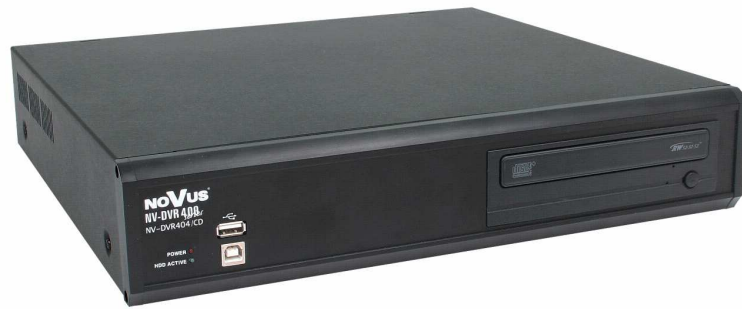


user's manual



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NV-DVR404/CD N-Viewer 400 N-BackupPlayer

noVus[®]

INFORMATION

EMC (89/336/EEC) and LVD (73/23/EEC) Directives

CE Marking

 Our products are manufactured to comply with requirements of the following directives and national regulations implementing the directives: :

- Electromagnetic compatibility EMC 89/336/EEC with further amendments
- Low-voltage LVD 73/23/EEC with further amendments. This directive applies to electrical equipment designed for use with a voltage rating of between 50VAC and 1000VAC as well as 75VDC and 1500VDC.

WEEE 2002/96/EC Directive

Information for users who want to get rid of electrical and electronic appliances



This product is marked according to the European Directive on Waste Electrical and Electronic Equipment (2002/96/EC) and further amendments. By ensuring this product is disposed of correctly, you will help to prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product.

The symbol on the product, or the documents accompanying the product, indicates that this appliance may not be treated as household waste. It shall be handed over to the applicable collection point for the waste electrical and electronic equipment for recycling purpose. For more information about recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

2002/95/EC RoHS Directive



Out of concern for human health protection and friendly environment, we assure that our products falling under RoHS Directive regulations, regarding the restriction of the use of hazardous substances in electrical and electronic equipment, have been designed and manufactured in compliance with the above mentioned regulation. Simultaneously, we claim that our products have been tested and do not contain hazardous substances whose exceeding limits could have negative impact on human health or natural environment.

Information

The device, as a part of professional CCTV system used for surveillance and control, is not designed for self installation in households by individuals without technical knowledge.

The manufacturer is not responsible for any defects or damages resulting from improper, or inconsistent with user's manual, installation of the device in the system.

WARNINGS AND PRECAUTIONS

ATTENTION!

THE KNOWLEDGE OF THIS USER'S MANUAL IS AN INDESPENSIBLE CONDITION OF A PROPER DVR OPERATING. YOU ARE KINDLY REQUESTED TO FAMILIARIZE YOURSELF WITH THIS MANUAL BEFORE STARTING THE DEVICE. THE MANUAL SHOULD BE KEPT FOR FUTURE USE.

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WARNING !

IN ORDER TO PROTECT YOURSELF AGAINST THE RISK OF FIRE OR ELECTRIC SHOCK YOU NEED TO AVOID PLACING THE DEVICE IN HUMID AND DUSTY PLACES.

CAUTION!

THE COVER MUSTN'T BE TAKEN OFF. ANY SELF-REPAIRS MUSTN'T BE EXECUTED.

ALL REPAIRS CAN BE EXECUTED ONLY BY QUALIFIED STAFF OF THE AUTHORISED NOVUS SERVICE.

CAUTION!

THE DVR IS SENSITIVE TO STATIC CHARGES, THAT IS WHY IT HAS TO BE USED ACCORDING TO DEVICE OPERATION RULES BASED ON CMOS/MOSFET SYSTEMS.

INFORMATION

All the data included in this manual are up to date at the moment of printing this manual. Novus Security Sp. z o.o. reserves the right to amend this manual. The producer reserves the right to modify multiplexer's parameters and change its design without notice.

WARNINGS AND PRECAUTIONS

1. The installation should be carried out by a qualified service person or a professional safety system installer.
2. DVRs mustn't be placed in places where ventilating holes are partially or fully covered.
3. User's interference inside the device is not allowed and is unnecessary as it does not have any systems which require adjusting or which are suitable for self-repair. You mustn't dismantle the DVR or remove any single fastening screws. If any repairs are necessary contact the service. The device must be taken care of and protected against any mechanical damage.
4. The DVR has to be protected against humidity and dust. In case the DVR had a contact with water react immediately: switch off the power supply and contact the authorised Novus service. If the device gets dirty it might get damaged or electrocute someone.
5. The device can only be cleaned with a damp cloth after the power supply has been switched off. Avoid strong detergents (liquids and sprays). Mild detergents can be used if the DVR becomes very dirty.
6. Power supply unit cords and signal cords should be laid in a way that eliminates the risk of mechanical damage; special attention should be paid to the plug. Be careful not to overload sockets and extension cords so that there is no fire.
7. To avoid DVR's damage vision and control signals should be equipped with systems protecting against disturbances, over voltage and atmospheric discharge that are in compliance with related regulations. It is also advised to use ground loop isolators.
8. The device mustn't be used in conditions which do not fulfil operating requirements as far as power supply, relative humidity or air temperature are concerned.
9. You cannot allow any metal objects get inside the DVR. It might cause serious damage. If a metal object gets inside the device contact the authorised Novus service immediately.

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FOREWORD INFORMATION

1. FOREWORD INFORMATION

1.1 Main characteristics

- Triplex operating mode
- Operating system based on Linux system
- Recording speed of up to 100 fps
- M-JPEG compression algorithm with 5 various levels of image compression settings
- Recording resolution:
 - 360 x 288,
 - 720 x 288
- Possibility of installing one HDDs 3.5" IDE (up to 500GB)
- Schedule recording individually adjustable for each day with selection of mode
- Motion detection function with sensitivity, threshold and active area adjustment individually for each camera (motion detection grid 16x12)
- Immediate access to any recorded data
- PTZ camera control by using PS2 Mouse connected to the DVR or network applet
- Possibility of remote control of NOVUS compact camera with RS485 standard
- Protocols: Novus-C1, Novus-C2, N-Control, Pelco-D
- Alarm recording function
- Files back-up methods available: through network, using CD-RW drive or USB flash memory
- Butli-in CD-RW drive
- Network connection for „live" display, playback and backup
- User friendly multi-language OSD
- Password protected for menu
- Power supply: 12 V DC (power supply adaptor 100~240 VAC/12 VDC included)

FOREWORD INFORMATION

1.2. Technical specification

Model	NV-DVR404/CD
Operation mode	triplex
Operating system	Linux
Video input	4 x BNC
Video output	main monitor output (1 x BNC, 1 x VGA) spot monitor output (1 x BNC)
Alarm input	4
Alarm output	1 relay output
Recording speed	up to 100 fps/s (720 x 288)
Compression algorithm	M-JPEG
Recording resolution	360 x 288, 720 x 288
Recording mode	continuous, caused by alarm, motion detection or caused by alarm and motion detection
Display speed	100 fps/s („live“)
Display screen	1, 4, PIP, sequence, digital zoom, freeze
Motion detection	grid 16 x 12, sensitivity adjustment
Video loss detection	yes
Schedule recording	individually adjustable for each day, specified days setting, possibility of simultaneous using of various recording modes
Recorded data search	by date/time, events, recording data bar
Event log	up to 9990 events
HDD	up to 1 HDD (up to 500 GB)
Backup	using built-in CD-RW recorder, USB flash memory, through the network
CD-RW recorder	built-in
External ports	1 x Ethernet - space RJ-45 2 x USB - for software upgrade and copy 1 x RS-485 - for PTZ camera control
PTZ control	directly from the device, through the network
PTZ protocols	Novus-C1, Novus-C2, N-Control, Pelco-D
Device control	PS2 mouse, network
Menu	OSD – on screen display
Software	N-Viewer 400
Password authorization	one password authorization
Auto System Recovery	Hardware WATCHDOG function
Power supply	12 VDC (power supply adaptor 100~240 VAC/12 VDC included)
Power consumption	Approx. 48 W
Operating temperature	0°C ~ 40°C
Operating relative humidity	0% ~ 80% (without condensation)
Dimensions (mm)	355 (w) x 70 (h) x 340 (l)
Weight	3.5 kg

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STARTING THE DEVICE

2. STARTING THE DEVICE

2.1 Preparing the equipment for operation

Please take extra caution when unpacking the device.

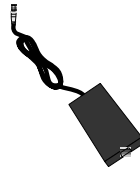
Please make sure that the following items are included in the package:



Digital video recorder NV-DVR404/CD



Power supply cord



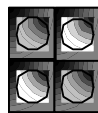
Power supply adaptor



CD containing manual and software



User's manual



Rubber feet



Rubber dampers for HDDs



Optical PS2 mouse

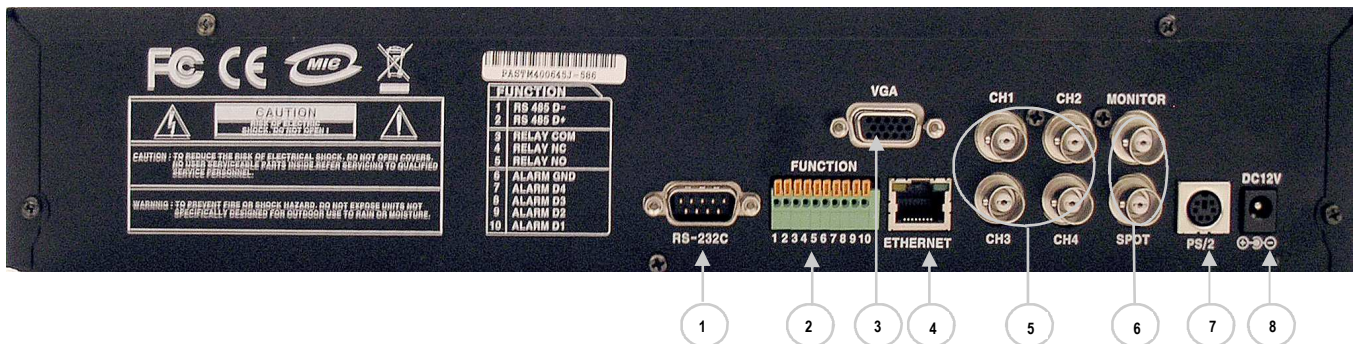
If any of the elements has been damaged during transport, pack all the elements back into the original packaging and contact your supplier.

ATTENTION!

If the device has been taken from a room with lower temperature you have to wait until it warms up to the temperature in the room where it will work. You mustn't switch the device on after it has been taken from a colder room. Condensation of steam, present in the air, might cause short circuit and, consequently, damage the device.

