User's manual (short)

NHDR-4104AHD
NHDR-4108AHD
NHDR-4116AHD

NOVUS®

IMPORTANT SAFEGUARDS AND WARNINGS

EMC (2014/30/EC) and LVD (2014/35/EC) Directives

CE Marking

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

- Electromagnetic compatibility EMC 2014/30/EC.
- Low voltage LVD 2014/35/EC with further amendment. The Directive applies to electrical equipment designed for use with a voltage rating of between 50VAC and 1000VAC as well as 75VDC and 1500VDC.

WEEE Directive 2012/19/EC

Information on Disposal for Users of Waste Electrical and Electronic Equipment

This appliance is marked according to the European Directive on Waste Electrical and Electronic Equipment (2012/19/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.

RoHS Directive 2011/65/EC

Concerning 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, were designed and manufactured in compliance with mentioned regulation. Simultaneously, we claim that our products were tested and do not contain hazardous substances exceeding limits which 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 defects and damages resulted from improper or inconsistent with user's manual installation of the device in the system.

Excluding of responsibility in case of damaging data on a disk or other devices:

The manufacturer does not bear any responsibility in case of damaging or losing data on a disk or other devices during device operation.

SAFETY REQUIREMENTS

ATTENTION!

PRIOR TO UNDERTAKING ANY ACTION THAT IS NOT PROVISIONED FOR THE GIVEN PRODUCT IN ITS USER'S MANUAL AVAILABLE AT WWW.NOVUSCCTV.COM AND OTHER DOCUMENTS DELIVERED WITH THE PRODUCT, OR THAT ARISES FROM THE NORMAL APPLICATION OF THE PRODUCT, ITS MANUFACTURER MUST BE CONTACTED OR THE RESPONSIBILITY OF THE MANUFACTURER FOR THE RESULTS OF SUCH AN ACTION SHELL BE EXCLUDED.

1. Prior to undertaking any action please consult the following manual and read all the safety and operating instructions before starting the device.
2. Please keep this manual for the lifespan of the device in case referring to the contents of this manual is necessary;
3. All the safety precautions referred to in this manual should be strictly followed, as they have a direct influence on user's safety and durability and reliability of the device;
4. All actions conducted by the servicemen and users must be accomplished in accordance with the user's manual;
5. The device should be disconnected from power sources during maintenance procedures;
6. Usage of additional devices and components neither provided nor recommended by the producer is forbidden;
7. You are not allowed to use the device in high humidity environment (i.e. close to swimming pools, bath tubs, damp basements);
8. Mounting the device in places where proper ventilation cannot be provided (e. g. closed lockers etc.) is not recommended since it may lead to heat build-up and damaging the device itself as a consequence;
9. Mounting the device on unstable surface or using not recommended mounts is forbidden. Improperly mounted device may cause a fatal accident or may be seriously damaged itself. The device must be mounted by qualified personnel with proper authorization, in accordance with this user's manual.
10. Device should be supplied only from a power sources whose parameters are in accordance with those specified by the producer in the devices technical datasheet. Therefore, it is forbidden to supply the devices from a power sources with unknown parameters, unstable or not meeting producer's requirements;
11. You cannot allow any metal objects get inside the recorder. It might cause serious damage. If a metal object gets inside the device contact the authorised Novus service immediately.
12. The manufacturer does not bear responsibility for damage or loss of data stored on HDDs or other media occurred during the usage of the product.

Due to the product being constantly enhanced and optimized, certain parameters and functions described in the manual in question may change without further notice.

We strongly suggest visiting the www.novuscctv.com website in order to access the newest manual .

NOVUS AHD DVRs are dedicated to work with NOVUS AHD cameras. Using only NOVUS products guarantees the highest image quality. Connecting cameras from other manufacturers to NOVUS DVRs may decrease video quality.

Technical changes reserved without prior notice and printing errors possible.

FOREWORD INFORMATION

1. FOREWORD INFORMATION

1.1. Main characteristics

- Digital recorders support high definition analog cameras (720p, 1080p, 4MPx, 5MPx), AHD, TVI, CVI.
- Support IP cameras up to 5 MPx (hybrid mode)
- AHD recording resolution: 2560 x 1440, 1280 x 1944, 1280 x 1440, 1920 x 1080, 1280 x 720, 960 x 480
- Dual stream recording
- Supports up to 1/2/2 SATA 3,5” HDDs * **
- Channel assigning to each HDD
- Operating system based on Linux
- H.264 and H.265 compression
- Main monitor 1 x HDMI (max. 4K UltraHD), 1 x VGA (max. FullHD)
- Recording compression, resolution, speed and quality defined individually for each camera
- Channel covering function
- Intelligent analysis with IP cameras
- 4/8/16 alarm inputs, 1 alarm output *
- 4/8/16 channel real-time audio recording *
- PTZ control of AHD and IP cameras directly from the device
- Protocols: Pelco-D, Pelco-P, COAX
- Special function to add cameras connected to another NHDR recorders or NVR-4000 as IP channels
- RTSP stream connection as IP channels
- Backup through USB port and through the IP network
- Software: NHDR-5000 Viewer (application for remote administration, live monitoring and recorded data search)
- Self-diagnostic functions with automatic notification
- User friendly multi-lingual OSD
- USB mouse and IR controller included
- Power supply: 12 VDC (100 ~ 240 VAC/12 VDC PSU in-set included)

* Depending on the model, in sequence: NHDR-4104AHD / NHDR-4108AHD / NHDR-4116AHD.
** The list of recommended disk models and their capacity is available on Novus Security website in the Compatible Disk file in the product tab.

