

FOR A GOOD **REASON** **GRUNDIG**

en

Owner's Manual

Digital Recording Systems

GRH-K1104B - 4 Channel H.264 HD-SDI Recorder with DVD Drive

GRH-K2108B - 8 Channel H.264 HD-SDI Recorder with DVD Drive

GRH-K4116B - 16 Channel H.264 HD-SDI Recorder with DVD Drive

GRH-K1104B.34.1.26.06.2014

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English

Content

1. Introduction.....	6
1.1 Available Versions.....	7
1.2. Key Features of your DVR.....	7
2. Important Safety Instructions.....	8
3. Package Contents	9
4. Installation	10
4.1. Part Names and Functions.....	10
4.2 Remote Control:	12
4.2.1 Setting the remote control.....	13
4.3. Installation and Connection.....	14
4.3.1. Different configurations	22
4.4. Running the OSD menu	24
4.4.1. OSD Menu Configuration.....	24
4.4.2. Basic Settings.....	25
5. Menu Use	27
5.1. Menu Structure	27
5.2. Function Menu	27
6. Monitoring.....	28
6.1. Basic Screen	29
6.2. Single Full Screen Mode	29
6.3. Multi Screen Mode	29
6.4. Screen Description.....	29
6.5. Sequence Mode.....	30
6.6. Event Screen	30
6.7. Zoom Screen Mode	30

6.8. Pause Live Screen	30
6.9. PTZ Control	32
6.9.1. Pan/Tilt	32
6.9.2. Zoom/Focus	32
6.9.3. Loading Preset	32
6.9.4. Save Preset	33
6.9.5. Auxiliary On	33
6.9.6. Auxiliary Off	33
6.10 Camera Setup	33
6.11. Implemented PTZ camera protocols:	34
7. Playback/Search	35
7.1. Playback/Search Mode	35
7.1.1. Playback on Standard monitor (16 / 9 / 4 division)	35
7.1.2. Playback function.....	35
7.1.3. Screen composition/names of the functions:	36
7.2. Copy	37
7.3.1. CD/DVD	37
7.3.2. EXE	39
7.3.3. AVI	40
8. Configuration.....	41
8.1. System Setup	41
8.1.1. Date/Time.....	41
8.1.2. Disk	43
8.1.3. User Setup	45
8.1.4. Utility	48
8.2. Network	51
8.2.1. Network.....	51
8.2.2. DDNS.....	53
8.2.3. Radius	54

8.3. Device Setup	55
8.3.1. Camera Setup	55
8.3.2. Monitor Setup.....	56
8.3.3. Audio Setup	56
8.3.4. Text Setup.....	58
8.4. Event Setup.....	59
8.4.1. Event Check	59
8.4.2. Event Actions.....	60
8.4.3. Motion Detection	62
8.4.4. Sensor	63
8.5. Recording Setup	64
8.5.1. Continuous / Manual / Schedule Recording Setup.....	64
8.5.2. Program Setup.....	66
9. GRUNDIG Web Viewer	67
9.1. System Requirements.....	67
9.2. Login	67
9.3. User Setup	68
9.4. Available Browser	69
9.5. Monitor.....	69
9.5.1. Screen division and changing video position	70
9.5.2. Playback on Standard monitor (16 / 9 / 4 division)	72
9.5.3. Channel On/Off.....	72
9.5.4. Sensor Indication	72
9.5.5. Relay operation	72
9.5.6. Using a microphone.....	72
9.5.7. Event Data	73
9.5.8. Relay operation	73
9.5.9. Video Recording & Safe Saving.....	73
9.5.10. Using PTZ	74

9.5.11. Using Audio.....	74
9.5.12. Closing Video Channel	74
9.6. Playback.....	75
9.6.1. Video Division & Changing Channel.....	75
9.6.2. Image recording.....	75
9.6.3. Printing	76
9.6.4. Backup	76
9.6.5. Web Monitor	76
9.6.6. Channel On/Off.....	77
9.6.7. Saving Time & Checking Rec. Capacity.....	77
9.6.8. Searching in the Calendar	77
9.6.9. Functions at the bottom of monitor	77
9.7. Java based Web Viewer.....	78
10. GRUNDIG Live Mobile Viewer	78
10.1. Log-In Page	78
10.2. Monitoring Page	80
EC Declaration of Conformity	81
Open Source License Report on the Product	82

1. Introduction

Thank you for purchasing a GRUNDIG digital video recorder for HD-SDI signals. This manual is for GRH-K1104B, GRH-K2108B and GRH-K4116B.

Based on the Television Standard for FullHD Television, HDcctv products feature up to 2 Megapixel (1920x1080) pictures in real-time (30fps) transmitted over coax cabling.

Get the advantages of IP technology without their drawbacks: 16:9 megapixel pictures without network configuration, bandwidth problems and network security risks. Use existing coax cables and only exchange the cameras and recorders. Get a “real” live picture and see the things that happen in the now, not a few seconds ago. Connect a monitor directly to a camera using only a HDcctv-to-HDMI converter. HDcctv is easy to handle, easy to install and produces amazing high quality pictures.

Before product installation and operation, please become thoroughly familiar with this user manual and other manuals referenced by this manual.

This user manual, the software and the hardware described here are protected by copyright law. With the exception of copying for general use within fair use, copying and reprinting the user manual, either partially or in entirety, or translating it into another language without the consent of ASP AG is strictly prohibited.

This specification may change without prior notice for improvement of product performance.

Product Warranty and Limits of Responsibility:

The manufacturer does not assume any responsibility concerning the sale of this product and does not delegate any right to any third party to take any responsibility on its behalf. No warranty is offered for any attachments or parts not supplied by the manufacturer. The product warranty does not cover cases of accidents, negligence, alteration, misuse or abuse, for example:

- Malfunctions due to negligence by the user
- Deliberate disassembly and replacement by the user
- Connection of a power source other than a properly rated power source
- Malfunctions caused by natural disasters (fire, flood, tidal wave, etc.)
- Replacement of expendable parts (HDD, FAN, etc.)
- The warranty period for the HDD and Fan is one year after purchase.

This product is not for exclusive use of crime prevention but also for assistance in cases of fire. We take no responsibility for damage from any incident.

Caution:

This equipment underwent EMC registration and is suitable for business purposes. Distributors and users are aware of this point.

Warning:

This is a class A product. In a domestic environment this product may cause radio interference, in which case the user may be required to take adequate measures.

Warning:

1. In case of changing the built-in lithium battery, it should be replaced with the same or a kindred one to prevent danger of explosion. Since old batteries could be a factor of environment contamination, be cautious how you treat them.
2. Do not throw the batteries into fire or other heat. Short circuit or disassembly is prohibited.
3. Do not charge the batteries provided with the remote control.

1.1 Available Versions

These instructions apply to the following products. For the different properties of the products please refer to the table.

Model	Channels	Recording speed
GRH-K1104B	4	100/120fps
GRH-K2108B	8	100/120fps
GRH-K4116B	16	100/120fps

1.2. Key Features of your DVR

HD-SDI

These products can transfer HD (High-Definition) signal images using the HD-SDI technology via a coax cable. Please note that this product does not accept SD signals.

The supported resolutions are as follows:

- SMPTE 274M : 1920x1080p 25/30Hz

Monitoring Screens

These products support real live video with high resolution for each channel and with variable display modes.

- Various monitoring Multi Views (Single, 4 screen division, 8 screen division, 16 screen division)
- Covert channels for users

Audio Recording

These products support real-time audio input and recording.

- Simultaneous 4ch audio input & recording available
- Input : 4ch RCA, Output : 1ch RCA , 1ch HDMI
- Simultaneous audio recording and playback available

HD-SDI video recording

GRH-K1104B : 1920 x 1080 (1080P) : 1200ips GRH-K2108B : 1920 x 1080 (1080P) : 120ips GRH-K4116B : 1920 x 1080 (1080P) : 120ips

- Supports manual, continuous, schedule & event recording
- Video loss detection
- Supports archiving an event list (Sensor, Video loss, Motion detection, Text)

Search / Playback

These products support variable and convenient functions for search & playback.

- Search for Events (Motion, Video Loss, Text & Relays)
- Search for Dates (Calendar & Date input method)

- Smart Search for Motion Detection
- All Search methods can be used via DVR, remote control & USB mouse
- Supports various backup devices : DVD-R, USB
- eSATA port for external recording HDDs

Network

These products support networks like LAN, XDSL and can be easily controlled from remote site using the GRUNDIG Control Center Software.

- E-mail and/or Twitter notification
- Access Live video and playback with many Web browsers, backup with the Internet Explorer
- Access Live video, playback, search, backup and DVR management with the GRUNDIG Control Center Software
- Access Live video and playback with the GDViewer app, available for iOS and Android devices
- Record, search & playback over a network
- 10/100Mbps Ethernet/xDSL connection

ETC

- User friendly GUI with mouse function
- Easy and simple firmware upgrade over USB or the network
- PTZ Control (several protocols), PRESET function
- Control of up to 16 DVRs with one remote controller
- 10/100/1000Mbps connection for the external storage device GDS-R04A
- Advanced user management with covert function
- 2-men principle password function integrated

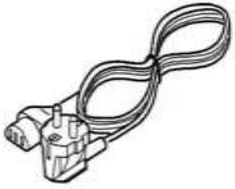
2. Important Safety Instructions

1. Do not place heavy objects on the top of the product.
2. This Product is for indoor use. It is not weatherproof. Please use the product considering its environmental specifications (Temperature & Humidity). To clean the product, gently wipe the outside with a clean dry cloth.
3. This Product uses AC power of 110V ~ 240V. Be cautious not to cause electric damages to the product.
4. Be careful not to drop the product. Physical shocks may harm the product including the internal HDD. In addition, be sure the product is secured after installation.
5. This Product is made of metal. Therefore you can hurt human beings if you throw it to them or hit it on them. When installing the product, be cautious to locate it in safe places where children cannot reach it.
6. If the product does not operate properly, please contact the closest GRUNDIG distributor for after sales service. Tampering or disassembling the product will cause expiration of the warranty.
7. Security surveillance laws may differ for each country. Therefore, please contact the local region first to avoid any surveillance law violations.
8. Experience and technical skills are needed for the installation of this product as an improper installation may cause fire, electric shocks, or defects. Any installation job should be performed by the vendor you purchased this product from.

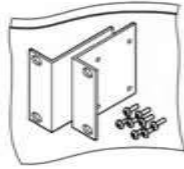
The content of this manual can differ according to firmware or software upgrading. The standard and appearance of the products may be changed for the improvement of quality without prior notice.

3. Package Contents

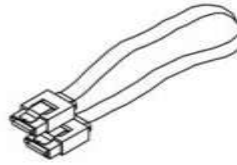
These parts are included:



AC Cord



Bracket



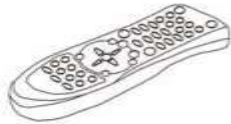
SATA HDD Cable
[built-in]



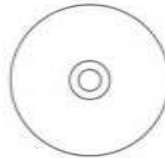
Screws for HDD



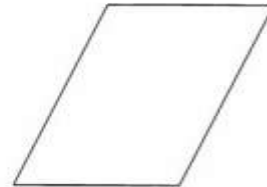
USB Mouse



Remote Control
[battery included]



Setup CD

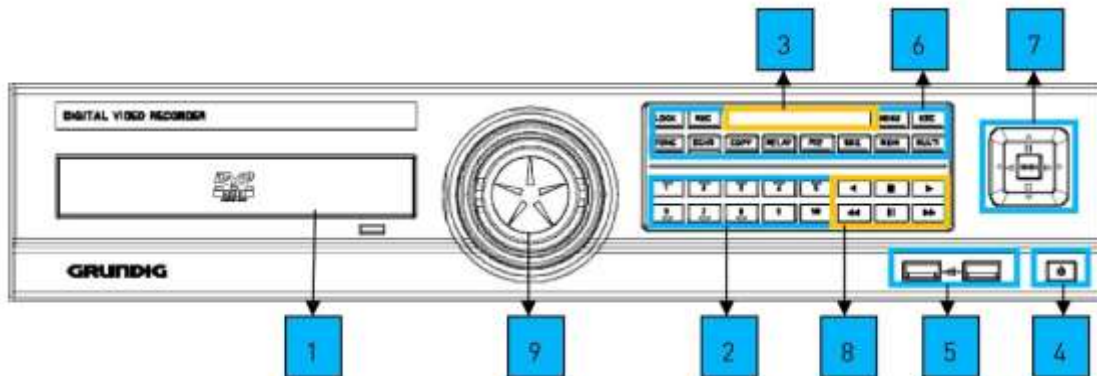


Quick Guide

4. Installation

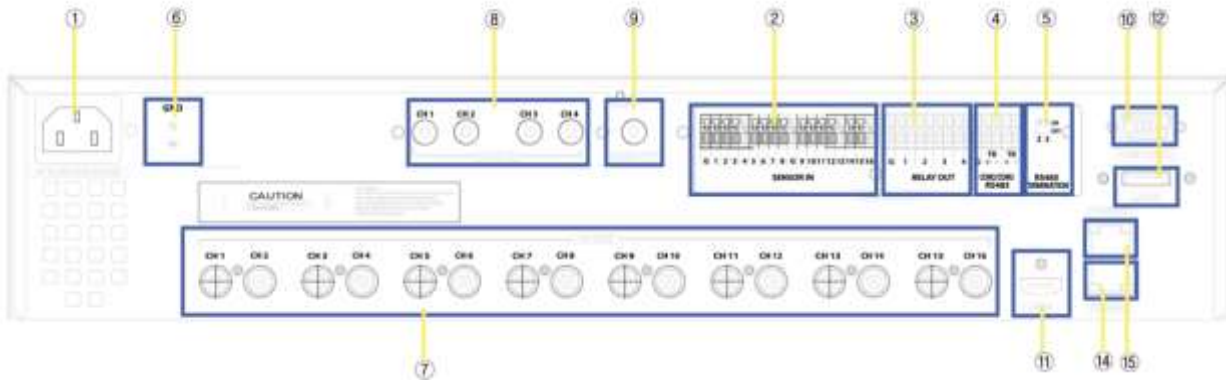
4.1. Part Names and Functions

Front view:



Item	Description
1	DVD-Multi (for Backup) Backup of recorded data by DVD/CD media
2	Channel Buttons To select a video input channel
3	REC LED Displays the recording status
	COPY LED Displays the copy status
	HDD LED Displays the running HDD
	NET LED Displays the network connection
	EVENT LED Displays event detection
4	Power To turn the power on/off
5	USB port For connecting with USB memory or mouse
6	REC To start or stop manual recording
	MULTI To change the DIVISION in live or playback mode
	SEQ To run or stop a user sequence
	COPY To enter copy mode
	SEAR To enter search mode
	PTZ To start or stop the PTZ function
	FUNC To enter the function menu
	RELAY Manual On/Off button for relay
	MON To change the monitor
	MENU To enter the menu
	ESC To exit the menu or close a pop-up window
7/8	Enter/Play ▶ To enter playback mode or select a menu
	◀/REW ◀◀ To move or select in the menu and to change the replay speed in reverse direction in playback mode
	▶/FWD ▶▶ To move or select in the menu and to change the replay speed in forward direction in playback mode
	▲/Pause II To move or select in the menu and pause live/replay video
	▼/Stop ■ To stop replay in playback mode
9	Jog/Shuttle STEP function control, Playback direction change, Playback speed control

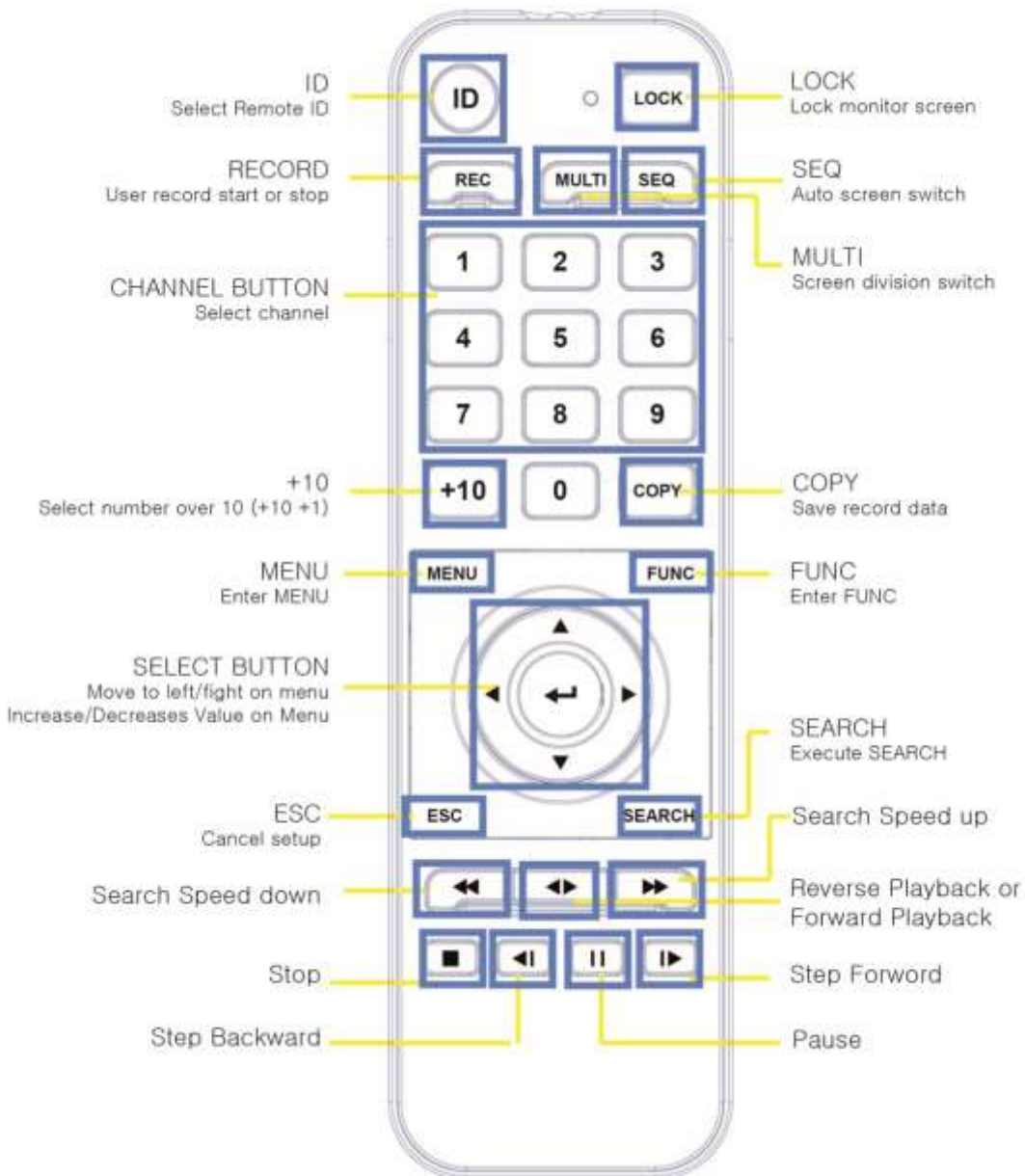
Rear view:



Item		Description
1	Power In	AC100V~AC240V power cord socket.
2	Sensor IN	External sensor input terminal
3	Relay	Relay connect terminal
4	COM2,3	Connct RS-485
5	RS-485 terminating resistors	Set terminating resistors when using RS-485 method
6	Ground connection	Connection terminals that connects DVR to an outside device
7	Channel input	Input connection terminal for BNC of a HD-SDI camera
8	Audio input	Audio input connect terminal.
9	Audio output	Speaker output terminal.
10	COM1	RS-232C D-SUB.
11	HDMI Output	Output port on which HDMI monitor can be connected
12	eSATA port	eSATA external HDD is connected
13	N/A	
14	Storage	Exclusive network storage device(NS0104R) is connected and used
15	ethernet	network connecting terminal (RJ-45)

4.2 Remote Control:

It is possible to use all functions of the DVR with the remote control,. If several DVRs are set with unique ID numbers, they can be controlled with one remote control. To use the remote control, it is necessary to set first the ID which you want to use. Keep pressing the ID button repeatedly (up to max. 16 times) and use it for matching DVR & ID.



4.2.1 Setting the remote control

Setting the ID of the DVR:

When controlling several DVRs with one remote control, set the Remote Control ID as follows:



- (1) Press the [MENU] button.
- (2) Select “System” by using the [▶] arrow button and press [Enter] or the [▼] button. (3) Select “Utility” by using the [▶] arrow button and press the [Enter] button.
- (4) Select “Remote Controller ID” and press [Enter].
- (5) Select a value using the [◀ / ▶] arrow buttons and press [ESC]. (6) Press the [ESC] button to return to monitor mode.

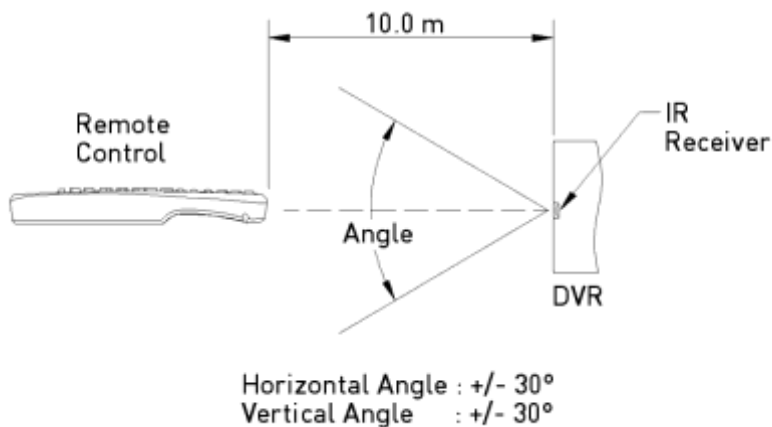
NOTE:

Up to 16 DVRs can be controlled with a single remote control. If you do not use a remote control, set the Remote Controller ID to “All”.

Selecting an ID with the remote control:

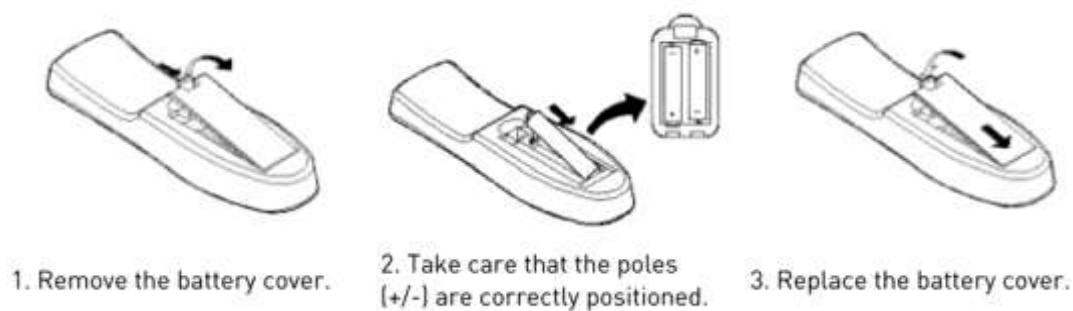
If there are several DVRs with unique ID numbers, they can be controlled with one remote control. To select a specific DVR, keep pressing the ID button of the remote control until you hear a signal sound for the duration of 2 seconds.

Operable range of the remote control:



Loading the batteries into the remote control:

The remote control requires two AAA-type batteries. Please refer to the following installation steps.



4.3. Installation and Connection

Check settings

This DVR is high quality security device with a high capacity built-in HDD and important circuits. Before installation, please read carefully below recommendations as high internal temperature of the product can lead to damages and shorten product life cycle.

Recommendations on installing a DVR in a rack:

Don't seal the inside of rack where DVR is installed.