STARTING THE DEVICE

2.2 Electric connectors on the back panel



- | | |
|--------------------------|---|
| 1. RS-232 | D-Sub 9 PIN connector for service purpose; |
| 2. RS-/485, ALARM | RS-485 connector for PTZ camera control, alarm inputs and outputs;; |
| 3. VGA | VGA output for computer monitor; |
| 4. Ethernet | RJ-45 socket for network connection and network status diodes; |
| 5. VIDEO INPUT | video inputs for camera connection; |
| 6. MONITOR | main and spot monitor connectors; |
| 7. PS/2 | PS2 mouse connector; |
| 8. DC12V | power supply socket 12V DC 5.83A; |

STARTING THE DEVICE

2.3 Connecting of peripheral devices

System connecting should be done by qualified staff. Before connecting system elements you need to familiarise yourself with the diagram presented below. Depending on requirements, specific system will consist of a different number peripheral devices. Monitors, cameras and other devices have to be bought separately, depending on your needs. The description concerning connecting external devices can be found in the following chapters of this manual.



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STARTING THE DEVICE

2.4 HDD installation

NV-DVR404/CD digital video recorder allows users to install one HDD.

NOTICE: **Producer advises utilizing HDDs manufactured by Hitachi.
Max. allowed capacity of single HDD is 500GB.**

WARNING: **Producer does not recommend utilizing Samsung or Western Digital.
Novus Security Sp. z o.o. does not take responsibility for problems caused by
using improper HDD.**

Before installing HDD please make sure that jumpers are set properly.
When installing HDD it must be set in MASTER mode. HDD configuration, of specified type and manufacturer, is described in the HDD manual supplied with the HDD.

WARNING: If the disc has been used in some other device (multiplexer or PC) its formatting will start during the first run of the device. Please have it in mind due to possible data loss.

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STARTING THE DEVICE

2.5 Switching On/Off.

Before switching the device on, please make sure that the power supply (voltage and frequency) conforms to device requirements. Also make sure that all peripheral devices are properly connected.

WARNING: It is not advised to connect any peripheral devices (cameras and monitors included) while the DVR is switched on.

You start the device by plugging it into a socket.

The system loading procedure takes about 30 seconds.

During this procedure information about system loading and HDDs checking appears on the screen.

Do not move or click mouse buttons while system loading procedure.

The loading procedure is completed when camera images appear on the main monitor together with their description and the system time.

In order to switch the device off stop recording and unplug the power cord.

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FRONT PANEL DESCRIPTION

3. FRONT PANEL DESCRIPTION

NV-DVR404/CD



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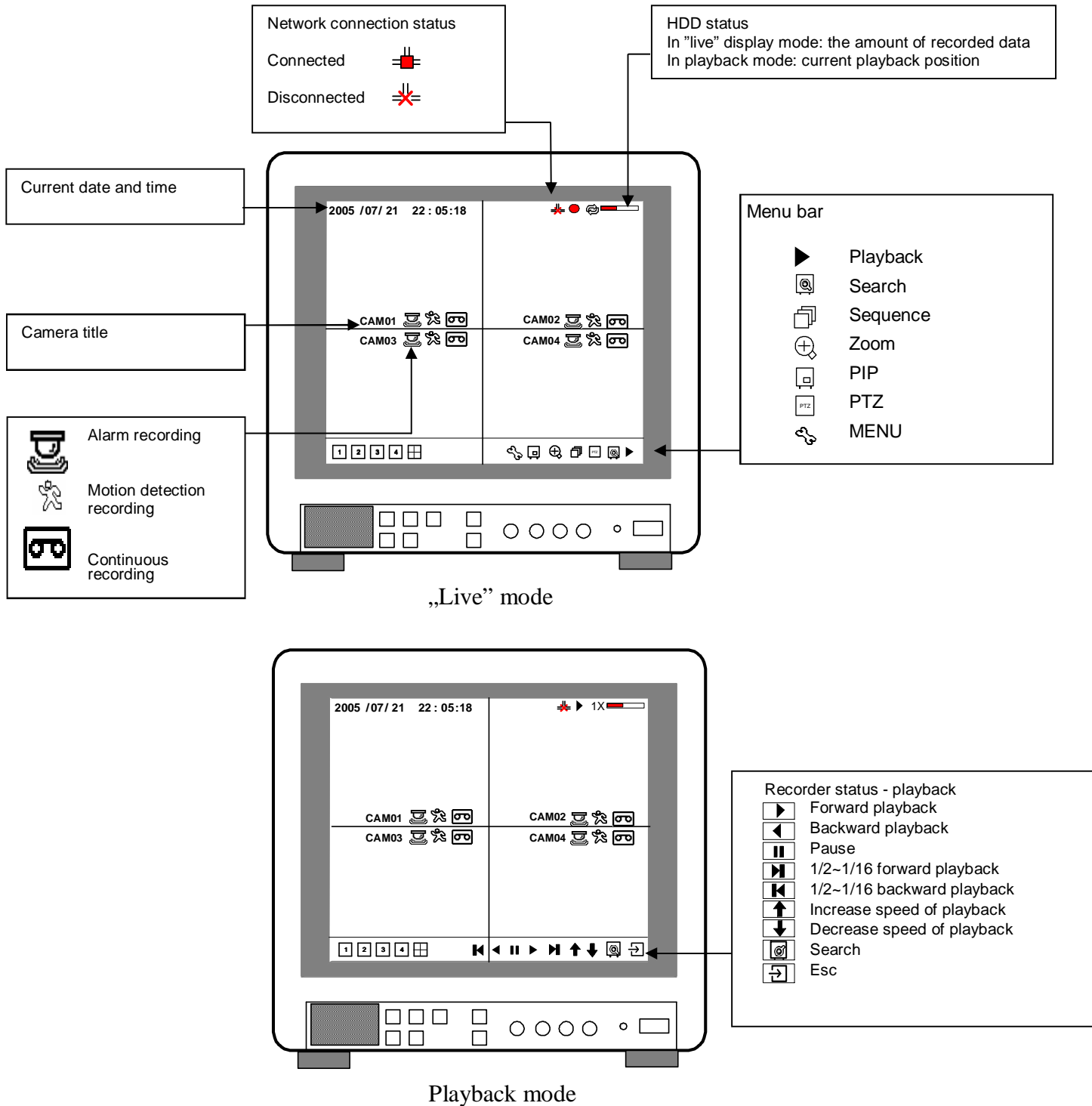
1. Recorder operating status diodes: power supply (POWER) and HDD activity (HDD ACTIVE).
2. USB connection port for software update.
3. USB connection port for data backup.
4. CD-RW drive.

STATUS INFORMATION

4. STATUS INFORMATION

After switching the device on, the following status information appears on the monitor screen.

In case of activating of a particular function the corresponding icon changes its color.



5. DVR OPERATION

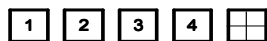
DVR operation is executed by means of PS2 optical mouse. There are no buttons on the front panel.

Scroll wheel	Increasing or decreasing of values in the menu. Increasing or decreasing of playback speed . Zoom in and zoom out in PTZ mode.
Right mouse button	Decreasing of values in the menu.
Left Mouse button	Increasing of values in the menu.

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Menu bar is located in a lower part of the main screen. Move the cursor of the mouse over the lower part of the main screen to display menu bar. The menu bar is automatically hidden during normal operating.

Click one of the below icons in the menu bar to display either particular cameras or quad view.



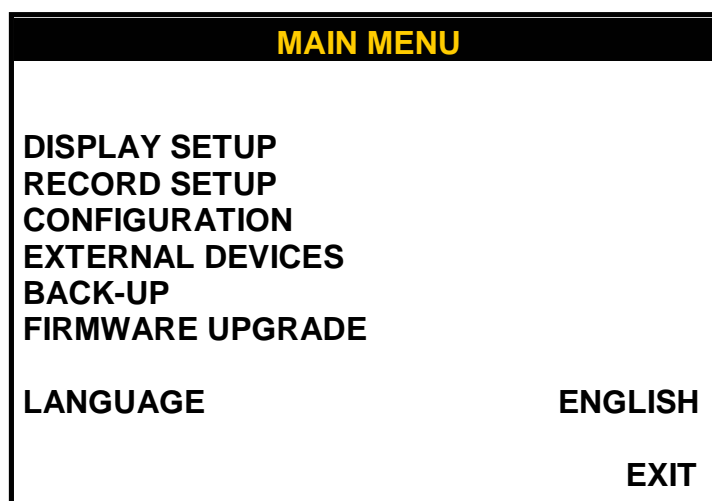
When in split mode (2x2), it is possible to switch to the full screen by clicking two times left mouse button on the chosen camera image. Next two fast left mouse button clicks on the camera image switch the view back to quad mode.

Description of icons in the menu bar is located in the previous chapter of this manual.

Detailed information regarding playback are located in chapter 8.

6.2 Main menu

NV-DVR404/CD digital recorder is equipped with multi level OSD (on screen display) sub-menus. These menus are used for program settings and executing functions such as playback or copy. In order to enter the device menu press the *MENU* button.



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The main menu consists of 7 sub menus. The contents of the submenu are described on the next pages of this manual.

The mouse cursor is used to select menu items.

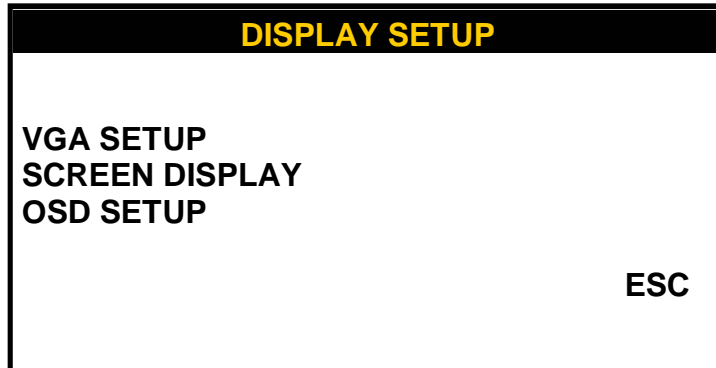
To confirm the selected choices, access sub-menus and editable fields you use left mouse button.

To modify selected values use scroll and left/right buttons.

You exit menu by pressing **EXIT / ESC**. All changes are automatically saved.