FOREWORD INFORMATION

1.2. Recorders' technical data

	NHDR-4104AHD	NHDR-4108AHD	NHDR-4116AHD
Video			
Video Input	4 x BNC *	8 x BNC *	16 x BNC *
Operating mode	AHD 5Mpx, TVI 5Mpx, CVI 4Mpx, analog 960H		
Monitor Output	main (split screen, full screen, sequence): 1 x HDMI, 1 x VGA		
IP Streams	Hybrid mode: 4 x AHD + 2 x IP IP mode: 0 x AHD + 6 x IP	Hybrid mode: 8 x AHD + 4 x IP IP mode: 0 x AHD + 12 x IP	Hybrid mode: 16 x AHD + 8 x IP IP mode: 0 x AHD + 24 x IP
Supported IP resolution	max. 2592 x 1944		
Audio			
Audio Input/Output	4 x RCA (Line-in) / 1 x HDMI, 1 x RCA	8 x RCA (Line-in) / 1 x HDMI, 1 x RCA	16 x RCA (Line-in) / 1 x HDMI, 1 x RCA
Recording			
Compression	H.264 / H.265		
AHD Recording Speed	120 fps (1280 x 720) 52 fps (1920 x 1080) 56 fps (1280 x 1440) 48 fps (1280 x 1944) 24 fps (2560 x 1440)	240 fps (1280 x 720) 120 fps (1920 x 1080) 144 fps (1280 x 1440) 120 fps (1280 x 1944) 56 fps (2560 x 1440)	480 fps (1280 x 720) 240 fps (1920 x 1080) 288 fps (1280 x 1440) 240 fps (1280 x 1944) 128 kl/s (2560 x 1440)
IP Recording Speed	Hybrid mode: 60 fps IP mode: 180 fps	Hybrid mode: 120 fps IP mode: 360 fps	Hybrid mode: 240 fps IP mode: 720 fps
IP stream size	hybrid mode: 8 Mb/s in total from all IP cameras IP mode: 24 Mb/s in total from all IP cameras	hybrid mode: 16 Mb/s in total from all IP cameras IP mode: 48 Mb/s in total from all IP cameras	hybrid mode: 32 Mb/s in total from all IP cameras IP mode: 96 Mb/s in total from all IP cameras
Recording Mode	continuous, triggered by: REC/PANIC button, alarm input, motion detection, PIR alarm, image analysis		
Schedule	individual settings for: each camera, each day of the week, configuration with an accuracy of 30 min, possibility of combining individual recording modes		
Prealarm/postalarm	up to 3 s/up to 5 min		
Playback			
Playback Speed	120 fps	240 fps	480 fps
Recorded Data Search	by date/time, events, motion in a defined area, tags		
Backup			
Backup Methods	USB port (HDD or Flash memory), network		
Backup File Format	JPEG, BMP, PNG, MP4, AVI		
Storage			
Internal HDDs	up to: 1 x HDD 3.5" SATA	up to: 2 x HDD 3.5" SATA	
Total Capacity	10 TB	20 TB	
Alarm			
Alarm Input/Output	4/1 relay	8/1 relay	16/1 relay
Motion Detection	36 x 44 grid, individual settings of sensitivity		
System Reaction to Alarm Events	buzzer, e-mail, alarm output activation, screen message, recording activation, PTZ, Full Screen, FTP picture upload, FTP video upload, picture to Cloud, video to Cloud		

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FOREWORD INFORMATION

	NHDR-4104AHD	NHDR-4108AHD	NHDR-4116AHD
Network			
Network Interface	1 x Ethernet - RJ-45 interface, 10/100 Mbit/s		
PC/MAC Software	NMS, Internet Explorer, NHDR-5000 Viewer/NHDR-5000 Viewer		
Mobile applications	RxCamView (iPhone, Android)		
Max. Number of Connections with DVR	20 (live monitoring: 20, playback: 1, configuration: 20)		
Bandwidth	32 Mb/s in total to all client workstations	64 Mb/s in total to all client workstations	96 Mb/s in total to all client workstations
PTZ			
PTZ Ports	1 x RS-485		
PTZ Protocols	Pelco-D, Pelco-P		
PTZ Functions	pan/tilt/zoom, preset commands, patterns		
COAX			
COAX Functions	menu, zoom, focus, PTZ		
Auxiliary Interfaces			
USB Ports	2 x USB 2.0		1 x USB 3.0, 1 x USB 2.0
Operating system			
Operating System	Linux		
OSD	Languages: Polish, English, Russian and others		
Control	PC mouse and IR remote controller (in-set included), network		
System Diagnostic	automatic control of: HDDs, camera connection loss		
Installation parameters			
Dimensions (mm)	300 (W) x 53 (H) x 227 (D)	378 (W) x 50 (H) x 340 (D)	
Weight	1 kg (without HDD)	2,5 kg (without HDDs)	
Power Supply	12 VDC (100 ~ 240 VAC/12 VDC PSU in-set included)		
Power Consumption	20 W (with HDD)	30 W (with 2 HDDs)	
Operating Temperature	-10°C ~ 55°C		

1.3. Package contents

Unpack the device carefully. After unpacking, please ensure that package contains the following items:

- AHD Digital Video Recorder
- Power supply 100~240 VAC/12 VDC
- Power cord
- USB Mouse
- IR remote controller
- Audio cable (only NHDR-4116AHD model)
- User’s manual (short)

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

STARTING THE DEVICE

CAUTION!

If the device was brought from a location with lower temperature, please wait until it reaches the temperature of location it is currently in. Turning the device on immediately after bringing it from a location with lower ambient temperature is forbidden, as the condensing water vapour may cause short-circuits and damage the device as a result.

Note: Please familiarize yourself with description and functions of rear panel inputs.

The pictures of the recorders contained in this manual are for illustrative purposes and may differ slightly from the actual device.

2. STARTING THE DEVICE

2.1. Electrical connection and other rear panel elements.

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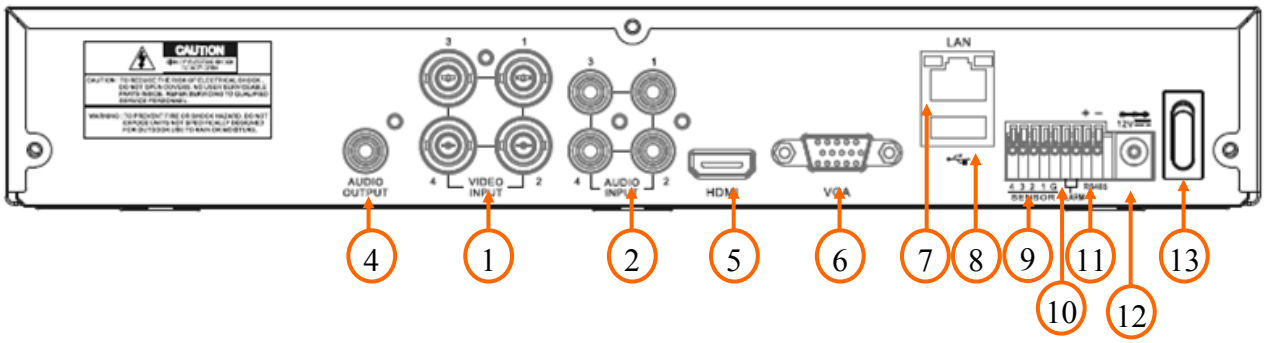
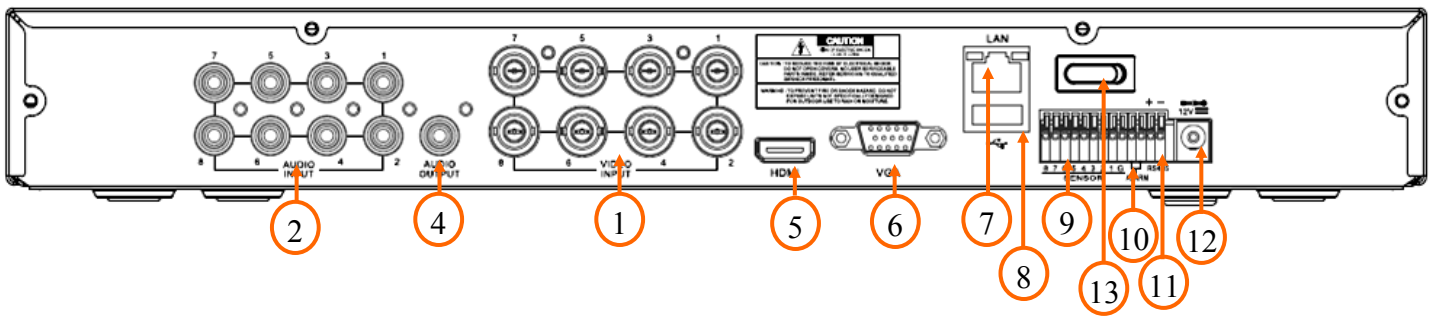
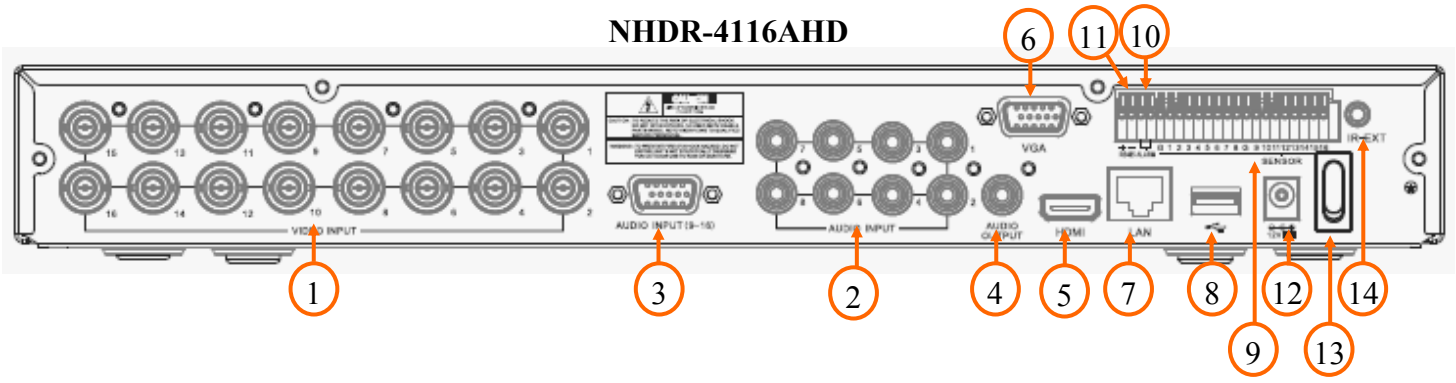
NHDR-4104AHD