Keep airflow through inlet and outlet.

If there is another device installed in the rack, secure additional space or install air ventilation.

Installation of an air circulation fan around each inlet and outlet is strongly recommended.

(Install filter around inlet or outlet for harmful substances)

Keep ambient temperature between 5°C~45°C around DVR.

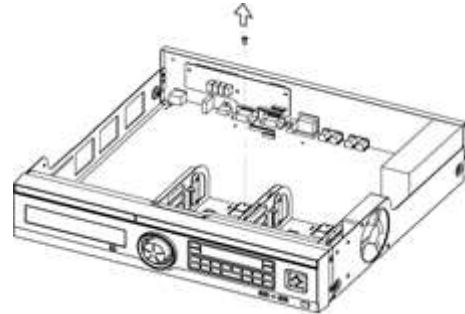
Warnings if HDD is installed

Please be extra careful not to damage HDD as it easily breaks.

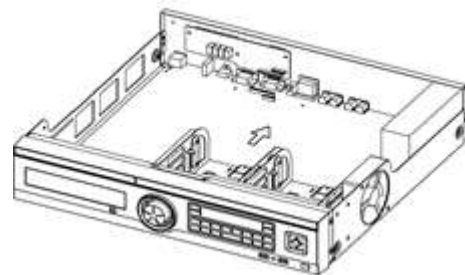
During installation, make sure insulated coat doesn't come off or isn't placed in the wrong place.
Don't lose screws and parts.
(If screws and parts are not screwed or assembled correctly, product may not operate)
Check HDD compatibility list HDD
Partition table must be removed for HDDs used in PC or other DVR models before installation.

HDD installation *

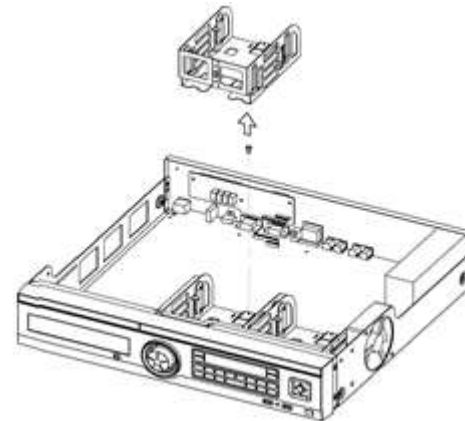
1. Unscrew bracket screws that are fixing it to a DVR..



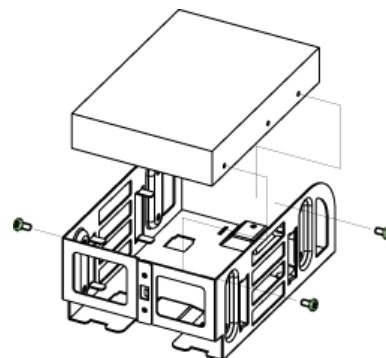
2. Push HDD bracket to a direction shown in the right picture and separate from fixtures.



Lift HDD bracket to a direction shown in the right picture and separate from the bottom.



Place HDD in a HDD bracket and fasten 4 screws on each side.

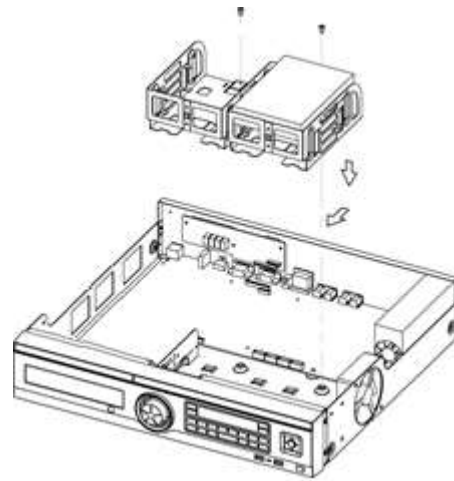


Place HDD bracket fastened with screws in DVR and fasten it on the bottom with screws.

NOTE:

Below is SATA cable socket sequence of a mainboard.
Up to 5 HDDs can be installed inside DVR.

Main Board	Disk Manager
INT A	INT A
INT B	INT B
INT C	INT C
INT D	INT D
INT E	INT E
eSATA	eSATA



Adding HDD:

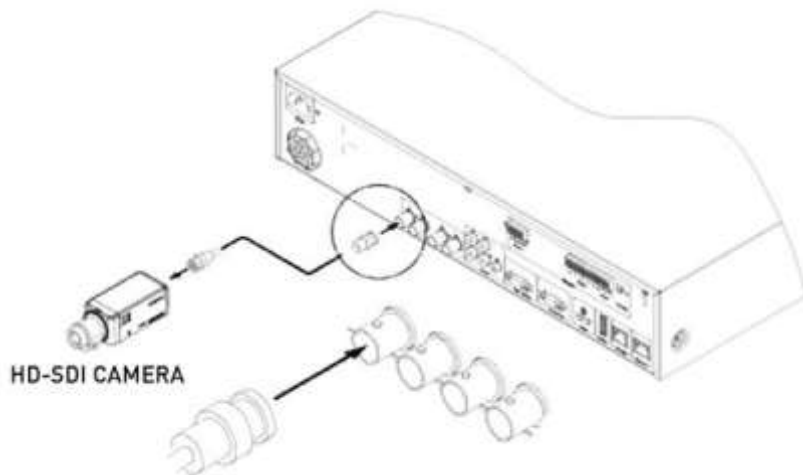
Remove the power cord before installation to protect DVR against possible damage and an electric shock. Please call the store you purchased the product from if it isn't operating correctly due to installation or configuration mistakes.

Warnings regarding Data loss:

Please handle with care so HDD data isn't damaged.
Check HDD compatibility before installing additional HDD.
Be careful not to give any shock on HDD during operation which could lead to possible damage or malfunction.
Cases when HDD and its data can be damaged.
To minimize the data loss, please copy data as often as you can.
Physical shock during disassembly or installation may lead to Data damage.
Sudden power outage or turn off of DVR can damage HDD.
Please don't try to move or shock DVR while HDD is working.

Connecting the camera:

Connect the CCTV camera to the DVR using the BNC cable as shown below:



Please make sure that all connected cameras fulfil the SMPTE standards 296M or 274M, or a compatible one. The DVR will recognise the camera automatically. If you do not get a video, please check the connections first and then make sure the distance is not too far for HDcctv signal:

Recommended cable *

Cable Type	HD-SDI transmission distance	Use
5C2V	about 90M	Analog signal
4C-FB(T), 4C-HFB(T), RG59	about 140M	High-foamed cable, double or triple shielded cables are recommended
5C-FB(T), 5C-HFB, L-6CHD, RG6	about 180M	HD-SDI cable
5C-HFBT	about 200M	HD-SDI cable

* Depends on manufacturer and models.

<warnings>

Transmission distance will be affected by cable types and installation site environment

Transmission distance of the chosen cable will be various based on reduction rate of 750MHz (reduction rate of dB/100m < 25dB is recommended)

Foamed or high-foamed trishield cable is recommended.

Impedance 75Ω must be used for coax cable connection and connector work.

Beware of deformation of cable due to high pressure over the cable.

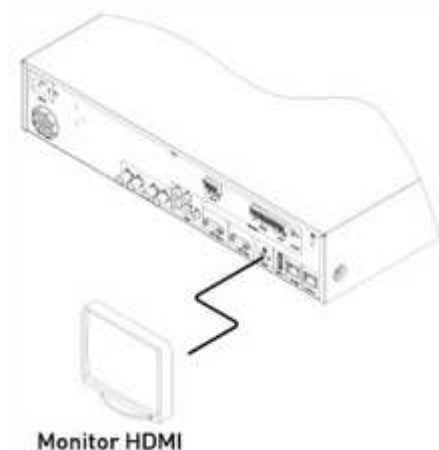
Don't pull the cable with too much force.

For DVR input/output, cables will be tied at the rear of the rack. If tied too tightly, inside/outside insulator can be deformed so tie it loosely within cable's curvature range.

For bigger distances, please use the GTH-L0011E extender from GRUNDIG.

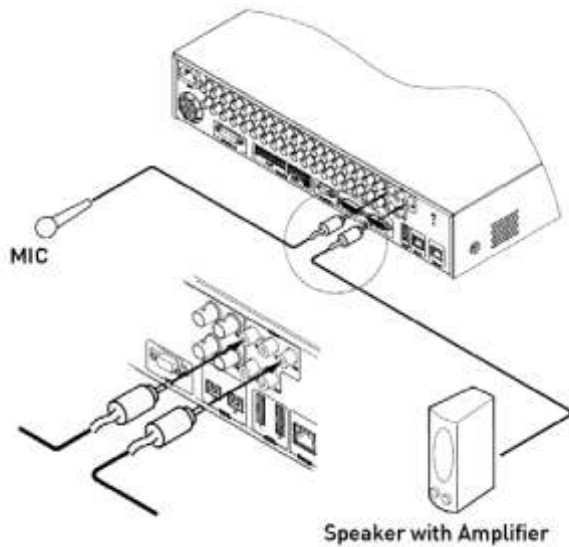
Connecting a monitor:

Connect a CCTV monitor using a HDMI cable with the corresponding port.



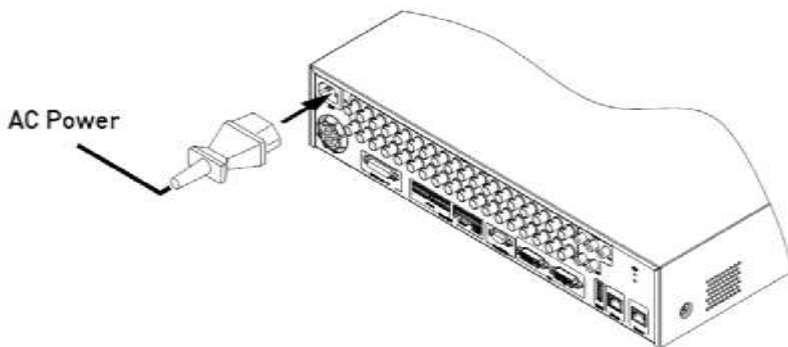
Connecting Audio:

Connect the audio signal to the DVR using the RCA connector as shown below:

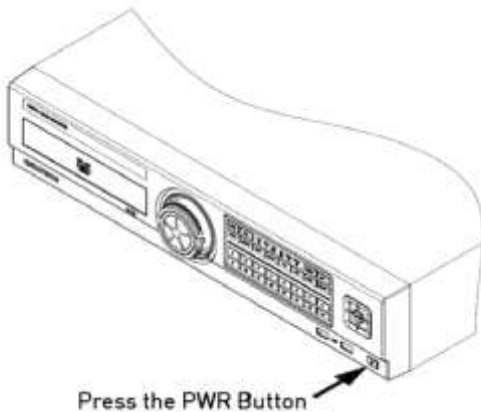


Supplying Power:

Connect the power cable as shown below:



- When supplying the DVR with power, the DVR starts booting automatically.
- In order to cut off the power, press the power switch on the DVR front for 5 seconds. When a pop-up window appears, select "YES" to shut down the DVR.
- For supplying the DVR with power again, push the Power button.



Connecting external device:

Connecting USB Device

USB port can be used for copy of recorded data and for mouse.

See below table for USB Device specifications.

USB specifications	Ver 2.0 or later
Usable device	USB Stick
Voltage specifications	DC 5V / Max. 200mA

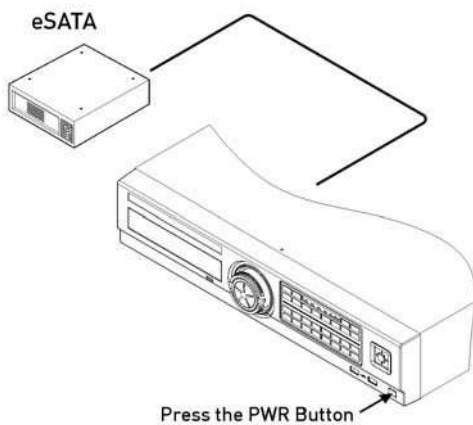
NOTE:

USB stick needs to be FAT32 formatted.

DVR may not recognize USB Flash memories that require additional program on MS Windows.

Connecting eSATA Device :

If external eSATA storage is used, it can be connected to a rear eSATA port. Additional power for eSATA device will be required as DVR doesn't supply power.



NOTE:

1. Check compatibility of eSATA with DVR as not all eSATA are compatible with DVR.
2. If eSATA is connected to DVR when it is on, it may not be recognized depending on external devices. So we recommend following the below steps.
 - 1) Turn off DVR.
 - 2) Turn off eSATA then connect it to DVR.
 - 3) Turn on eSATA.
 - 4) Turn on DVR.

Connecting input/out terminals:

Wire end handling

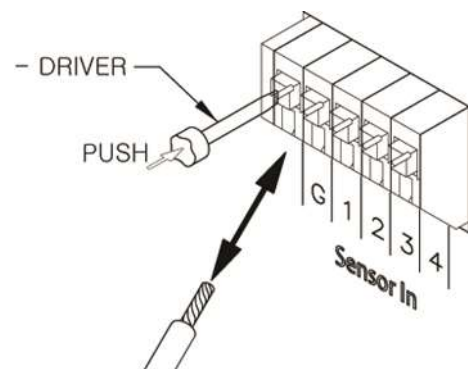
See below for wire end handling used in terminal block. Please work on single line and multiple line as they have different thicknesses.

- Multiple lines : Peel off the recommended length(8~10mm) and lead-coat it. Use AWG 22 ~ 26.

- Single line : Peel off the recommended length(8~10mm) and use AWG 20 ~ 26.

Wire insertion/removal

As shown in the picture, push the lever to insert or remove a wire.



Connecting a sensor:

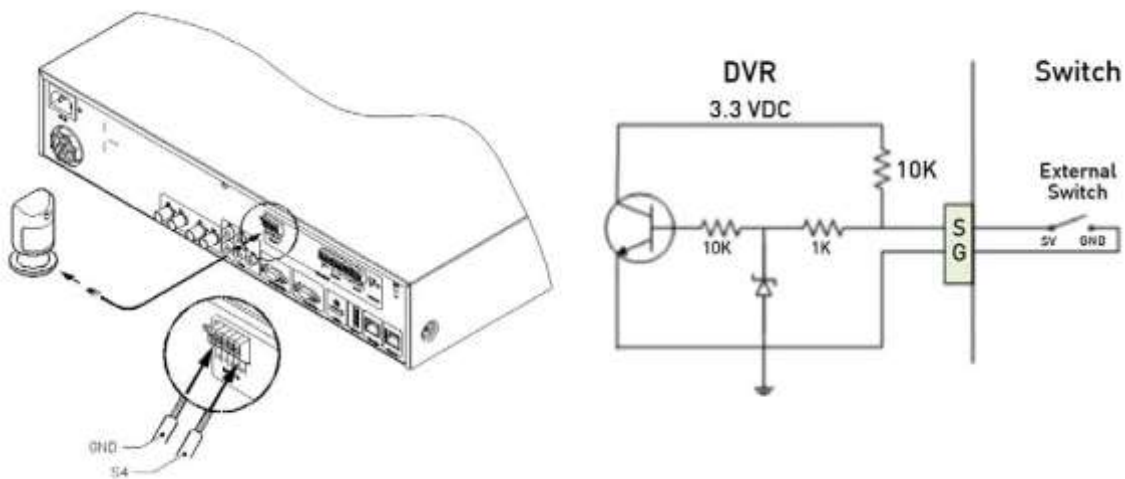
Specification:

below requirements need to be met in order to connect the sensor

Specifications	Input Channel #	16EA Transistor input
	Input Type	N.C, N.O support
	Supported sensor	Dry contact sensor
	Connection method	Connect the trimmed wire to terminal block
Performance	Available input pulse range	Minimum 500ms
	Output current	Standard DC 12mA

Connecting sensor input terminal:

Please see the picture for sensor input. The below picture is an example of connecting Dry Contact sensor type. Please refer to “Wire Handling” for more information.



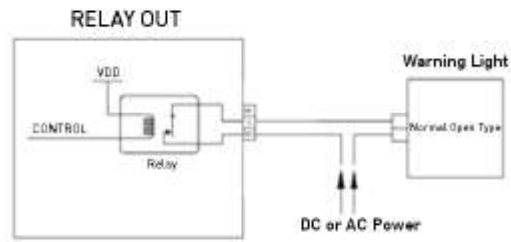
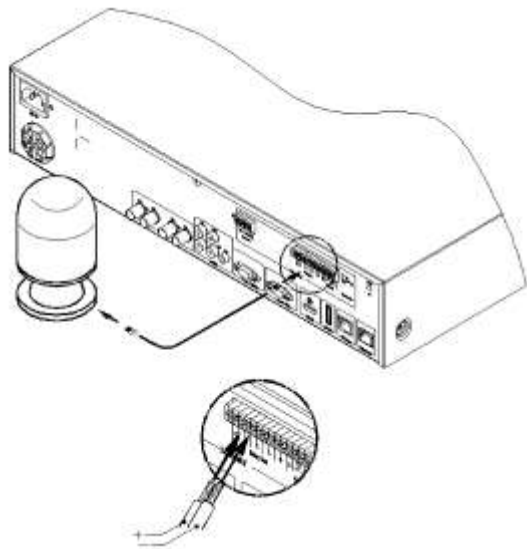
Connecting a Relay:

Specifications:

Please see the below table for alarm output requirements.

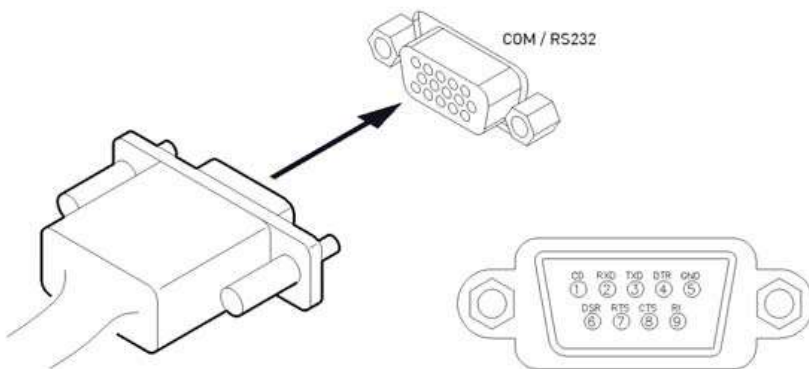
Specifications	Output Ch.	4ch relay output
	Output type	Dry Contact
	Connection method	Connect the trimmed wire to terminal block
Performance	DC	30V / 1A
	AC	125V / 0.5A

Please refer to the below picture in regards to connecting R1~R4 output. Below picture is an example of connecting a light bar. Please see “wire end handling” in regards to connecting/removing wires.



Connecting COM1 serial port with external devices:

Connecting Text input device (ATM / POS / Access Control)
Using COM1/RS232, TEXT DATA can be recorded with synchronizing POS/ATM.

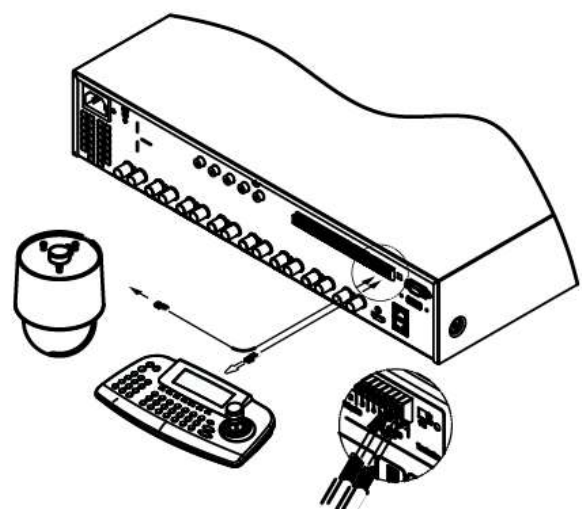


As shown in the picture, for a set up to connect COM1/RS232 (D-Sub 9pin), set up serial & text info under “device” menu.

Connecting COM2/COM3 serial port external device:

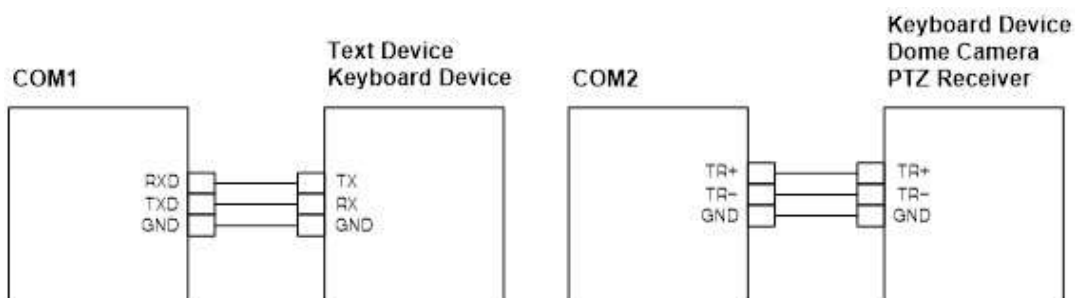
Connecting serial communication terminal for PTZ device & Keyboard device

Control PTZ devices and Keyboard devices by connecting them to DVR’s COM ports. Picture in the right shows how a camera and a keyboard device with PTZ function are connected to RS-232 COM1 & RS-485 COM2 respectively. Other serial communication terminals will be connected to other devices as shown in the below picture. To connect or remove a wire, please refer to the “wire end



handling” and supported models can be checked on “compatible PTZ & Keyboard device” on the supplement booklet.

Connecting Serial Port for Transparent device:



Specifications	Output Ch.	4ch relay output
	Output type	Dry Contact
	Connection method	Connect the trimmed wire to terminal block
Performance	DC	30V / 1A
	AC	125V / 0.5A

Connecting PTZ & Keyboard:

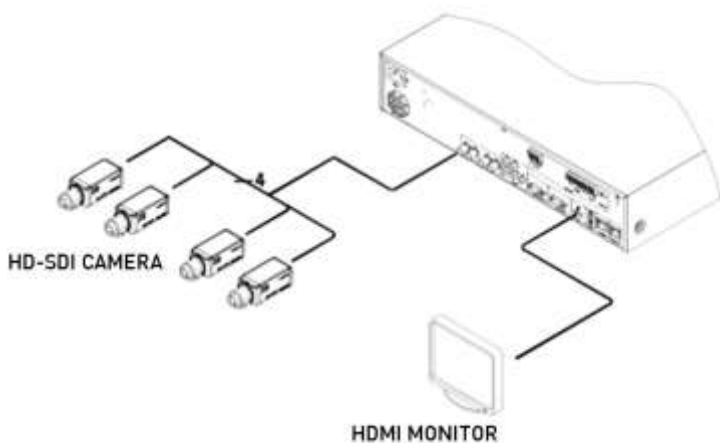
up to 255 DVRs can be connected using keyboard and PTZ control is possible for all channels connected to DVR. Also, multiple keyboards extension as Slave can be used limitless with Master Keyboard. In this case, Master Keyboard has priority for all controls. Please refer the instruction manual for PTZ keyboard connection & its way of control which comes with PTZ/ Keyboard.