DVR MENU

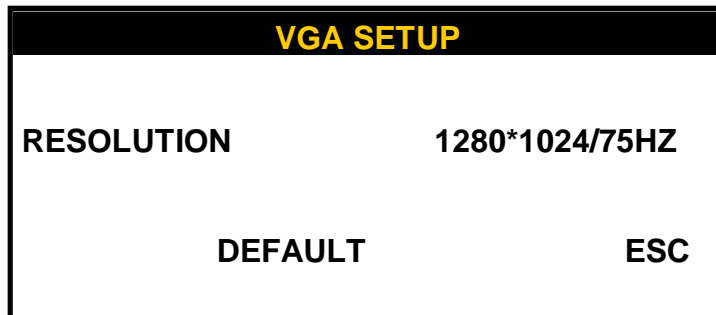
6.3 Display setup



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There are three sub-menus in the **DISPLAY SETUP** menu: **VGA SETUP**, **SCREEN DISPLAY**, **OSD SETUP**.

6.3.1 VGA setup



NV-DVR404/CD is equipped with VGA connector for main monitor connecting. The below settings of output signal format are available:

- 640 x 480 / 60Hz
- 800 x 600 / 60Hz
- 1024 x 768 / 60Hz
- 1280 x 1024 / 60Hz
- 640 x 480 / 75Hz
- 800 x 600 / 75Hz
- 1024 x 768 / 75Hz
- 1280 x 1024 / 75Hz

Not all LCD monitors cooperate correctly with the DVR via VGA output. Before connecting monitor please check operating formats or contact Novus distributor.

WARNING: VGA output is active simultaneously with BNC connector.

6.3.2 Screen display

SCREEN DISPLAY		
VERTICAL POSITION		25
HORIZONTAL POSITION		02
BORDER ENABLE		OFF
BORDER WIDTH		06
BORDER COLOR	LIGHT GRAY	
	DEFAULT	ESC

VERTICAL POSITION and **HORIZONTAL POSITION** are used to set the position of displaying image in the range: 0~63.

BORDER ENABLE is used to switch off / on the border of the cameras displayed in the split.

BORDER WIDTH is used to set the border width of the cameras displayed in the split.

BORDER COLOR is used to set the color of the border.

6.3.3 OSD setup

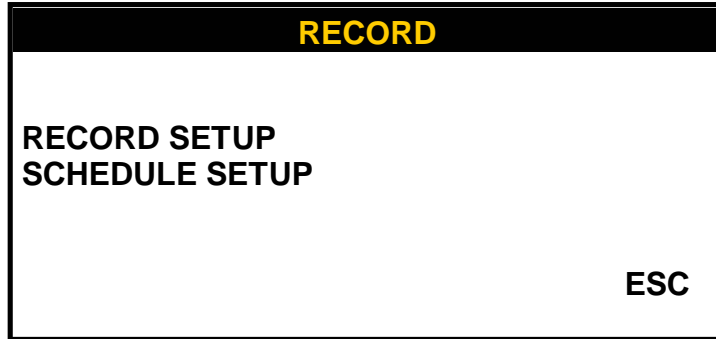
OSD SETUP		
TOP OSD OFFSET		0
BOTTOM OSD OFFSET		0
	DEFAULT	ESC

TOP OSD OFFSET is used to set the position of status information displayed at the top of the screen.

BOTTOM OSD OFFSET is used to set the position of the recorder's menu displayed on the bottom of the screen.

DVR MENU

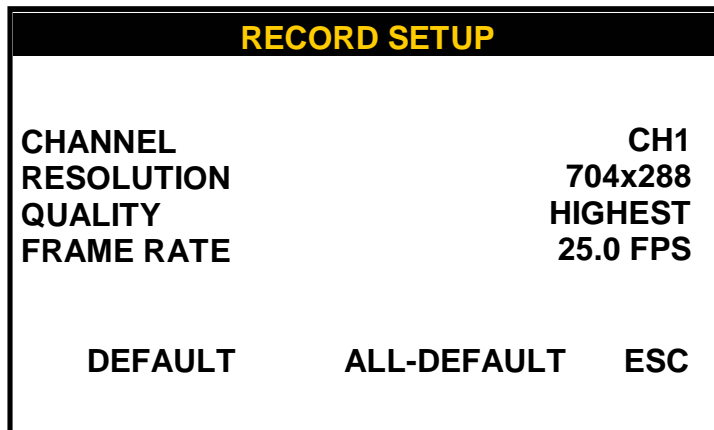
6.4 Record



There are two sub-menus in the **RECORD SETUP** menu: **VRECORD SETUP** and **SCHEDULE SETUP**.

6.4.1 Record setup

The following menu is displayed after selecting **RECORD SETUP**.



CHANNEL is used to set the channel for the below settings.

RESOLUTION is used to set the resolution of the recording images 704 x 280 lub 352 x 288. Digital video recorder NV-DVR404/CD for all resolutions records 100 ips.

QUALITY is used to set the level of compression, it means the quality of reorded images. There are 5 levels of the compression available: **HIGHEST, HIGH, NORMAL, LOW, LOWEST**.

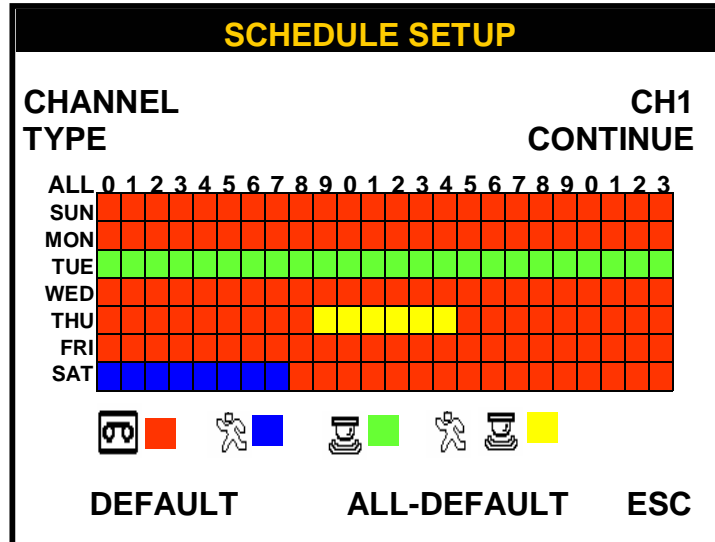
FRAME RATE is used to set the speed of recording for each channel independently.

DEFAULT is used to set the default settings for the camera(352 x 280, highest quality, recording speed 25 ips). **ALL-DEFAULT** is used to set the defaults settings for all channels.

In case of pressing **ESC** all the settings are automatically saved.

6.4.2 Schedule setup

The following menu is displayed after selecting **SCHEDULE SETUP**.



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NV-DVR404/CD is equipped with advanced graphical schedule recording that allows to differentiate recording modes for particular week days and hours independently for each camera.

CHANNEL is used to choose the channel for schedule recording.

TYPE is used to define the type of recording: **CONTINUE, MOTION, ALARM, MOTION&ALARM.**

For chosen channel and type of recording you need to set the appropriate time range on the graphical schedule by means of the mouse. Please repeat the above procedure for each channel.

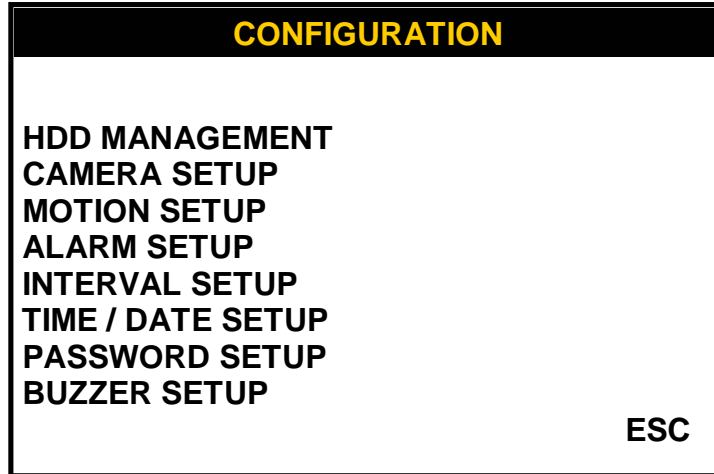
DEFAULT is used to set the default settings for the schedule recording (continues recording).

ALL -DEFAULT is used to set the defaults settings for all channels.

In case of pressing **ESC** all the settings are automatically saved.

DVR MENU

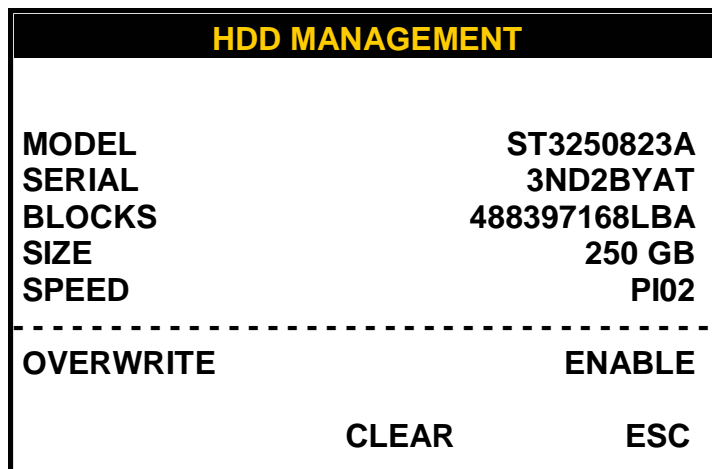
6.5 Configuration



There are eight sub-menus in the **CONFIGURATION SETUP** menu

6.5.1 HDD management

The following menu is displayed after selecting **HDD MANAGEMENT**:



In sections: **MODEL**, **SERIAL**, **BLOCKS**, **SIZE**, **SPEED** name of disk, serial, number of blocks, size and speed (mode of transfer) are displayed .

OVERWRITE allows for recycle recording, it means in case of full disc the oldest images are overwritten. If this option is not enabled, the recorder in case of full disc stops the process of recording.

CLEAR is used to format the HDD. Before starting formatting enter the password of the system administrator.

6.5.2 Camera setup

The following menu is displayed after selecting: **CAMERA SETUP**.

CAMERA SETUP		
CHANNEL		CH1
TITLE	CAM01	_____
BRIGHTNESS		0
CONTRAST		0
SATURATION		0
HUE		0
DEFAULT	ALL-DEFAULT	ESC

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CHANNEL is used to choose the appropriate camera input for the below settings.

TITLE is used to define 8-character camera name. All the letters and digits 0 ~ 9 are available.