NHDR-4108AHD



NHDR-4116AHD



STARTING THE DEVICE

1. VIDEO IN: Video inputs to connect video signal sources to the DVR**.**

2. AUDIO IN: Audio mono inputs (RCA LINE IN type) to connect microphones.

3. AUDIO IN: 9-16 audio mono inputs (RCA LINE IN type on the additional cable included) to connect microphones (only NHDR-4116AHD model).

4. AUDIO OUT: Audio output to connect speakers with amplifier (RCA connector).

5. HDMI: HDMI connector to connect main monitor using HDMI cable.

6. VGA: D-SUB connector to connect main monitor using VGA cable.

7. LAN: RJ-45 connector port to connect the local network and internet.

CAUTION! It is forbidden to connect ethernet port of the DVR to the POE port of the POE Switch. It may damage the device.

8. USB: USB 2.0 port to connect USB mouse, external hard drives or Flash memory to make a backup

9. SENSOR: Alarm inputs, which may be set as normal open (NO) or normal closed (NC) in the DVR menu. The ground of the alarm device needs to be connected to one of the G connectors.

10. ALARM: alarm output, relay 3A 250VAC / 3A 30VDC.

11. RS-485: RS-485 bus connector to connect PTZ cameras.

12. DC 12V: Power supply connector 12V.

13. POWER SW: Power switch, plug the power cord and turn this switch on.

14. IR EXT: External IR receiver connector.

2.2. HDD mounting

Note: In order to obtain info on latest compatible HDDs together with their capacities, please contact your distributor or visit www.novuscctv.com website. AAT HOLDING company does not bear responsibility for any issues arising from usage of unsupported hard drives.

Note: List of compatible HDDs contains all disks supported by DVR model, including desktop HDDs. It is preffered to use 24x7 hard drives to keep reliability ot the recording system.

Note: If a hard disk was used in another device, it has to be format. It is needed due to the irrecoverable data loss result.

NHDR-4104AHD recorder support 1x 3,5" SATA HDD. NHDR-4108AHD and NHDR-4116AHD supports up to two 3,5" SATA HDDs.

STARTING THE DEVICE

Make sure the power supply is not connected before staring the process.

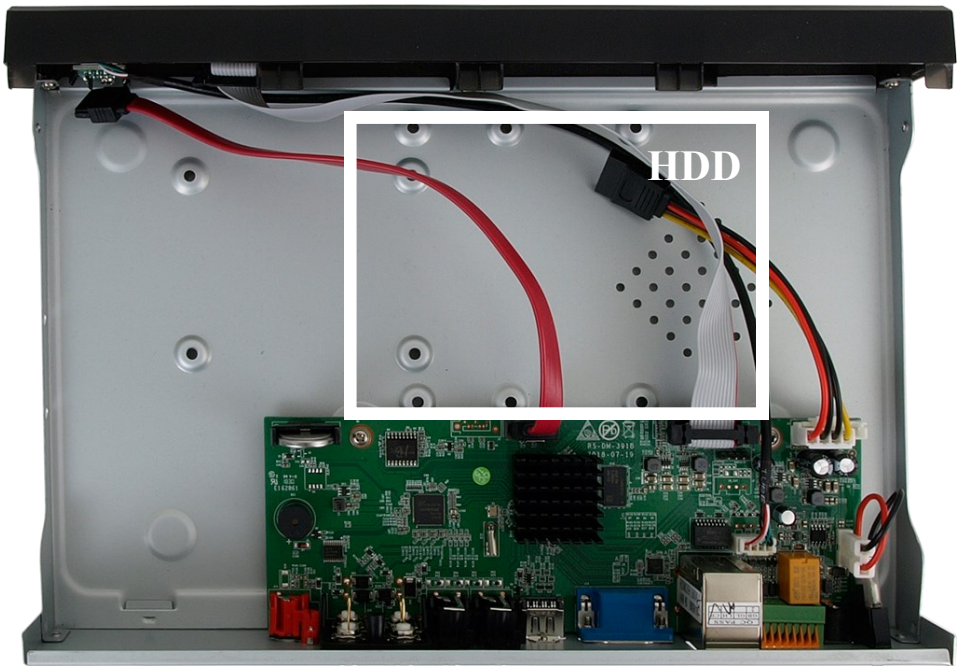
In order to mount HDD, please unscrew screws on the back and both sides as depicted below and remove top cover.

Depending on the model, follow the instructions:

NHDR-4104AHD

SATA and power cables are connected to the mainboard by default and ready to connect HDD. Put the HDD at the shown place.

Rotate DVR to the side holding HDD by hand, and screw it tightly from the bottom.