Configuration using 2 serial ports

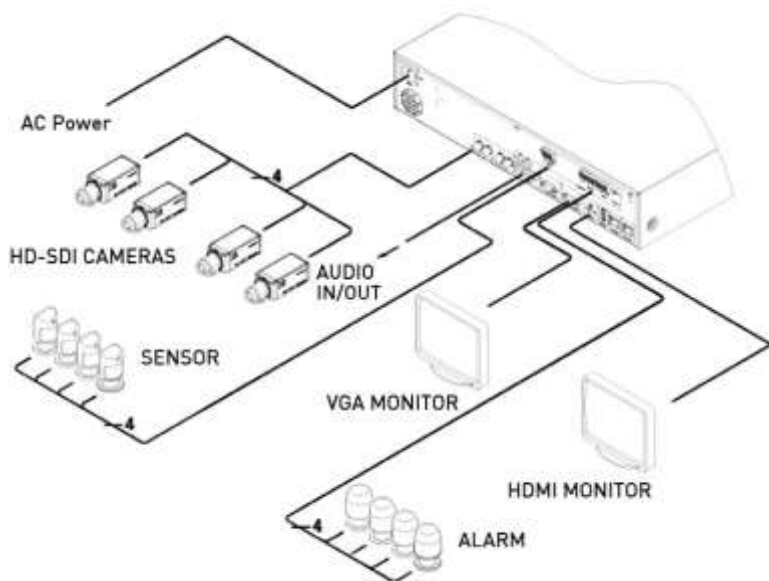
PTZ(DOME) and Keyboard can be connected to DVR’s 2 serial ports. In such case, keyboard can control DVR and PTZ(DOME) at the same time, and DVR can control PTZ(DOME).

4.3.1. Different configurations

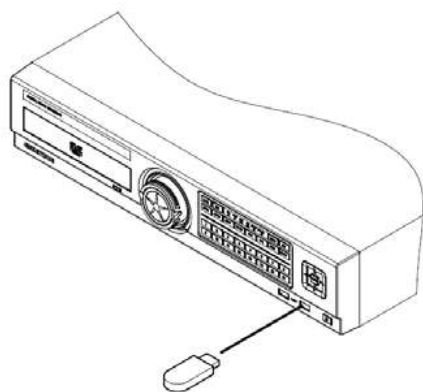
Basic configuration:



Advanced configuration:

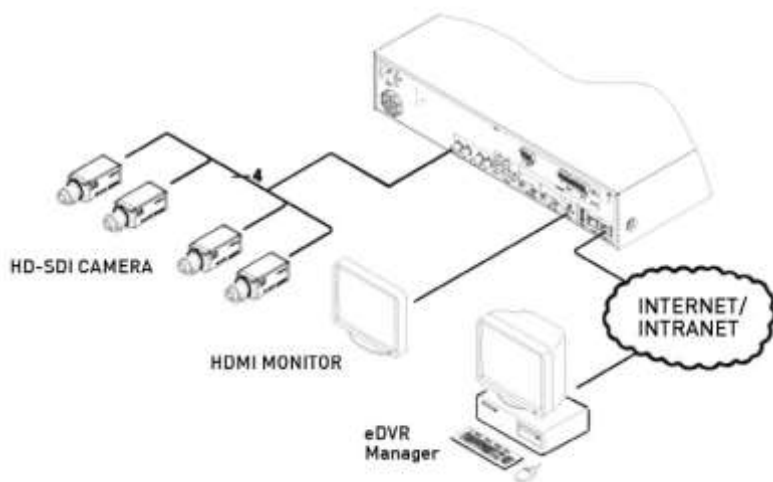


Connection to an USB storage device for backups:



USB Storage for Copy

Internet/Intranet configuration:

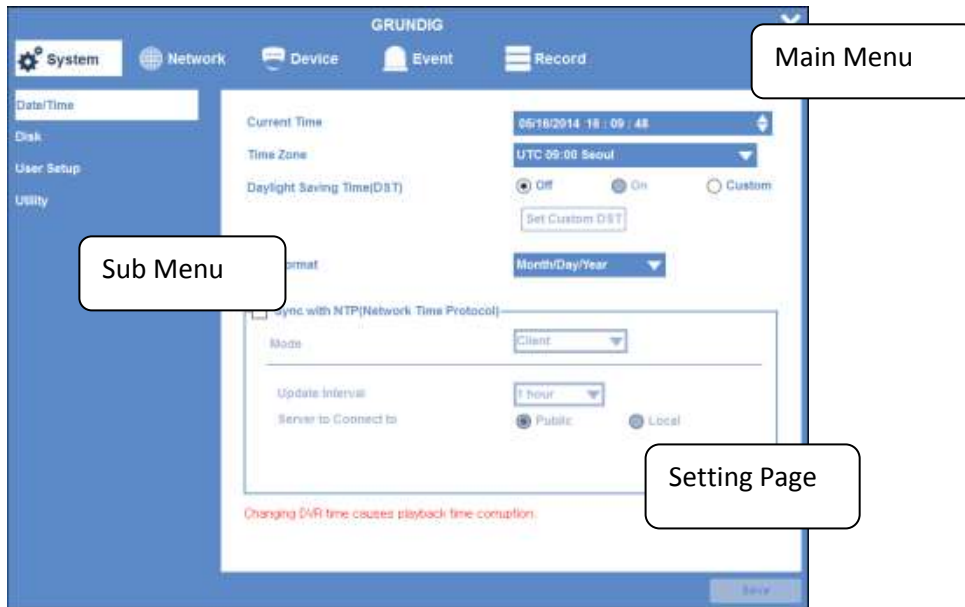


4.4. Running the OSD menu

The OSD can be controlled with the keypad on the front panel of the DVR, with a remote control or with an USB mouse. In this manual we will refer to the keys of the front panel, as the procedure with a remote control and a mouse is almost identical.

4.4.1. OSD Menu Configuration

Press [MENU] on the keypad on the front to open the configuration menu as shown below:



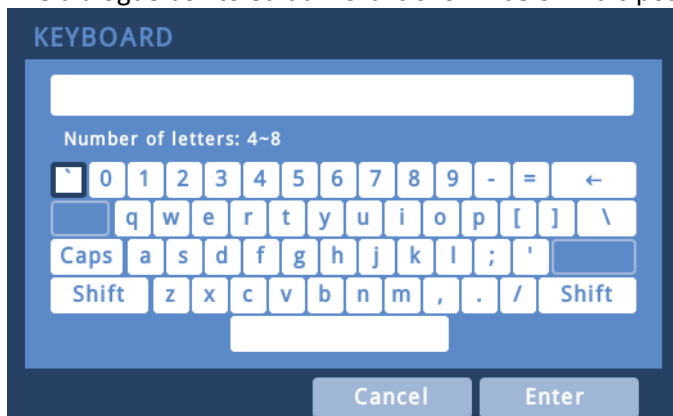
(1) Main Menu : The selected tab is shown in white colour and the related sub-menu will be shown on the left, below the tab. To move to the previous/next tab, use the [◀ / ▶] arrow buttons. To move to a sub-menu, press the [Enter] key.

(2) Submenu : The selected sub-menu is shown as a tab title and the related setting will be shown. To move to the previous/next tab, use the [◀ / ▶ , ▲ / ▼] arrow buttons. To move to the related setting, press [Enter]. To move to an upper main menu, press the [ESC] button.

(3) Setting page : The selected tab is shown in blue. To move to the previous/next tab, use the [◀ / ▶] or [▲ / ▼] arrow button and press the [Enter] key for value setting. When setting the value is a word, a dialogue box to edit the word will open. When setting the value is a number, it should be set with using [◀ / ▶] or [▲ / ▼]. Press the [ESC] button when the value is set. With the [ESC] button it is also possible to move to the upper sub-menu.

Dialogue box to edit a word:

The dialogue box to edit a word is shown below. It is possible to input both letters and numbers.

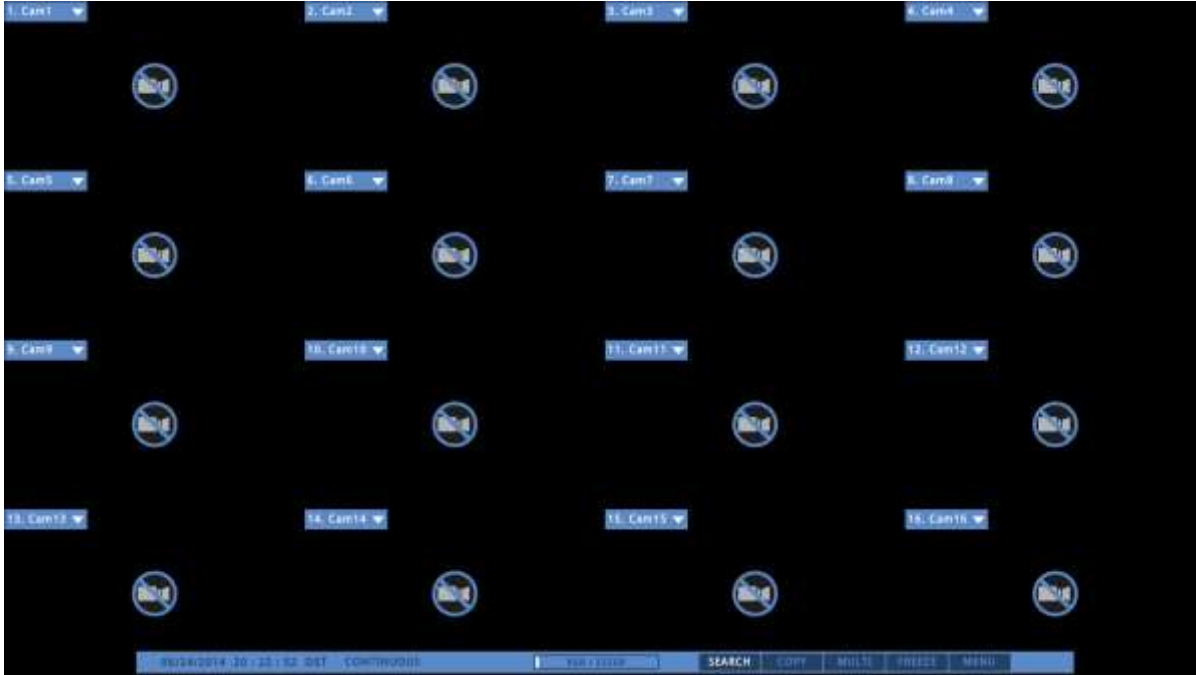


Keep pressing the [▲/▼], [◀ /▶] arrow buttons until the word is typed in, then press [Enter]. In case of deleting press [←], for spacing press the [→] button. To exit the dialogue box, press [Enter] after having finished the word input.

4.4.2. Basic Settings

Viewing Image:

When powered on, the DVR starts automatically and displays a basic 4 ch-split (GRH-K1104B) , a 8-split screen (GRH-K2108B) or a 16-split screen (GRH-K4116B).

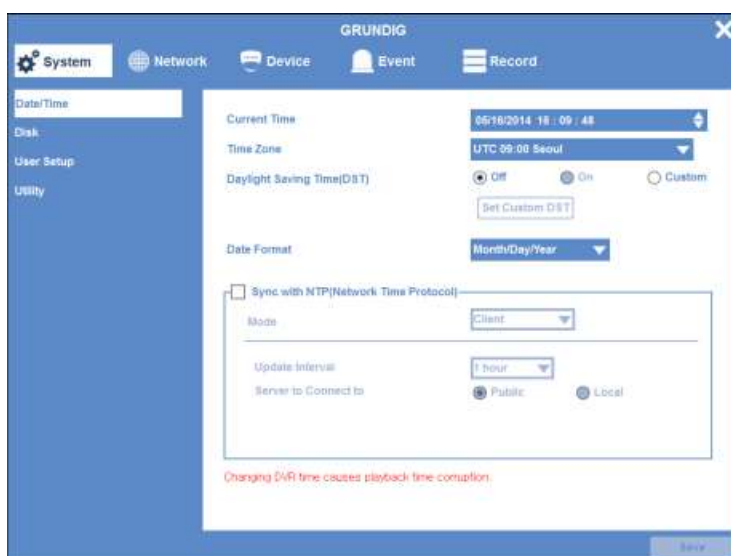


NOTE:

After booting the recorder, by default a prompt for entering the password will appear. The default admin password is: 1234.

Setting Date & Time:

- Press the [MENU] button and select “System” when the OSD menu appears.
- Select “Date/Time” and press the [Enter] button.



Standard time zone

Use the left or right arrow key on the front or the mouse wheel to select your time zone. (In order to go to the previous menu, press the [ESC] button on the front or click "X" with a mouse. This is the same for all OSD menus.)

Daylight Saving Time (DST)

On the "time zone" setting, "on" will be chosen when users click on regions where daylight saving time applies and "off" will be chosen when regions without daylight saving time are chosen.

Users can check "off" if they don't need daylight saving time function for a region where daylight saving time applies.

Please select "custom" if users want to set their own daylight saving time preferences. Select "custom" and the DST setting will appear. ??? "month/day" will set DST start/end at month/day/hour and "month/week/day" will set DST start/end at month/week/day/hour.???

NTP function

Please set the NTP 'On' then select 'Public' in Client Mode for the DVR to set the time automatically via internet connection.

Date Notation

Please select "Date Format" by choosing 'YYYY/MM/DD, MM/DD/YYYY or DD/MM/YYYY.

Recording configuration



[continuous recording]

[manual recording]

[schedule recording]

Continuous recording

Continuous recording will automatically begin after booting is completed and continuous/event recording will begin according to the chosen program values.

Manual recording

Push the REC button on the front panel to begin/end manual recording and manual/event recording will begin according to the chosen program values.

NOTE:

If manual recording is chosen, exit the menu and check the manual record indicator on the status bar to confirm recording. If there is no manual recording indicator sign, press the REC button on the front panel to begin recording.

Schedule recording

Schedule recording will begin according to a pre-set day/time schedule. Set day/time on "schedule setting" under the schedule recording mode.



Program configuration

Please set the resolution, frame rate, and picture quality of each individual camera per channel in “Program menu” under the record setup.

<Reference>

How to check if it’s recording: When the settings are correct and recording has started, the “REC LED” indicator on the front will be flickering. Also, the status bar’s save indicator will show [SCHEDULE], [MANUAL], or [continuous] indicating that all channels are recording. The “REC LED” is turned off when the DVR is not recording.



5. Menu Use

5.1. Menu Structure

The menu structure is shown in the image below. The settings for each menu are explained in the following chapters.



5.2. Function Menu

To run the Function menu, click the right mouse button in the live monitoring or playback status or push the “Func” button on the front panel.

The Function menu enables every function of the product to be controlled by USB mouse. Each function can be executed by clicking the left mouse button.

The Function menu can also be controlled by the front panel buttons.
Please refer to the picture on the right for the Function menu structure..

Function Menu in Live Mode:



Function Menu in Playback/Search Mode:

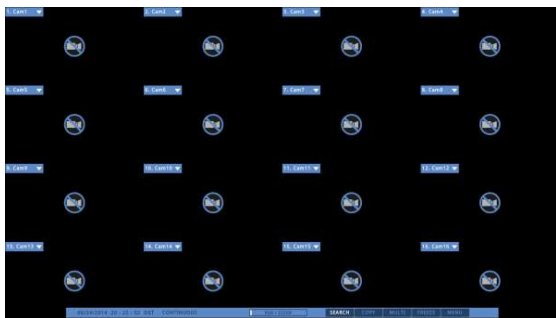


6. Monitoring

All HD-SDI video image channels connected to the DVR are displayed on the screen after booting the DVR.

6.1. Basic Screen

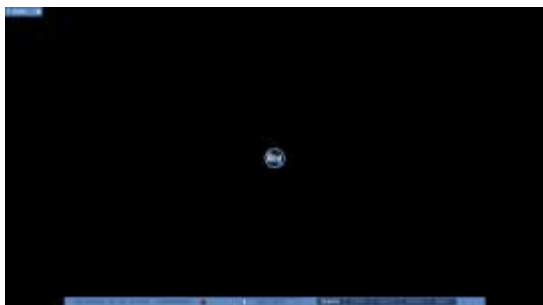
The basic screen shows a multi screen with all channels supported, if the multi screen has been modified and the DVR is being rebooted, the default multi screen will be shown.



6.2. Single Full Screen Mode

After the power connection is established, the DVR will boot automatically. After booting, the user needs to put in his user password. In the default settings, only the admin has the rights to see the channels, therefore no user will see any video at the first boot.

Depending on the model you will either see a 4ch or 8ch split view.



Press the wanted channel number or click with the mouse on the wanted channel. Double-click with the mouse to return to the previous multi-channel view.

You can select different Multi-channel views by clicking the [MULTI] button on the front panel or the [Display] button in the function bar.

6.3. Multi Screen Mode

Press [MULTI] for multi channel display or click the "Multi" function in the Function menu. Every time you press the [MULTI] button, the screen mode will change.

For GRH-K1104B you only have the 1-4 channel multiview.

For GRH-K2108B you also have the 5-8, 4C & 1~8 multiview and for GRH-K4116B the 5-8, 4C & 1~16 multiview .

6.4. Screen Description

The status bar from the monitoring screen shows the DVR's current status which includes Date/Time, Record, Motion/Sensor Detection, Manual Record, Text Input and HDD's Record capacity.



6.5. Sequence Mode

Auto switch screen mode is a feature in which the selected channel or multi screen division switches in a sequence with the time interval of 1 – 60 seconds.

(Please refer to “Monitor setup” for further configuration methods).

Auto Switch mode can be set in every division mode by pressing the [SEQ] button.

Press the [SEQ] button once more to exit the Auto Switch mode.

6.6. Event Screen

Users can set the selected screen to pop-up automatically when an event is triggered.

Users can choose events that trigger the pop-up from the event source. Event source supports 3 types of events: Sensor, Motion Detection & Text.

If multiple events are triggered, the corresponding screens will pop up automatically.

For example, if events are triggered in 3 Channels, they will be displayed in a 4 screen division automatically.

To return to the original channel, press the button of one of the popped up channels.

Press [ESC] to return to original channel.

NOTE:

If Alarm pop-up is “Off”, Event pop-up will not be enabled.

If event screen switch is set to “Keep”, it keeps showing pop-up image until the user presses a button. To return to the previous screen, please press any button.

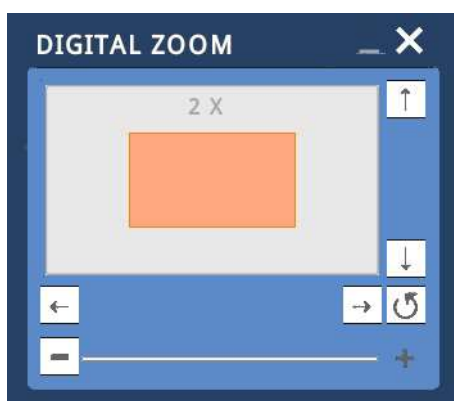
6.7. Zoom Screen Mode

By using D-Zoom on a single screen, users can enlarge the section they want to view.

Press [ZOOM] on a single screen in a full screen mode or press D-Zoom while pressing [FUNC] to enable D-Zoom mode. Use “+,-” or drag a mouse to enlarge/reduce the screen.

The initial location of the enlarged screen is the center. Use the direction keys to move the enlarged image 22 steps to left/right and 14 steps up/down.

Enlarge mode can be used between a 1.00X ~ 10.00X range. To return to the previous screen, select a button and press enter or left click the mouse.



6.8. Pause Live Screen

Just like in playback, Live screen can be paused.

Press the PAUSE button to pause the live display, press any button to return to the live display.

6.9. PTZ Control



Connect a PTZ controller to the DVR and set the relevant protocol in the “Serial Setup” menu and the corresponding camera menu, then the PTZ of the camera can be operated while live monitoring is activated. To pan and tilt a PTZ camera, use the direction keys from the DVR’s front panel or the mouse. You can access focus, zoom and presets of the PTZ camera by pressing the PTZ button on the DVR’s front panel or clicking on the PTZ icon in the Function menu.

Below you find a list of supported protocols.

Instant PTZ

PTZ mode will automatically be on if Instant PTZ switches a set channel to a single screen. + sign will appear in the middle of the screen if PTZ is operating.



- Press the button of the desired channel, or select the channel with the mouse.
- Press the PTZ button from the front panel or click on the PTZ icon in the Function menu with the mouse.
- The PTZ menu (Zoom/Focus, Load Preset, Save Preset) will appear.
- Then press the [Enter] button or click on the mouse.

6.9.1. Pan/Tilt

The Pan/Tilt function is directly activated after you have chosen a PTZ camera in single monitor mode. You can control the PTZ with the front panel direction buttons, or with the USB mouse by clicking on the screen. Depending on the distance to the central cross, the PTZ will move into the direction of the mouse click.

6.9.2. Zoom/Focus

This menu is used to control the Zoom & Focus function in real-time monitoring mode.

- Select Z/F (Zoom/Focus) from the PTZ mode.
- Control Zoom/Focus through the direction keys on front of the DVR or use the scroll wheel of the mouse.

6.9.3.

Loading Preset

This menu is used to move the PTZ camera into a Preset position during real-time monitoring mode.

- Use the Up / Down buttons or the mouse wheel to select the Preset Number.
- Once Preset is configured, please select [Load] and then press [Enter].

6.9.4. Save Preset

This menu is used to set a new Preset position during real-time monitoring mode.

- Control the PTZ camera location by using the 'Pan/Tilt' menu and the 'Zoom/Focus' menu.
- Use the Up / Down buttons or the mouse wheel to select the Preset Number.
- Once the preset position is configured, select [Save] and then press [Enter].

6.9.5. Auxiliary On

This menu is used to utilise specific functions of a PTZ device during real-time monitoring mode.

- Use the Up / Down buttons or the mouse wheel to select the Aux Number.
- Select the relevant Number button for this specific function (Up to 16 functions of the PTZ camera can be controlled with the Aux Function.)

6.9.6. Auxiliary Off

This menu is used to stop operation of a specific function of the PTZ device.

- Use the Up / Down buttons or the mouse wheel to select the Aux Number.
- Select Off and press the [Enter] button or click on the mouse.

6.10 Camera Setup

Used to enter the menu of the connected PTZ device.

Use the direction keys and the enter button to set up the menu. Press esc or “ ” to exit the menu.



6.11. Implemented PTZ camera protocols:

Model	Manufacturer
BOSCH AutoDome, TC8560X-4	Bosch
PELCO(P), PELCO(D)	Pelco
Sony EVI-D3x	Sony
VT VPT-4x	VT
AD SpeedDome	AD
SungJin SJ372R1	SungJin
Samsung SCC641	Samsung Electronics
Panasonic WV-CS850	Panasonic
SDZ160/330, Samsung SPD, Keyboard SCC3000A, Samsung SRX-100B	Samsung Techwin
LG GAC-PT2	LG
Merit-Lilin FastDome	Merit
Elmo PTC200C	Elmo
Canon VC-C4	Canon
HTC-2305	DongYang Unitech
RVision	RVision
Elbex	Elbex
Honeywell 755/655, HRX-2000, HTX-3000, ScanDome2	Honeywell
VIDO	VIDO
VICON	Vicon
Hunt	Hunt
ORX-1000	Sysmenia
Fine CRR-1600	LiveEye
Tokina	Tokina
Kodicom KRE	Kodicom
Nuvico	Nuvico

7. Playback/Search

7.1. Playback/Search Mode

7.1.1. Playback on Standard monitor (16 / 9 / 4 division)

- Please press the [SEARCH] button in monitoring mode or click the [SEARCH] button in the Function menu with the mouse.
- When pressing the [PLAY] button or the [FWD] button, the video plays in forward direction at 1× speed.
- When pressing the [REW] button, the video plays backwards at 1× speed.
- When pressing the Playback button in a multi-division monitor mode, it plays the recorded data for all viewable channels.

7.1.2. Playback function

PLAY ◀ ▶ :

Playback 1× speed Multichannel video will play when pressing the [PLAY] button in Multichannel monitor mode.

PAUSE II :

Pause the video temporarily.

STOP ■:

Stops the Playback and the DVR returns to live view.

