id	Name	Function
1	Menu bar	Here you have the following options: Play Window (default window) activates a window where you can play pre-recorded files. Export File activates a window where you can choose files to export to a pre-defined directory – see <i>Export file, page 125</i> Authentication activates a window where you can check the validity of a recording – see <i>Authentication (checking watermark), page 124</i> Config is used to setup how the player saves and formats snapshots, and the language for the user interface – see <i>Configuration, page 126</i>
2		Activates a directory overview where you can browse and choose a file to play. Double-click on a specific file to start playing.
3		Click to show player in full screen (press Esc to return to standard screen)

4	Play screen	Here you can have a maximum 16 player screens to simultaneously play a maximum 16 channels (cameras).
5		Click  to minimize player screen Click  to maximize player screen Click  to close and exit the player interface Click  to show player software version
6	Scroll channels	Scroll up and down through the different channels of the currently chosen recording.
7	Time scale	Move this scale left or right to increase or decrease the time scale on the 'Time bar' (see below)
8	Audio control	Click here to mute or activate audio (if present in recording). Move the scale bar to increase or decrease volume.
9		Play or Pause the recording (the 'pause' button is displayed if the recording is already playing and you wish to pause the play). Click a valid period in the time bar and then 'play' to start the file at that point.
		Begin play at start of recording.
		Reverse play; possible speeds are 1/2x, 1/4x, 1/8x, 1/16x, 1/32x, 1/64x
		Fast play; Possible speeds are 2x, 4x, 6x, 8x, 16x, 32x, 64x
		Go to end of recording.
10	Record type	A checked box shows the settings that were applied for the recorded file (Motion, Alarm, Normal, All).
11	Time bar	Displays the time span of the currently selected file (the colored segment). The colors are: – Green for a regular record file – Red if an external alarm is active – Yellow if motion detection is active A max. 16 channels (bars) are shown for each file. Click on a point in a colored zone in the time bar to begin playback at that point.
12	Screen views	Select here the number of screens (channels) that are shown (double click on a screen to show it in full screen). See 'Player control' below for a description of additional player buttons in the top of each screen
13	Tab	Click here to hide or show an extra tab showing the current file (and channels) selected

Open an archive file

After starting the player, check the relevant directory to locate your archive files (identified by file extensions .mpg, .mp4, .dav, .264, .dev, .asf).

These files can be opened and played in 2 ways:

- Using the **Open** button on the player - you will be asked to browse and select the file(s) to be played on the Player
- Use the mouse to drag an archived file onto the player (you can also drag a batch of files to store them in the player memory; the last file that is dragged onto the player is automatically started in play mode)

Player control

As the record file is playing use the player interface buttons to further control the play status of the archived files. Another control possibility is to scroll your mouse over an active channel screen to activate four separate buttons in the top of the screen – see following figure.



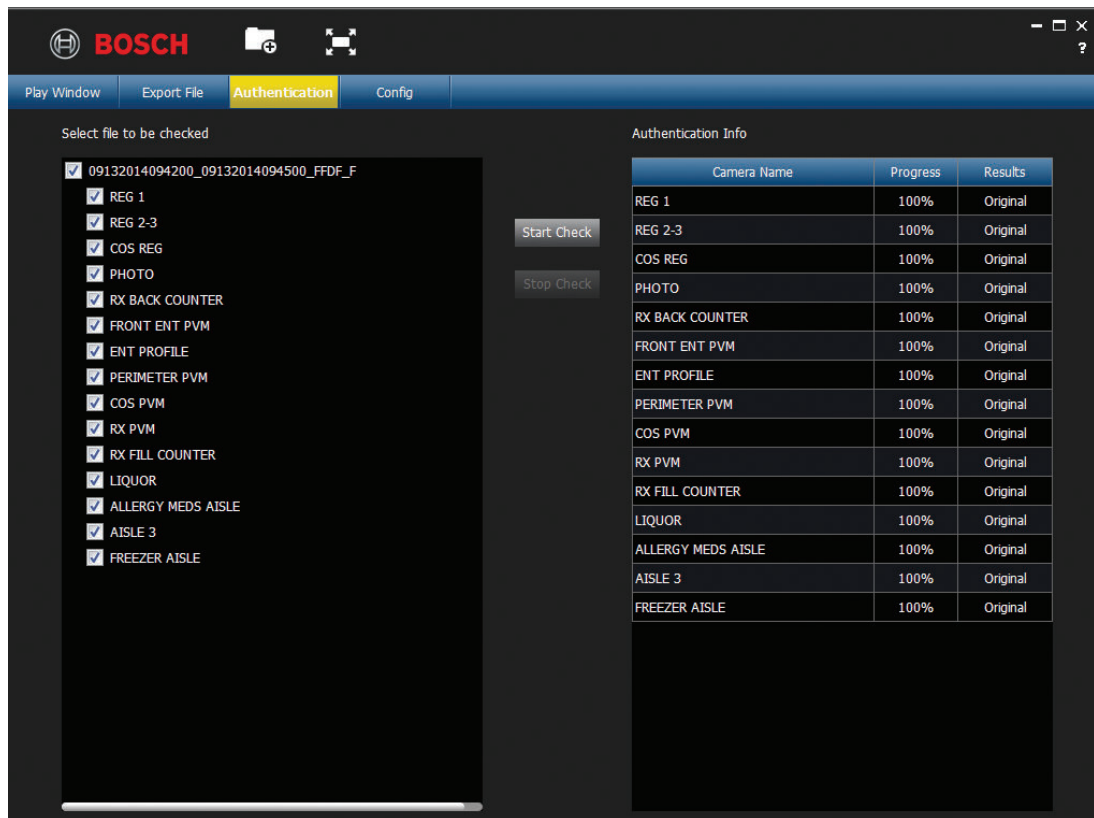
These buttons have the following functions:

	Show file resolution and frame rate
	Zoom in on a segment of the screen (press the button and then select the desired region by drawing a rectangle with your mouse on the screen; if required, press the button again and then scroll the zoomed image with your mouse; when finished, right-click the mouse to exit the zoomed area)
	When playing the video file, click to save current video frame as an image file to a specified directory (assigned in Config > Snap Path)
	Close the file that is currently playing

See also

- *Authentication (checking watermark), page 124*
- *Configuration, page 126*

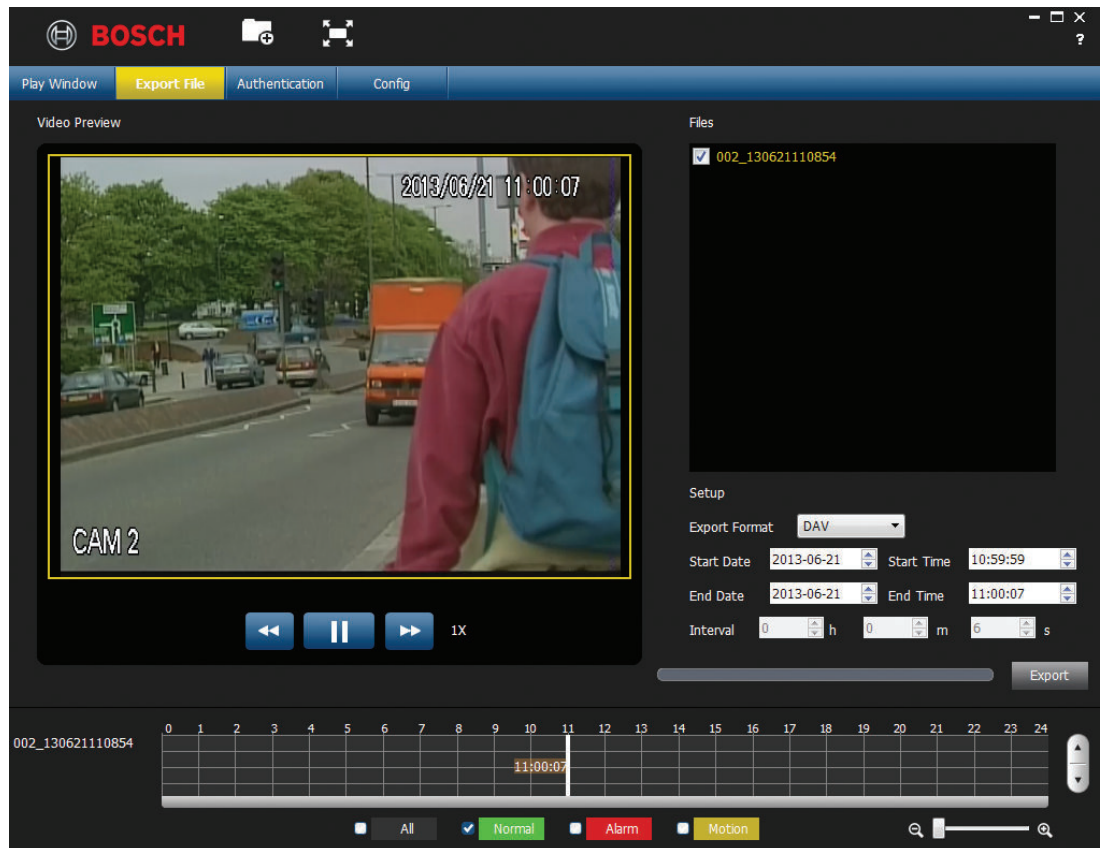
9.2 Authentication (checking watermark)



Use **<Authentication>** to check the authenticity of individual frames:

1. Click the Open file icon and browse through the relevant directories to choose a record (file) to check.
2. Select the check box beside the file (if not already selected).
3. Click **<Start Check>** to check if the record has been modified or not.
 - The file is displayed in the right column
 - A progress percentage is displayed during the check
 - If required, press **<Stop Check>** to halt the check
4. Upon completion:
 - If the record is original, the word **Original** is displayed in the **Results** column
 - If the record is false, a warning message is displayed