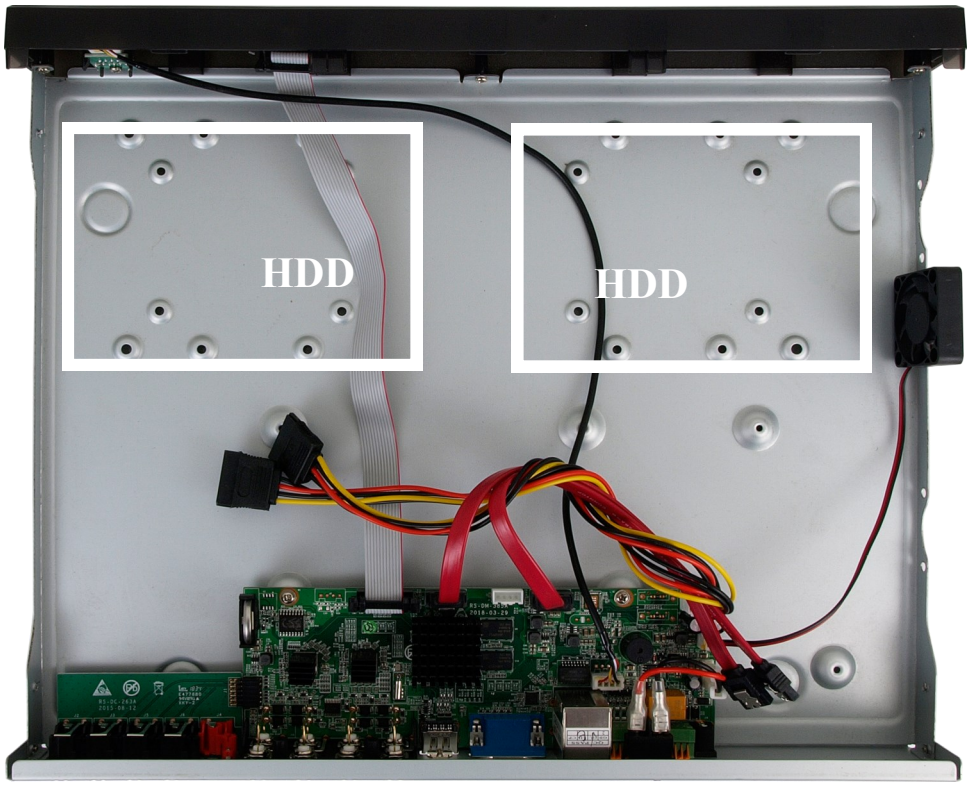
STARTING THE DEVICE

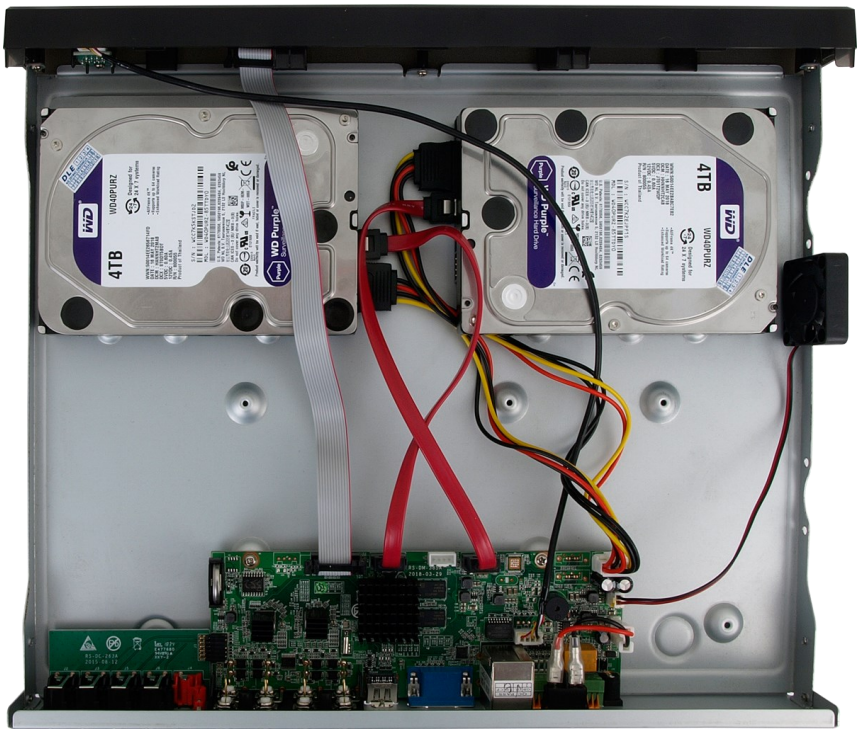
Connect SATA and power cable as shown on the picture below.

Install the top cover on the DVR and screw it back.

NHDR-4108AHD

SATA and power cables are connected to the mainboard by default and ready to connect HDD. Put the HDDs at the shown places. Rotate DVR to the side holding HDD by hand, and screw it tightly from the bottom. Install second HDD if necessary. Connect power and SATA cables to the disks as shown below.



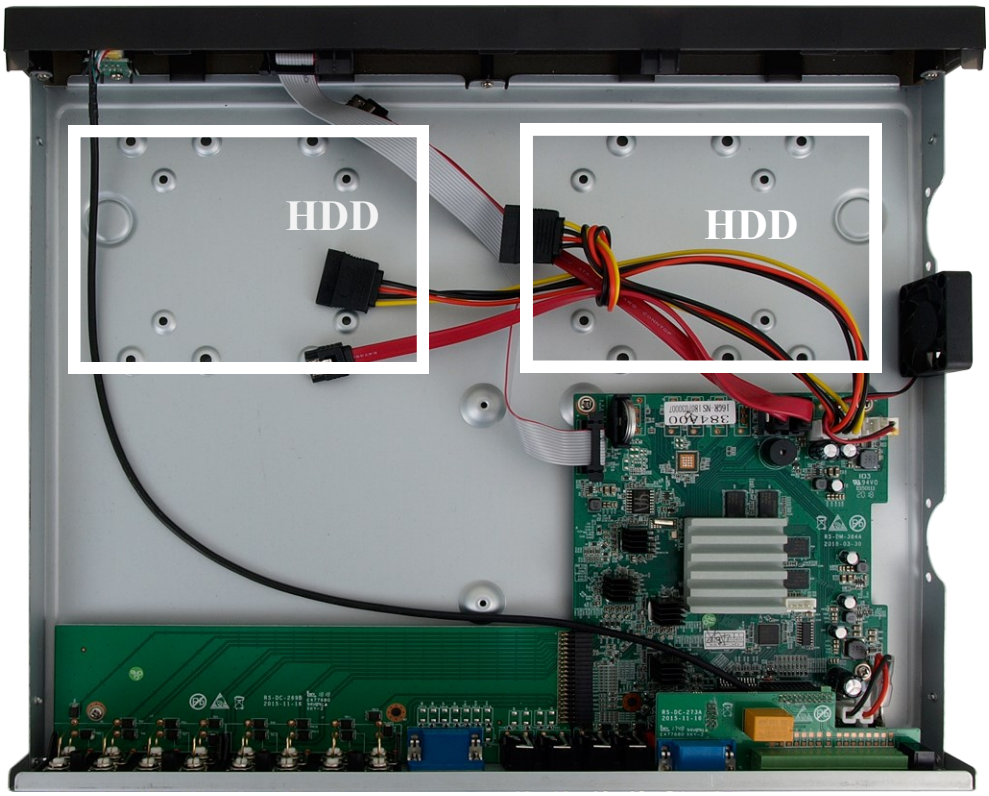


Install the top cover on the DVR and screw it back.