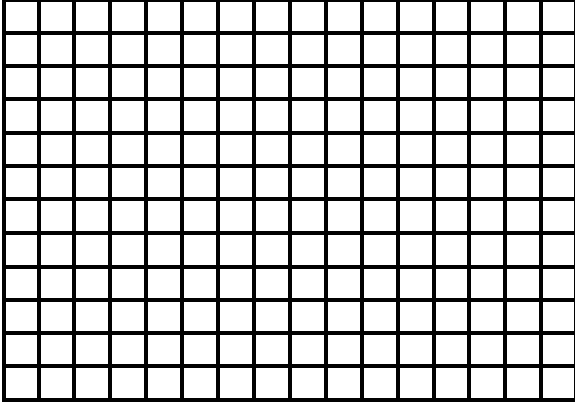
In the next sections define **BRIGHTNESS**, **CONTRAST**, **SATURATION** and **HUE of the** image displayed from the camera. The available range of values: -32 ~ 31. Default value is: 0.

DVR MENU

6.5.3 Motion setup

The following menu is displayed after selecting: **MOTION SETUP**.

MOTION SETUP

CHANNEL	CH1	
SENSITIVITY	4	
DURATION	10	
DETECT		
CELL NUMBER	01	

DEFAULT
ALL-DEFAULT
ESC

NV-DVR404/CD is equipped with the independent settings of motion detection for each channel. Motion detection functions are done by means of 16 x 12 grid. After selecting number of channel the grid is displayed in the background of camera image. By means of mouse cursor activate and deactivate the chosen cells (gray colour). In default settings all the cells are active. Active cells change the colour during motion detection.

SENSITIVITY is used to define the sensitivity of the grid in the 1~5 range, where 1 means the lowest sensitivity and 5 means the highest sensitivity.

DURATION is used to define event recording time from its detection within the 1 ~ 99s range. The default value is 5s.

DETECTION CELL NUMBER is used to define the threshold, it means the minimum cell quantity which have to be active to detect motion.

6.5.4 Alarm setup

The following menu is displayed after selecting **ALARM SETUP**.

ALARM SETUP		
CHANNEL		CH1
INPUT	NORMAL	OPEN
DURATION		07 SEC
DEFAULT	ALL-DEFAULT	ESC

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CHANNEL is used to choose the appropriate alarm input for the below settings. Each alarm input is connected with the appropriate camera input.

INPUT is used to define the type of input: **NORMAL OPEN**, **NORMAL CLOSE** or **DISABLE**. The default type of input is: **NORMAL OPEN**.

DURATION is used to define event recording time from its detection within the 1 ~ 99s range. The default value is 5s.

6.5.5 Interval setup

The following menu is displayed after selecting **INTERVAL SETUP**.

INTERVAL SETUP	
SEQUENCE SCREEN	02 SEC
PIP SCREEN	99 SEC
EVENT UPDATE	010 SEC
DEFAULT	ESC

SEQUENCE SCREEN is used to set the time of switching for full screen cameras on the main monitor within the 1~99s range.

DVR MENU

PIP SCREEN is used to set the time of switching cameras in PIP screen mode within the 1~99s range.

EVENT UPDATE is used to define minimum time of updating events in log list. If event update value is set to 20s. it means that after this period of time and after motion has been detected new event is added to the list.

WARNING: It is recommended to set the same values of the time for **EVENT UPDATE** and **DURATION**.

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6.5.6 Time / date setup

TIME / DATE SETUP	
DATE	02 / 04 / 2007
TIME	08:53:15
DATE FORMAT	EUROPEAN
HOUR FORMAT	24HOUR
MONTH FORMAT	NUMERIC
	DEFAULT ESC

DATE / TIME is used to set the current date and time of DVR system.

DATE FORMAT is used to set format of displayed date: European, Asian, American.

HOUR FORMAT is used to set format of displayed hour: 24-hour or 12-hour.

MONTH FORMAT is used to set format of displayed month: numeric or English.

6.5.7 Password setup

The following menu is displayed after selecting **PASSWORD SETUP**.

PASSWORD SETUP

USER ID	ADMIN
USER PW	-----
NEW PW	-----
CONFIRM	-----

0	1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---	---

ENTER

ESC

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USER ID section is not editable, only one user available.

USER PASSWORD is used to enter the current password.

NEW PASSWORD is used to enter new password.

CONFIRM is used to confirm new password.

DVR MENU

6.5.8 Buzzer setup

The following menu is displayed after selecting **BUZZER SETUP**.

BUZZER SETUP		
KEY TONE		OFF
VIDEO LOSS		OFF
ALARM ACTIVE		OFF
	DEFAULT	ESC

BUZZER menu is used to define events which cause internal buzzer start .

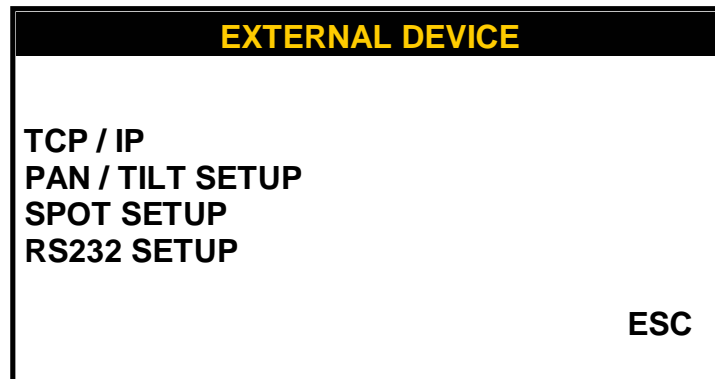
KEY TONE activates internal buzzer in case of clicking (operating) the system.

VIDEO LOSS activates internal buzzer in case of video loss on any channel.

ALARM ACTIVE activates internal buzzer in case of alarm input switching on.

6.6 External device

The following menu is displayed after clicking **EXTERNAL DEVICE**.



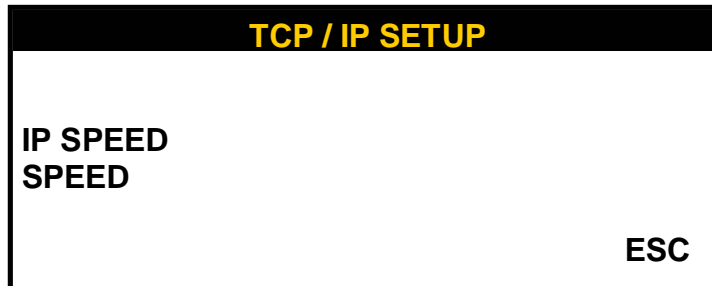
eng

EXTERNAL DEVICE consists of four sub-menus: **TCP / IP**, **PAN / TILT SETUP**, **SPOT SETUP**, **RS232 SETUP**.

DVR MENU

6.6.1 TCP/IP setup

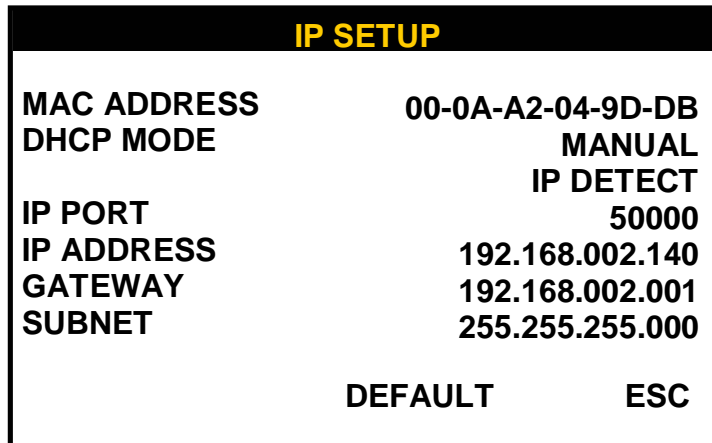
The following menu is displayed after selecting **TCP/IP**.



eng

6.6.1.1 IP setup

The following menu is displayed after selecting **IP SETUP**.



The **NETWORK SETUP** menu contains parameters related to network operation of the device. Please contact your network administrator before starting configuring these settings in order to set correct and legal network parameters.

MAC ADDRESS: hardware Ethernet address of the built-in network card.

DHCP SETUP: selected addressing mode: **MANUAL** - parameters are set permanently and manually, **AUTOMATIC** - parameters are assigned automatically by the DHCP server. In this case only the port number setup is editable.

IP ADDRESS: unique IP address in the network.

IP PORT: network port for image transmission.

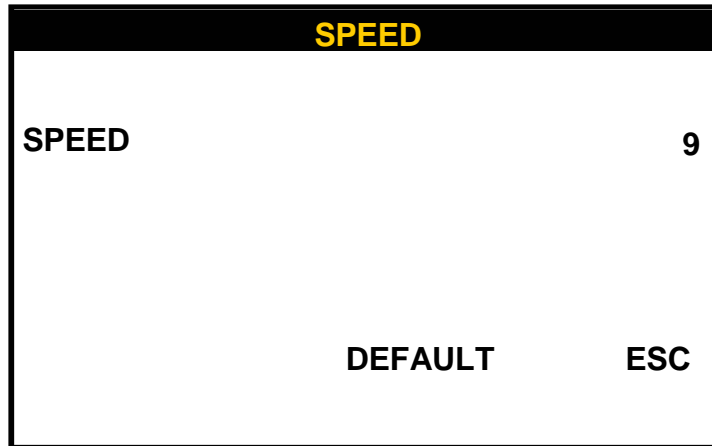
GATEWAY: internet gate for external network connection.

SUBNET MASK: network mask.

In case of automatic mode network settings are assigned after clicking the **IP DETECT** option.

6.6.1.2 Speed

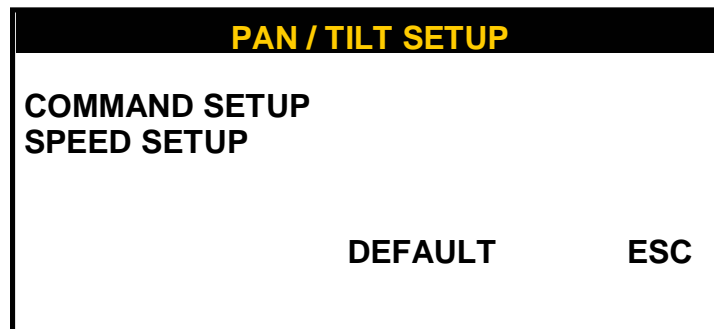
The following menu is displayed after selecting **SPEED**.



In the **SPEED** section define the maximum bandwidth for network transmission, it means the frame rate for images within the 1~9 range. Higher value of speed means higher frame rate and bigger bandwidth utilising.

6.6.2 PTZ setup

The following menu is displayed after selecting **PTZ SETUP**.



eng

DVR MENU

6.6.2.1 Command setup

The following menu is displayed after selecting **COMMAND SETUP**.