9.3 Export file

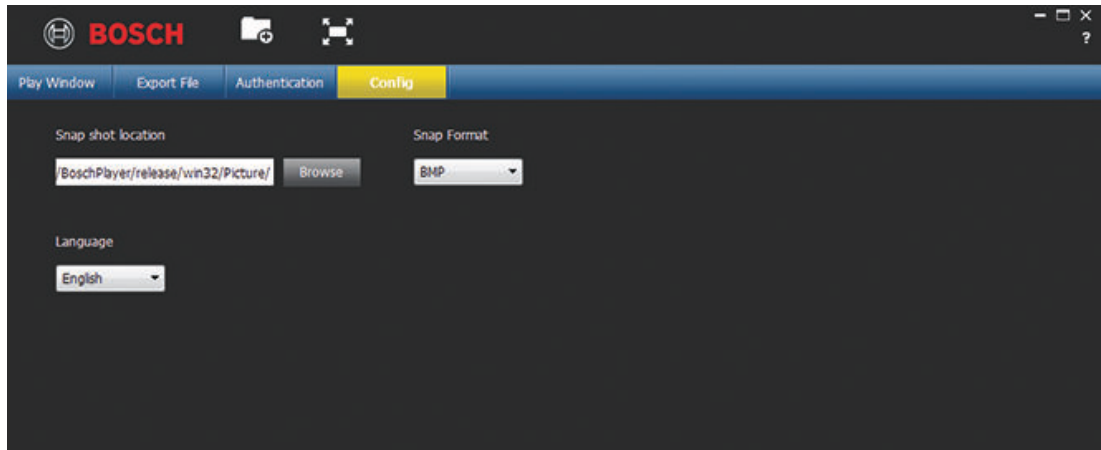


Export a file as follows:

1. Choose  and open a file to be exported.
2. If required, preview the file on the left screen by selecting the check box for the chosen file (if the file has multiple channels, select the check box for the required channel). Use the play, pause, and fast forward/reverse buttons as required.
3. You can also overview the recording contents using the grid in the bottom of the screen.
4. When you have decided on the recording segment that you wish to export, fill in the setup fields (Export format, Start date, End date, Start time, End time, Interval) by manually entering the field values. Or use the grid in the bottom of the screen to select start and end times.
5. Press <Start Export>.
6. In the 'Save as' dialog box, choose a directory location and a file name for the export, and press <Save>.
A progress percentage is displayed during the export
If required, press <Stop Export> to halt the export
7. When prompted, export the end of the file by pressing <OK>.

9.4 Configuration

Choose **<Config>** from the menu for the following screen.



Here you can set:

- Snap shot location – assign the path and directory to save a snapshot image (if necessary, click on <Browse> and select a new path)
- Snap format - select here the format (JPG or BMP) for the saved snapshot files
- Language – choose here the language for the player user interface

10

Troubleshooting

Cannot boot up correctly

- Input power is incorrect.
- Power connection is faulty.
- Power switch button is faulty.
- Program upgrade is incorrect.
- HDD malfunction or HDD cable connection is faulty (check HDD info screen for status).
- Seagate DB35.1 , DB35.2 , SV35 or Maxtor 17-g has compatibility problem. Please upgrade to the latest version.
- Front panel error.
- Main processor board is damaged.

DVR automatically shuts down or stops running

- Input voltage is not stable or is too low.
- HDD malfunction or HDD cable connection is faulty (check HDD info screen for status).
- Front video signal is not stable.
- Working environment is too harsh (e.g. too much dust).
- Hardware malfunction.

System cannot detect hard disk

- HDD malfunction or HDD cable connection is faulty (check HDD info screen for status).
- Main processor board SATA port is faulty.

No video output (on one-channel, multiple-channel or all-channel output).

- Program is not compatible. Please upgrade to the latest version.
- Brightness is 0. Please restore factory default setup.
- There is no video input signal or it is too weak.
- Check privacy mask setup or your screen saver.
- DVR hardware is faulty.

Real-time video color is distorted

- When using BNC output, NTSC and PAL setup is not correct (the real-time video becomes black and white).
- DVR and monitor resistance is not compatible.
- Video transmission is too long or degrading is too large.
- DVR color or brightness setup is incorrect.

Cannot search local records

- HDD malfunction or HDD cable connection is faulty (check HDD info screen for status).
- Upgraded program is not compatible.
- The recorded file has been overwritten.
- Record function has been disabled.

Video is distorted when searching local records

- Video quality setup is too low.
- Program read error, bit data is too small. There is mosaic in the full screen. Please restart the DVR to solve this problem.
- HDD malfunction or HDD cable connection is faulty (check HDD info screen for status).

- DVR hardware is faulty.

There is no audio when monitoring

- No power to pickup.
- No power to acoustics.
- Audio cable is damaged.
- DVR hardware is faulty.

There is audio when monitoring but there is no audio during playback

- Setup is incorrect. Please enable the audio function
- Corresponding channel has no video input. Playback is not continuous when the screen is blue.

Time display is incorrect

- Setup is incorrect
- Battery contact is incorrect or voltage is too low.
- LED display is faulty.

DVR cannot control PTZ

- Front panel PTZ error
- PTZ decoder setup, connection or installation is incorrect.
- Cable connection is faulty.
- PTZ setup is incorrect.
- PTZ decoder and DVR protocol is not compatible.
- PTZ decoder and DVR address is not compatible.
- When there are several decoders, please add 120 Ohm between the PTZ decoder A/B cables furthest end to delete the reverberation or impedance matching. Otherwise the PTZ control is not stable.
- The distance is too great.

Motion detection function does not work

- Period setup is not correct.
- Motion detection zone setup is not correct.
- Sensitivity is too low.
- For some versions, there is hardware limit.

Cannot log in client-end or web

- For Windows 98 or Windows ME users, please update your system to Windows 2000 SP4 (or install client-end software for previous versions). The DVR is not compatible with Windows VISTA control.
- ActiveX control has been disabled.
- No dx8.1 or higher. Please upgrade display card driver.
- Network connection error.
- Network setup error.
- Password or user name is invalid.
- Client-end is not compatible with DVR program.

No video (only mosaic) during remote preview or playback of video file

- Network fluency is poor.

- Client-end resources are limited.
- Multiple-cast group setup in DVR is causing mosaic (this mode is not recommended).
- There is privacy mask or channel protection setup.
- Current user has no rights to monitor.
- DVR local video output quality is poor.

Network connection is instable

- Network is instable.
- IP address conflict.
- MAC address conflict.
- PC or DVR network card is faulty.

Burn error / USB backup error

- Burner and DVR are connected with same data cable.
- System uses too much CPU resource. Please stop recording first and then begin backup.
- Data amount exceeds backup device capacity (causing burner error).
- Backup device is not compatible.
- Backup device is damaged.

Keyboard cannot control DVR

- DVR serial port setup is incorrect.
- Address is incorrect.
- Several switchers are draining power supply.
- Transmission distance is too great.

Alarm signal cannot be disarmed

- Alarm setup is incorrect.
- Alarm output has been opened manually.
- Input device error or connection is faulty.
- Program version may be incorrect - please upgrade your system.

Alarm function is null

- Alarm setup is incorrect.
- Alarm cable connection is faulty.
- Alarm input signal is incorrect.
- Two loops connect to one alarm device.

Remote control does not work

- Remote control address is incorrect.
- Distance is too great or control angle is too small.
- Remote control battery power is low.
- Remote control or DVR front panel is damaged.

Record storage period is too short

- Camera quality is too low.
 - Lens is dirty
 - Camera is installed facing the light
 - Camera aperture setup is incorrect.
- HDD capacity is insufficient.

- HDD is damaged.

Cannot playback the downloaded file

- No media player.
- No DXB8.1 (or higher) graphic acceleration software.
- No DivX503Bundle.exe control when you play the file transformed to AVI via media player.
- No DivX503Bundle.exe or ffdshow-2004 1012.exe in Windows XP OS.

Forgotten local menu operation password or network password

Please contact your local service engineer or Bosch sales group for help.

11 Maintenance

Maintenance of this unit is limited to:

- External cleaning and inspection
- *Replace internal battery, page 135*
- *Install HDD in DIVAR AN 3000, page 136*
- *Install HDD in DIVAR AN 5000, page 139*
- *Install DVD in DIVAR AN 3000, page 143*
- *Install DVD in DIVAR AN 5000, page 145*

The following figures show the DIVAR AN 3000 and the DIVAR AN 5000 (with top covers removed) and the installed positions of the battery (1), DVD (2) and HDD (3):