NHDR-4116AHD

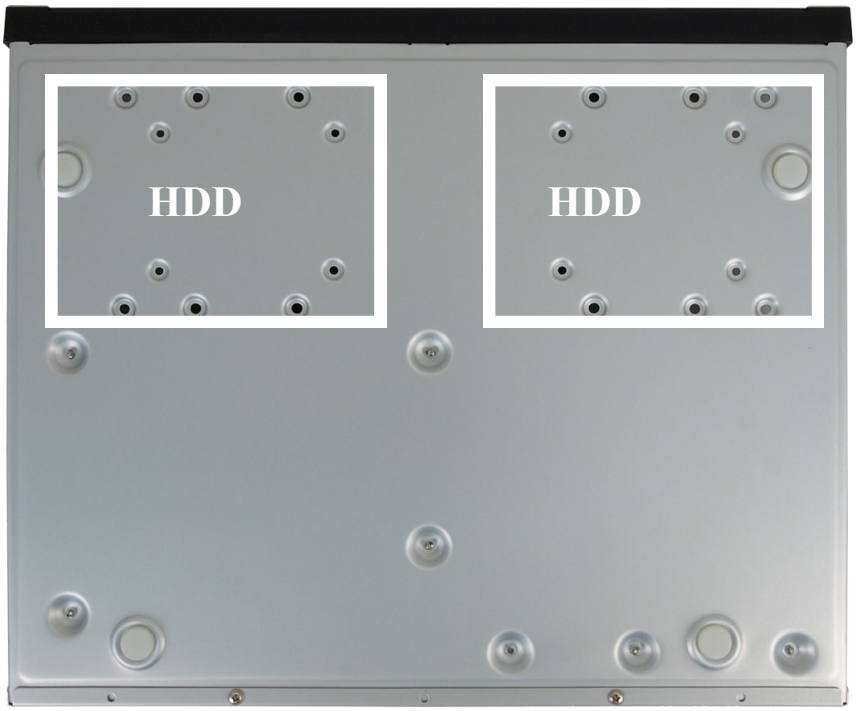
SATA and power cables are attached to the mainboard.

Put the HDD into the shown place.



STARTING THE DEVICE

Rotate DVR to the side holding HDD by hand and screw it tightly from the bottom. Install second HDD if necessary.



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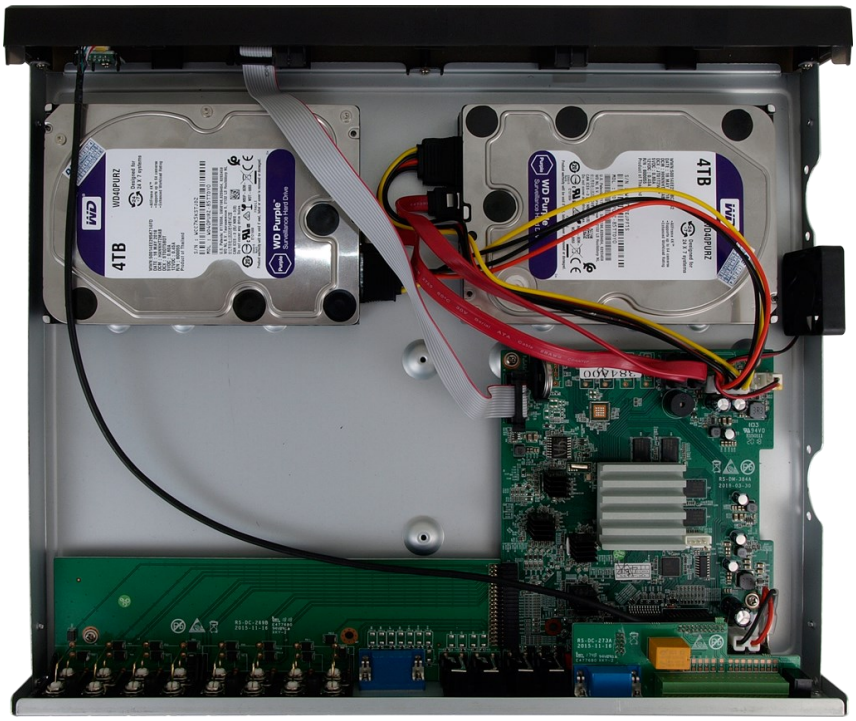
Connect power and SATA cables to the disks as shown below.

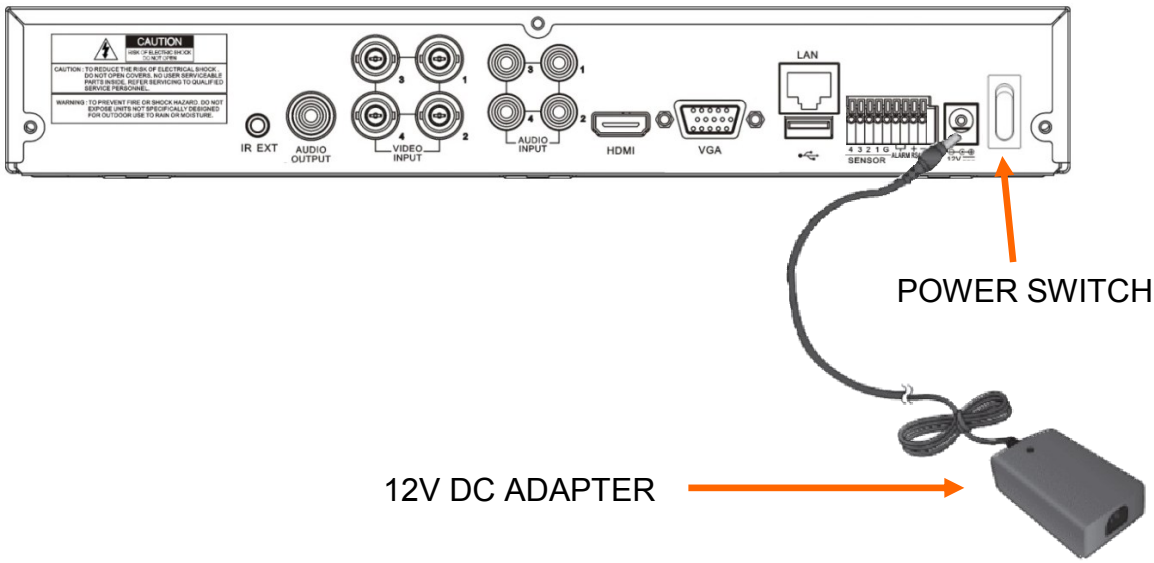


Install the top cover on the DVR and screw it back.

2.3. Connecting power adapter.

Please connect provided 12V DC adapter to the power port of the DVR like depicted below.

To start the unit switch on the power on back panel. Initialization lasts for approximately 60 seconds. During this time executing any device functions is prohibited. To shut down the device please use the menu function.



CAUTION:

Make connection when the power is not applied and the power switch is turned off.

Do not place the power cord under the carpet or rug. The power cord is usually earth-grounded. However, even if it's not earth-grounded, never modify it on your own for earth-grounding.

Make sure that power adapter is placed near of DVR and secured from accidental disconnection.

STARTING THE DEVICE

2.4. Connecting monitor

The recorder supports HDMI and VGA interfaces for main monitor: .

DVRs support following resolutions: 1024x768 (60Hz), 1280x1024 (60Hz), 1440x900 (60Hz), 1280x720 (50Hz). 1920x1080 (50Hz). 1680x1050 (60Hz), 1600x1200 (60Hz), 1920x1200 (60Hz), 3840x2160 (30Hz). NHDR-4116AHD also support 1920x1080 (60Hz).