COMMAND SETUP		
CHANNEL		CH1
MODEL		NOVUS-C1
PTZ ID		002
BAUDRATE		009600 BMS
CMD RELAY		1 MSEC
COMMAND		PAN LEFT
LENGTH		07
CODE	A5 02 10 0D 18 55 31	
DEFAULT	ALL-DEFAULT	ESC

In order to ensure compatibility of the DVR with PTZ cameras, all settings in this menu should be adequate with the settings of cameras. If there is no PTZ camera in the system, it is not necessary to make any changes. The model of PTZ camera (protocol), camera ID, transmission speed and delay between each camera are defined in this sub-menu.

The **CHANNEL** section defines the channel number to which the PTZ camera is connected.

Telemetry protocol of camera control is set in the **MODEL** section. The following protocols are available: **Novus-C1, Novus-C2, N-Control, Pelco-D**.

ID number of the camera connected to the selected camera output is defined in the **PTZ ID** section.

Delay between sent commands is set in the **CMD DELAY** section.

All available commands for the protocol, together with their code, are displayed in **COMMAND & LENGTH & CODE** lines.

DVR MENU

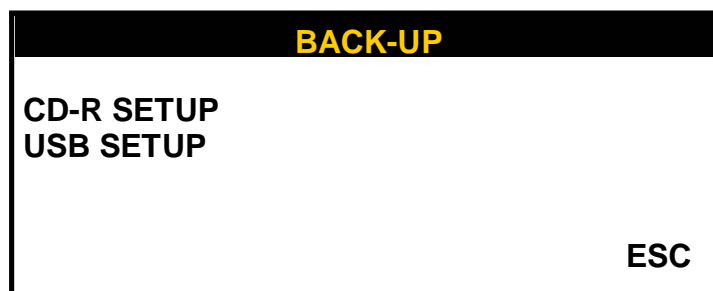
6.6.4 RS-232C setup

Service port.

6.7 Back-Up

NV-DVR404/CD DVR allows for recorded images backup onto the CD-R disc or USB flash memory. The following menu is displayed after selecting **BACK-UP**. The coping settings for both data carriers are exactly the same and below there is a description for CD-R coping.

eng



NV-DVR404/CD DVR is equipped with a CD recorder. Thanks to the CD recorder there is a possibility to backup recorded data on CD-R and CD-RW discs. In order to avoid any problems with compatibility and durability of backup we recommend using products of well-known manufacturers.

NOTICE: the DVD backup is unavailable.

Size of the backup file depends on the length of recorded images, recording speed and quality of images that are backed up. All recorded channels are backed up at one time.

NOTICE: When entering backup menu network connection is being suspended.

NOTICE: When entering **BACK-UP** menu network and starting backup procedure recording process is suspended.

In order to backup data onto a CD, please put the disc into the CD-RW recorder and enter the **CD-R SETUP** sub-menu.

CD-R SETUP		
HDD	27/ 03/ 2007	16:34:11
START	27/ 03/ 2007	16:34:11
END		
CD-R		
START	27/ 03/ 2007	16:34:11
END	27/ 03/ 2007	16:34:11
SIZE	500 MB→700MB	
	BURN	ESC

eng

Period of the recorded data to be copied is displayed in the **HDD** section.

In order to setup starting date and time please define the beginning of the recorded data and its maximum size in MB. This is done in the **START** and **SIZE** settings. Due to this procedure, system automatically defines end date and time.

NOTICE: Disk is closed automatically after burning procedure. That means no more sessions can be added on the disk.

In case of using CD-RW discs, there is no possibility of deleting existing content before backup. In order to use such a disc please erase the data on another device (e.g. PC).

Please start backup after setting all parameters. Select the **BURN** option and press **ENTER** to start backup.

During the backup process the system displays a progress bar. CD tray is pulled out when the process is completed. Please do not press any buttons until the backup process is finished. In case of backup problems (e.g. when the disc is closed) appropriate information is displayed.

DVR MENU

6.8 Firmware upgrade

The following menu is displayed after selecting **FIRMWARE UPGRADE**.

FIRMWARE UPGRADE		
CURRENT VER		1.26_NV
UPGRADE VER		
CHECK USB		
CD-CHECK	UPGRADE	ESC

Because the manufacturer continuously develops the product there is firmware upgrade availability. In the successive firmware version new features will be added and founded bugs will be improved.

In order to check the latest firmware version availability please contact your supplier.

NOTICE: When entering **FIRMWARE UPGRADE** menu recording process is suspended.

6.9 Languages



DVR menu is available in 12 languages: **POLISH, FRENCH, RUSSIAN, GERMAN, UKRAINIAN, PORTUGUESE, CZECH, DUTCH, GREEK, ENGLISH, SPANISH, ITALIAN.**




MAIN MENU	
DISPLAY SETUP	
RECORD SETUP	
CONFIGURATION	
EXTERNAL DEVICES	
BACK-UP	
FIRMWARE UPGRADE	
LANGUAGE	ENGLISH
	EXIT

7. RECORDING

NV-DVR404/CD recorder allows for schedule recording.

Current recording status can be monitored by observing information displayed on-screen and LED diodes on the recorder front panel.

-  red icon informs that schedule recording is in process. Additionally, green LED **HDD ACTIVE** diode is lit.
-  icon informs that schedule recording is in process. Additionally, red LED **HDD ACTIVE** diode is not lit.


Additionally, for each camera input recording mode icons are displayed: continuous  alarm  motion detection. . In case of recording in one of these modes the icons are displayed in red.

NOTICE: The DVR does not record in the following conditions:

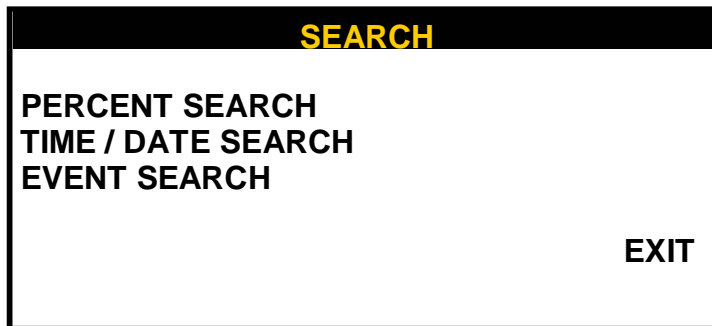
- When you are in **HDD MANAGEMENT** menu;
- When you back-up recorded images on a CD disc or USB flash memory;
- No connected cameras;
- Disc is full and overwrite function is off;
- When you update firmware.

PLAYBACK

8. PLAYBACK

NV-DVR404/CD DVR allows for finding desired recordings in three ways. Firstly it is possible to search the data by means of a search bar. Secondly it is possible to search by specified time and date. Third search option is event list searching. In order to enter **SEARCH** mode please press the  icon.

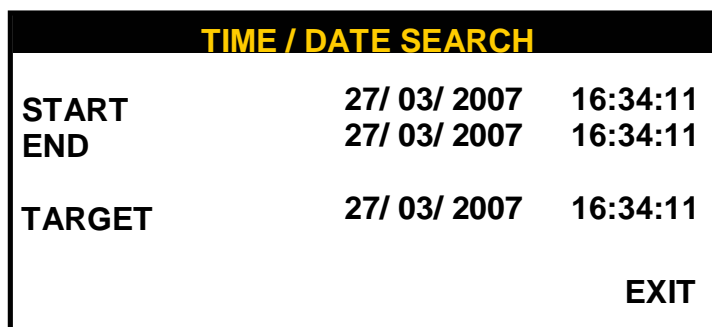
eng



NOTICE: Simultaneous local and network playback is impossible.

8.1 Search bar

After selecting **SEARCH BAR** option, event list search bar is displayed on the screen and exact date and time of playback are selectable. Additionally on the top of the screen there is information about the recording range.












PLAYBACK

When the **PLAY** button is pressed, playback is initiated.

Recording is automatically started in 2x2 screen division.

During this time there is possibility of changing the display mode.

During the playback the following buttons are active:

-   - playback;
-   - frame forward and backward;
-  - pause, stop playback;
-  - increase forward and backward playback speed, the next click change the speed as following: x1/16, x1/8, x1/4, x1/2, x1 x2, x4, x8, x16, x32 of normal speed;
-  - increase forward and backward playback speed, the next click change the speed as following: x32, x16, x8,x4, x2, x1, x1/2, x1/4, x1/16 of normal speed;
-  - go back to search menu;
-  - playback stop and playback menu exit;

eng

PLAYBACK

8.2 Event list search

The following menu is displayed after selecting **EVENT SEARCH**.


EVENT SEARCH			
DATE / TIME		CHANNEL	EVENT
30/03/2007	15:49:43	3	MOTION
30/03/2007	15:49:43	3	MOTION
30/03/2007	15:49:43	3	MOTION
30/03/2007	15:49:43	3	MOTION
30/03/2007	15:49:43	3	MOTION
30/03/2007	15:49:43	3	MOTION
PAGE		086/099	ESC

Further pages are selected by using a mouse's scroll. In order to move to the selected event please use scroll and click left mouse button on chosen event.

During playback all buttons described in the previous chapter are active.

8.3 Percent search

After selecting **PERCENT SEARCH** option, event list search bar is displayed on the screen..

PERCENT SEARCH		
START	27/ 03/ 2007	16:34:11
END	27/ 03/ 2007	16:34:11
TARGET	27/ 03/ 2007	16:34:11
PERCENT		
PLAY		ESC

Exact date and time of playback are selectable by using scroll and thus moving the percentage search bar.

CONNECTING PERIPHERAL DEVICES TO ALARM INPUTS AND OUTPUTS

9. CONNECTING PERIPHERAL DEVICES TO ALARM INPUTS AND OUTPUTS

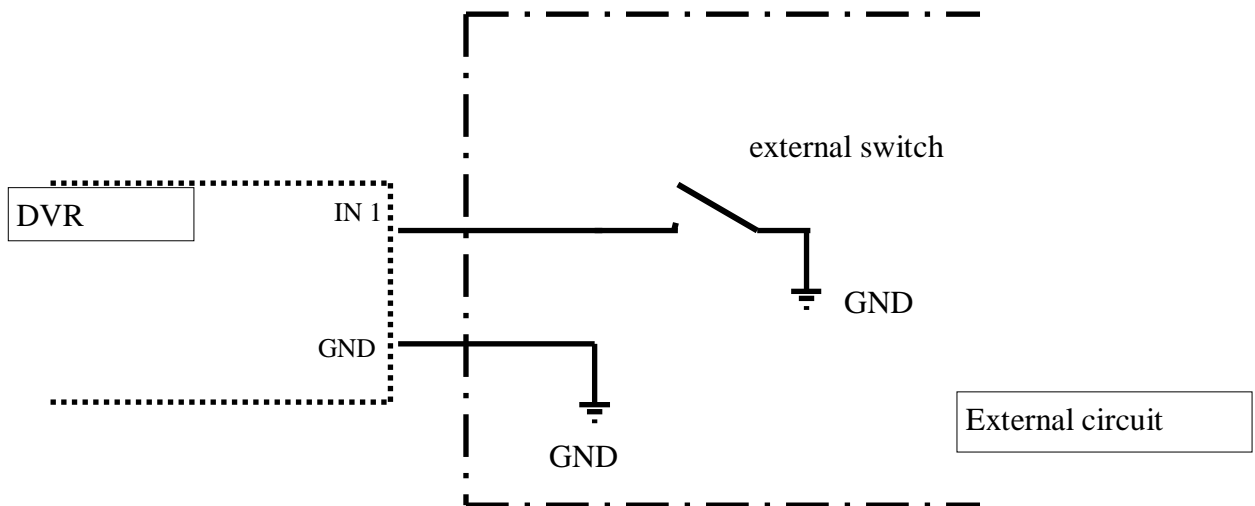
NV-DVR404/CD DVR is equipped with 4 alarm inputs, that allow for connection of external devices.