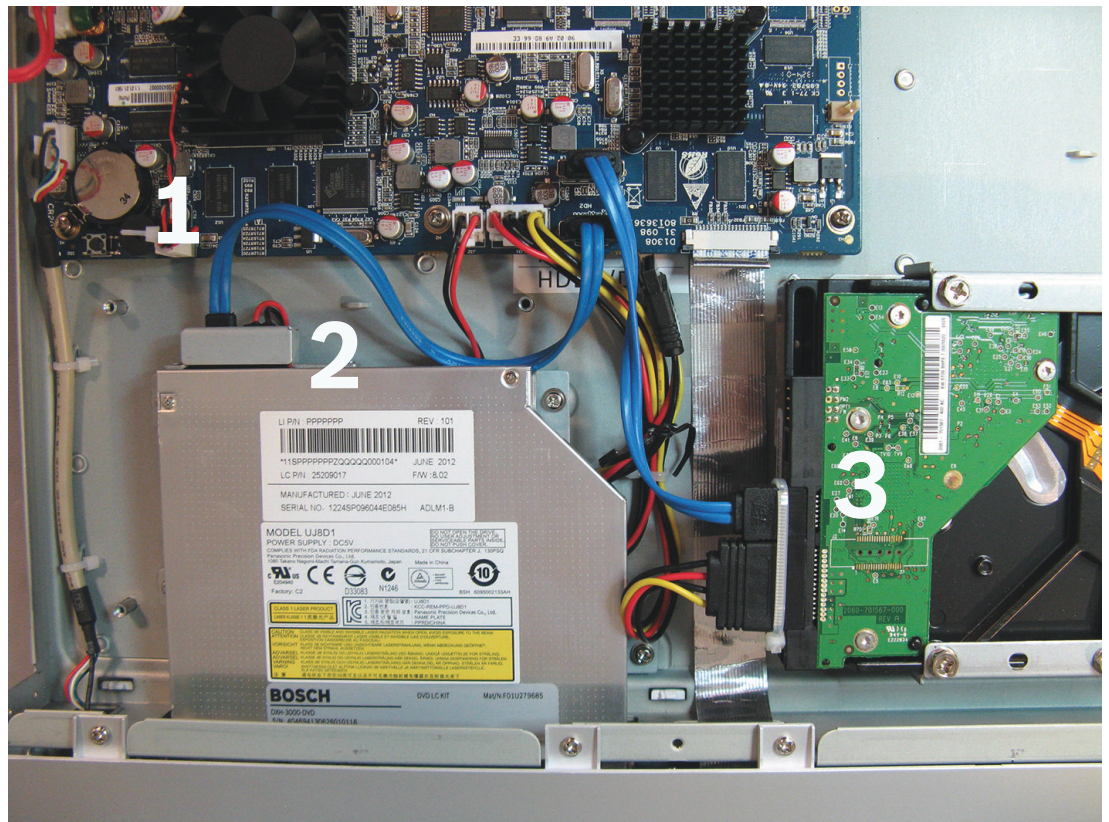


Figure 11.1: DIVAR AN 3000

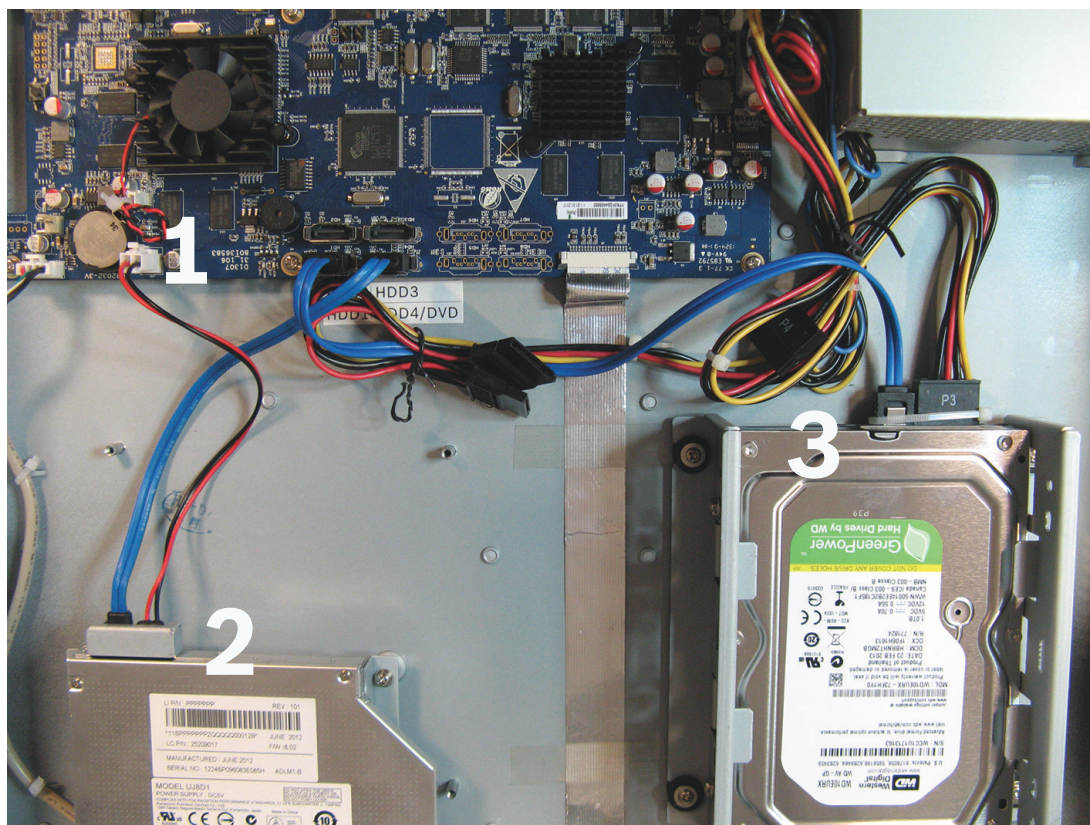


Figure 11.2: DIVAR AN 5000

Refer to the Appendix in the Operator Manual for recommended DVD and HDD types.

11.1 Maintenance precautions

11.1.1 Attach ESD strap

Precaution – ESD

**Caution!**

Possible processor damage.

When the DIVAR cover is removed for installing, replacing or repairing internal components (battery, HDD or DVD), always make sure you wear an approved ESD wrist strap – see below.



Figure 11.3: ESD strap

The ESD strap is vital to prevent damage to ESD-sensitive parts when maintaining components in an opened DVR cabinet.

Always attach the ESD strap around your wrist as follows:

1. Slide the expandable strap over your wrist.
2. Connect the clip on the flexible grounding cord to an unpainted ground point (or to an approved ground point).
3. Keep the strap on and connected while you touch, insert, or remove any ESD-sensitive part.

11.1.2 High Voltage

**Danger!**

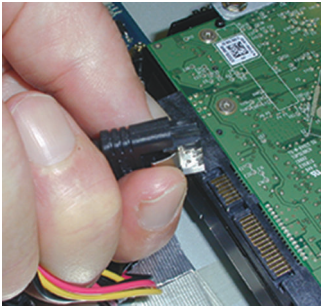
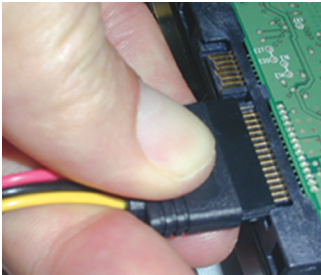
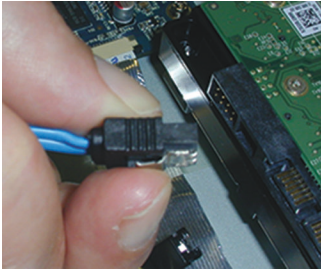
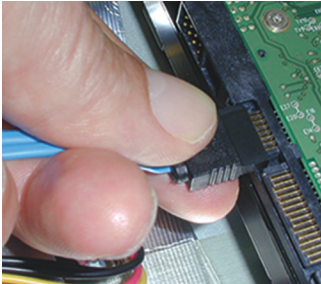
High voltage. Risk of electric shock.

When opening the top cover to service the unit, always make sure that the power has been switched off and the power cable is disconnected.

11.1.3 Connector/processor damage

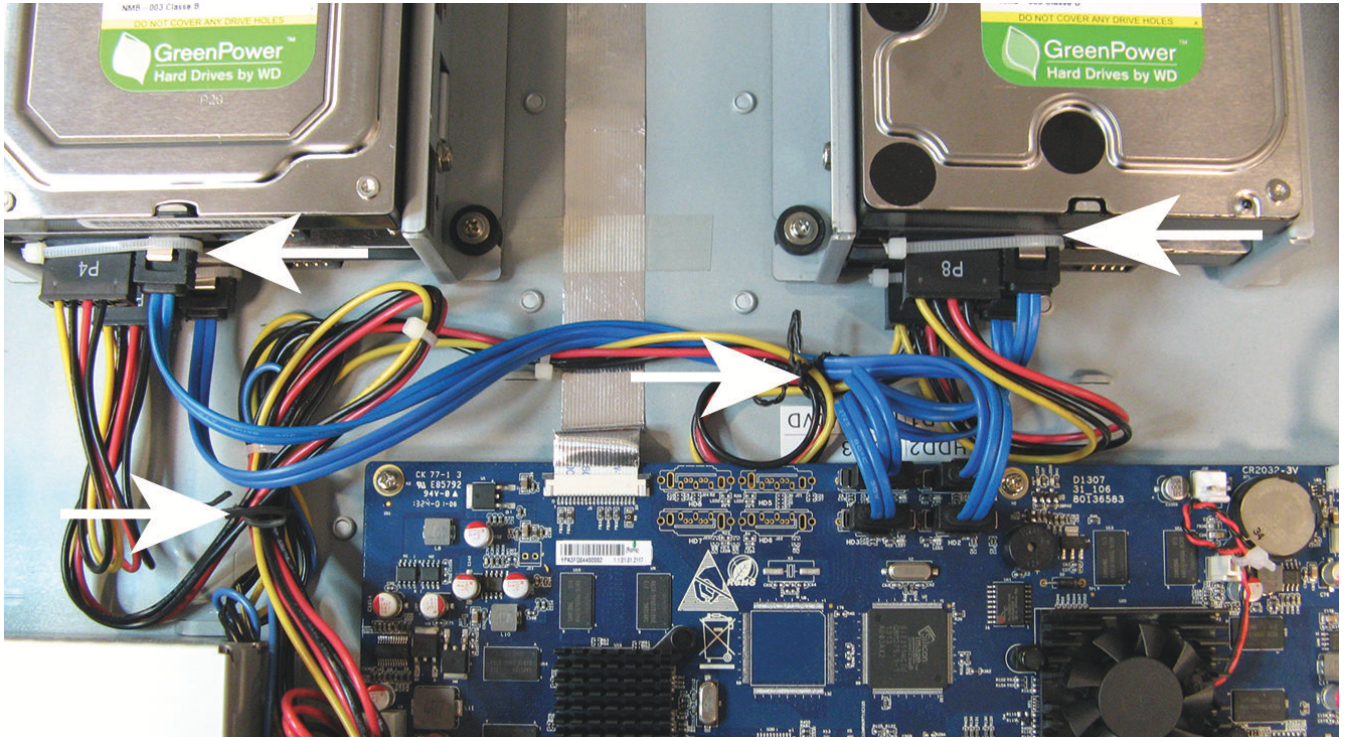


Caution!
Possible connector damage.
Notice also that some cables for both the DIVAR AN 3000 and DIVAR AN 5000 have a lock which must be pressed and held when inserting/removing the cable. See following figures.

	
Press pin	Hold pin and connect cable
	
Press pin	Hold pin and connect cable



Caution!
Loose connectors and cables.
After installing HDD(s), always make sure that the connectors and cabling are firmly attached in place with tie wraps and tie cables to prevent connector movement and cable strain (see arrowed locations in following example). Avoid sharp bends in the SATA cables.