Default screen resolution is 1280x1024(60Hz). If the monitor native resolution is bigger, the recorder propose to change it.

Changing the screen resolution is available in main menu of the DVR. In case of monitor does not display anything after resolution change, please wait a moment, then previous resolution will be restored.

Note:

You can use the HDMI <> DVI converter to connect to the DVI monitor. HDMI cable and HDMI<>DVI converter it's not included and you have to buy it separately.

2.5. Connecting alarm ports

NHDR-41XXAHD series recorders has 4, 8 or16 alarm inputs (depending on the model) and one alarm output. To connect them please refer table below:

NHDR-4104AHD alarm connector:

4	3	2	1	G	con1	con2	RS485+	RS485-
ALARM INPUT					ALARM		PTZ	

NHDR-4108AHD alarm connector:

8	7	6	5	4	3	2	1	G	con1	con2	RS485+	RS485-
ALARM INPUT									ALARM OUTPUT		PTZ	

NHDR-4116AHD alarm connector:

RS485+	RS485-	con1	con2	G	1	2	3	4	5	6	7	8	G	9	10	11	12	13	14	15	16
PTZ		ALARM OUTPUT		ALARM INPUT																	

Alarm inputs, may be set either as normal open (NO) or normal closed (NC) in DVR menu settings. Alarm input settings are described in user's manual (**Alarm** section in full user's manual). The ground of the alarm device needs to be connected to one of the G connectors.

Alarm output is a relay with 2 connectors (con1, con2). Max contact ratings are 3A 250VAC / 3A 30VDC.

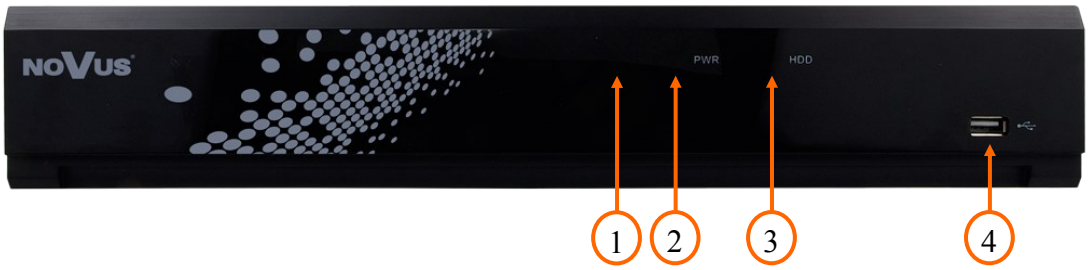
2.6. Connecting ethernet network

DVR has an Ethernet port. It is marked as number 7 on the scheme in 2.1 chapter. It can be connected to switch to make a connection with PC and IP cameras. How to add IP camera is described in chapter 3.3.3.

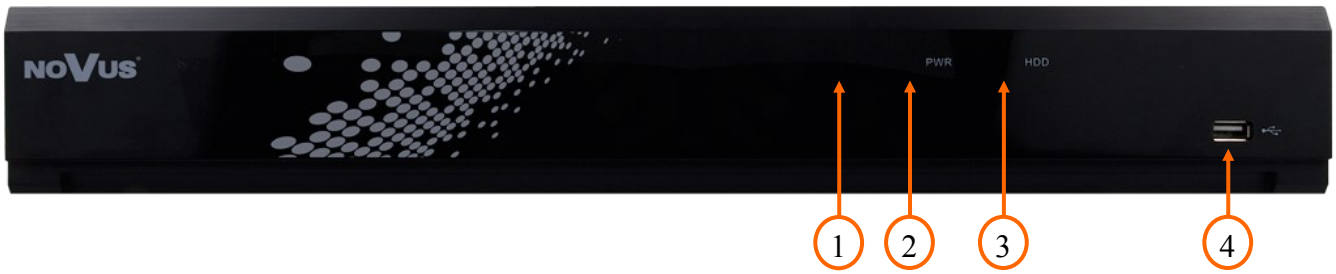
CAUTION! It is forbidden to connect ethernet port of the DVR to the POE port of switch. It may damage the devices.

2.7. Front panel description

Front panel of NHDR-4104AHD



Front panel of NHDR-4108AHD and NHDR-4116AHD



1. IR receiver (behind the panel)

2. PWR Power LED. When the LED is light on, it means DVR is working..

3. HDD HDD LED. Flickering indicates that the recording or searching / playback is in progress

4. USB 2.0 port to connect external HDD, Flash memory or USB mouse.

3. DVR OPERATING

3.1. Recorder control

NHDR-41XXAHD series recorders can be controlled in 3 ways: using IR remote controller, USB mouse or NV-KBD50 keyboard.

DVR OPERATING

3.1.1. Controlling via IR remote controller

IR remote controller is included with DVR. IR range depends on battery status and may vary between a few and several meters. The range of controller can be extended using NV-RCEX5AHD (NHDR-4116AHD model only). Controller is supplied with two AAA batteries. Buttons functions are listed below.

0 - 9 Numeric buttons for channel selection. Channel 10 and another can be selected using buttons combination. i.e. to open channel 15 press „1" and then „5".

ALL Toggles between different display formats: 1, 4, 9, 16, 25.

MENU Enters to main menu. Pressing this button cancel the selection and leaving the menu also

SUBMENU In live mode open the Popup menu.

◀ ▶ Navigation control „left", „right". In live mode open the Popup menu.

▲ ▼ Navigation control „up" , „down".

SEL Button is used for confirm the selection and start to editing fields. In live mode open the Popup menu.

▶ Switch on playback mode. Open Record Search menu. In live mode open the Popup menu.

◀◀ Slow down playback speed.

▶▶ Fast up playback speed.

● Turn on manual record.

❚❚ Playback pause, press again to play frame by frame.

■ Stop the playback. In live mode stop the manual recording.

3.1.2. Controlling via USB mouse

It is possible to control all DVR functions via USB mouse connected to USB port. Double-clicking on any camera in 2x2, 3x3 display mode switches the display to full-screen mode. Another double-click returns to previous display mode. Move cursor to the bottom of the screen displays popup menu. Left mouse button on the channel video displays channel menu, allows to choose options. Certain positions allow to select them via mouse scroll. Right mouse button displays popup menu or leave the menu. Scroll wheel allows to change some menu options, do digital zoom on video image.