When external alarm function is active alarms are not registered in the Event List, if alarm recording is disabled or if related camera is not connected or there is signal loss.

In order to record alarm recordings, please set alarm recording for selected cameras and period of time in schedule recording mode.

NV-DVR404/CD DVR has a built-in clamp junction terminal. Inputs operate in the TTL/CMOS standards. Therefore, they accept 5 volts voltage and grounding. Alarm input is activated when low or high logical state appears according to the **ALARM** menu settings.

eng



Notice: both alarm inputs and outputs are not protected against voltage surges. Alarm inputs and outputs should be protected (by means of external devices) against voltage surges, which may damage them.

NV-DVR404/CD are equipped with alarm outputs that allow for controlling external devices. Both outputs modes: NO and NC are available. Alarm output current load cannot exceed 1A / 24V DC or 0,5A / 125V AC.

PTZ CAMERAS - CONNECTION AND CONTROL

10. PTZ CAMERAS - CONNECTION AND CONTROL (PTZ)

NV-DVR404/CD recorder allows for controlling 4 cameras (speed dome, standard digital and optical zoom cameras) equipped with RS-485. Control lines are connected in the “daisy chain” mode. Camera control is possible by using mouse or by utilizing network software. In order to control cameras, each camera must have unique address within the system.

Control is done by Novus-C, Novus-C1, Novus-C2 or Pelco-D protocols.

Notice: All cameras in the system should be set to identical protocol and baud rate (please check speed dome camera manual).

Camera connection description applies to NOVUS cameras. In order to connect cameras of other producers, the user should contact a NOVUS authorized distributor and familiarize themselves with the camera user's manual.

10.1 Novus speed dome camera connection

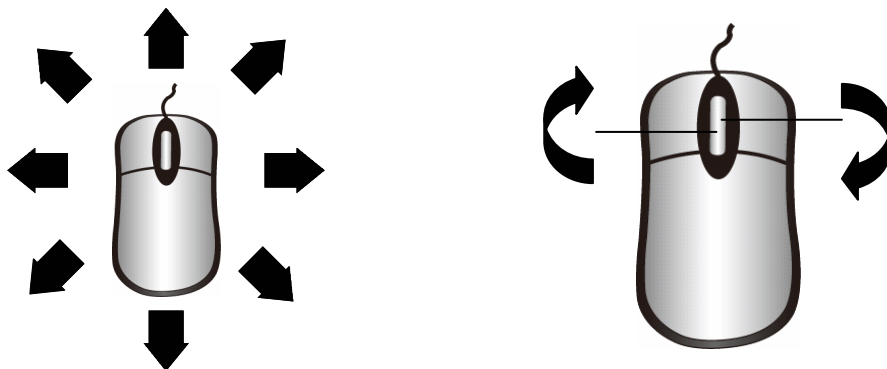
Speed dome camera control lines are connected in a “daisy chain” mode utilizing twisted pair cable (UTP 5th class). The maximum length of line cannot exceed 1200m.

In case of NV-DVR404/CD telemetry control signals are led to the clamp junction terminal named FUNCTION and numbered from 1 to 10. Clamp no. 1 - RS-485 Tx -, Clamp no. 2 - RS-485 Tx +.

10.2 Camera control

Please press the **PTZ** icon in live mode in order to enter camera control mode. Then, select camera which you want to control by using the appropriate icon.

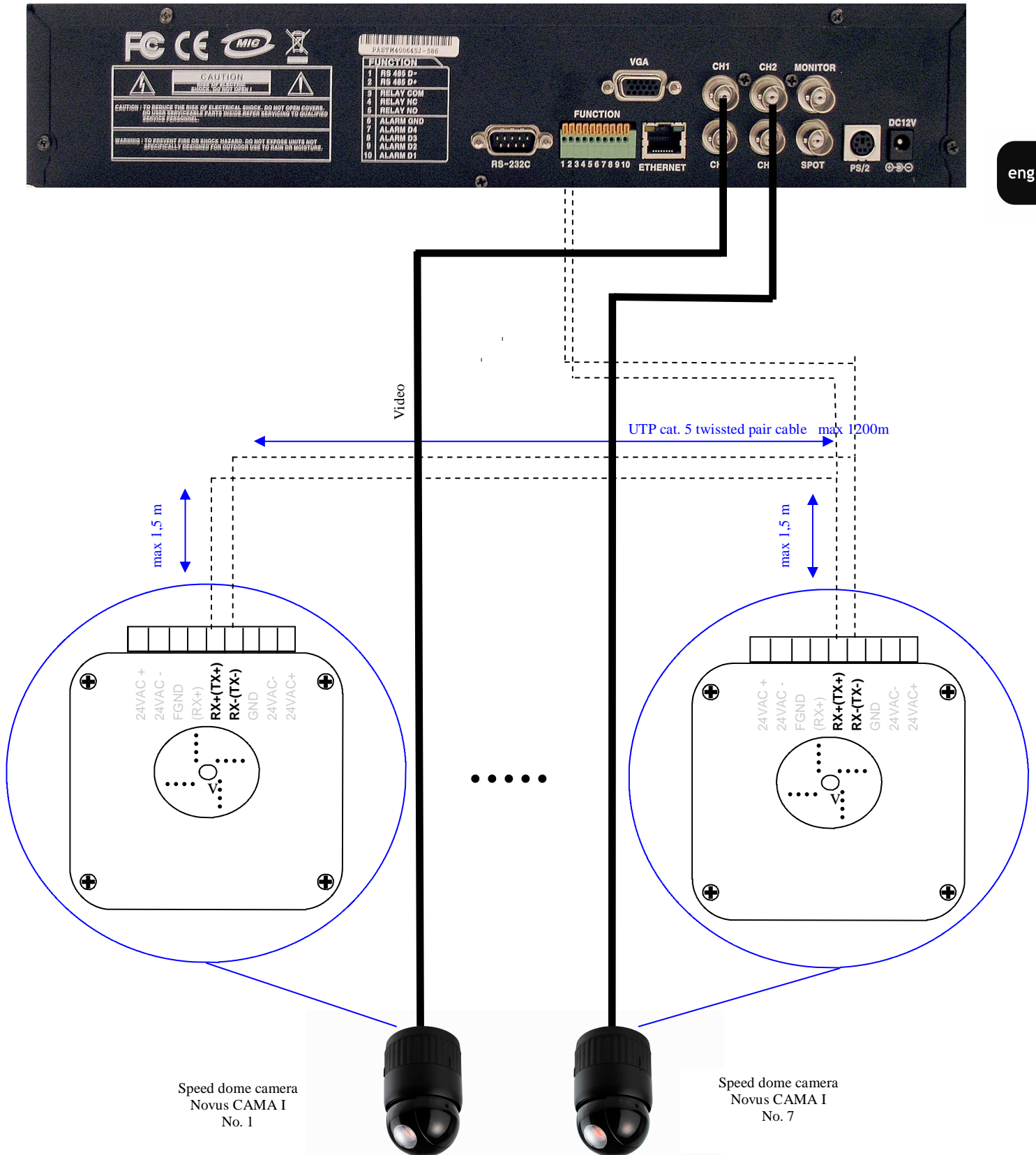
Recorder is equipped with very intuitive and effective system of PTZ control via PS2 Mouse. In order to control zoom it is recommended to set the cursor in central area of the screen (magnifying glass icon) and use scroll. In order to control PAN/TILT speed dome cameras move cursor to the chosen direction (arrow icon) and press left mouse button.



In order to exit the camera control mode, please press **PTZ** button once again.

PTZ CAMERAS - CONNECTION AND CONTROL

Exemplary CCTV system based on NV-DVR404/CD recorder and Camal speed dome camera



eng

NETWORK CONNECTION FEATURE

11. NETWORK CONNECTION FEATURE

NV-DVR404/CD DVR allows for network operation via TCP/IP protocol. Network connection is made by **N-Viewer 400** software.

One user may connect with the recorder in “live” mode and playback mode, select different camera view or screen split.

Warning: NOVUS SECURITY Sp. z o.o. is not a distributor of server systems, routers, hubs, and other network devices which may influence proper networking. Network user or network administrator is responsible for proper configuration of the devices mentioned above.

11.1 Computer hardware requirements

Processor	Intel® Pentium® 1GHz (or higher)
RAM memory	128MB
Other devices required	Graphic Card, AGP x 4, 16MB
Operating System	Microsoft® Windows® 2000 / XP™

NETWORK CONNECTION FEATURE

11.2 Software installation

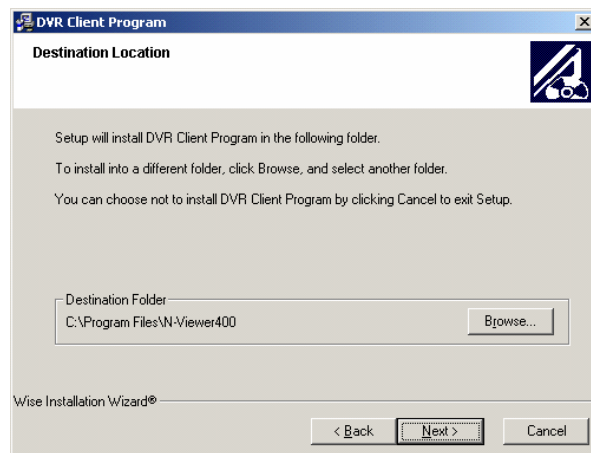
If you want to establish network connection please use **N-Viewer 400** software.

Notice : If any previous software version was installed on the computer, uninstall it before the installation of new software version.