**See also**

- Attach ESD strap, page 133

11.2

Replace internal battery

This product uses a 3.0 V Lithium CR2032 battery (article number F01U099057) as the backup power supply for internal system status (e.g. real time clock).

Under normal circumstances this battery will last for a minimum of 5 years. Low battery power affects the DVR operation causing it to reset at every power-up. A log message appears when the battery needs replacing (it should not be replaced unless required).

If the battery needs replacing, contact Bosch for assistance. Take note of the following precautions:

- Danger of explosion if battery is incorrectly replaced.
- Replace only with the same battery type (or equivalent).
- Dispose of used batteries according to the manufacturer's instructions.

11.3 Install HDD in DIVAR AN 3000

See the following components for installing HDD (brackets, rubbers, screws, tie wrap and cables included in package; HDD not included):

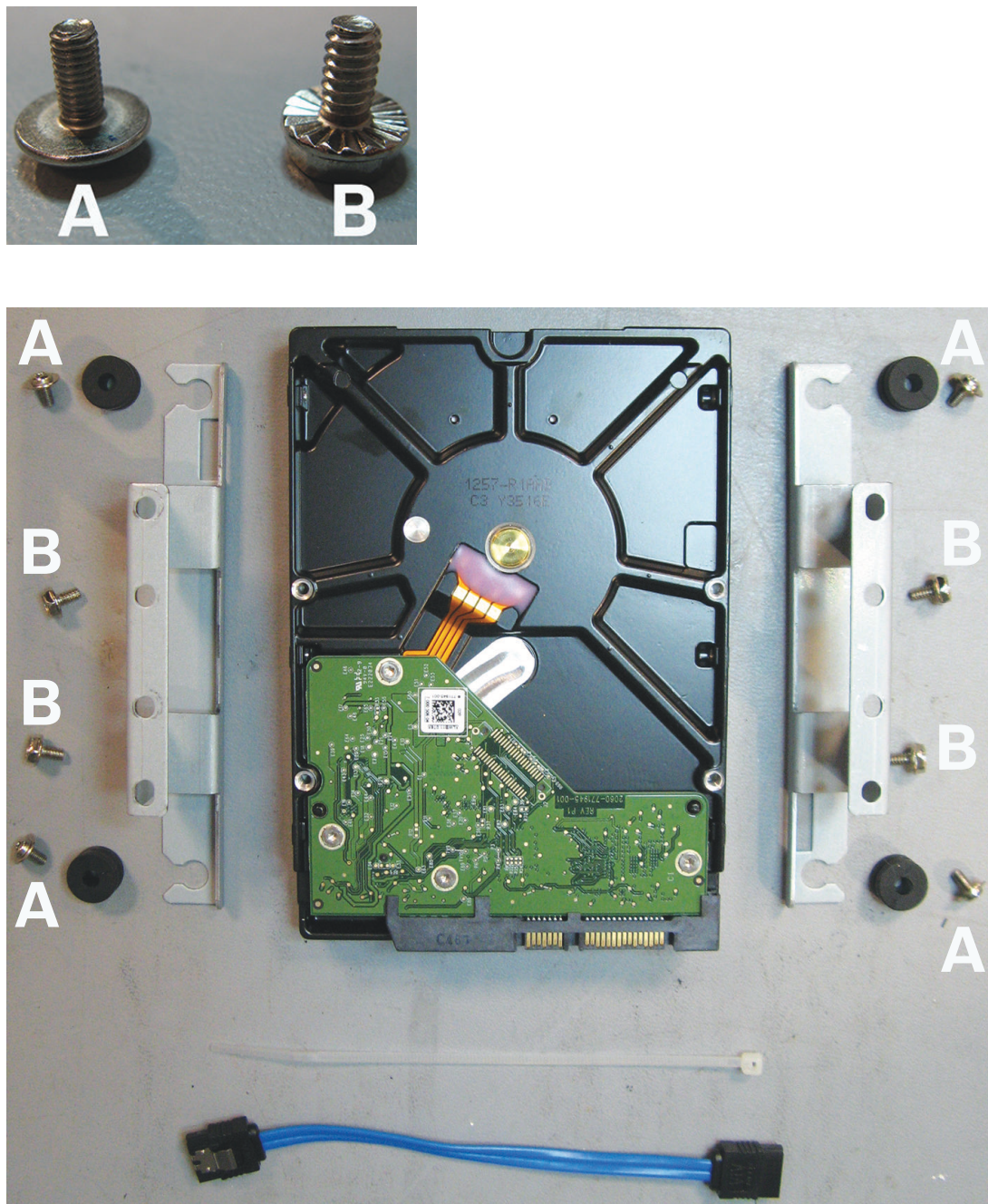


Figure 11.4: HDD install components for DIVAR AN 3000

Note: A maximum 2 HDDs can be installed in the DIVAR AN 3000

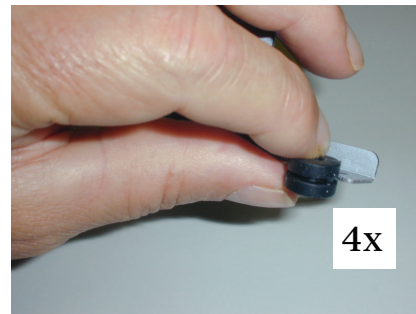
11.3.1 Install HDD 1



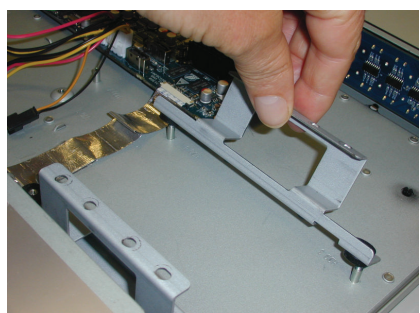
(1)



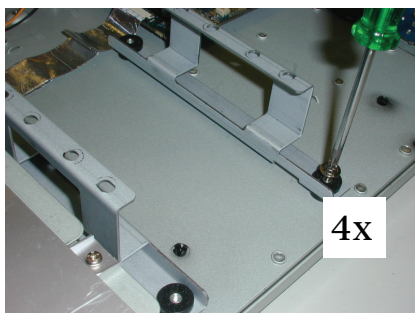
(2)



(3)



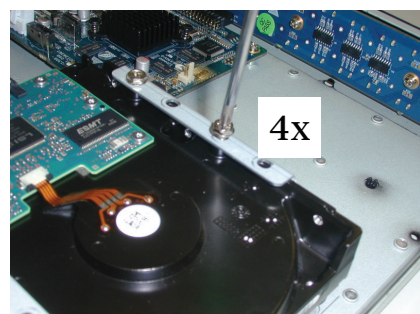
(4)



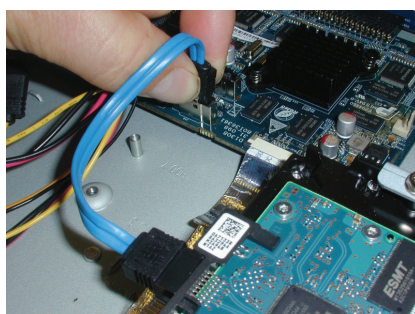
(5)



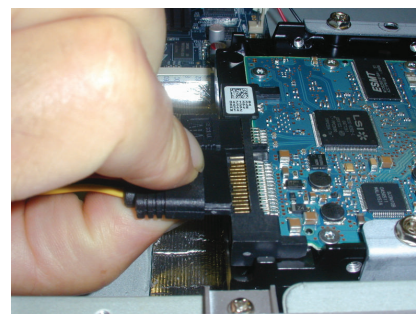
(6)



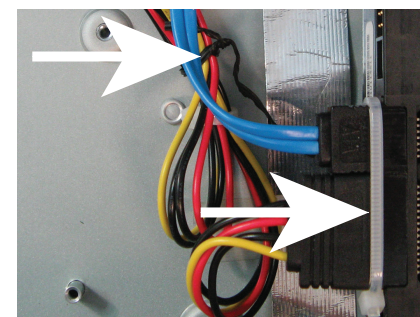
(7)



(8)



(9)



(10)



(11)



(12)

11.3.2

Install HDD 2

Install HDD 2 in the position of the optional DVD – see following figure:

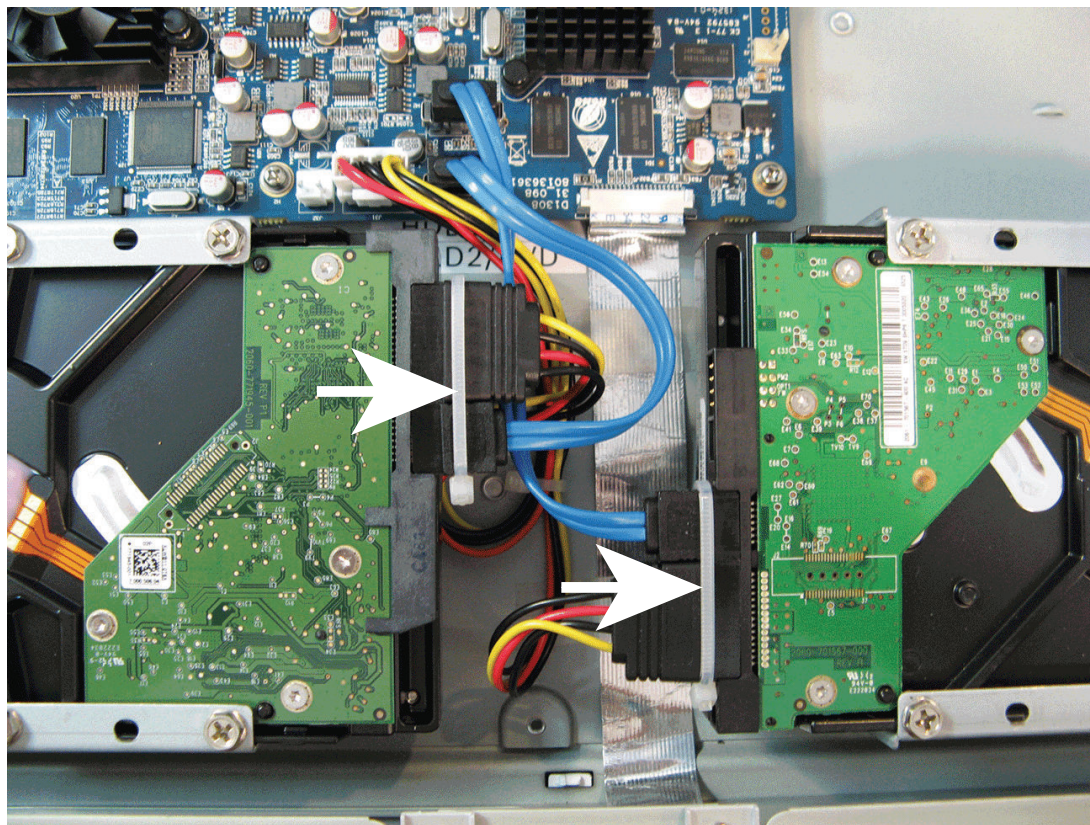


Figure 11.5: Install HDD 2

Use the same install steps described for installing HDD 1.