3.1.3. Controlling via external keyboard

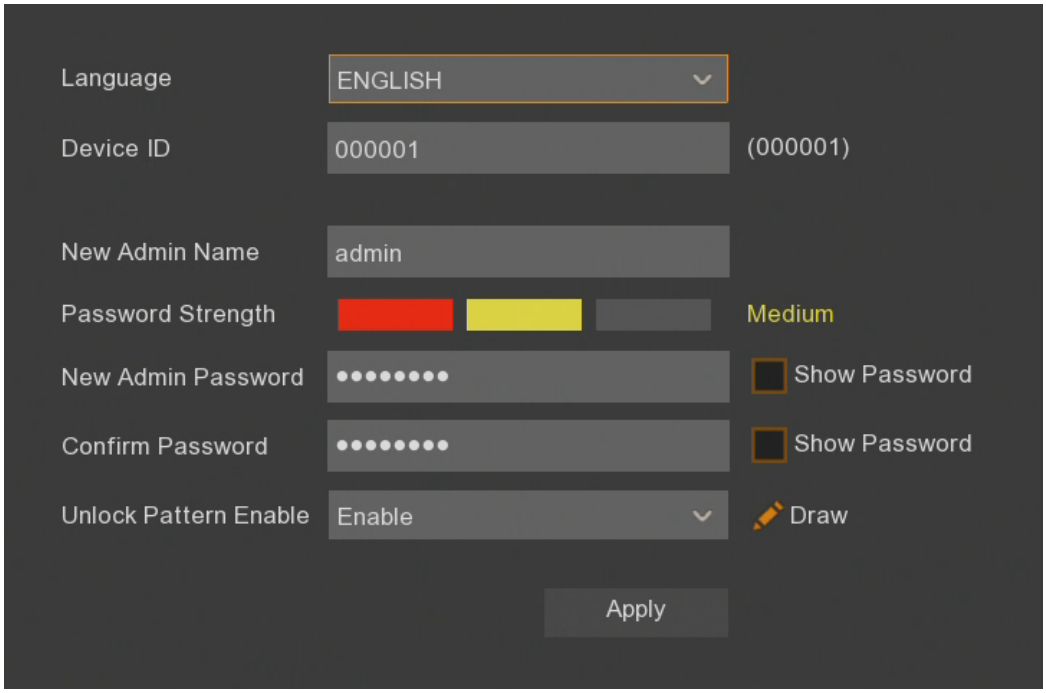
The DVR can be controlled by NV-KBD50 keyboard. It has to be connected to RS485 port on DVR backpanel. All needed DVR settings are described in full version of users manual .

3.2. First launch

To start the unit connect the power cable to 12V DC adapter and turn on the power switch on rear panel and wait for DVR initialization.

After the first launch a window to choose and set language, administrator name and password will be displayed.

Default language is **English**. If you change the language, all the descriptions will be translated automatically.



Clicking on each field expands drop-down list or displays on-screen keyboard.

New Admin Name - name of administrator account (default: **admin**)

Password Strenght - the scale showing how strong is the written password. It is updated on the fly while typing the password in the next fiels. Password strenght can be **Low**, **Medium** or **High** and marked with Red, Yellow or Green color.

New Admin Password - it is required to create access password. It must contain 5-15 characters.

Confirm password - enter the access password again to confirm.

Show Password - shows password instead of masking marks.

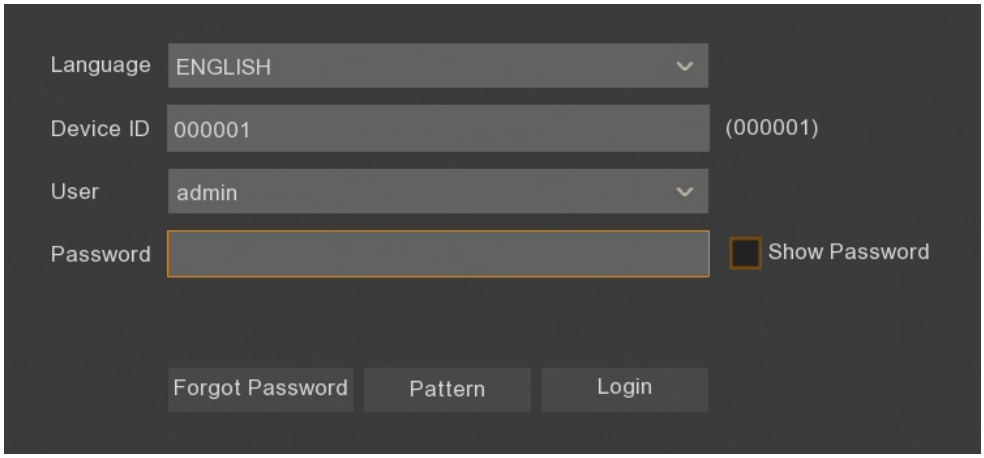
Unlock Pattern Enable - enables an alternative authentication method for the password using the pattern. It allows to enter administrative settings and make changes. Some settings, such as disk formatting, import/export settings still require password authentication.

DVR OPERATING

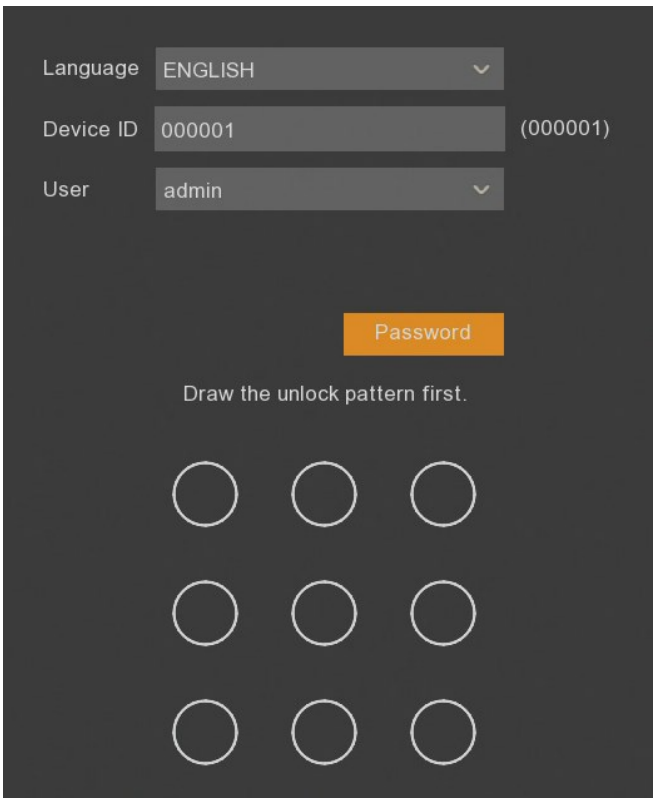
Draw - the function shows when Unlock Pattern function is enabled. It allows to create an unlock pattern. There is 3x3 board to create a pattern by dragging the mouse cursor. The pattern has to be confirmed by dragging the mouse cursor again.

Apply - saves settings.

The next step is to log in using the created user data.



Use the **Pattern** button to switch to login with the unlock pattern.



The **Password** button returns to the previous view.