FWD ▶ ▶ :

Playback speed will be changed (x1, x2, x4, x8, x16, x32, x64, x1/2, x1, x2, x4 – in order). When pressing the [FWD] button in live view mode, the DVR plays back the recorded video from 1 minute ago. Playback speed can be changed by pressing the [FWD] button.

REW ◀ ◀ :

Reverse playback speed will be changed (x1, x2, x4, x8, x16, x32, x64, x1/2, x1, x2, x4 - in order). When pushing the [REW] button in the live view mode, the DVR plays back the video from 1 minute ago. Playback speed can be changed by pressing the [REW] button.

1/2 FORWARD :

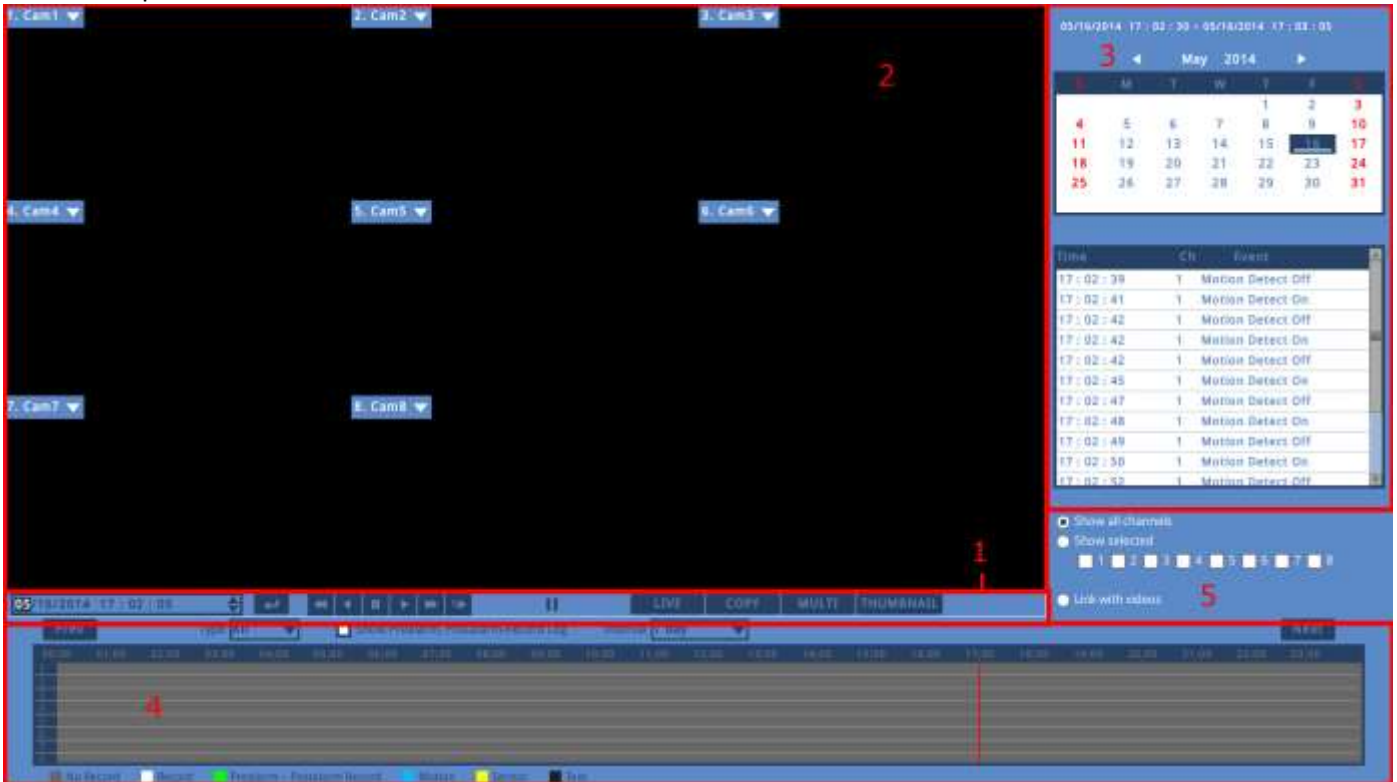
Plays at half speed in forward direction.

Jog Dial:

The Jog Dial can be used to control the video playback. The outer wheel controls the speed of the playback. The inner wheel can be used to control the Fast-forward function and the Rewind function.

7.1.3. Screen composition/names of the functions:

Screen composition



Name	Description	
1	Playback button	Use the buttons to control the playback.
2	Screen	Displays the playback videos.
3	Log viewer	Displays the log seen on timeline
	Calendar/time search	Select a date on the calendar to view the data of the date.
4	Timeline	Displays the info of the unit and search the playback sections.
5	Channel Selector	Allows you to select the channels that will be displayed

Icon function description:

Buttons	Description
	Go back to live mode.
	Enter COPY menu
	Select multi-screen mode.
	Switches to Thumbnail Search Mode
	Fast Rewind button
	1x reverse playback button.
	Pauses the playback.
	1x forward playback button.
	Fast Forward button.
	1/2 forward playback button

Time search:

Enter the date and time you want to search and press enter to move to the entered date and time.



Calendar search:

When calendar search is running, it marks the dates on which there were recordings.

Select a date from calendar you want to search, and it moves to the desired date.



Event search:

Event info(All, Motion, Sensor, Text, None) is shown on the timeline. Select a list to move to the selected time.

Time	Ch	Event
17 : 02 : 39	1	Motion Detect Off
17 : 02 : 41	1	Motion Detect On
17 : 02 : 42	1	Motion Detect Off
17 : 02 : 42	1	Motion Detect On
17 : 02 : 42	1	Motion Detect Off
17 : 02 : 45	1	Motion Detect On
17 : 02 : 47	1	Motion Detect Off
17 : 02 : 48	1	Motion Detect On
17 : 02 : 49	1	Motion Detect Off
17 : 02 : 50	1	Motion Detect On
17 : 02 : 52	1	Motion Detect Off

Channel Selector:

Select between all channels or a selection to be displayed in the monitor and timeline.



7.2. Copy

The Copy function is used to back up video material on USB devices or CD/DVDs. For USB devices you can select between the EXE (multichannel) and AVI (only 1 channel) video format and store it on a FAT32 formatted device. In the user authorisation you can define which user has the right to back up the video. For this please refer to chapter 8.1.3. User Setup.

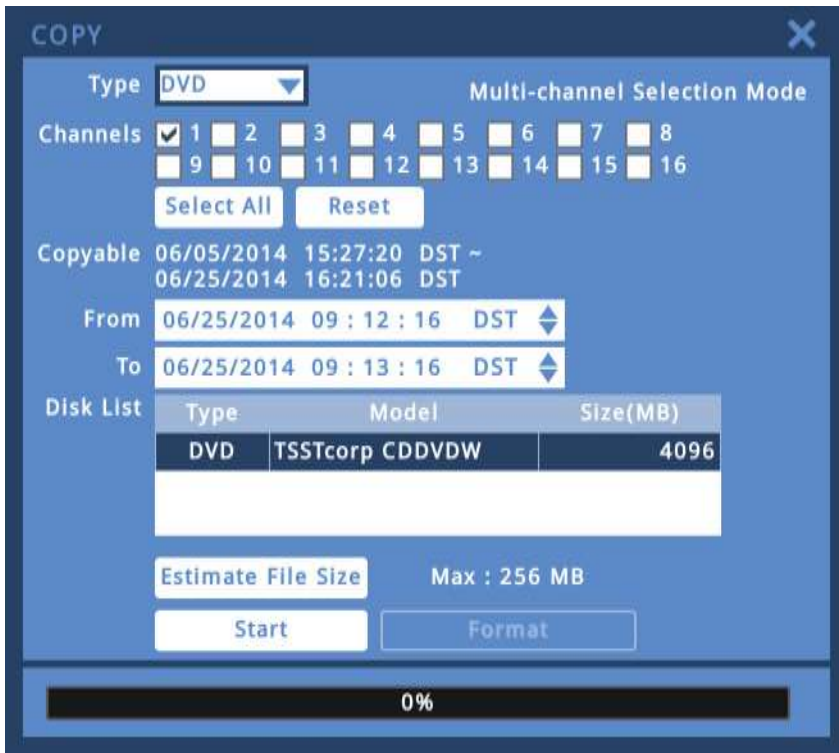
To use the copy function, press [COPY] or click the Copy button in the Function menu.

NOTE: The multi-channel format always includes a miniplayer.exe file that can play back the video without the need to install any program. You have also access to the logfile with this miniplayer.

NOTE: When accessing the Copy function from Playback, the actual playback time will be copied to the Start time field and the Stop time field will be 1 minute later. With these settings an easy adjustment of the backup time is possible.

7.3.1. CD/DVD

This is the copy function if you use a recordable CD or a DVD. Please insert the recordable CD or DVD first before you start the backup menu. The CD or DVD will be automatically detected.



Type:

Select CD/DVD by using the direction keys or the mouse.

Channel:

Select the channels you want to back up.

From:

Select the start date and time to copy using the Up / Down direction keys or the mouse.

To:

Select the end date and time to copy using the Up / Down direction keys or the mouse.

Select Disk:

Select the media to copy using the [Enter] button on Select Disk.

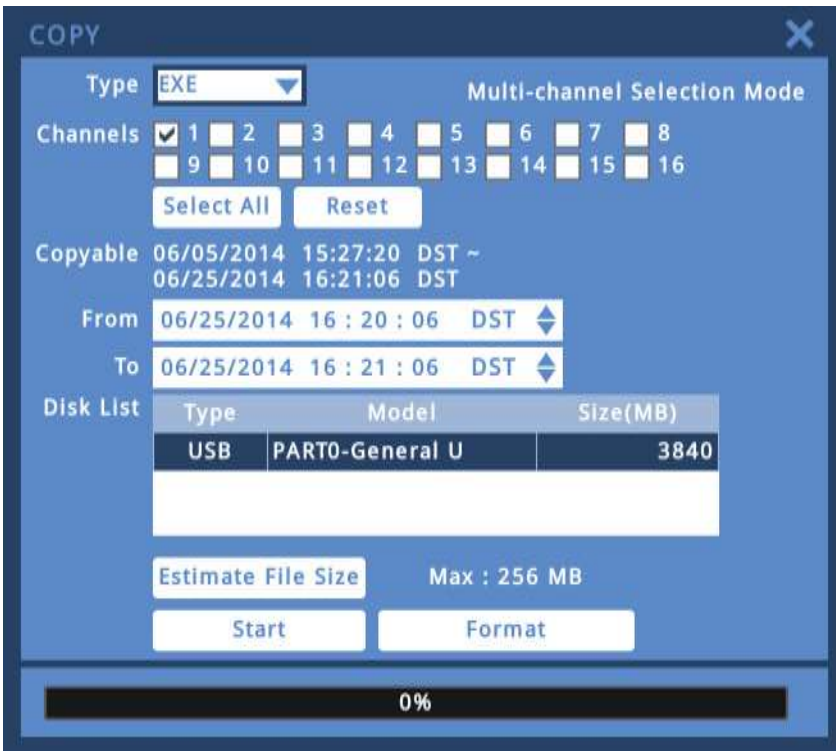
Start:

Starts to copy. Press the [Start] button with [Enter] or click with the left button of the mouse.

DVD-R manufacturer (DVD+R is not supported):

- Mitsubishi (×16 recommended)
- TDK (×16 recommended)
- Imation (×16 recommended)
- Sony (×16 recommended)

7.3.2. EXE



The EXE format can be backed up on external HDDs and USB Flash drives. Together with the video a Mini player will be copied to the Storage device to be able to view the EXE format. You can also open the EXE file with the GRUNDIG Control Center.

Select the channel you want to record and press [Enter] or use the mouse to open the channel selector as shown below.

Type:

Select EXE using the direction keys or the mouse.

Channel:

Select the channels you want to back up.

From:

Set the start date or time to copy. Use the direction keys or the mouse to change the values.

To:

Set the end date or time to copy. Use the direction keys or the mouse to change the values.

Select disk:

Select the media you want to copy to. Press [Enter] on the Disk list or click the mouse.

Start:

Starts the backup. Press [Enter] or click the mouse.

Format:

This will format the entered USB device. All data on the device will be deleted.

NOTE: If the backup is interrupted, the backup files will not be playable on a PC.

7.3.3. AVI

In the AVI format the user can back up a single channel video. Together with the video file the System and Event log of the selected time frame will be copied to the external storage.



Type:

Select AVI using the direction keys or the mouse.

Channel:

Select the channel to copy with the direction keys or the mouse.

From:

Set the start date and time you want to back up. Use the direction keys or the mouse to change the values.

To:

Set the end date or time to copy. Use the direction keys or the mouse to change the values

Select disk:

Select the media on which you want to back up the AVI file. Press [Enter] and select the media or click the mouse.

Start:

Starts the backup. Press [Enter] or click the mouse.

Format:

This will format the entered USB device. All data on the device will be deleted.

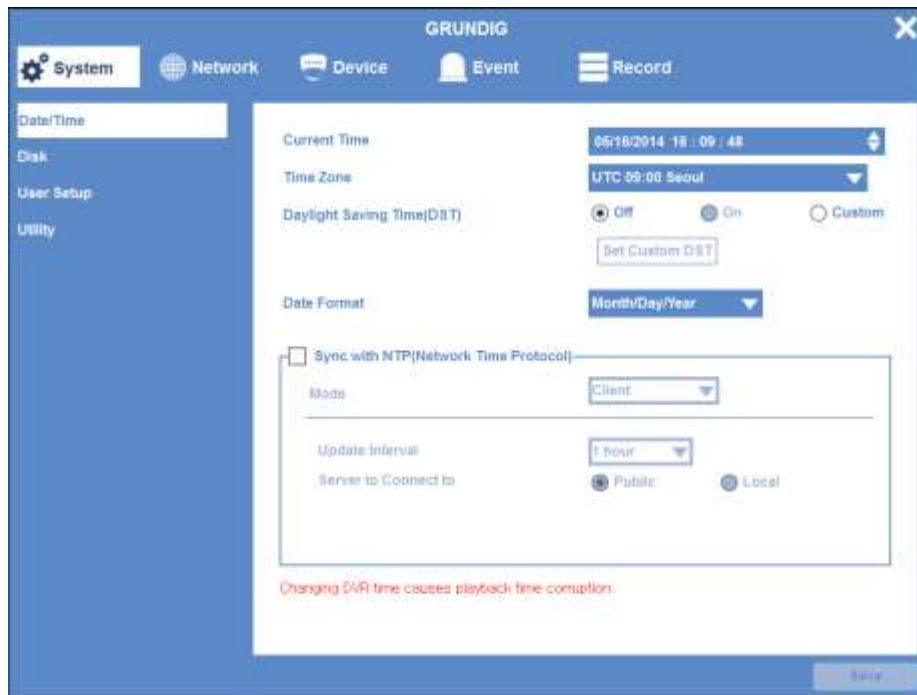
8. Configuration

8.1. System Setup

Time, Disk and Authority settings and miscellaneous settings can be configured here.

8.1.1. Date/Time

The Date and Time setting should be configured prior to any recording.



The Time configuration is very important to protect the recording data. Changing the time during recording is not recommended. The factory default setting for the time is “UTC 00:00 Dublin”.

Time Setup:

Caution: While recording, changing the system time will affect a time change for all previously recorded video data. Therefore, we recommend to back up the recorded video before changing the system time.

- Press “Main Menu” in the Function menu or the [MENU] button on the front panel.
- Select the “System” menu.
- Select “Date/Time” in the System menu. The Date/Time configuration will be opened.
- Use the directional keys or the mouse to change the values.

Time Zone / Standard Time:

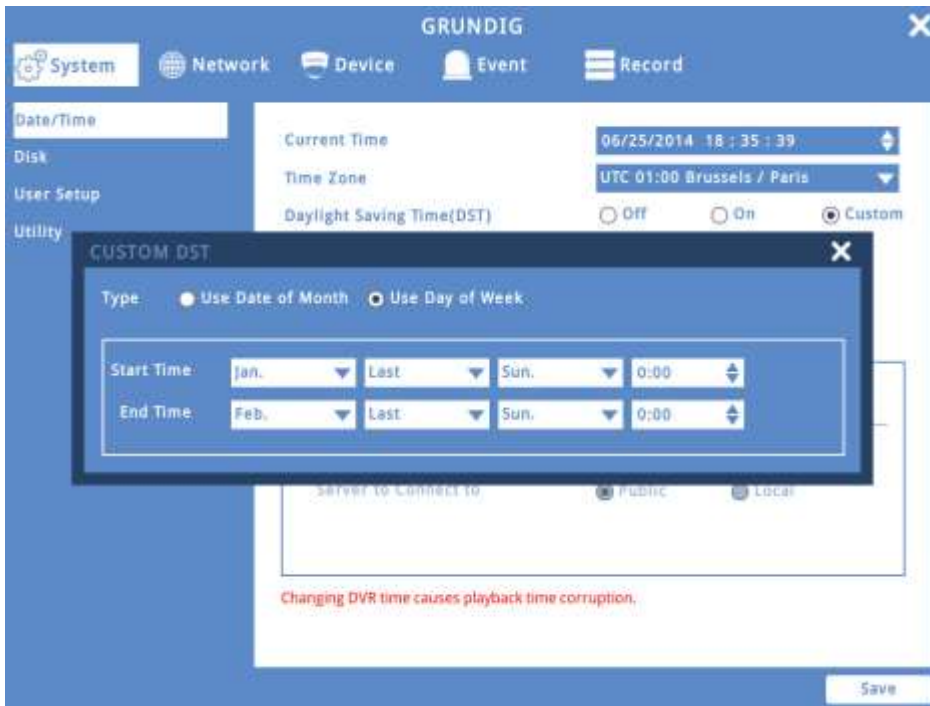
Use the Left / Right direction keys or the mouse wheel. To return to the previous menu, press [ESC] or click the right mouse button.

Daylight Saving:

This menu is synchronised with the time zone configuration menu. When a daylight saving area is set, this function is activated. The daylight saving applicable area is working in conformity with the time zone of Microsoft Windows.

Custom DST Setup:

You can also use a custom DST. Select a fixed day of a week (first Tuesday of March) or the day of a month (24th of March) to select when the switch should happen. You can also define the exact time, when it should happen. This can be used if you want to change the time not in the middle of the night, but maybe on the noon of the next day, so you have enough time to search for any events using the “old” time, for example.



Date format (Type):

Change the date format between “MM/DD/YYYY”, “YYYY/MM/DD” and “DD/MM/YYYY” by using the Left / Right direction keys or the mouse wheel.

Start / End Time:

With the Left / Right direction keys, you can move to year, month, day, hour in order. Each configuration can be changed with the Up / Down direction keys or the mouse wheel.

NTP Setup / Set Automatically (NTP):

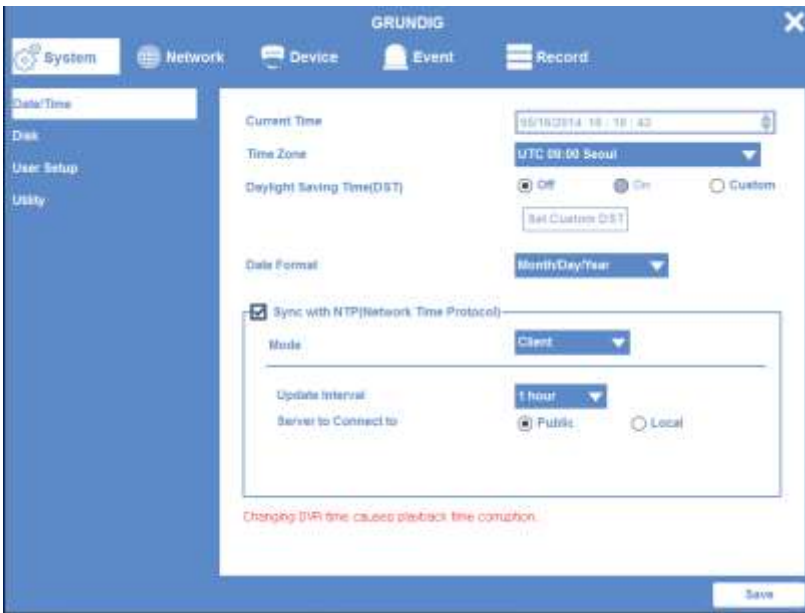
The NTP (Network Time Protocol) synchronises the time of all connected devices. The DVR can be set to client mode or server mode or to both modes at the same time.

Sync with NTP:

Enable or disable the NTP function.

NTP Mode:

Configure the NTP mode of the DVR – Client / Server / Both



NOTE:

When using the NTP client mode, the user must set the NTP to "On". NTP Server Loc.:
 If the DVR is in client NTP mode, this function is enabled. Configure the IP address of a local network NTP server or select "Public" if the NTP server is a public one.

NTP Local server IP:

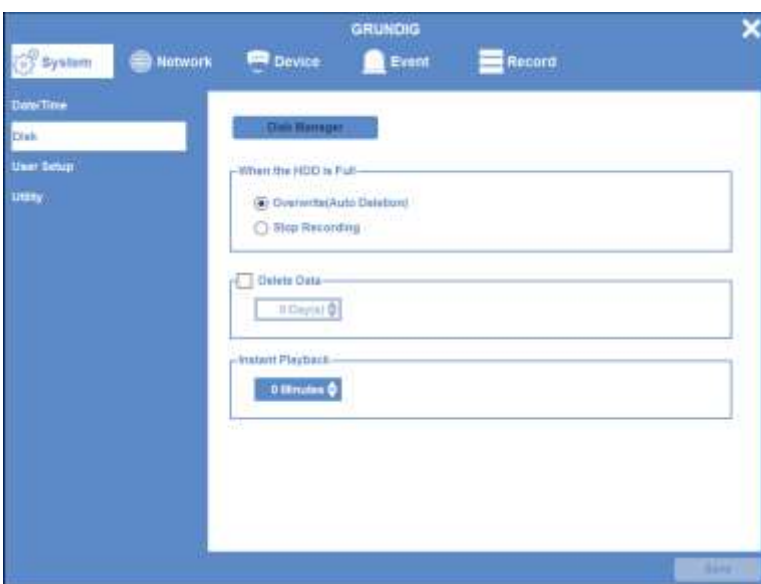
Input the IP address of the local NTP server or a DVR that is working in NTP server mode.

Interval:

Configure the interval of the time synchronisation.

8.1.2. Disk

In the "Disk" menu everything regarding the hard disk of the DVR can be configured. Here you can also use the Disk Manager to format HDDs.

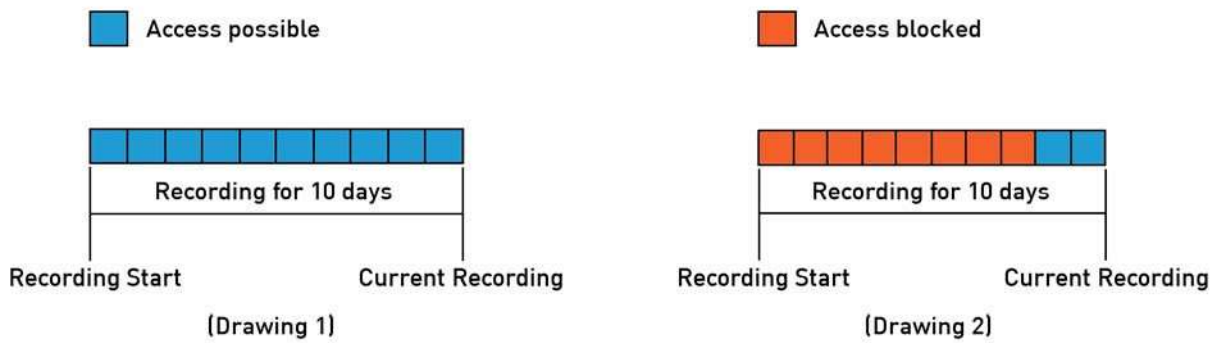


Overwrite (Auto Deletion):

If there is no space left in the HDD, old data will be overwritten automatically.