11.4 Install HDD in DIVAR AN 5000

See the following components for installing HDD (brackets, rubbers, screws, tie wrap and cables included in package; HDD not included):

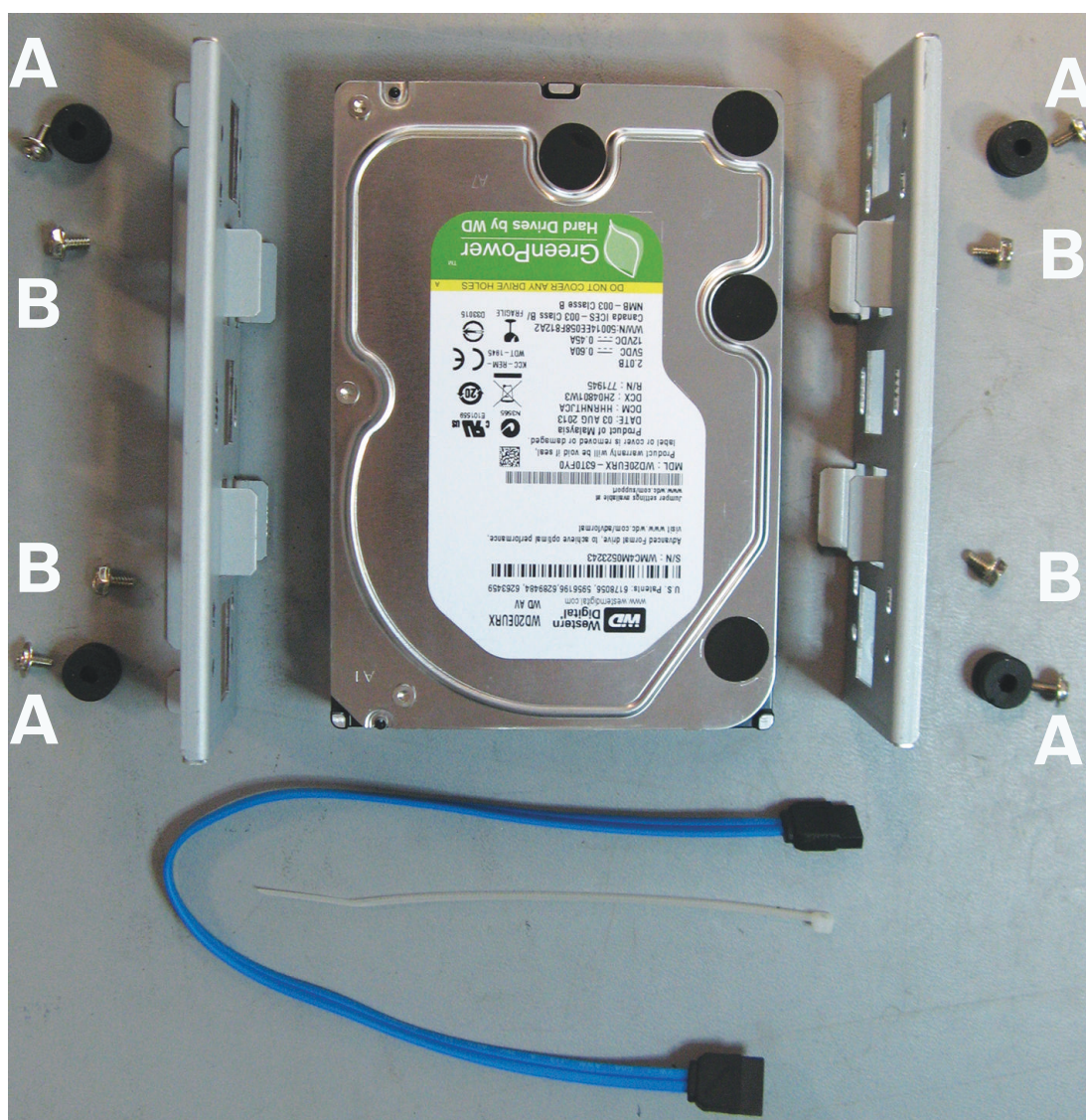
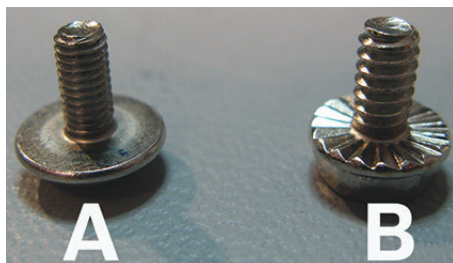
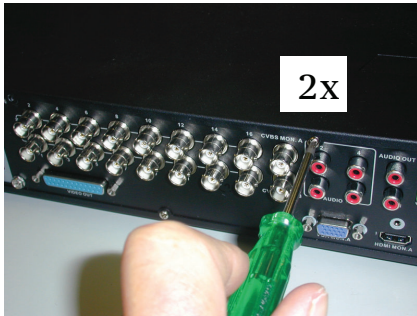


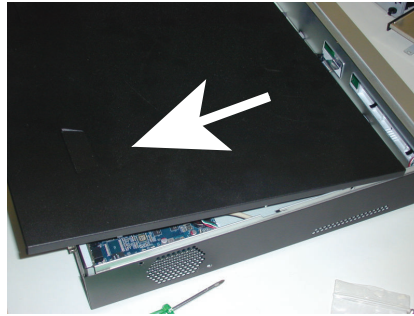
Figure 11.6: HDD install components for DIVAR AN 5000

Note: A maximum 4 HDDs can be installed in the DIVAR AN 5000

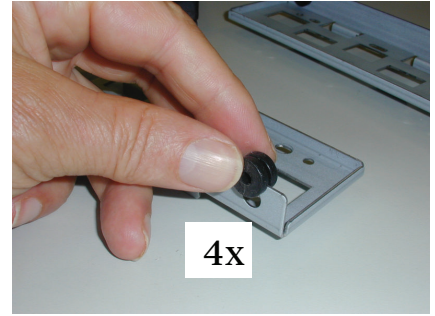
11.4.1 Install HDD 1



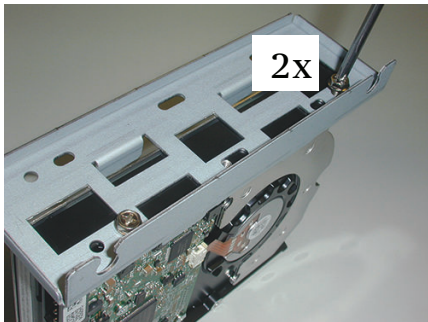
(1)



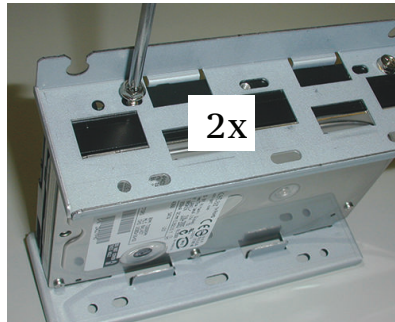
(2)



(3)



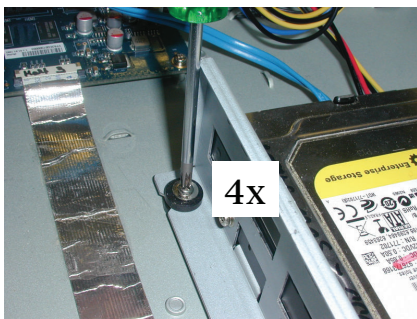
(4)



(5)



(6)



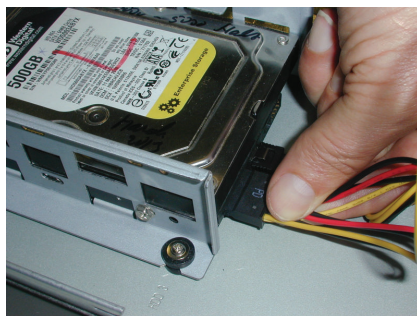
(7)



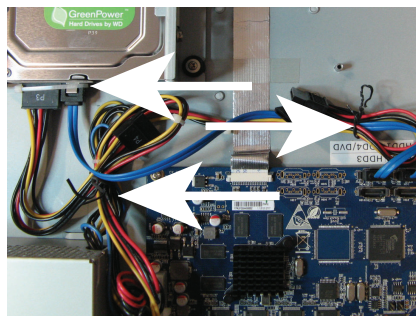
(8)



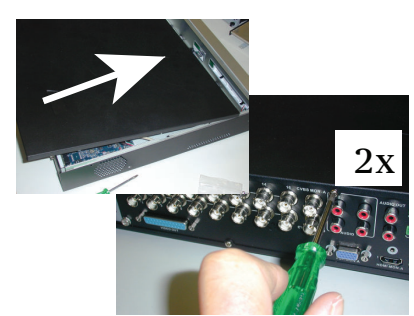
(9)



(10)



(11)



(12)