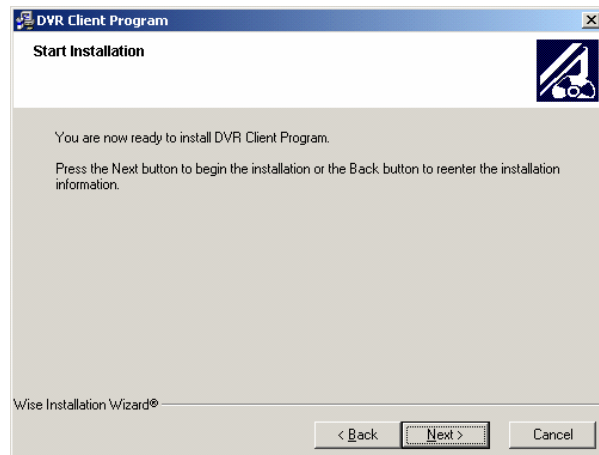
In order to start installation process, please find **N-Viewer400_x,x,x,x.exe** file on the attached CD. Click the icon twice to start installation process.

When the following window appears select installation folder. Default installation folder is: *C:\Program Files\N-Viewer400*.

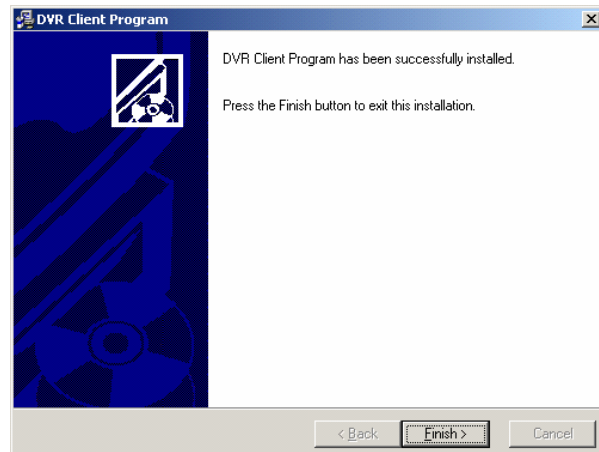
Click **Next** to continue installation.



Click **Next** to continue installation.



Click **Finish** to complete installation.



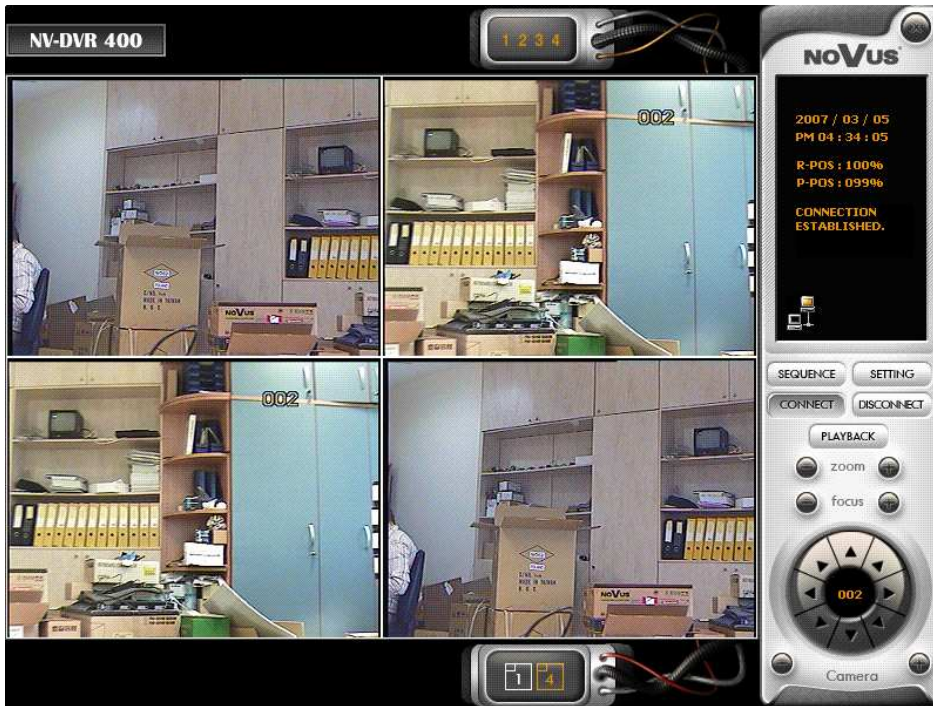
NETWORK CONNECTION FEATURE

11.3 User interface view

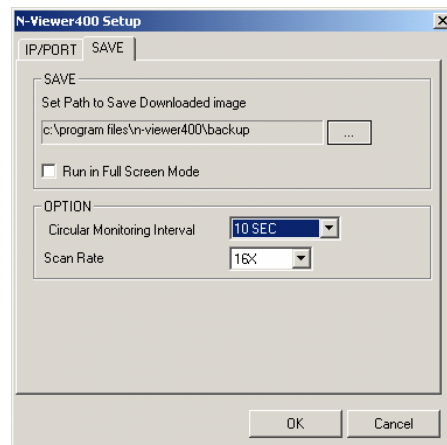
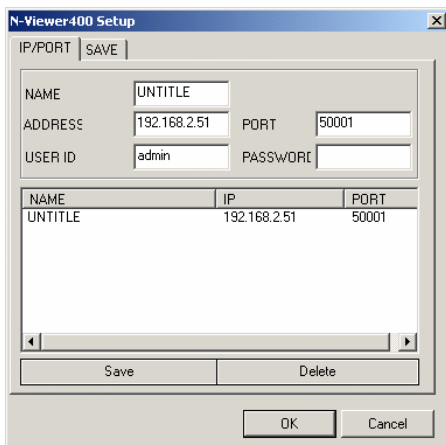
In order to run **N-Viewer 400** application use short-cut icon placed on a desktop or in Program Menu.

The view of software window in “live” display mode appears after a while.
N-Viewer 400 user interface is displayed in English only.

The view of software window in “live” camera display mode (after logging in as Admin).



The program window in setup configuration mode.



NETWORK CONNECTION FEATURE

11.4 Live monitoring

In order to connect click **SETTING** after starting **N-Viewer400** application.

NAME	IP	PORT
UNTITLE	192.168.2.51	50001

Please define multiplexer's name / site in the **NAME** field.

Multiplexer IP should be defined in the **ADDRESS** field.

Communication port set in the multiplexer should be defined in the **PORT** field.

Please input user ID and password in the **USER ID** and **PASSWORD** fields. These settings must match the multiplexer's settings.

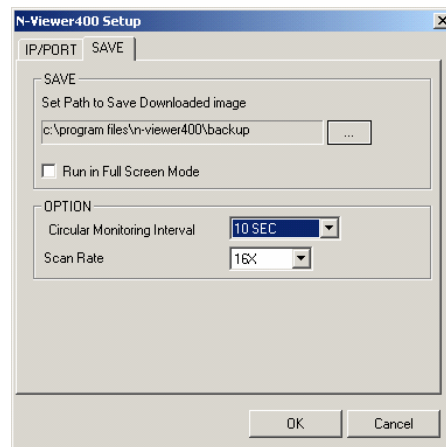
Notice: In the "live" mode images from cameras (**OFF** see chapter 5.4.3.3) that have been excluded from the "live" mode are also visible.

All settings shall be saved by clicking **SAVE**. Among the defined sites, the one is active for which detailed settings are displayed. In order to change the active site please click the mouse twice in localization name. In order to delete localization please, select site and click **DELETE**.

eng

NETWORK CONNECTION FEATURE

The following screen is displayed after selecting **PTZ/SAVE**:



Time of sequence switching (after pressing **SEQUENCE** icon in the main program window) is defined in the **CIRCULAR MONITORING INTERVAL** field.

Playback speed is set in the **SCAN RATE** field.

Directory for local recording of specified images (JPEG) and video sequence (AVI) in display mode is defined in the **SAVE** field.

Display mode: full screen or with standard resolution 800 x 600 is defined in **RUN IN FULL SCREEN MODE**.

After making all settings please confirm changes by clicking **OK**.

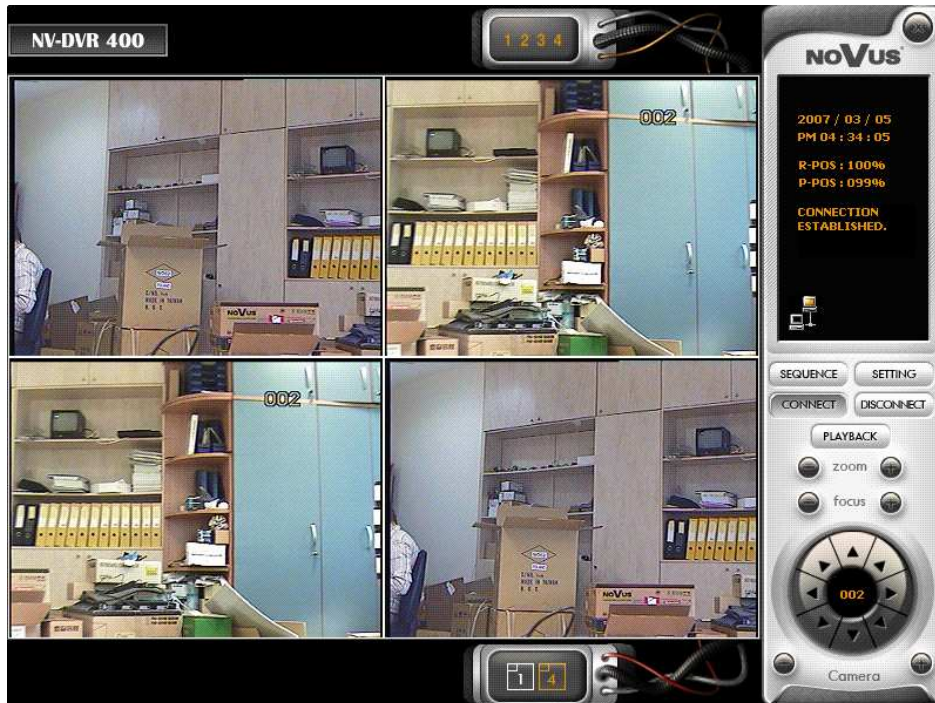
If the connection is lost (e.g. because of starting local playback in multiplexer) the **DISCONNECTED** inscription is displayed on screen.



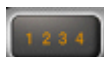
In order to restore connection please click the **CONNECT** button.

NETWORK CONNECTION FEATURE

After proper network configuration and pressing the **CONNECT** button, connection with the multiplexer should be established.