Delete Data:

Select this ticker to select after which amount of days the recorded data will be deleted.

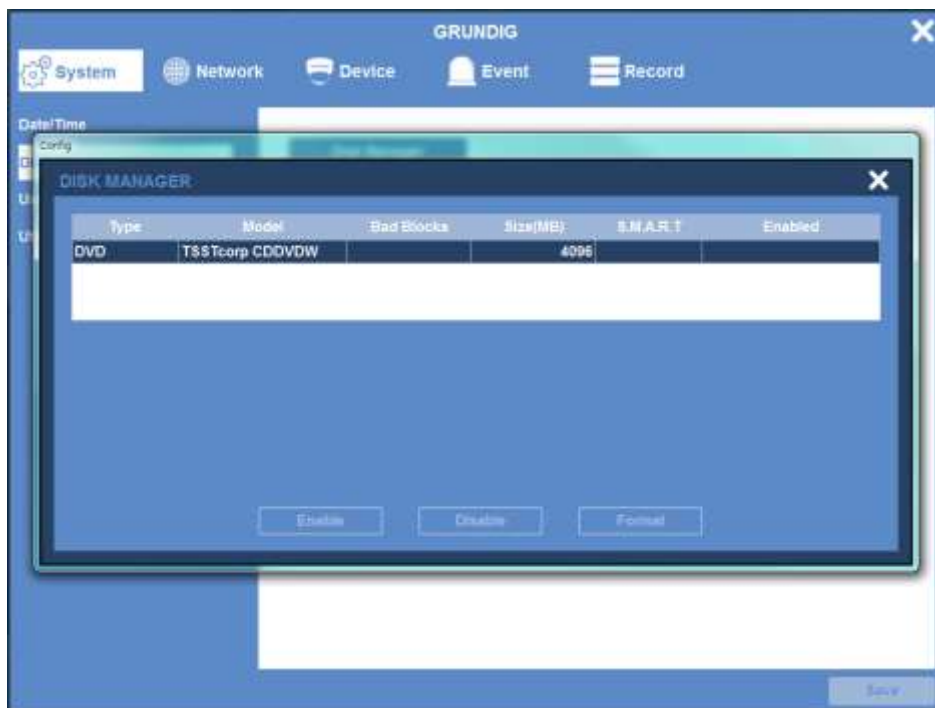


Instant Playback:

Decide the time interval that will be used to go back in time when you select the instant playback function.

Disk Manager:

“Disk Manager” is the menu for the management of internal or external HDDs (hard disk drives). You can see the type, name, the bad block status and the size of the HDD in this menu. You can also select if the HDD is enabled for recording or not.



NOTE: If you enable a HDD to record, you will be asked whether the HDD should be formatted. Type: Displays the location or type of disk (Int A (Internal A HDD), Int B (Internal B HDD), Ext (External HDD)).

Model:

HDD model name

Bad Blk:

Displays the number of bad blocks of the HDD.

Size:

Displays the HDD size in MB.

Enabled:

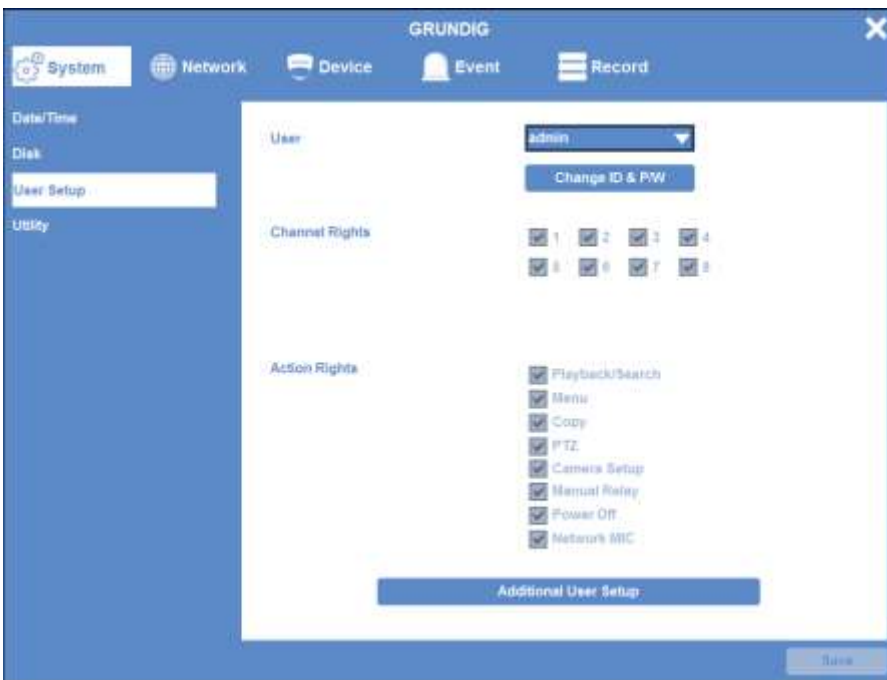
Shows if a HDD is enabled for recording (“Yes”: Enabled / “No”: Disabled).

To enable a HDD, select it and change and press the [Enable] button on the bottom of the disk manager. If the HDD needs to be formatted, select [Format] first. All data will be erased then.

8.1.3. User Setup

The user setup is only editable for the administrator. Users can only change their passwords here.

In the user setup you can define which user has which rights. You can choose that users are only allowed to access defined channels and can only execute defined functions. Here you can change the user name and the password.

**User :**

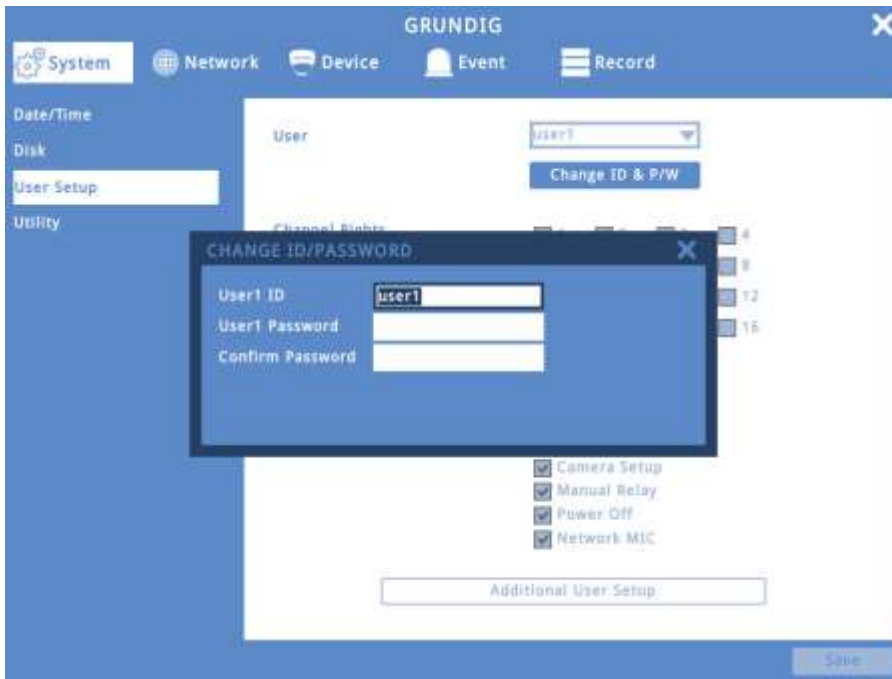
Here you can select which user you want to edit.

Change ID & Password:

Change the user name here. This name can then be used to enter the DVR directly or over the Ethernet connection.

Change Password:

The password can be up to 8 digits long. To ensure you did not misspell the password, you have to enter the password twice. Press “Change” when the password is finished. After that, a message window will be shown and you have to confirm the password change.



NOTE: The Admin Password is “1234” in factory default. For user 1 to 10 the password is (in order) “1111”, “2222”, ... and for user 10 it is “0000”.

Access rights:

Here you define which rights the user has. The administrator has always all of the rights and this cannot be changed. In the default settings the users do not have any right to see any channel or do anything. The administrator needs to give them rights first.

Action rights:

Here you can define which functions of the DVR the user can access.

Action Rights

- Playback/Search
- Menu
- Copy
- PTZ
- Camera Setup
- Manual Relay
- Power Off
- Network MIC

Menu: Gives the user the right to access the configuration menu. (The users are not allowed to change the user rights or to perform a factory reset.)

PTZ: If set to YES, the user has the right to control PTZ cameras.

Relay: If set to YES, the user has the right to activate the relays of the DVR. **Playback:** If set to YES, the user has the right to access the Playback.

Power Off: If set to YES, the user has the right to turn off the DVR.

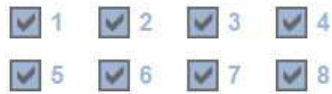
Copy: If set to YES the user has the right to backup video.

N/MIC: If set to YES, the user has the right to use the microphone function over the network.

Channel rights:

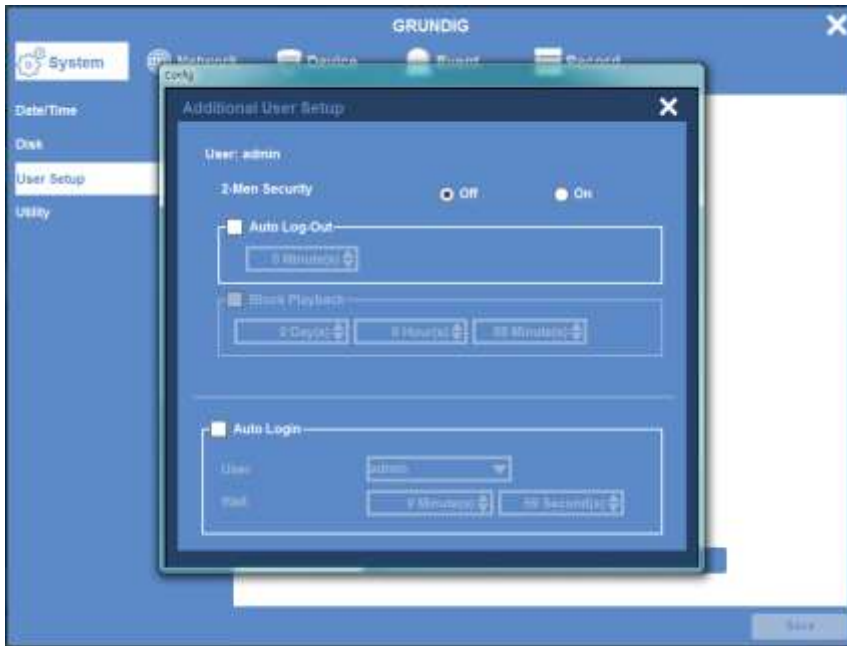
Here you can define which channels the user can see under Live & Playback. Covert channels will also be invisible in search results and backup files.

Channel Rights



Additional User Setup:

In the Additional User Setup extended functions can be accessed.



2-Men Security:

Activate this function to enable the 2-men security function for this user. You will need to enter a second password for this user to log in.

Auto Log-out (Min):

Every user can have its own auto-log-out time. With this function you can, for example, limit the admin access to 2 minutes. So even if you forget to log-out, the access to the DVR will not be possible without the admin password. But you can also create a user with infinite log-out time (set to 0), so that you can have a "guest" account that will show defined channels all the time without any special function rights.

Block Playback:

Here you can block the playback access independently for each user. Select days, hours and minutes for the user he is allowed to access the recorded material.

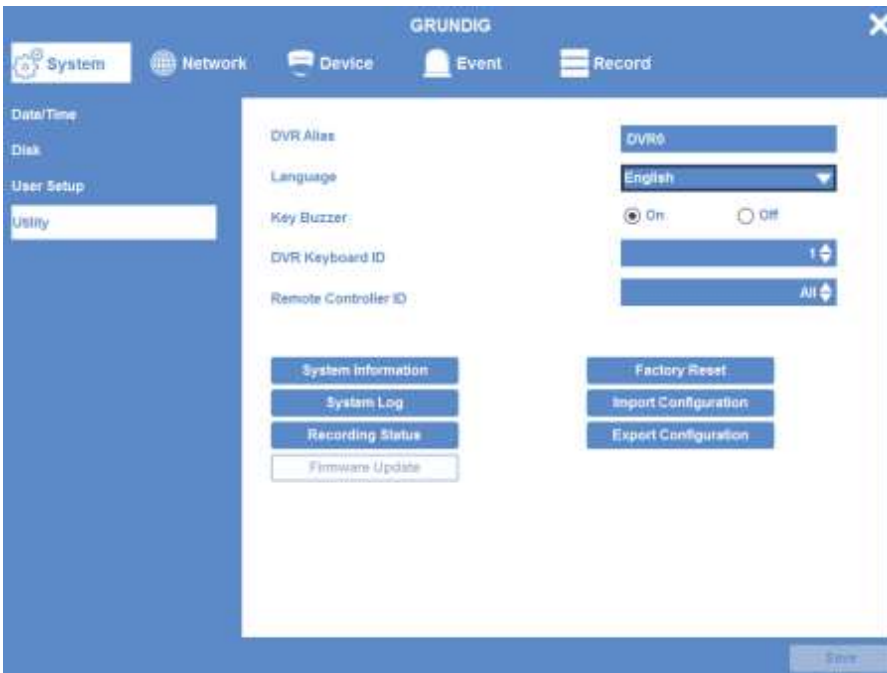
NOTE: If a user is logged in locally with blocked playback access. Also from remote the playback time is blocked, even though the remote user, might have a different time range he can access.

Auto Login:

The Auto-Login function can be used to log in a user automatically. Use this function to restart the DVR in a guest mode, with limited access for example.

8.1.4. Utility

Configure the name of the DVR, the remote control ID and Language.



DVR Alias:

Set the name of the DVR. This name will be shown when accessing the DVR via a network.

Language:

Select the language you would like to use.

Key Buzzer:

Select if the Buzzer will be active, when you press a button on the front panel of the DVR.

DVR Keyboard ID:

This menu is for setting the address of the keyboard when using all functions of the DVR with the keyboard. Factory default is "1". If the user wants to control various DVRs with one keyboard, each address should be set with a different value.

Remote Controller ID:

Maximally 16 remote control IDs can be set. One remote control can be used to manage all the 16 DVRs.

Registration order for the remote control:

1. Make the remote control point in the direction of the DVR.
2. Press the ID button several times to match the ID of the remote control to the DVR.
3. If the IDs are matched correctly, the DVR buzzes.
4. Now you can use the remote control.

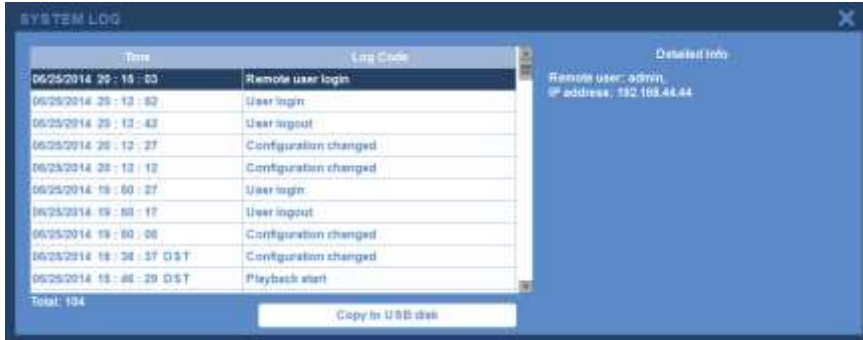
System Information:

The System information contains all the relevant system information like firmware and model type.

System Log:

The system log shows the boot status of the system and any changes regarding users and the DVR configuration.

You can also export the system log to USB disk from here.

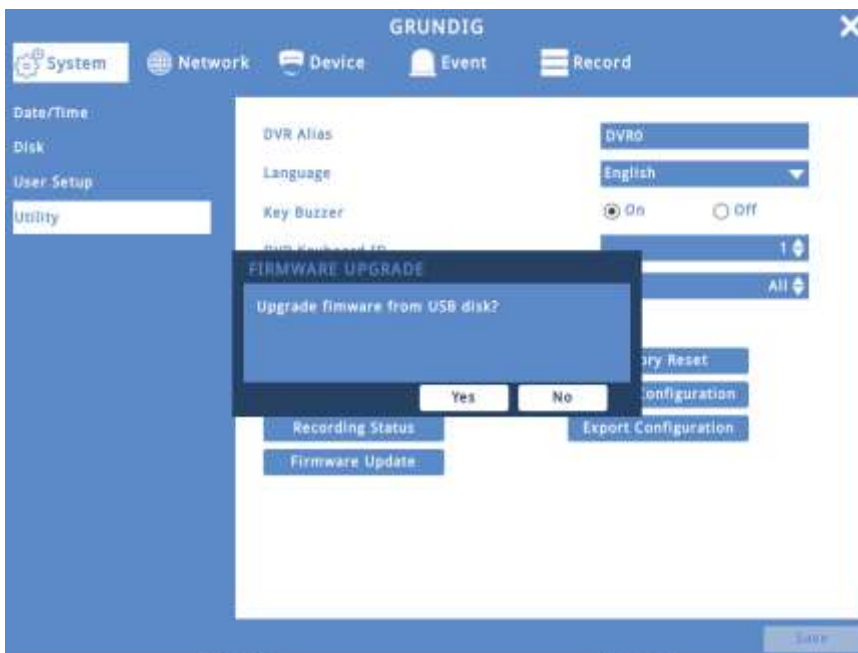


Firmware Update:

You can update the firmware by a USB Memory device.

- Insert a USB memory device including the firmware file to the USB port.
- Press the Firmware Update button.
- Select [YES] in the pop-up window.

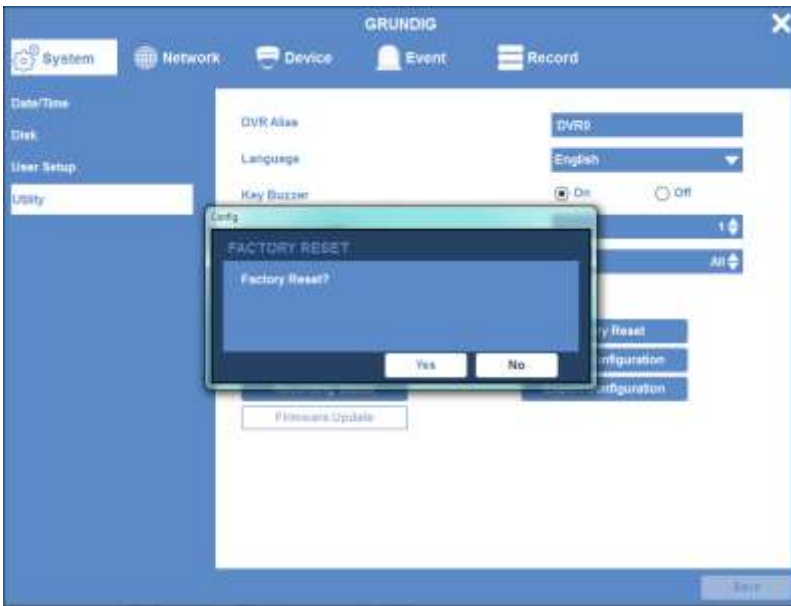
NOTE: Only the administrator is allowed to perform a Firmware Update.



- The system will reboot.
- Firmware update is done.

Factory Reset:

Set all configurations back to factory default.



NOTE: Only the administrator is allowed to perform a factory reset.

Import/Export Configuration:

Use this function to backup the DVR configuration for a later time, or to copy it to other DVRs of the same model type and firmware status.



8.2. Network

This is the menu for configuring the network related settings.

8.2.1. Network



Type:

Configure the type of Network (Ethernet/xDSL) connection. If the DVR is connected to a local network, you can change the configuration directly in the fields below. If the DVR is connected by xDSL (PPPoE), please make the configuration in the xDSL submenu.

Automatic Addressing (DHCP):

With DHCP (Dynamic Host Configuration Protocol), all hosts connected to LAN can get a temporary IP address from a DHCP server.

If the LAN has an active DHCP server, this server allocates the IP address directly to the DVR. If there is no DHCP server in the network, the IP address needs to be configured manually.

IP Address:

The IP Address is for connection between the DVR and the Control Center and also for the web connection with the WebViewer (Net Mask and Gateway need to be configured if you want to access the DVR over the Internet.)

Net Mask:

The Net Mask determines the range of the IP addresses which are available for use. You should receive the correct data from the network administrator.

Gateway:

The Gateway is necessary for different types of network connections. You should receive the correct data from the network administrator.

UPnP (Universal Plug and play) Port Forwarding:

This very helpful feature can be used if you do not want to configure your network forwarding ports manually. If activated, the DVR will instruct your router automatically to forward all requests coming to the defined port. Set the Port Forwarding to "On" to activate this feature in the Pop Up Window. The status of the UPnP forwarding will be shown in the Status field.



DNS Server:

DNS is a network service used to rename IP addresses (Domain Name Server) and it should be received from the network administrator.

Port:

The port is necessary for the connection to the Control Center Software and the WebViewer. The factory default setting is Port 80. If you want to connect to the DVR through the internet over a router, this is the port you will need to forward in your router.

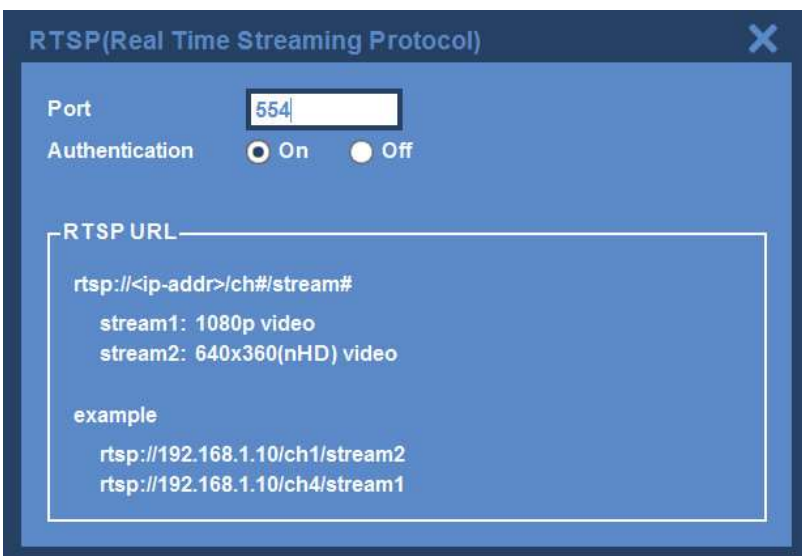
Please make also sure that your firewall is not preventing the access to this port.

Bandwidth Limit:

In this menu the bandwidth used for video transmission can be limited. You can define the bandwidth between 0.03 Mbps and 99.99 Mbps. Contact the network administrator for further information on bandwidth limitation.

Video Streaming:

Adjust the RTSP streaming settings here. Choose the RTSP port and deactivate authentication if needed.