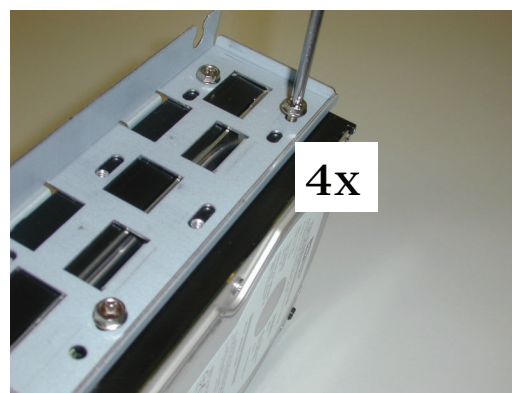
11.4.2

Install HDD 2

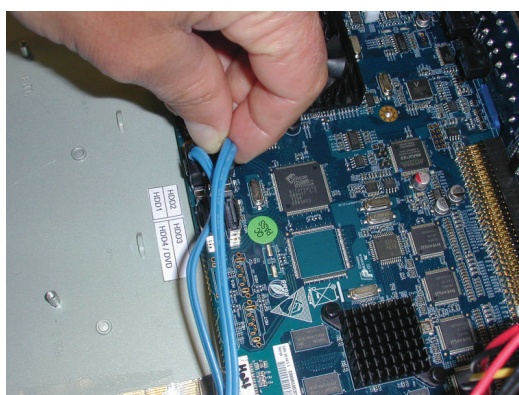
Use the same procedure as for installing HDD 1, but include the following extra steps:



(5a)



(5b)



(8a)



(8b)

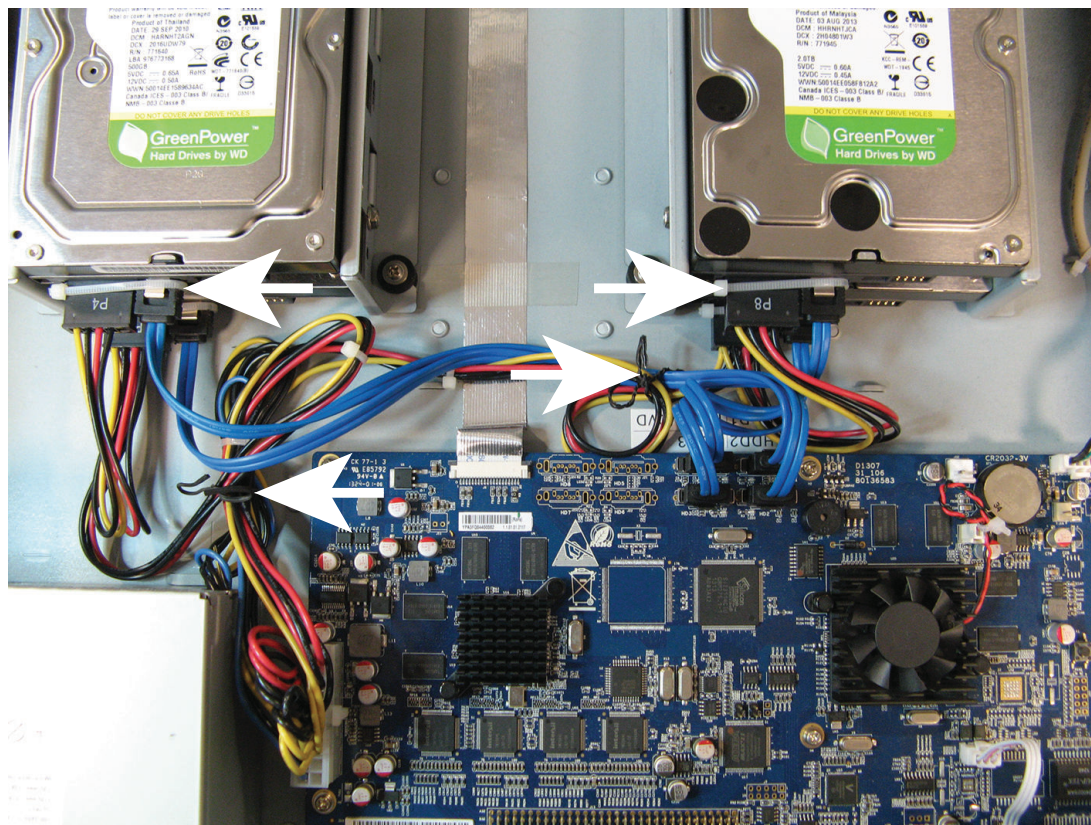


(10a)

11.4.3

Install HDD 3 and 4

Use the same install steps as for HDD 1 and 2, but install HDD 3 and 4 at the optional DVD location. See following figure.

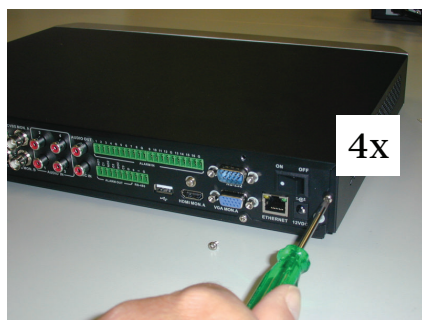


11.5 Install DVD in DIVAR AN 3000

See the following components and steps required for this installation (screws included in package):



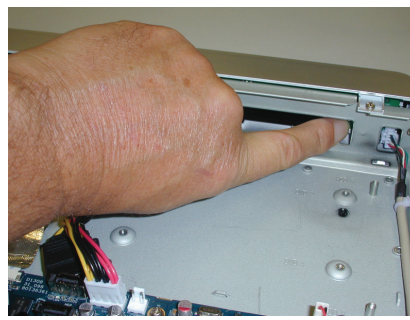
Figure 11.7: DVD install components for DIVAR AN 3000



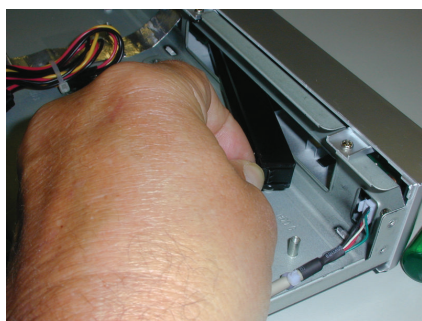
(1)



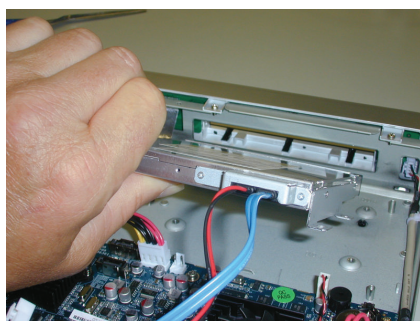
(2)



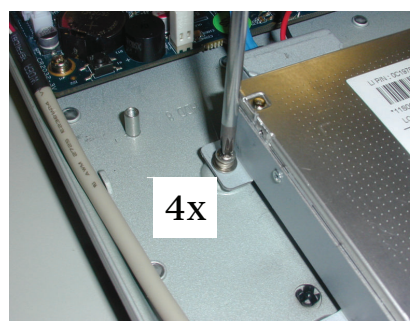
(3)



(4)



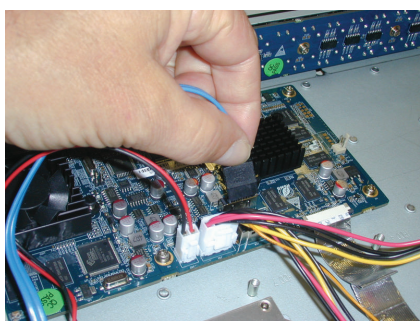
(5)



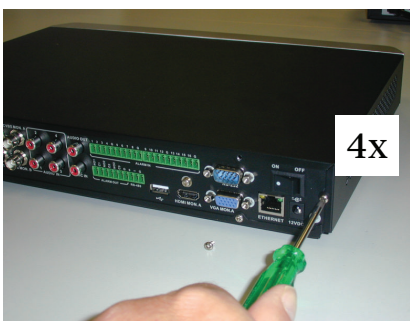
(6)



(7)



(8)



(9)

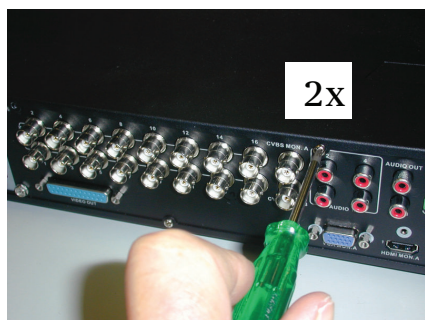
Figure 11.8: Install DVD in DIVAR AN 3000

11.6 Install DVD in DIVAR AN 5000

See the following components and steps required for this installation (spacers and screws included in package):



Figure 11.9: DVD install components for DIVAR AN 5000



(1)



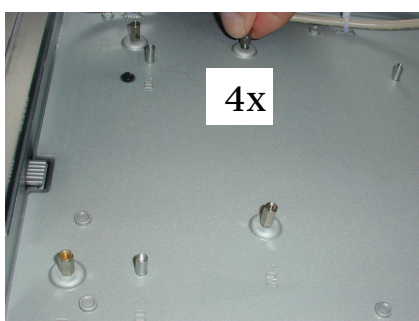
(2)



(3)



(4)



(5)



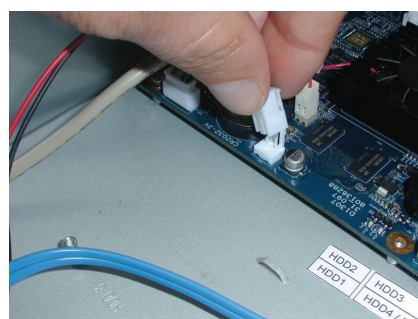
(6)



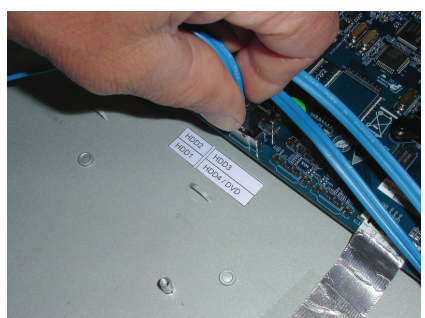
(7)



(8)