Split screen display mode. Split screen unavailable for particular multiplexer type is displayed in grey. Current split screen is marked in orange. Change of screen division can be made by clicking one of the icons. In order to select any camera, double click left mouse button on the image. Additional clicking restores previously selected screen division



Selection of active cameras in full screen mode or further screen division.



2007/02/20 PM 02.01.26 - PC system date and time

R-POS - HDD usage.

P-POS - current playback position.

CONNECTION ESTABLISHED - information about network connection.



+ ZOOM - speed dome camera zoom control, zoom in + and out -

+ FOCUS - manual setting of speed dome camera focus.

Pan / Tilt control cursor icons

CAMERA - camera selection for telemetry control, successive clicking + - icons changes controlled camera number displayed in the middle of the control panel.

NETWORK CONNECTION FEATURE

11.4.1 PTZ camera control

If there are PTZ cameras in the system and all the settings related to described camera control are set correctly, there is possibility of camera control from the level of N-Viewer 400 application.

Notice: Before starting network control, please check if connection and settings are made properly by trying to control cameras by means of front panel buttons. After positive verification of local control you may start control the camera via network.

eng

Cameras control may be done both in sequence and one camera display in full screen. In order to control camera from the application level, please select camera number to be controlled. The number is displayed in the middle of control panel and you control the camera by means of the **+ CAMERA -** buttons. The following icons gathered in the right bottom of software window are active during controlling .

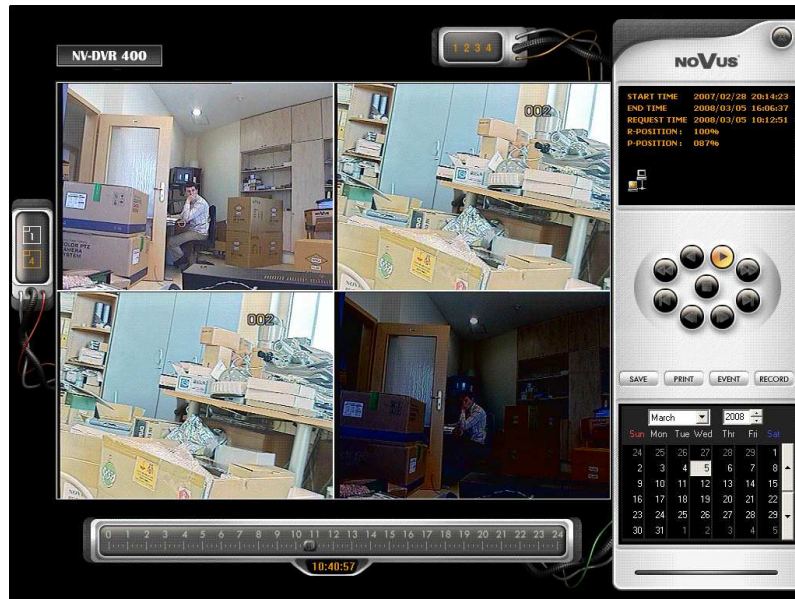


NETWORK CONNECTION FEATURE

11.5 Recordings playback

N-Viewer 400 application provides the possibility to play the recorded data. As in local operation, there is an option of recorded data search according to exact date and time or events.

The following playback window appears after clicking **PLAYBACK**.



eng

Information concerning available range of recorded data, their quality, current playback, and connection status is displayed in the below window.



The date and time of the earliest recorded images are displayed in the **START TIME** line.

The date and time of most recently recorded images are displayed in the **END TIME** line.

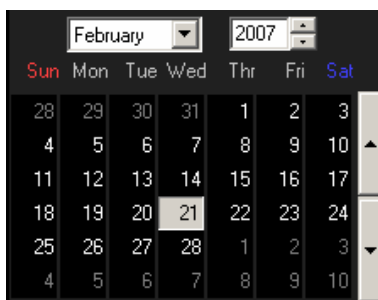
Date and time selected by user are displayed in the **REQUEST TIME** line. Date and time is updated after playback start.

R-POS - HDD usage.

P-POS - current playback position.



Network connection status icon












Calendar for selecting desired year, month and day of playback start. When selecting date / time availability of the data should be taken into account. The last day of registration is marked by grey rectangle.

NETWORK CONNECTION FEATURE



Selection bar of exact time of playback. If you setup display time please take time range of available data into account.

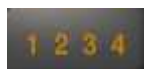
In order to start playback please click  or  for backward playback after selecting desired date and time.

-  Fast forward playback.
-  Fast backward playback.
-  STOP.
-  Move to the end of recordings.
-  Move to the beginning of recordings.
-  Move to the beginning of next hour of recordings.
-  Move to the previous hour of recordings.

Currently active icon is displayed in orange.



Playback screen division selection. Available screen division modes can be selected by means of + - icons. Available screen divisions: full screen display and 2x2. Present screen split is distinguished in orange.



Active camera selection in full screen or successive screen divisions.

Notice: Simultaneous local playback and network playback is impossible. Local playback start disconnects networking.

NETWORK CONNECTION FEATURE

11.5.1 Image saving and printing while playback

While playback saving watched images as IPEG or AVI files is possible.

In order to save JPEG file click **SAVE** icon while playback.

Simultaneously, previously defined folder with local recordings is played back. Information about channel and time of saving is saved into this file.

eng



Clicking **SAVE** while playback causes direct printing from the default system printer. Apart from images, information about resolution and time of printing is printed.

Clicking **RECORD** while playback causes direct AVI file saving. Another icon clicking stops saving. Saving directory is opened automatically after saving file. Apart from images, the file also includes information about resolution and time of saving.

Any video player such as Windows Media Player is suitable for playing saved files.

12. N-BackupPlayer INSTALLATION AND OPERATION

In order to play backup files saved on CD, install **N-BackupPlayer** software first. Please find **BackupCDPlayerNovus.exe** file on the attached CD to start installation. The installation process starts after double clicking on the icon. Installation process is similar to the installation of **N-Viewer 400** network application.

The computer on which **N-BackupPlayer** software is going to be started should follow requirements recommended for **N-Viewer 400** network application.

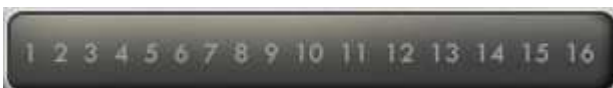
N-BackupPlayer program is started by shortcut-icon placed  on desktop or in the Programs menu. The program window appears after a while. **N-BackupPlayer** interface is displayed in English.



When you insert CD into the drive, please click **OPEN** icon and open appropriate file (ajp extension).



Split screen playback mode. Available splits: full screen and 2x2



Active cameras selection in full screen mode or successive split modes.

BACKUP PLAYBACK



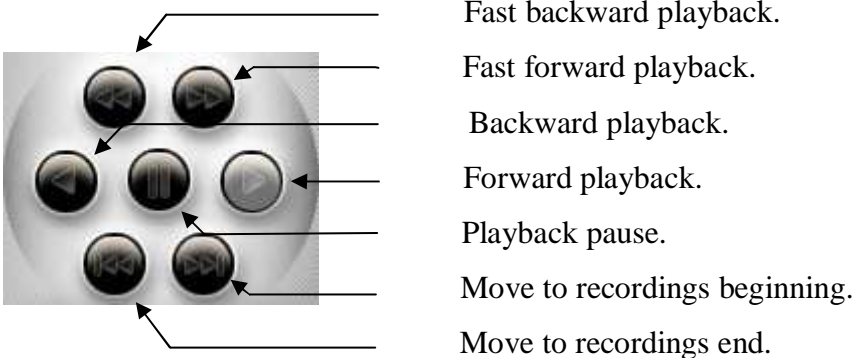
Playback adjustment. Using + - icons in the **SPEED** option playback speed as multiple of nominal speed: x2, x4, x8, x16 is set. Delay of played back images is set in the **DELAY** option by means of + - icons.



Next camera selection and screen division selection.

eng

Playback icons group:

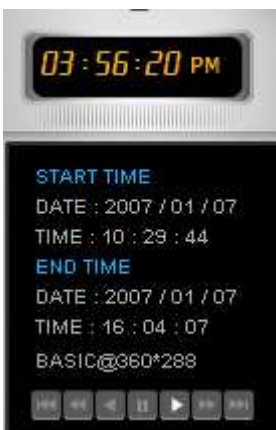


- Fast backward playback.
- Fast forward playback.
- Backward playback.
- Forward playback.
- Playback pause.
- Move to recordings beginning.
- Move to recordings end.

There is playback process bar with slide control of playback place position selection below the window with camera image.



The following information is displayed in the status window:



Current date and time of computer on which **N-BackupPlayer** application has been installed.

Date and time of the earliest available recordings.

Date and time of the latest available recordings.

Quality and resolution of recorded data.

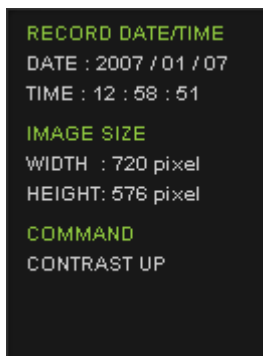
Playback status icons.

BACKUP PLAYBACK

Notice: Image edition mode is available only for full screen playback mode.



Status information is displayed in the right top of the image edition window.



Date and time of displayed image.

Image size (resolution) in pixels

Last image edition function made.

Image edition icons:



Contrast level increase (contrast up)

Contrast level reduction (contrast down)

Brightness level increase (bright)

Brightness level reduction (dark)

Image sharpness (sharpen)

Image blurring (blur)

BACKUP PLAYBACK



In order to record saved image, please click this icon. Image in JPG format is saved in a directory defined by admin during installation. Default directory is: *C:\Program Files\N-BackupPlayer\Backup*.



If you want to print edited images from a system printer, directly from the **N-BackupViewer** software without using other software please click this icon. The system printer settings menu appears. Apart from images, information about channel and time from which printing comes, the range of the backed up data on file and the time of printing.



Clicking this icon exits image edition window.

Video stream saved in APJ format may be converted to AVI format using **N-BackupViewer** application. In order to convert please press the **SAVE** button.

The following menu appears:



Channel number, which you want to save as AVI format is defined in the **CHANNEL** section.

Frame rate is defined in the **FRAME RATE** section.

Maximum recording resolution is defined in the **SIZE** section.

In order to start conversion process please click **START** icon. If you click **STOP** the conversion is stopped and directory with recorded AVI file is displayed. Default recording directory is: *C:\Program Files\N-BackupPlayer\avi*.

AVI file can be played using any software player such as Windows Media Player if only appropriate video codes are present in a system.

NOTES

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NOVUS[®]

NOVUS Security Sp. z o.o.

ul. Puławska 431, 02-801 Warszawa
tel.: (22) 546 0 700, fax: (22) 546 0 719
www.novuscctv.com

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