IP Filtering:

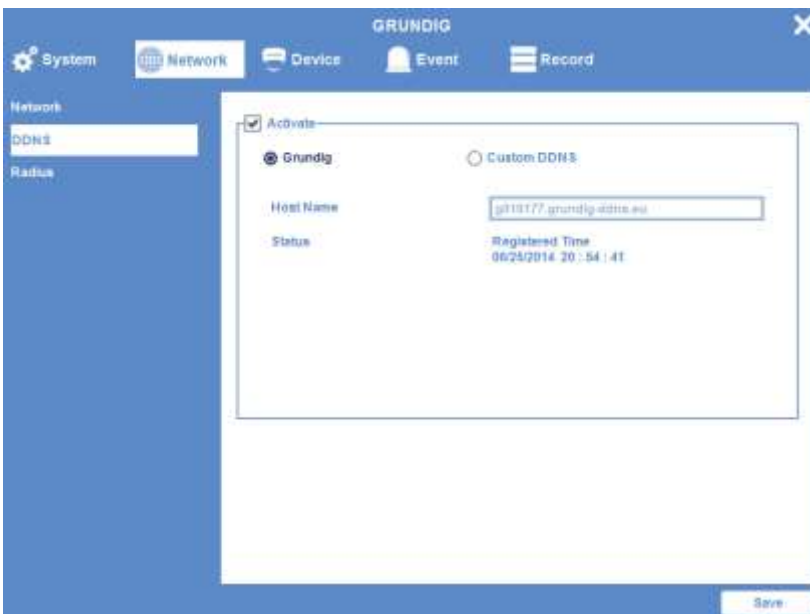
Configure a White- or Blacklist to filter IP addresses for remote connection.



8.2.2. DDNS

If the DVR is connected to a Cable modem or a xDSL modem, the IP address will be changed with every connection to ISP. To connect to the DVR over the Internet you need to know this IP address. GRUNDIG supplies a DDN Server that can be used to update the IP address of the DVR. The DVR sends its latest IP address to this server and the user can then connect to this server to access its DVR.

To register the Static IP to DDNS, please refer to the following configuration.



Host Name:

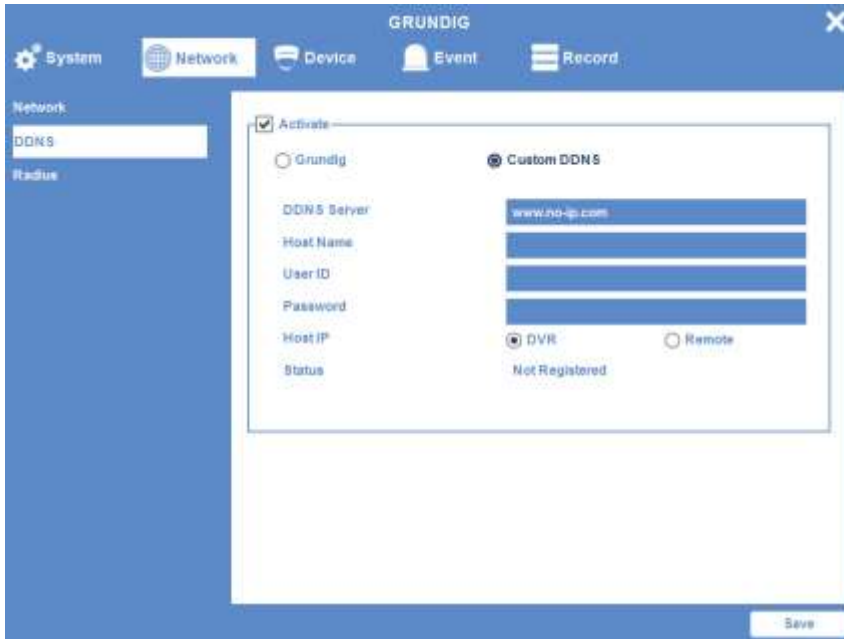
This menu shows the server address where the DVR registers its dynamic IP address. The DDNS address, on which GRUNDIG is operating now, is: www.grundig-ddns.eu.

You can access the DVR now over the internet and the Control Center Software through the following address: [last 6 digits of the MAC address].grundig-ddns.eu

(example: g02c362.grundig-ddns.eu)

Custom DDNS:

If you have already a DDNS service like no-ip.com, you can use this account also with your Grundig DVR. You have to enter your Host Name, user ID and the password to use this function.

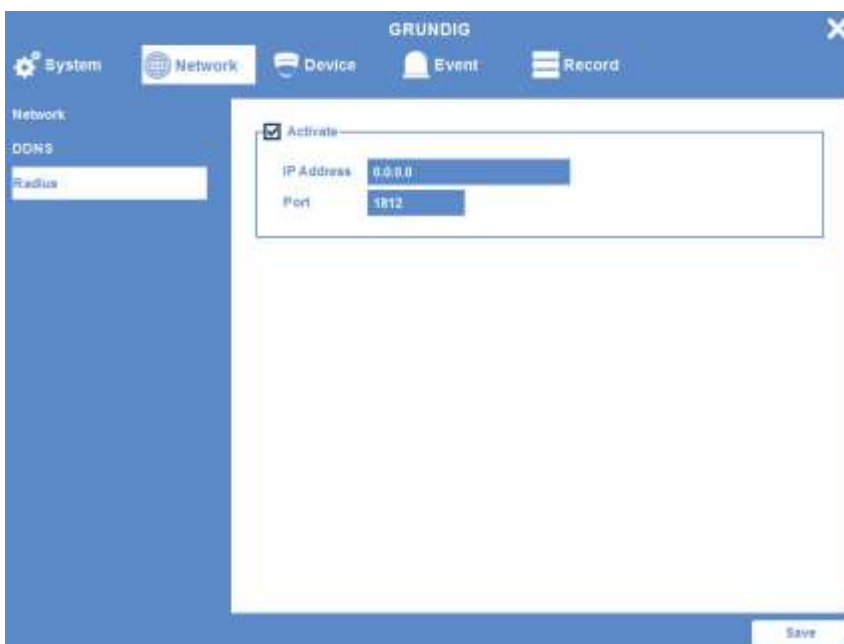


The MAC address is printed on the box label and on the backside of the DVR.

8.2.3. Radius

Remote Authentication Dial In User Service (RADIUS) is a networking protocol that provides centralized Authentication, Authorization, and Accounting (AAA) management for users that connect and use a network service.

Here you can configure the Radius settings if you are using this protocol in your network.



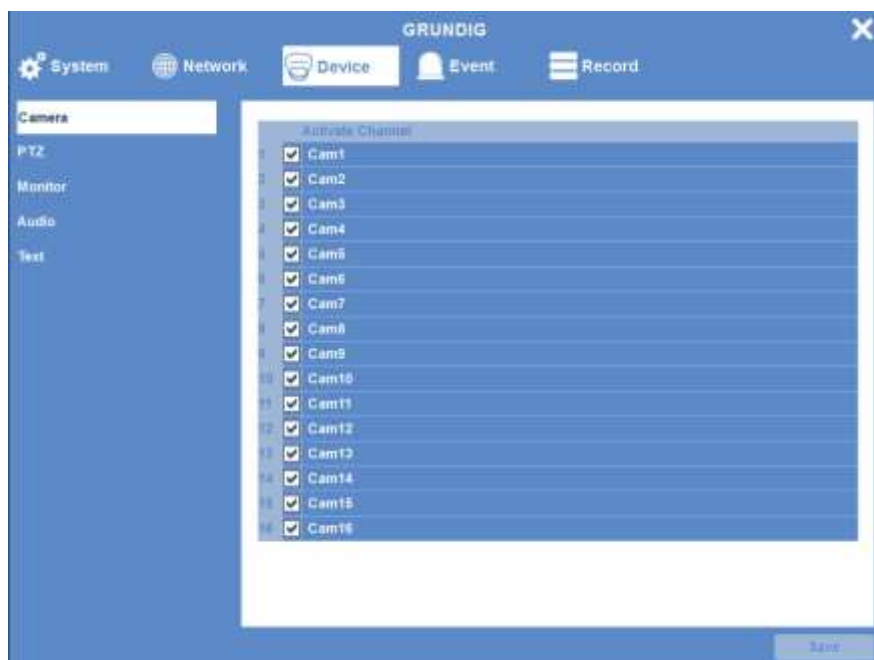
8.3. Device Setup

In this menu you can configure all devices that can be connected to the DVR, like cameras, monitors and keyboards.

Caution: NTSC and PAL cameras cannot be used at the same time.
If changing the camera type from NTSC to PAL, the system should be rebooted.

8.3.1. Camera Setup

Select the camera you want to configure, by selecting its channel.



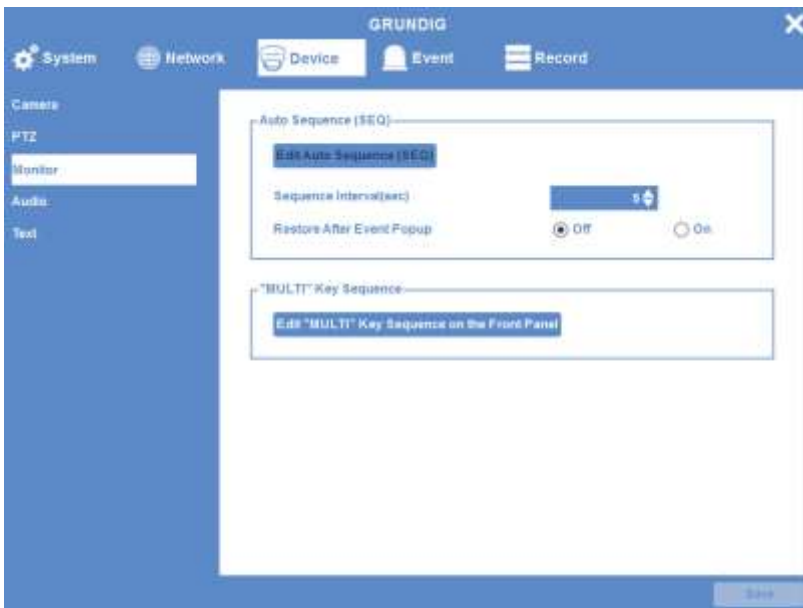
Name:

Fill in the name the camera should have. This name will be shown on the monitor and will be also shown in the GRUNDIG Control Center Software.

When pressing the [Enter] button or clicking the mouse, you can enter the camera name in the text menu.

8.3.2. Monitor Setup

Configure all connected monitors. Depending on the model of the DVR and the attached monitor different options are available.



Sequence configuration:

Here you can configure the user sequence. You can edit up to 16 steps within an interval from 1 to 60 seconds. You can select a single channel and Multi-Mode views.

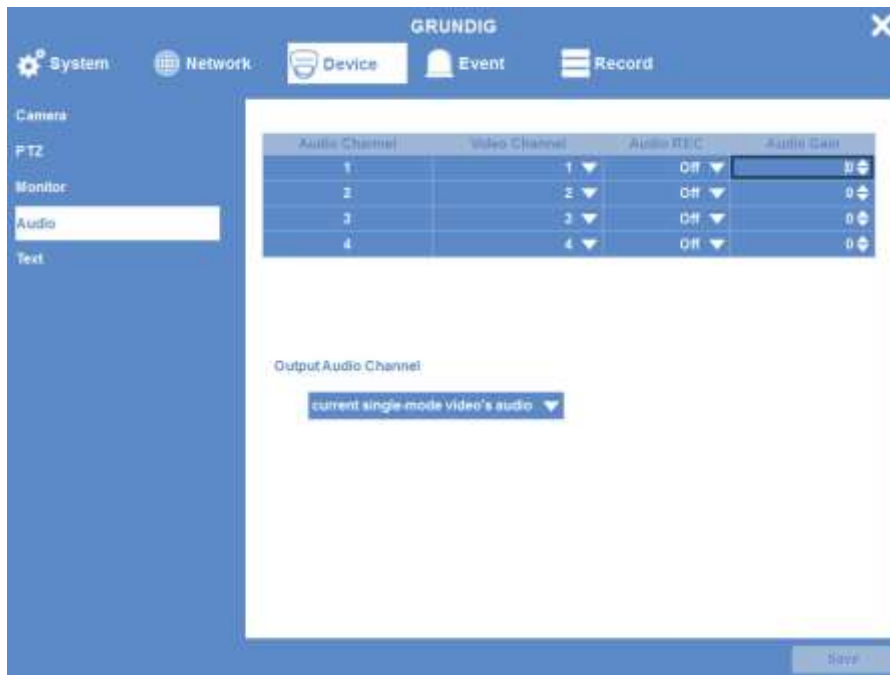


Sequence Interval:

Select the amount of time in seconds between the switching of channels during sequence.

8.3.3. Audio Setup

In this menu the user can configure Audio recording, Volume, Synchronisation and Mixing.



Audio Channel:

Select the channel you want to configure.

Video Channel:

Select the video channel you want to connect to this audio channel.

Audio REC:

Enable or disable the audio recording. If disabled, audio will be transmitted in live view, but will not be recorded. If audio recording is enabled, the recorded audio will also be available in playback mode.

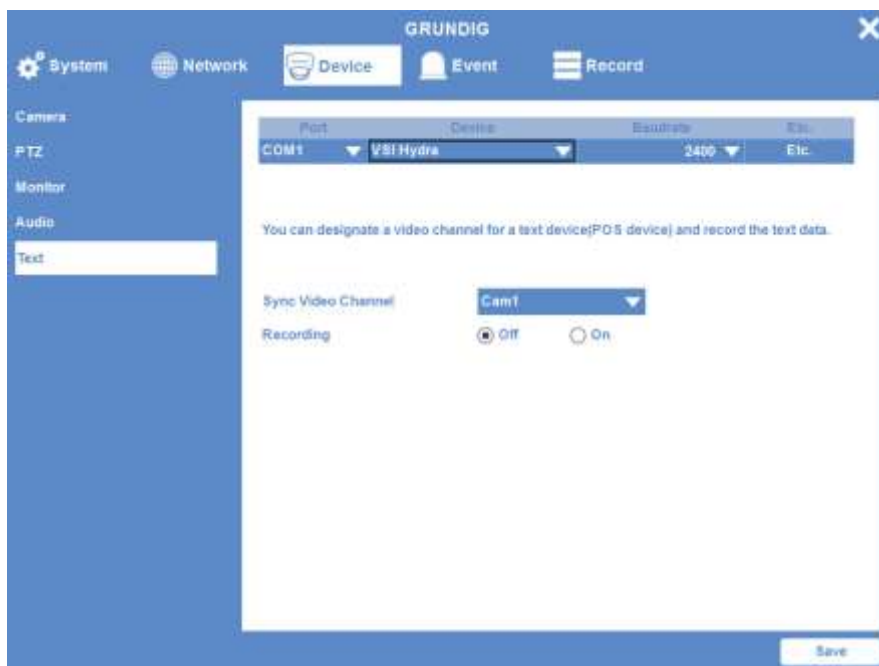
Audio Gain:

Configure the volume of the audio in the + /- direction.

Audio Output Channel:

Select the channel that will be active over the speakers. You can either fix one audio channel, or let always make audio channel active that is connected to the current video channel.

8.3.4. Text Setup



Device:

Select the type of the Text input device you are using. Choose between VSI-Pro Hydra, Starfinger 007 or manual configuration. If you choose the manual configuration you have to set the Header, Delimiter, Timeout and Lines settings.

Sync Video Channel:

Select the channel which will be synchronised with the text input.

Recording:

Enable or disable the recording of transmitted texts.

Seek Header:

Activate or deactivate searching for the header of the data. You can define up to 2 different headers here. For information about the header, please refer to the manual of your text input device.

Delimiter:

The delimiter value may differ depending on the device used. For more information on delimiters, refer to the user manual of the text input device.

Timeout:

The lines defined below are the maximum number of text lines available for one piece of data. Even though the number of lines is preset the actual number may differ sometimes. For example, three lines are programmed for a client name input for an ATM, but if someone registers only his/her first name and last name, only two lines will be provided when the person uses the ATM. The DVR will not be able to detect this automatically, so the Timeout function will be used to stop data recognition after the last line is entered.

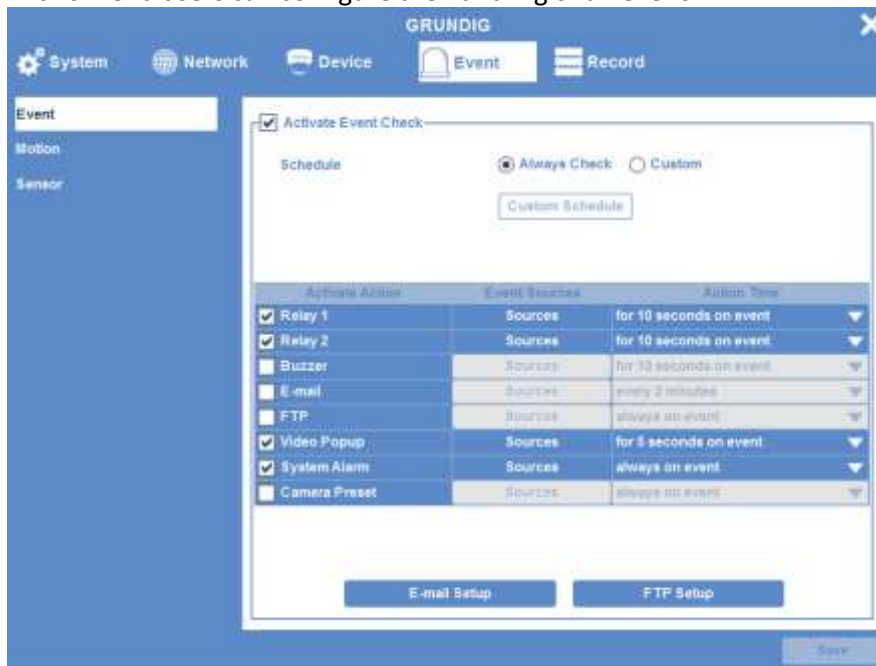
Lines:

This defines the maximum number of lines for one piece of data.

NOTE: If the external text input device cannot be recognised, please contact the seller of the external device.

8.4. Event Setup

In this menu users can configure the handling of an event.



8.4.1. Event Check

Enable or disable the event checking algorithms. You can set up a schedule for the event check if you want to enable the event check only for a certain time frame. In the case of schedule mode, you can set up schedules for different dates and times, as shown in the following screenshot.



Create a schedule:

By default the DVR has set the event schedule for all days at all times. To edit the existing schedule, you have to delete the existing schedule first.

Then you can add new schedules by creating them in the Add Schedule field and press the [Add] button when you are finished. You can add schedules for each day or for weekdays and weekends.

8.4.2. Event Actions

Configure what action the DVR will perform if an event is detected.

Event Action:

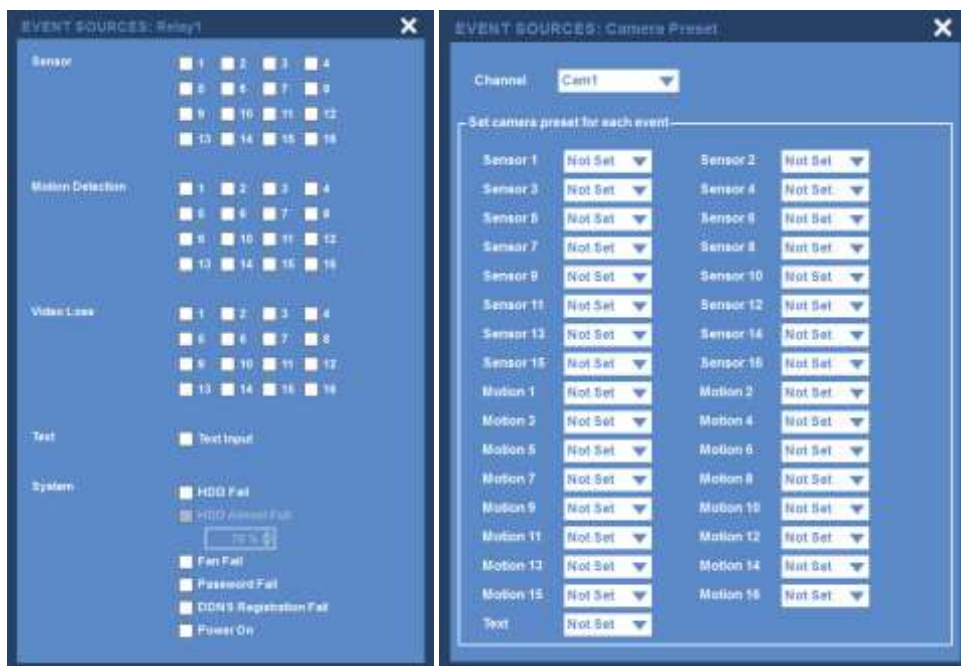
There are different actions you can choose from: Relays, Buzzer, FTP, E-Mail, Video Pop Up, System Alarms and Camera Presets..

Action Duration:

Select how long an Action Duration will be kept up. Relay and Buzzer can be configured from 5 seconds to 60 seconds. In the FTP, E-mail and Twitter notification you can configure the repeating interval.

Event Sources:

There are multiple different event sources available that could trigger an event. The amount of these sources differ for each model, but they all have following types.



Sensor:

These will trigger an action when the physical contacts have been activated.

Motion Detection:

If the motion detection is set up, it can trigger event actions.

Video Loss:

If the connection to a camera signal is lost, it can trigger an action.

Text:

If you have set up the text device connection, the receiving of a text can trigger an event.

System:

Here system related events can be selected to trigger actions.

E-Mail Setup:

Here you can set up the sender & receiver E-mail address.



The screenshot shows a dialog box titled "E-MAIL SETUP" with a close button (X) in the top right corner. The fields are as follows:

- Recipient Address: receiver@gmail.com
- Sender Address: dvr1@dvr.com
- Attach Picture:
- SMTP Server section (indicated by a bracket on the left):
 - Address: SMTP_SERVER
 - ID: email_jd
 - Password: [masked]
 - Port: 25 (dropdown menu)
 - Authentication: Not Use (dropdown menu)
- Send Test-Mail button at the bottom.

Recipient Address:

Input the E-mail address to get an event alarm to this E-Mail address.

Sender Address:

Not mandatory, but necessary if the receiver wants to know which DVR sent the event.

Attach Picture:

Tick this box, if you want to receive a picture of the channel that triggered the event.

SMTP Server:

Address: Enter your SMTP server address, provided by your email address provider.

ID: Enter the username for your email address.

Password: Enter your email password.

SMTP Port: Enter the port your SMTP server is using. This information can also be obtained from your email provider.

Authentication:

Please select here if your SMTP Server needs an authentication. You can also choose if your SMTP Server is using a TLS encryption method.

FTP Setup:

Here you can set up all information needed to upload events to an FTP server.



The screenshot shows a dialog box titled "FTP SETUP" with a close button (X) in the top right corner. The fields are as follows:

- Sever IP/URL: FTP_SERVER
- FTP Directory: /
- User Account section (indicated by a bracket on the left):
 - ID: ftp_user
 - Password: [masked]

Server IP/URL:

Input the URL to connect to the FTP server. Please use either a DNS name or the static IP address.

FTP directory:

If you want to include all the uploads in a dedicated directory please name it here. Make sure the directory exists on the FTP server.

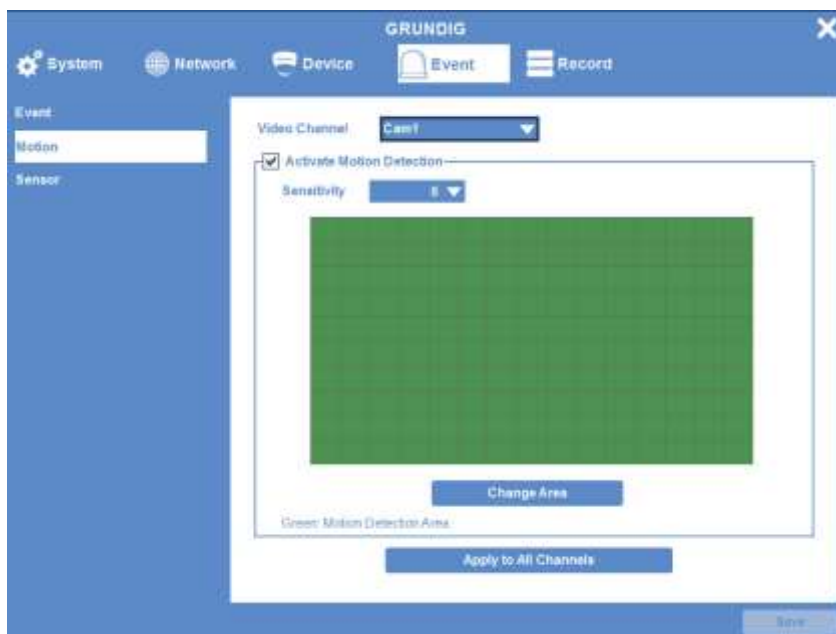
User ID:

Please input the user name which will be used to access the FTP server.