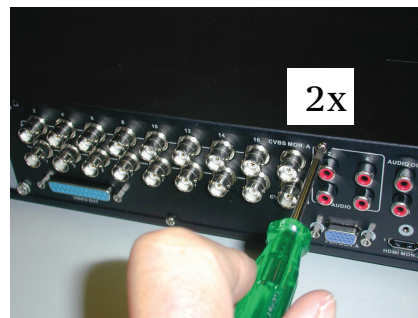
(9)



(10)



(11)



(12)

Figure 11.10: Install DVD in DIVAR AN 5000

12 Technical specifications

12.1 DIVAR AN 3000

Electrical

Rated voltage and power	
External power adapter AC input	100–240 VAC; 50-60 Hz; 1.7 A
Power adapter DC output	12 VDC; 5 A
DVR Power input	12 VDC; 35 W, 119 BTU/h
RTC battery on main PCB	Lithium CR2032, 3 VDC

Video	
Video standard	PAL or NTSC (select via General Setup menu, or auto detect on channel 1) 960H resolution support
Playback	960H: 960x576 (PAL), 960x480 (NTSC) 4CIF: 704x576 (PAL), 704x480 (NTSC) 2CIF: 704x288 (PAL), 704x240 (NTSC) CIF: 352x288 (PAL), 352x240 (NTSC) QCIF: 176x144 (PAL), 176x120 (NTSC)
Compression	H.264
Inputs	4, 8 or 16 composite video 1 Vpp, 75 ohm, CVBS (BNC)
Outputs	1 channel Mon. A: CVBS (BNC) 1 channel Mon. A: HDMI 1 channel Mon. A: VGA 1 channel Mon. B: CVBS (BNC) Support for simultaneous CVBS/VGA/HDMI output to Mon. A

Monitors	
MON.A	Live, playback, menus
	VGA: analog RGB max. 1920x1080, 60 Hz
	HDMI: digital RGB max. 1920x1080, 165 MHz
	CVBS: 1 Vpp, 75 ohm, BNC (NTSC/PAL)
Resolution (MON.A)	CVBS (PAL): 704x576 CVBS (NTSC): 704x480 VGA: 1920x1080, 1280x1024, 1280x720, 1024x768 HDMI: 1920x1080, 1280x1024, 1280x720, 1024x768 960H camera: 960x576 (PAL), 960x480 (NTSC) 720H camera: 704x576 (PAL), 704x480 (NTSC)

MON.B	Live
	CVBS: 1 Vpp, 75 ohm, BNC
Resolution (MON.B)	CVBS (PAL): 704x576 CVBS (NTSC): 704x480

Audio	
Inputs	4-ch RCA (for 4/8/16 channel), 200 to 3000 mV, 10 kOhm (RCA)
Output	Mono RCA, 200 to 3000 mV, 5 kOhm (RCA)
MIC input	Mono talk input RCA, 200 to 3000 mV, 10 kOhm (RCA)
Compression	G.711A
Sample rate	8 kHz per channel
Bit rate	8-bit

Control	
RS485	PTZ control port Output signals according to RS485, max. signal voltage -5 to +5 V
RS232	PTZ control port interface Output signals according to EIA/TIA-232-F, max input voltage ± 10 V
Supported protocols	Pelco P and D (over RS-485) Bosch OSD (over RS-485 or RS-232)

Alarms	
Inputs	16 inputs configurable NO/NC, max. input voltage 5 VDC
Outputs	3 relay outputs
Relay contact	Max. rated, 30 VDC, 2 A continuous or 125 VAC, 1 A (activated)

Connectors	
Video inputs	4, 8 or 16 BNC
Monitor outputs	1 VGA D-SUB 1 HDMI 2 channel BNC (CVBS)
Alarm inputs	16 screw terminal inputs, cable diameter AWG26-16 (0.13–1.5 mm)

Alarm outputs	3 screw terminal outputs, cable diameter AWG26-16 (0.13–1.5 mm)
Audio inputs	4 RCA
Audio outputs	1 RCA
Audio bidirectional (MIC)	1 RCA for talk input or output
Ethernet	RJ45, 10/100/1000Base-T according to IEEE802.3
RS485	Screw terminal output
RS232	DB9 male, 9-pin D-type
USB 2.0	One front and one rear USB connector for mouse or USB memory device
+12 VDC	External power input

Video recording

Recording	
Speed	Max. 30 IPS per channel (NTSC), configurable Max. 25 IPS per channel (PAL), configurable
Mode	Manual, motion detection, scheduled, alarm

Network control	
View alarm	External, motion detection, system alarms and video loss
Audio	Bidirectional (audio input and output connected via device)
PC software	Bosch Video Client

Playback	
Multi-channel	Simultaneous 1/4/9/16 channels
Mode	Frame-by-frame, slow play, fast play, reverse
Search	Time, channel, type, smart
Network	Bosch Video Client or Web Client software

Alarm Handling	
Motion detection	Detection zones: 396 (PAL) / 330 (NTSC)
Video loss	External alarm and screen prompt

Storage	
Internal	2 SATA HDD or 1 HDD + 1 DVD (R/RW) Max. capacity per HDD: 4 TB Max. supported speed per HDD: 6 Gb/s

Exporting	
DVD (optional)	Built-in DVD+R/RW writer
USB	Flash memory or external HDD (FAT32)
Network	Bosch Video Client or Web Client software

Mechanical

Dimensions (WxDxH)	375 x 290 x 50 mm (14.8 x 11.4 x 2.0 in) excluding cabling and feet (5 mm)
Weight	2.5 kg (5.51 lb) approx. excluding HDD(s) and DVD writer

Environmental

Temperature (incl. HDD(s) and DVD writer)	
Operating	+0°C to +40°C (+32°F to +104°F)
Storage	-40°C to +70°C (-40°F to +158°F)

Humidity	
Operating	<93% non-condensing
Storage	<95% non-condensing

12.2**DIVAR AN 5000****Electrical**

Rated voltage and power	
Power input	100–240 VAC; 50-60 Hz; 55 W, 187 BTU/h
RTC battery on main board	Lithium CR2032, 3 VDC

Video	
Video standard	PAL or NTSC (select via General Setup menu, or auto detect on channel 1) 960H resolution support

Playback	960H: 960x576 (PAL), 960x480 (NTSC) 4CIF: 704x576 (PAL), 704x480 (NTSC) 2CIF: 704x288 (PAL), 704x240 (NTSC) CIF: 352x288 (PAL), 352x240 (NTSC) QCIF: 176x144 (PAL), 176x120 (NTSC)
Compression	H.264
Inputs	4, 8 or 16 composite video 1 Vpp, 75 ohm, CVBS (BNC)
Outputs	1 channel Mon. A: CVBS (BNC) 1 channel Mon. A: HDMI 1 channel Mon. A: VGA 1 channel Mon. B: CVBS (BNC) Support for simultaneous CVBS/VGA/HDMI output to Mon. A

Monitors	
MON.A	Live, playback, menus
	VGA: analog RGB max. 1920x1080, 60 Hz
	HDMI: digital RGB max. 1920x1080, 165 MHz
	CVBS: 1 Vpp, 75 ohm, BNC (NTSC/PAL)
Resolution (MON.A)	CVBS (PAL): 704x576 CVBS (NTSC): 704x480 VGA: 1920x1080, 1280x1024, 1280x720, 1024x768 HDMI: 1920x1080, 1280x1024, 1280x720, 1024x768 960H camera: 960x576 (PAL), 960x480 (NTSC) 720H camera: 704x576 (PAL), 704x480 (NTSC)
MON.B	Live
	CVBS: 1 Vpp, 75 ohm, BNC
Resolution (MON.B)	CVBS (PAL): 704x576 CVBS (NTSC): 704x480

Audio	
Inputs	4-ch RCA (for 4/8/16 channel), 200 to 3000 mV, 10 kOhm (RCA)
Output	Mono RCA, 200 to 3000 mV, 5 kOhm (RCA)
MIC input	Mono talk input RCA, 200 to 3000 mV, 10 kOhm (RCA)
Compression	G.711A
Sample rate	8 kHz per channel
Bit rate	8-bit

Control	
RS485	PTZ control port Output signals according to RS485, max. signal voltage -5 to +5 V
RS232	PTZ control port interface Output signals according to EIA/TIA-232-F, max input voltage ± 10 V
Supported protocols	Pelco P and D (over RS-485) Bosch OSD (over RS-485 or RS-232)

Alarms	
Inputs	16 inputs configurable NO/NC, max. input voltage 5 VDC
Outputs	5 relay outputs, plus one controllable 12 VDC port
Relay	Max. rated, 30 VDC, 2 A continuous or 125 VAC, 1 A (activated)

Connectors	
Video inputs	4, 8 or 16 BNC
Video outputs (loop through)	4 or 8 BNC (for 4 and 8 channel units) 1 x 25-pin D-type for 16 channel unit (connector cable supplied)
Monitor outputs	1 VGA D-SUB 1 HDMI 2 channel BNC (CVBS)
Alarm inputs	16 screw terminal inputs, cable diameter AWG26-16 (0.13–1.5 mm)
Alarm outputs	5 screw terminal outputs, cable diameter AWG26-16 (0.13–1.5 mm) 1 controllable 12 VDC screw terminal output
Audio inputs	4 RCA
Audio outputs	1 RCA
Audio bidirectional (MIC)	1 RCA for talk input or output
Ethernet	RJ45, 10/100/1000Base-T according to IEEE802.3
Intuikey keyboard (KBD Digital or KBD Universal)	Conforms to RS485, max. signal voltage ± 12 V, power supply to keyboard 11 to 12.6 VDC at max. 400 mA
RS485	Screw terminal output
RS232	DB9 male, 9-pin D-connector
e-SATA	e-SATA connector for backup device

USB 2.0	One front and one rear USB connector for mouse or USB memory device
+12 VDC	External power input

Video recording

Recording	
Speed	Max. 30 IPS per channel (NTSC), configurable Max. 25 IPS per channel (PAL), configurable
Mode	Manual, motion detection, scheduled, alarm

Network control	
View alarm	External, motion detection, system alarms and video loss
Audio	Bidirectional (audio input and output connected via device)
PC software	Bosch Video Client