Password:

Please input the password of the above user.

8.4.3. Motion Detection

**Video Channel:**

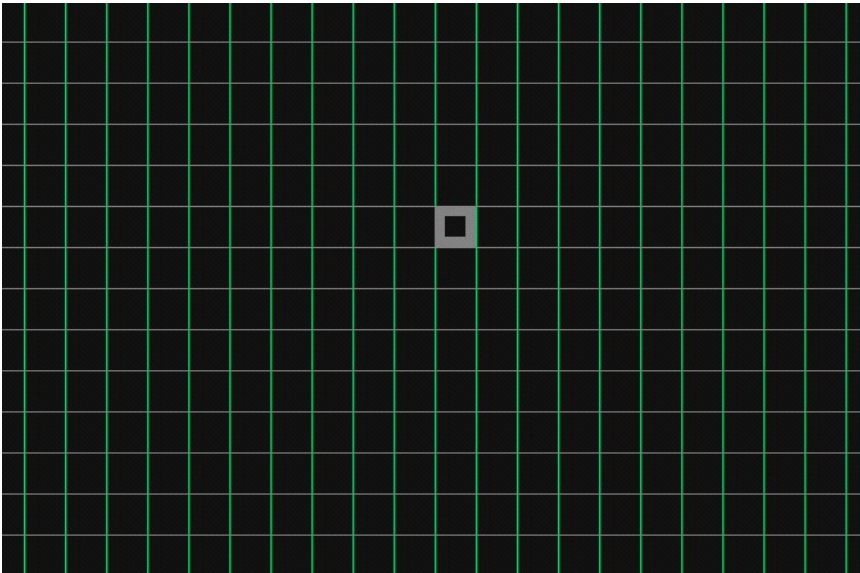
Select if you want to configure all channels or only a dedicated one.

Sensitivity:

The sensitivity of the motion detection can be configured from min. 1 to max. 10, whereas 1 means less sensitive and 10 means very sensitive.

Change Area:

A custom area can only be defined for a single channel. The video is divided into 15x10 grids. After pushing the custom area button, the configuration window for the detection area will appear.



Select an area with the direction keys and press [Enter] or click the mouse to select or deselect an area which is used for motion detection. The first selected field will define the start and the second one will draw a rectangle within these 2 fields. Combine several rectangles to optimise the Motion detection area. Press the [ESC] button or click the right mouse button to apply your settings and go back to the previous menu.

8.4.4. Sensor

This menu is to set up the existing sensor input and the type of the sensor. GRH-K4116B has 16 inputs, GRH-K2108B has 8 inputs and GRH-K1104B has 4 inputs. The sensors can be set either to Normal Open (N.O.) or to Normal Close (N.C.).



8.5. Recording Setup

There are 3 modes for recording – Continuous Recording, Manual Recording & Schedule Recording.

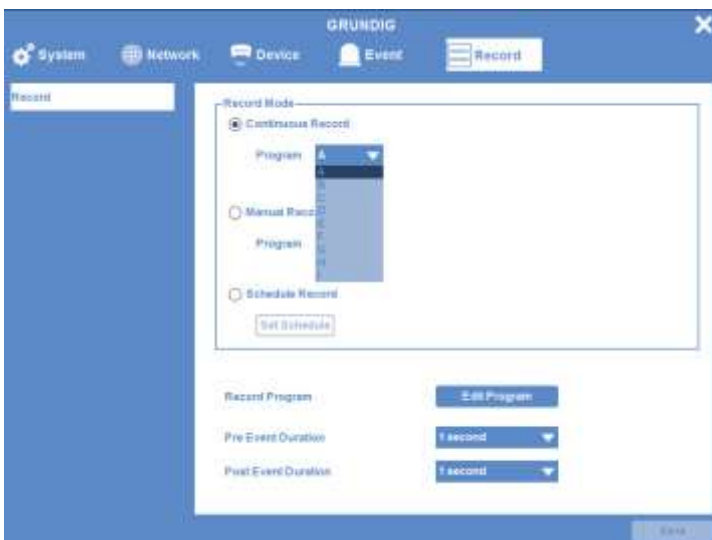


Schedule Recording records according to a configured schedule, you can use different programs for different times.. Manual Recording records only after pushing the [REC] button or an event is noticed, continuous recording will record all the time and can switch the recording mode when events are detected.

8.5.1. Continuous / Manual / Schedule Recording Setup

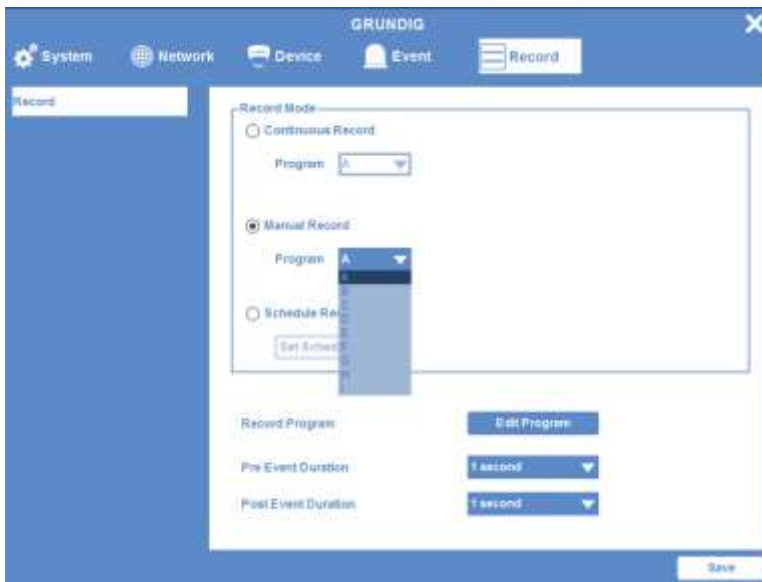
Continuous Record:

If the DVR is set to Continuous Record the DVR will record all the time. If an event occurs the recording setting will be changed from continuous to event settings.



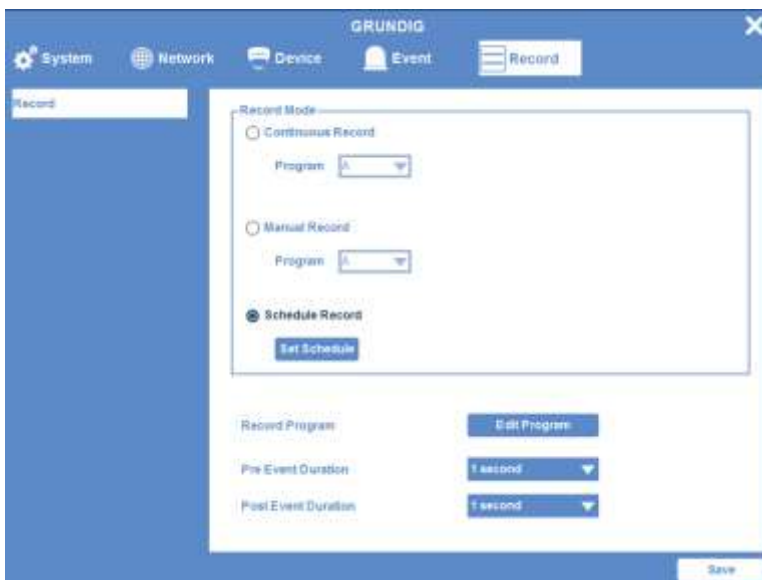
Manual Record:

If set to Manual Record, the DVR will record when pressing the [REC] button. It will stop recording when you press [REC] again. If an event is detected the DVR will start recording automatically. You can also set which program is used for manual recordings.



Schedule Record:

The DVR can record automatically, depending on the programmed schedule. Set the recording mode to Schedule Record and configure the days and time in the schedule submenu.



Select the days and the time zones which you want to record. You can also select different programs for different times.

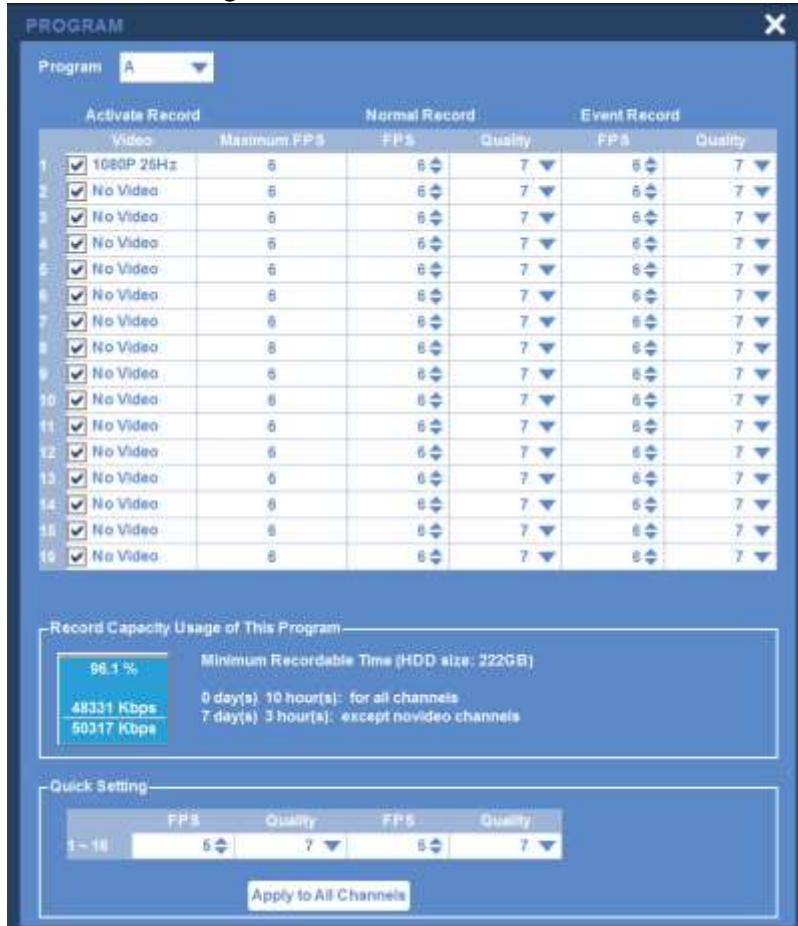


- Program: Set the recording program (A~Z)
- Time: Set the applicable time
- Day : Set the day you want to record

- Program: Set the program you want to use for this day and time
- Delete selected: will delete the currently selected index
- Delete All: Will delete all indexes that are in the schedule list.

8.5.2. Program Setup

Here you can setup the recording resolution, frame rate and quality for every channel for normal recording and for event recording.



Program:

There are 9 programs from A to I composing the recording quality and resolution per channel. For a detailed explanation please refer to the program configuration below.

Video:

Displays the channel number.

Maximum FPS:

Displays the maximum possible frames per second you can use for this channel.

F (FPS):

FPS means frame per second. The user can select a frame rate from 1 to maximum fps. The max. frame rate can differ according to the configuration.

Q (Quality):

There are 7 recording qualities: Q7/ Q6/ Q5 / Q4 / Q3 / Q2 / Q1. The recommended quality for event recording is Q5. Q1 has a low quality which needs less storage space and Q7 is a higher quality which needs more storage space.

NOTE: If you disable a channel or lower its resolution or its frame rate the unused bandwidth can be used for other channels to increase their frame rate or resolution.

The relation between general recording and event recording:

When an event is triggered, the DVR records with the event recording settings. The recording performance of the DVR differs for every model.

Quick Settings:

Here you can apply the selected FPS and Quality to all channels at once.

9. GRUNDIG Web Viewer

The GRUNDIG WebViewer is a Web application program to access the DVR over an Ethernet or Internet connection. You can monitor the live view or access the recorded data with this program.

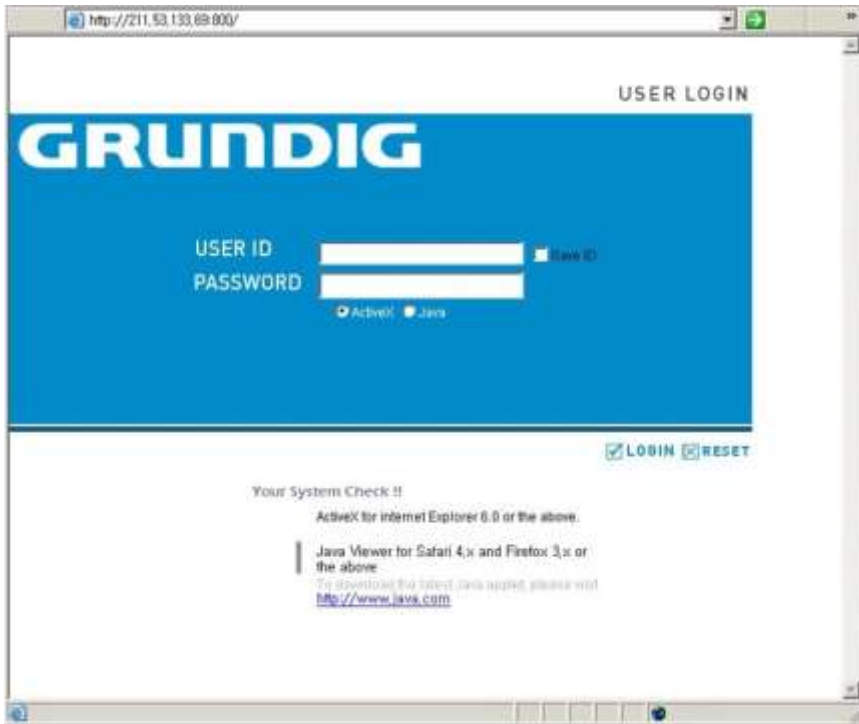
The GRUNDIG WebViewer is divided into the Login page, the Monitor page, where you can monitor the live video, and the Playback page to access recorded videos.

9.1. System Requirements

	Minimum	Recommendation
CPU	Intel Pentium 4 / 3.0GHz	Core2duo E6750 or higher
Main Memory	1GB	2GB or higher
Video Memory	128MB	512MB or higher
Display	1280 x 1024 (with 32bit colour) or higher	
HDD	1GB or higher	
OS	Windows XP Professional (over SP2) / Window Vista Business (over SP1)	
Others	DirectX 9.0 or higher	

9.2. Login

After inputting the IP address of the DVR, the GRUNDIG WebViewer Login page will be displayed in the browser window.

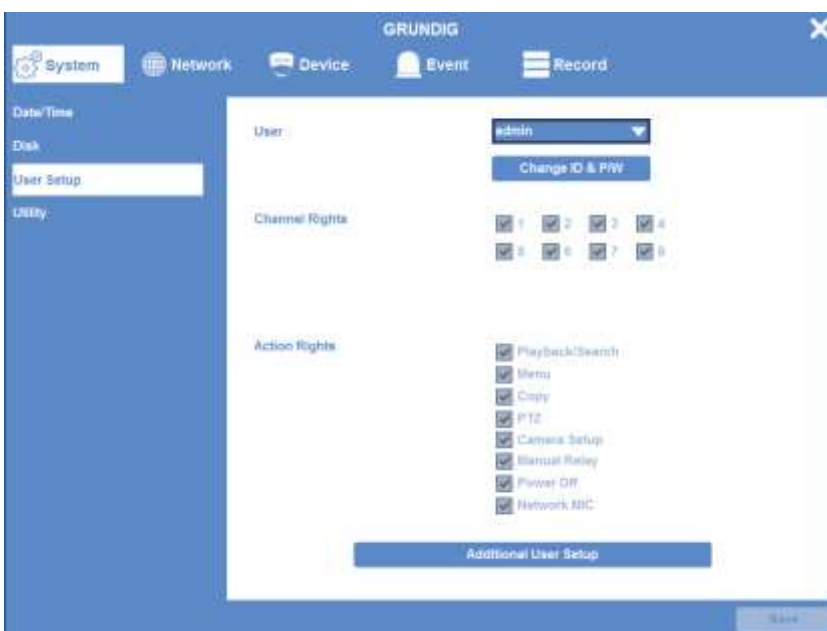


Input the User ID and Password and click 'LOGIN' to access.

If the user/administrator did not change the password in the Control Center, the ID and the Password will be: ID: admin / user1 / user2 / ... / user10
 Password: 1234 / 1111 / 2222 / .../ 0000

9.3. User Setup

To access the GRUNDIG WebViewer, user authority and password can be changed in the DVR or in the Control Center configuration (see the following images).



The basic admin password is "1234" and the user password is "1111" for User 1, "2222" for User 2 etc. The

password for User 10 is "0000". A valid password can have up to 8 digits.

This authority configuration is almost the same in the DVR as in the Control Center. But the authorisation of quick recording and the covering of dedicated channels for a user are only possible in the Control Center.

9.4. Available Browser

The GRUNDIG WebViewer is optimised for the Windows Internet Explorer 6.0 or higher. But GRUNDIG also supplies a Java based access to the DVR that can be used with other browsers like Mozilla Firefox, Apple Safari, Google Chrome or the Opera browser.

WebViewer Installer:

The Login page provides a manual installation program for the WebViewer.

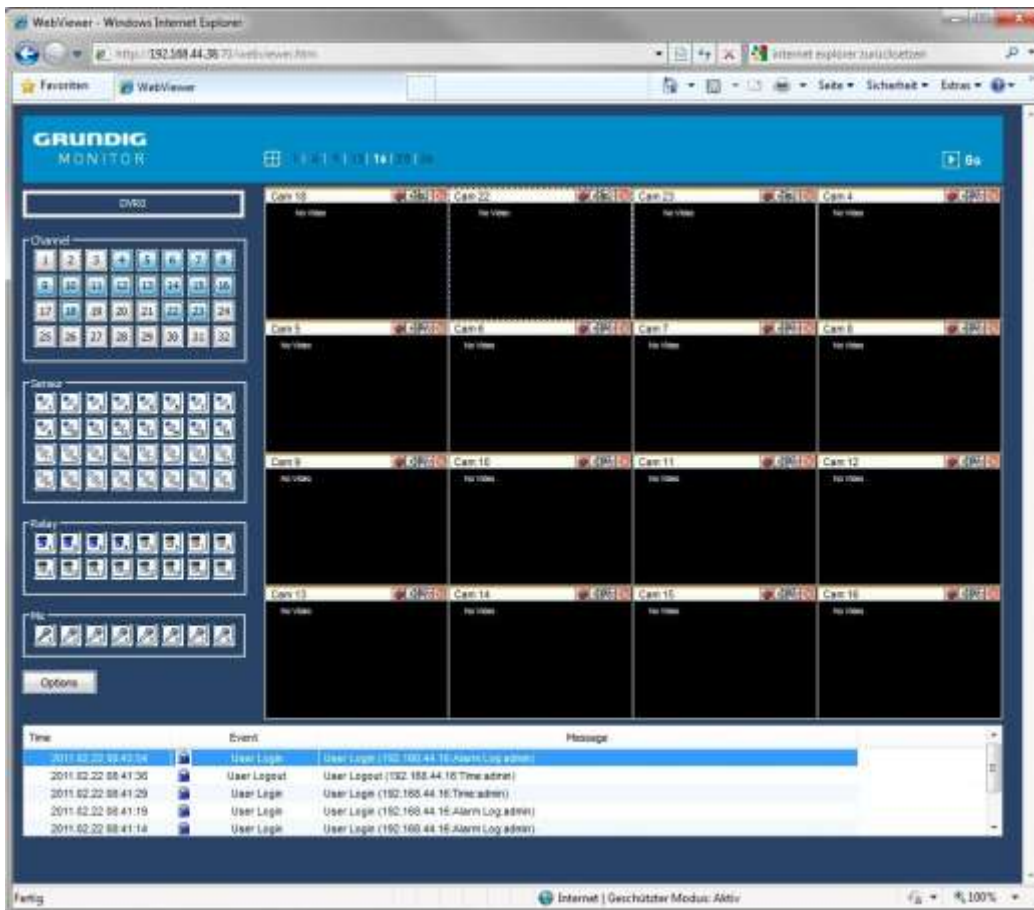
A PC that accesses the WebViewer for the first time will install an ActiveX certificate to use the WebViewer's functions. If this installation fails, the installation program can be downloaded from the Login Page and installed manually.

Caution:

When installing the WebViewer Installer, all programs related to the Control Center have to be closed. Otherwise the installation might fail.

9.5. Monitor

When successfully authorised with User ID & Password input at the Login page, you will be directed to the Monitor page. On the Monitor page you can view live videos of cameras connected to DVR, or you can control a PTZ camera, Relays, and use the Microphone function according to user's authorisation.

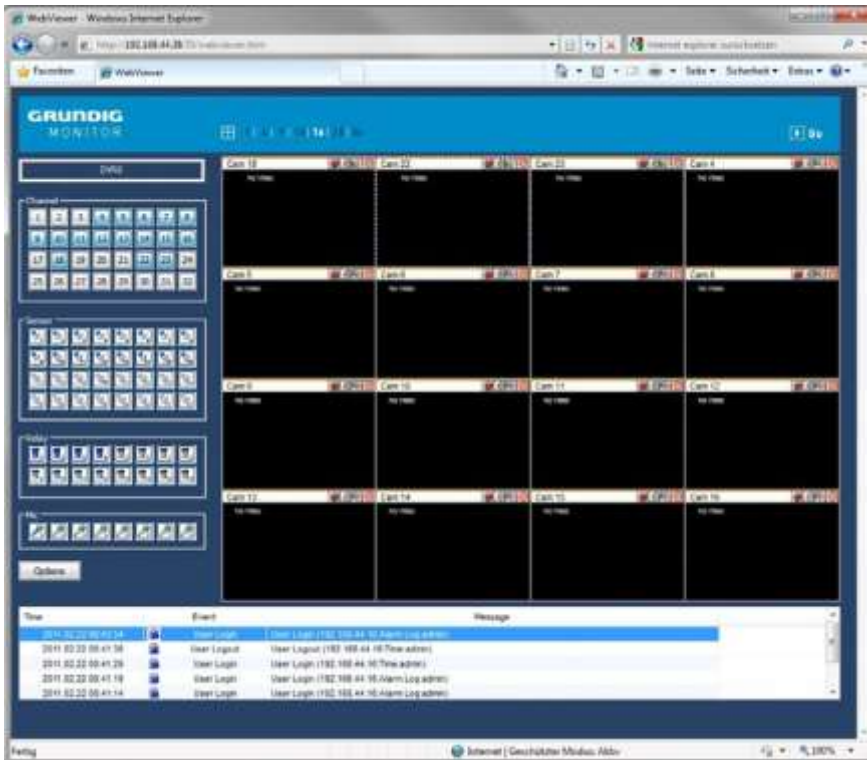


9.5.1. Screen division and changing video position

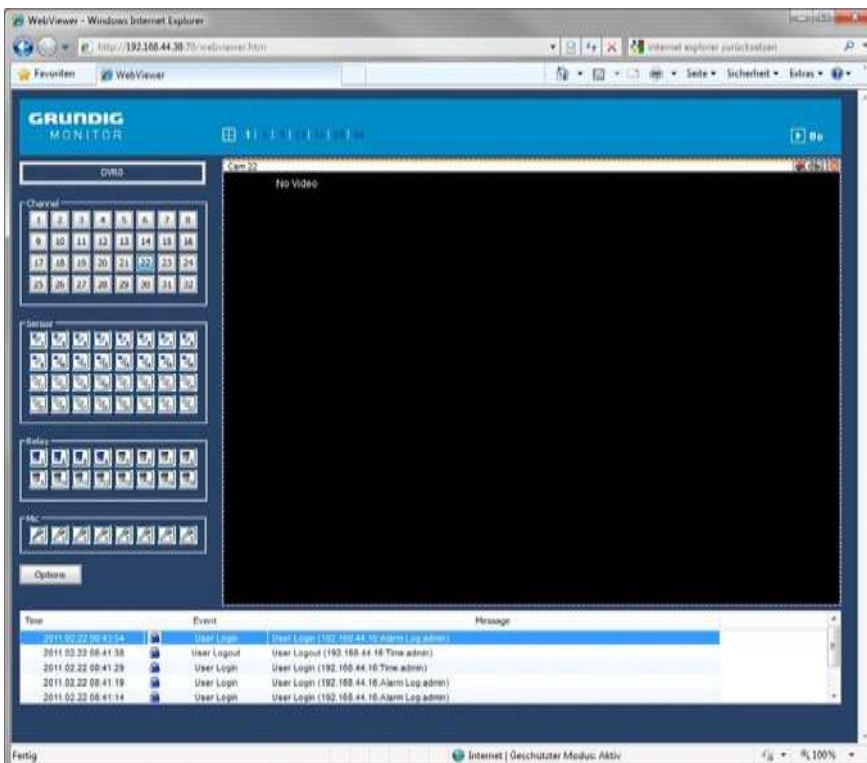
When accessing the Monitor page for the first time, 9 divisions, 16 divisions or 32 divisions (according to the number of channels of the DVR) are displayed.



You can change to 1, 4, 9, 13, 16, 25 or 36 divisions by clicking on the number on top of the page. Also, you can change to 1-channel mode by clicking on any of the channel images.



Double-click on one of the channels to switch to 1-channel mode.



After entering 1-channel mode, a double-click on the screen will return to the previous division of channels. On the division screen, you can change the screen location.

If you want to move channel 3 to the position of channel 6, drag the 3ch image and drop it on the 6ch location. Channel 6 will automatically move to the former position of channel 3.

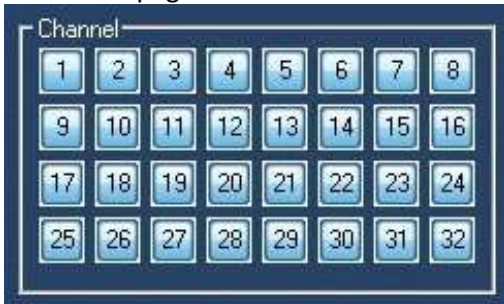
9.5.2. Playback on Standard monitor (16 / 9 / 4 division)



Move to the playback function by clicking on the image above.

9.5.3. Channel On/Off

You can select which channels are played by clicking the On/Off button of the Channel located on the left hand side of the page.



9.5.4. Sensor Indication

The icons indicate whether a sensor event occurred in the system.



When a sensor is activated, the relevant sensor icon will change to red colour.

9.5.5. Relay operation

You can turn on or off the relays of the DVR within the WebViewer. Click the number button to activate the relay and the icon will change from blue to orange.

If you define a time for the relay in the Control Center, the Control Center will be turned off automatically after this configuration.



Activating relays is only possible when the user possesses the authorisation. Refer to the chapter "User Authority" in this manual for the setup of user authority for relays.

9.5.6. Using a microphone

You can enable or disable the use of a microphone within the GRUNDIG WebViewer. The default setting is Off. If a microphone is activated, the colour of the corresponding icon will change from blue to red.



9.5.7. Event Data

The event log is displayed at the bottom of the monitoring page and shows all the event information stored on the DVR.

2009.03.31 10:42:13		7 On	CH7 - Motion Detected
2009.03.31 10:42:13		6 On	CH6 - Motion Detected
2009.03.31 10:42:13		5 On	CH5 - Motion Detected
2009.03.31 10:42:13		1 On	CH1 - Motion Detected
2009.03.31 10:42:13		16 On	CH16 - Motion Detected

9.5.8. Relay operation

The indicated data is listed as follows: [Table / Event Icon]

Button	Function
	Motion Detection On
	Sensor Input [Off, On]
	Relay Output [Off, On]
	No Video, Video Detected

9.5.9. Video Recording & Safe Saving

Video Recording:

During monitoring, the GRUNDIG WebViewer can record up to 10 minutes of video by clicking the Quick Recording button (the red dot in the top panel). During Quick Recording, the recording time is shown on the video.



During video recording, click the Quick Recording button to stop recording and a dialogue box will be opened to store the recorded files.

Saved recording files are saved in “*.re4” file format. The .re4 file can be played back by the GRUNDIG Control Center Playback software or the GRUNDIG Mini Player software.

Screenshots:

You can make a screenshot of the video by clicking on the right mouse button in the selected channel and by choosing the

“Save As” option. The picture can be stored in .jpg, .bmo or .eye file format.

9.5.10. Using PTZ

Among the icons on the top of a video in monitoring mode, click ‘PTZ’ to activate the control Pan, Tilt, Zoom, and Focus. If a PTZ camera is connected and already set to PTZ, this button is activated by default.



Pan/Tilt Control:

To control the PTZ with the mouse, click the right button and select “PTZ” or click the arrow button at the top. A Cross line on the middle of screen will be shown indicating that PTZ control is activated. Click within the image to operate the pan/tilt function.

Zoom/Focus Control:

Move the mouse to the left and right edge to see the slide bar for Zoom and Focus.

Move to Preset:

In case you have a set preset for a PTZ in the DVR, you can access it by right-clicking the mouse and selecting “Go to Preset”. When selecting a preset position from the preset list, the camera will move to the selected preset position.

Activating Auxiliary:

In case of a preset set, the “Auxiliary” function is indicated additionally, and can be operated after you selected the designated menu.

NOTE:

For a supported PTZ camera list please refer to 6.9. PTZ Control.

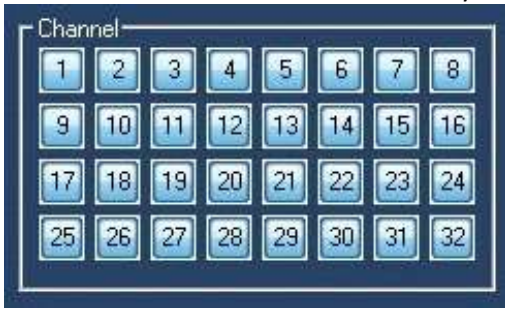
9.5.11. Using Audio

In case of Channel setup synchronisation with Audio, press the right mouse button on the channel to activate the pop-up menu “Listen” or activate the audio listen button. In the default setting the audio is muted. To activate the audio transmission, select it in the pop-up menu or click the corresponding button.



9.5.12. Closing Video Channel

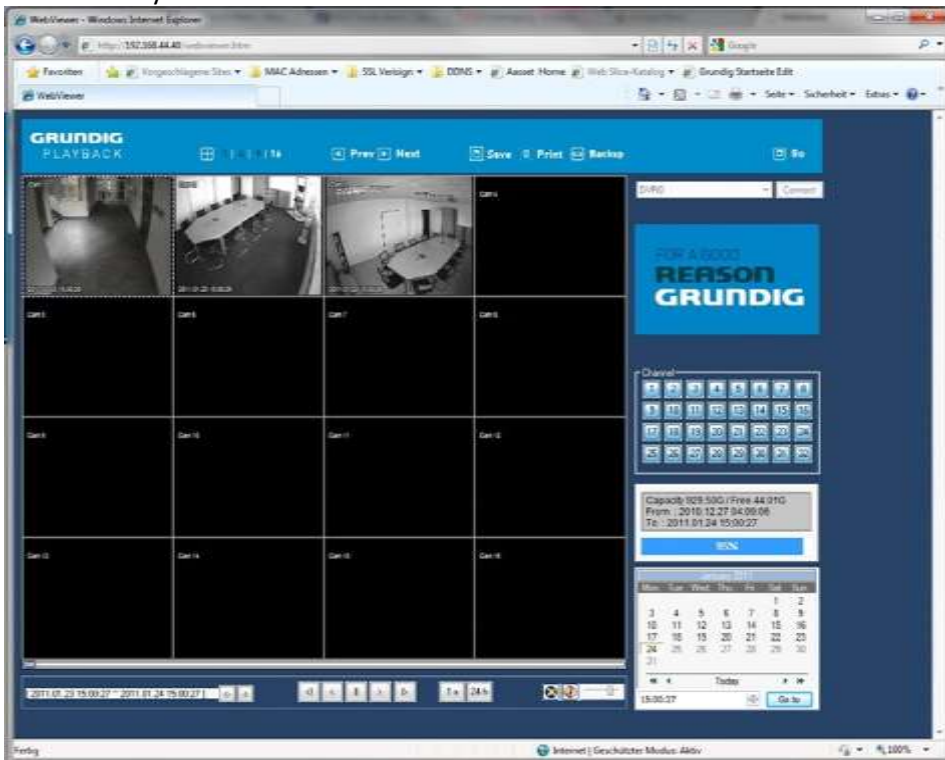
You can disable and enable channels by clicking on the corresponding button at the top of the screen.



9.6. Playback

If you have the user rights to play back video, you can access the Playback screen when pressing the “Go” button on the Monitor screen of the GRUNDIG WebViewer.

In the Playback screen you can monitor up to 16 video streams simultaneously and search through a calendar to see recorded video from that date. You can make backups of the videos and save images in .bmp format or print them directly.



9.6.1. Video Division & Changing Channel



The Playback supports 1, 4, 9 and 16 divisional screens. You can select the number of divisions using the menu on the top of the page as shown in the picture above.



If the screen shows 4 divisions CH1~CH4, you can change to CH5~CH8 using the ‘Next’ button. Press the ‘Prev’ button to call for the previous channel group CH1~CH4.

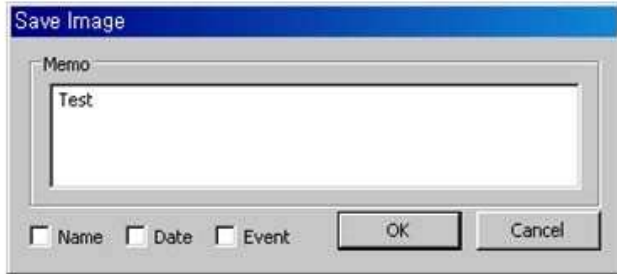
9.6.2. Image recording

You can save a playback image as '.bmp' picture file.
Select the channel with the mouse and click the 'Save' button.



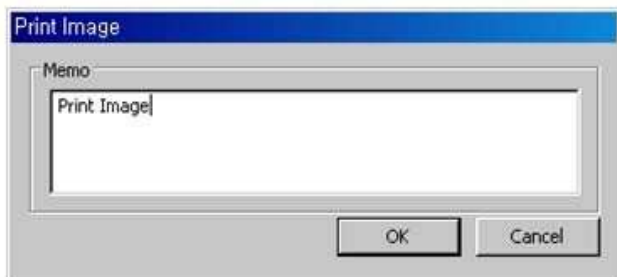
A Save Image dialogue box appears and you can input a memo text or select if the channel name, date and event data should be written into the file.

Press 'OK' to open the dialogue box for the saving location, then you can save it as a '.bmp' file.



9.6.3. Printing

Select the channel you want to print, and click the 'Print' button.

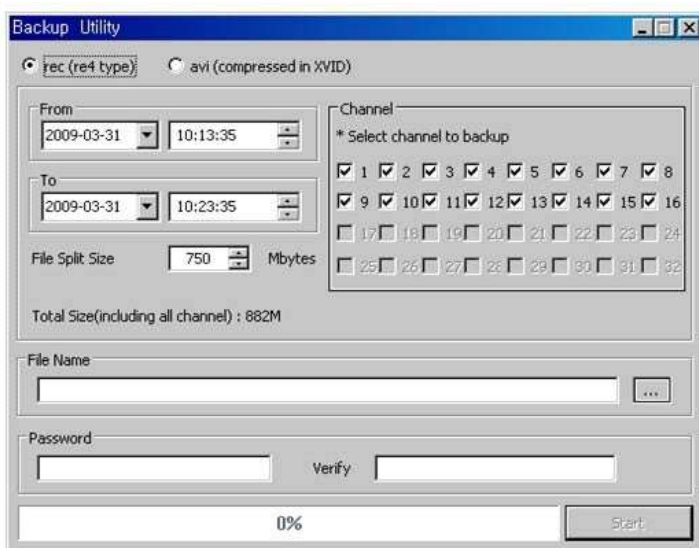


A window pops up to input a memo text. Click the 'OK' button to print the image on the connected printer. The Printout will include the 'Printing Date', 'Channel name', 'Recording Date', 'Event' and the 'Memo' text.

9.6.4. Backup

You can choose between .re4 (multi-channel) or .avi (single-channel) backup. Select the time, date and channel you want to back up and choose a location to save the file to.

If you want to secure the video file you can input a password which has to be verified.



9.6.5.

Web Monitor

Click on the 'Go' button at the top of the page to return to the Web Monitor page.

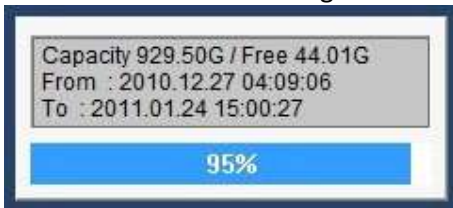


9.6.6. Channel On/Off

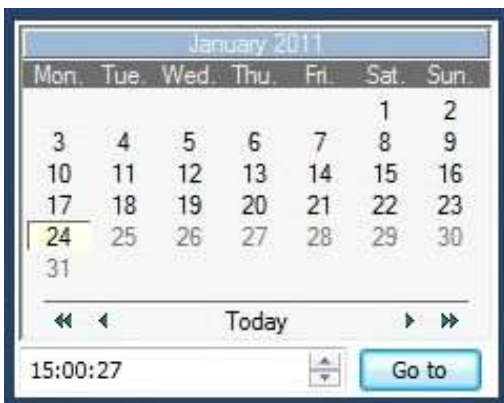
This function is similar to the Channel On/Off function of the Web Monitor.

9.6.7. Saving Time & Checking Rec. Capacity

This field indicates the total capacity of the HDD and also displays the Starting date & Last date of the recorded video on the DVR. The image shows the percentage (%) of the DVR's HDD capacity.



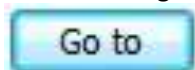
9.6.8. Searching in the Calendar



When a video was recorded on a special date, that day will be coloured in black. When a day is coloured in grey, this means that there was no video recorded on this date. Select the year, month, day and time to play back the video of that date.



When clicking on the 'Go to' button, you get access to the 24 hours of that date.



9.6.9. Functions at the bottom of monitor



(1) Indicates the playback range of the recorded image.

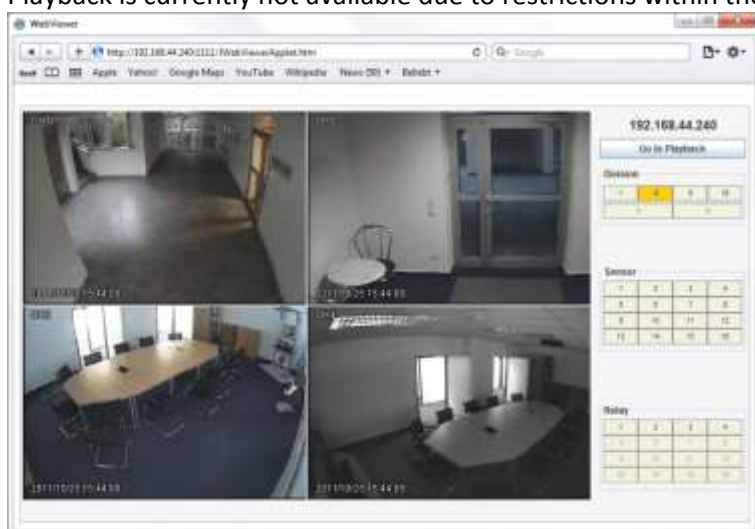
- (2) Press the -> <- buttons to jump to the time area of an earlier or later time.
- (3) From left to right: 'One frame back', 'Play backward', 'Stop', 'Play', 'One frame forward'.
- (4) Here you can set the playback speed. After clicking the button, it can set the playback speed to '0.5x, 1x, 2x, 4x, 16x, 32x, 64x, and All'.
- (5) Here you can set the time area. After clicking the button, select the time area out of '10min, 30min, 1hour, 3hour, 6hour, 12hour, 24hour'.
- (6) Here you can select if you want to use DirectX or not. If checking/activating DirectX mode, the WebViewer will use the graphic card of the PC to display the video. This will reduce the CPU workload.
- (7) Here you can set if audio should be played or not, and you can change the volume.

9.7. Java based Web Viewer

The GRUNDIG DVRs also support a connection based on Java. This technology can be used to get access to the DVR using another browser than the Microsoft Internet Explorer. The user just needs to select "Java" in the WebViewer start page.

While the opticaldesign looks slightly different than ActiveX, the basic functions are almost identical. You can have Multi-Views in Live mode, controlPTZ cameras and activate the relays over a network connection.

Playback is currently not available due to restrictions within the JAVA environment.



10. GRUNDIG Live Mobile Viewer

The GRUNDIG Mobile viewer is a viewer service for monitoring video with many different mobile devices. To access the mobile viewer, the user needs a mobile device supporting Wi-Fi or 3G.

10.1. Log-In Page

The picture below shows the Mobile viewer log-in page.

To access the log-in page via mobile viewer, please type in the address in the following format:

`http://IP/mvmenu.html`.

E.g.: `http://192.168.44.40/mvmenu.html`

or: `http://g0187D3A.grundig-ddns/mvmenu.html`

To log-in, please enter the ID and the password, select the resolution, the channel number and the refresh rate. Press the [Start View] button or [0] on a mobile phone without a touch screen to start the monitoring.

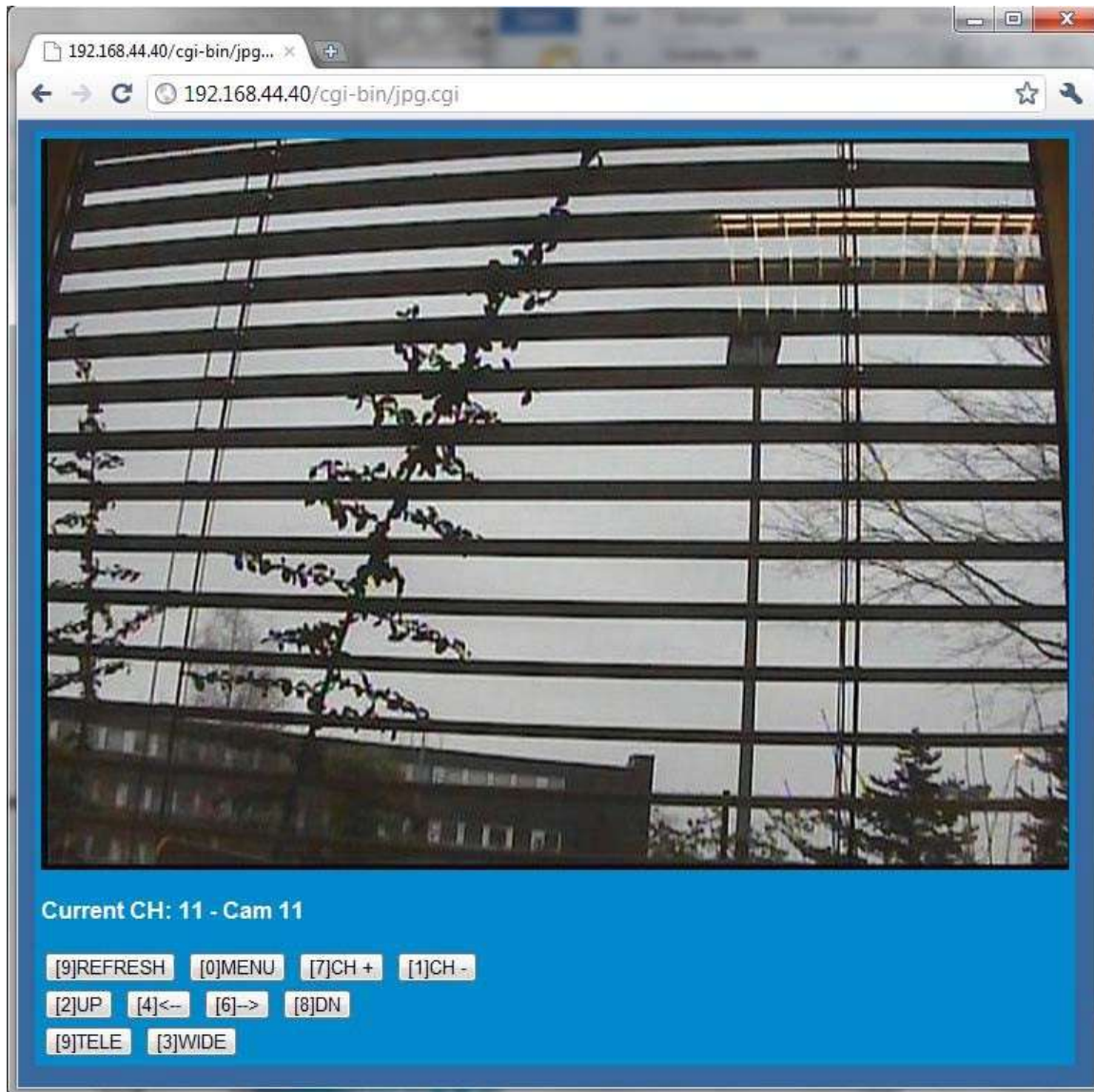


The image shows a web browser window displaying the 'GRUNDIG Live Mobile Viewer' configuration page. The browser's address bar shows the URL '192.168.44.40/mvmenu.htm'. The page has a blue background with white text and form fields. The title 'GRUNDIG Live Mobile Viewer' is prominently displayed at the top. Below the title, there are four input fields for configuration: '[1]User ID' with the value 'admin', '[2]Password' (empty), '[3]Channel' with the value '1', and '[4]Interval' with the value '5'. Underneath these fields is a section titled 'Select Resolution' with three radio button options: '[5] 180x120' (selected), '[6] 360x240', and '[7] 720x480'. There is also a checkbox for 'Old Browser Support' which is currently unchecked. At the bottom of the form is a button labeled '[0]Start View'.

10.2. Monitoring Page

The monitoring page shows the selected channel video and some functions you can use, right below the video display. The functions can be activated by pressing the buttons (touchscreen devices) or pressing the corresponding number on your phone keypad.

For the functions, please refer to the description below.



(0) MENU : Move back to Login page

(1) CH- : Move to previous channel

(2) UP : If the channel is PTZ you can move the camera up

(3) WIDE : If the channel is PTZ you can zoom out

(4) <- : If the channel is PTZ you can move the camera to the left (6) -> : If the channel is PTZ you can move the camera to the right (7) CH+ : Move to next channel

(8) DN : If the channel is PTZ you can move the camera down

(9) TELE : If the channel is PTZ you can zoom in



EC Declaration of Conformity

GRH-K1104B	4 Channel H.264 HD-SDI Recorder with DVD Drive
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Applied harmonised standards and technical specifications:

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EN 55022 (2010)
EN 55024 (2010)
EN 50130-4 (2011)
EN61000-3-2 (2006/A2:2009)
EN 61000-3-3 (2008)

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GRUNDIG

Remscheid, 18.12.2012

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CEO

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```
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```

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```
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```

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