Playback	
Multi-channel	Simultaneous 1/4/9/16 channels
Mode	Frame-by-frame, slow play, fast play, reverse
Search	Time, channel, type, smart
Network	Bosch Video Client or Web Client software

Alarm Handling	
Motion detection	Detection zones: 396 (PAL) / 330 (NTSC)
Video loss	External alarm and screen prompt

Storage	
Internal	4 SATA HDD or 2 HDD + 1 DVD (R/RW) Max. capacity per HDD: 4 TB Max. supported speed per HDD: 6 Gb/s
External	e-SATA connection: Max. 4 HDD Max. capacity per HDD: 4 TB Max. supported speed per HDD: 6 Gb/s

Exporting	
DVD (optional)	Built-in DVD+R/RW writer
USB	Flash memory or external HDD (FAT32)
e-SATA	Flash memory or external HDD (FAT32)
Network	Bosch Video Client or Web Client software

Mechanical

Dimensions (WxDxH)	440 x 420 x 70 mm (17.3 x 16.5 x 2.8 in) excluding cabling and feet (5 mm)
Rack mount kit (included)	For mounting one unit in an EIA 19" rack
Weight	5.5 kg (12.13 lb) approx. excluding HDD(s) and DVD writer

Environmental

Temperature (incl. HDD(s) and DVD writer)	
Operating	+0°C to +40°C (+32°F to +104°F)
Storage	-40°C to +70°C (-40°F to +158°F)

Humidity	
Operating	<93% non-condensing
Storage	<95% non-condensing

12.3**Standards and Directives**

Standards	
EMC Directive	2004/108/EC
EMC Immunity	EN 50130-4:2011 *
EMC Emission	EN 55022:2010, +AC:2011. Class B conducted + radiated emission EN 61000-3-2:2006, +A1: 2009, +A2:2009 Mains harmonics EN 61000-3-3:2008. Voltage fluctuations
Environment	EN 50130-5 Class 1
Low voltage directive	2006/95/EC
Safety	EN 60950-1:2006, +A11:2009, +A1:2010, +A12:2011, +AC:2011 USA: UL 60950-1: 2nd edition 2011-12-19 CAN/CSA-C22.2 No.60950-1-07, 2nd edition 2011-12

FCC	CFR Title 47 Part 15:2009 class B
EMC Australia	C-Tick

* Clause 8 (mains supply voltage dips and short interruptions): to meet the requirements of this clause, auxiliary equipment (such as a UPS) must be used.

13 Appendix

13.1 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.

13.1.1 Bosch software

All Bosch software is licensed under the terms of the End User License Agreement (EULA) of Bosch Security Systems B.V. or Bosch Security Systems Inc, as available together with the physical carrier (CD or DVD). Any use is subject to agreement and compliance with such EULA, as applicable.

13.1.2 Other licenses – copyright notices

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At the time of printing this manual, the following extra licenses apply to the applicable software components included in the DIVAR:

Name software component	License (*)	URL link to address
Linux Bootloader	u-boot-1.3.1	http://sourceforge.net/projects/u-boot
common linux command line utilities	busybox-1.18.4	http://www.busybox.net/
Linux Kernel and other utilities	Linux-2.6.32	www.kernel.org/
Linux Bootloader	u-boot-2008.10	http://sourceforge.net/projects/u-boot
Linux Kernel and other utilities	Linux-2.6.24	www.kernel.org/
Database	sqlite	http://www.sqlite.org/copyright.html
security socket layer	openssl	http://www.openssl.org/source/license.html

Name software component	License (*)	URL link to address
Script Language	lua	http://www.lua.org/license.html
data commute format	jsonapp	www.json.org/licence.html

(*) Full texts of the appropriate licenses are available at the URL links and are also delivered together with the software on the physical carrier.

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The relevant open source software can be found at:
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To obtain the complete Corresponding Source Code in the physical medium such as CD-ROM by airmail, Bosch may charge for reasonable costs related to producing a physical carrier of open source software or source code. This offer is valid to anyone in receipt of this information.

13.1.3

Warranties and disclaimer of warranties

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13.2

DVD compatibility

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

DVD media compatibility list

Manufacturer	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

Manufacturer	Type	Speed	Size
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

Note:

DVD -R and -RW are not supported.

13.3 USB memory sticks

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

Recommended USB memory sticks

Manufacturer	Model	Capacity
Sandisk	Cruzer Micro	512M
Sandisk	Cruzer Micro	1G
Sandisk	Cruzer Micro	2G
Sandisk	Cruzer Freedom	256M
Sandisk	Cruzer Freedom	512M
Sandisk	Cruzer Freedom	1G
Sandisk	Cruzer Freedom	2G
Kingston	DataTraveler II	1G
Kingston	DataTraveler II	2G
Kingston	DataTraveler	1G
Kingston	DataTraveler	2G
Maxell	USB Flash Stick	128M
Maxell	USB Flash Stick	256M
Maxell	USB Flash Stick	512M
Maxell	USB Flash Stick	1G
Maxell	USB Flash Stick	2G
Kingax	Super Stick	128M
Kingax	Super Stick	256M
Kingax	Super Stick	512M

Manufacturer	Model	Capacity
Kingax	Super Stick	1G
Kingax	Super Stick	2G
Netac	U210	128M
Netac	U210	256M
Netac	U210	512M
Netac	U210	1G
Netac	U210	2G
Netac	U208	4G
Teclast	Ti Cool	128M
Teclast	Ti Cool	256M
Teclast	Ti Cool	512M
Teclast	Ti Cool	1G
SanDisk	cruzer mirco	2G
SanDisk	cruzer mirco	8G
SanDisk	Ti Cool	2G
SanDisk	Hongjiao	4G
Lexar	Lexar	256MB
Kingston	Data Traveler	1G
Kingston	Data Traveler	16GB
Kingston	Data Traveler	32GB
Aigo	L8315	16GB
Sandisk	250	16GB
Kingston	Data Traveler Locker+	32GB
Netac	U228	8GB

Note:

USB memory sticks must be formatted according to the FAT32 standard. No other standard is permitted.

13.4

HDD compatibility

The following portable HDDs have been tested on the DIVAR for USB port connection.

Brand	Model	Capacity
YDStar	YDstar HDD box	40 GB
Netac	Netac	80 GB
lomega	lomega RPHD-CG" RNAJ50U287	250 GB

WD Elements	WCAVY1205901	1.5TB
Newsmy	Liangjian	320 GB
WD Elements	WDBAAR5000ABK-00	500 GB
WD Elements	WDBAAU0015HBK-00	1.5 TB
Seagate	FreeAgent Go(ST905003F)	500 GB
Aigo	H8169	500 GB

The following HDDs have been tested on the DIVAR when connected to the SATA port and to the e-SATA port (only on DIVAR 5000 family).

Manufacturer	Series	Model (Bosch order no.)	Capacity	Port Mode
Western Digital *	AV series	WD5000AVCS-xx2DY1 (DVR-XS050-A)	500 GB	SATA
Western Digital *	AV series	WD10EURX-xxFH1Y0 (DVR-XS100-A)	1 TB	SATA
Western Digital *	AV series	WD20EURS-xxSPKY0 (DVR-XS200-A)	2 TB	SATA
Western Digital *	AV series	WD30EURS-xxSPKY0 (DVR-XS300-A)	3 TB	SATA
Seagate	Barracuda.10	ST3750640AS	750 GB	SATA
Seagate	Barracuda.10	ST3500630AS	500 GB	SATA
Seagate	Barracuda.11	ST3750330AS	750 GB	SATA
Seagate	Barracuda.11	ST3500320AS	500 GB	SATA
Seagate	Barracuda 7200.11	ST31500341AS	1.5 TB	SATA
Seagate	SV35.2	ST3500320SV	500 GB	SATA
Seagate	SV35.2	ST3750640SV	750 GB	SATA
Seagate	SV35.3	ST31000340SV	1 TB	SATA
Western Digital	Caviar SE16	WD7500KS2	750 GB	SATA
Western Digital	Caviar SE16	WD5000KS2	500 GB	SATA
Western Digital	RE series	WD5000ABYS	500 GB	SATA

* The top four models are available from Bosch Security Systems as DVR-XSxx0-A Storage Expansion Kits (see listed order numbers).

Warranty and support issues:

Bosch can not be held liable for any loss or damages or system malfunction resulting from the use of non-Bosch HDDs in the DIVAR.

Bosch provides advance exchange and carry-in service on Bosch products only. Non-Bosch hard drives should be removed from DIVAR recorders when returning these units for repair. Should non-Bosch HDDs be returned, then Bosch will not be held responsible for loss of these drives or any information recorded on these drives or for any consequential damages.

Bosch will not be held liable for loss or consequential damages resulting from disclosure of any information stored on non-Bosch drives.

Legal note:

Video loss is inherent to digital video recording; therefore Bosch cannot be held liable for any damage that results from missing video information. Bosch does not make any commitments or promises regarding quality, performance or other features with respect to third party HDDs. The information included here is provided "as is".

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13.5

Port settings

Port	Protocol	Usage
0-1024	tcp/udp	Internal system ports. Theoretically all of these ports may be used by the operating system, it is therefore best to avoid using a port for video transport if it is available for the operating system.
3800	tcp	Reserved. This is currently a private debug port used for development purposes. This port will be available in future releases.
5000	tcp	Reserved Used in firmware versions 1.x as private protocol port for internal communications. In firmware versions 2.x this port is configurable (default is 7892)
37777	tcp	Private default port for remote connections; 37777 can be changed by configuration.
37778	udp	Private default port for remote connections, 37778 can be changed by configuration.
42323, 42324	tcp	Used for private protocol monitoring during product development.
5050, 37810	udp	Reserved (IP search)
49152	tcp	upnp communication
1900	udp	Reserved for upnp Multicast
9999, 39999	udp	Reserved for factory production process (Uboot)
20000-24000	udp	rtp data transfer; used when rtsp connections are created. Each new connection creates 2 port assignments (1 sending, 1 receiving).

Bosch Security Systems B.V.

Torenallee 49

5617 BA Eindhoven

The Netherlands

www.boschsecurity.com

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