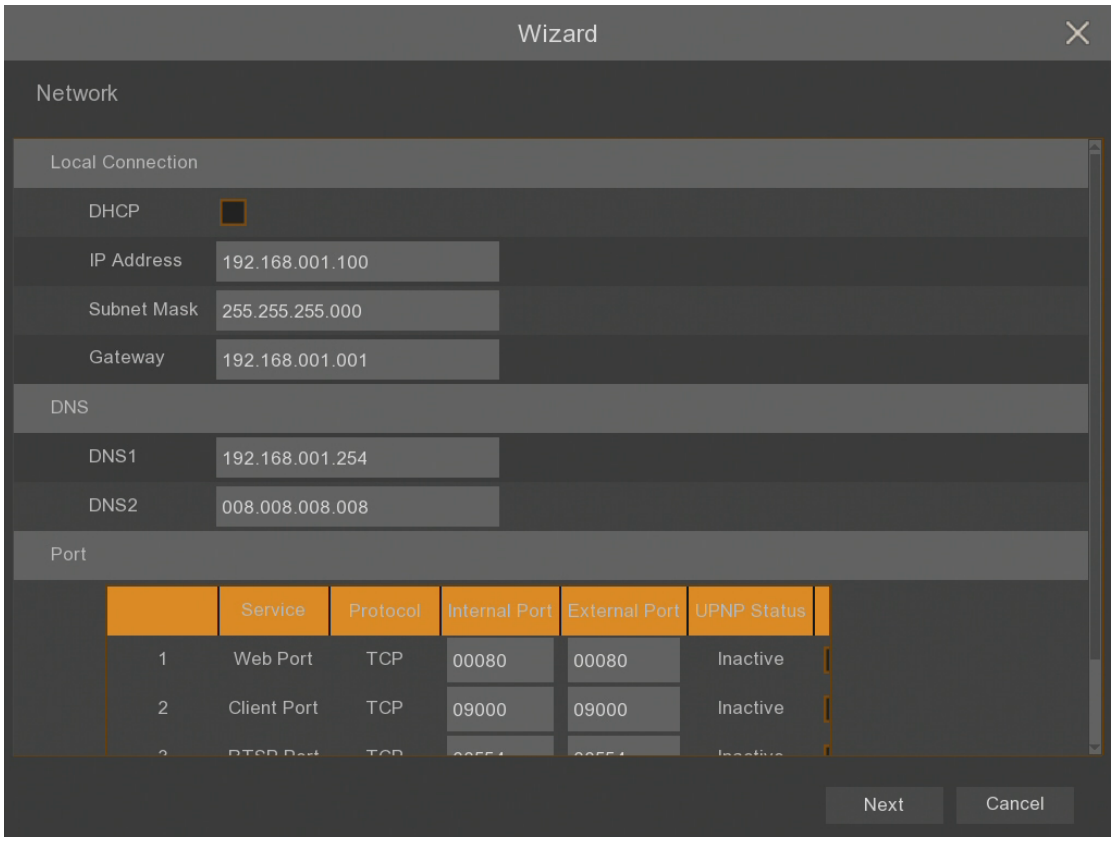
After authentication the **First Launch Wizard** opens.

3.3 Frist Launch Wizard

The first launch wizard provides a quick way to configure basic DVR settings.

When the **Start Wizard** will be pressed, subsequent sections of the wizard will appear.
The **Next** and **Previous** buttons allow to toggle between consecutive sections. The **Cancel** button exits the wizard without saving any changes.

3.3.1. Network Settings



DVR OPERATING

This section contains basic network settings.

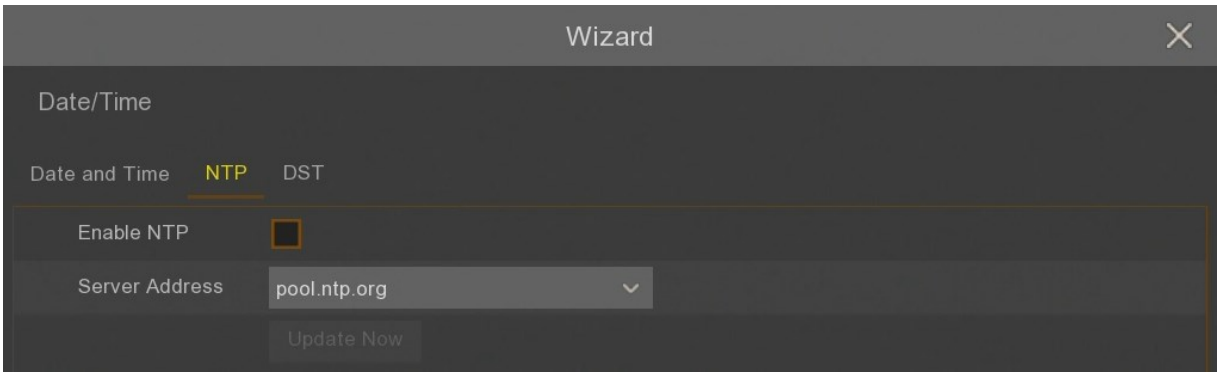
DHCP - enable network settings retrieval from a DHCP server
IP Address - network address of the recorder in the local network
Subnet Mask - number dividing in IP address the network part
Gateway - IP address of the router for Internet connection
DNS1 - domain server address
DNS2 - alternative domain server address
Web Port- the port used to connect with the DVR network plugin by Internet Explorer browser
Client Port - the port used to connect with the DVR by NHDR-5000Viewer, NMS, RxCamView
RTSP Port - the port used for RTSP streaming from NVR.
HTTPS - the port used while the connection with HTTPS protocol
UPNP - enable the UPnP discovery feature. The UPnP function must be supported by the router
UPNP Status - informs if the UPnP function is active for the port (**Active** or **Inactive**)

3.3.2. Time and date settings

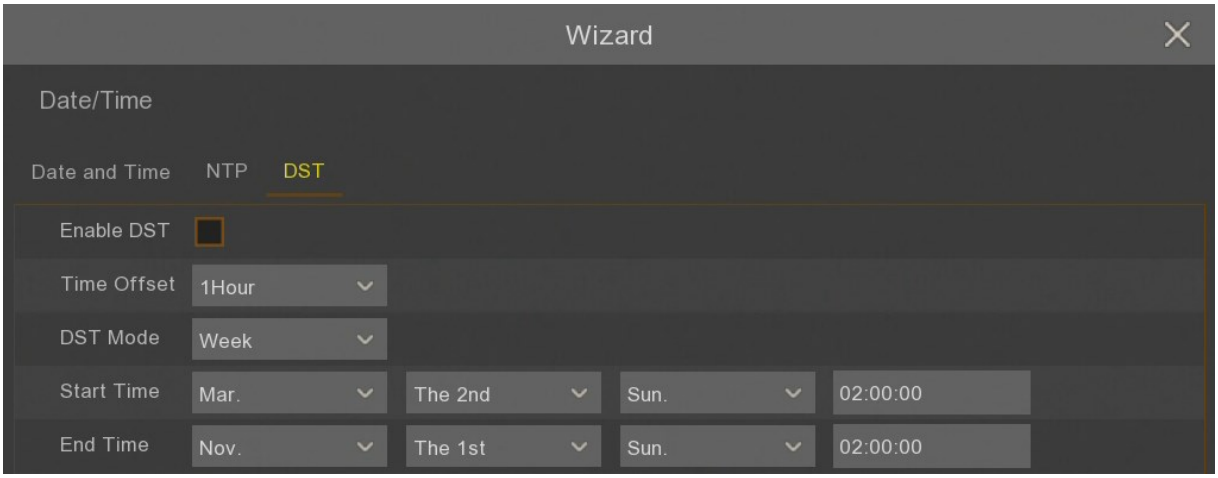
This section contains all the date and time options in the recorder.

Date - select day from calandar
Time - current DVR time. It can be written manually
Date Format - dispaly format of the date (MM/DD/YY, YY-MM-DD, DD/MM/YY)
Time Format - display format of time (12Hour or 24 Hour)
Time Zone - display a time zone depending on the region

The recorder allows to synchronize time with the NTP server. The server can be selected from drop-down list. The **User-Deifined** option allows to enter any IP address of the time server.
The correct network settings and connection are required to allow communication with the NTP server.



The recorder allows to set daylight saving time.



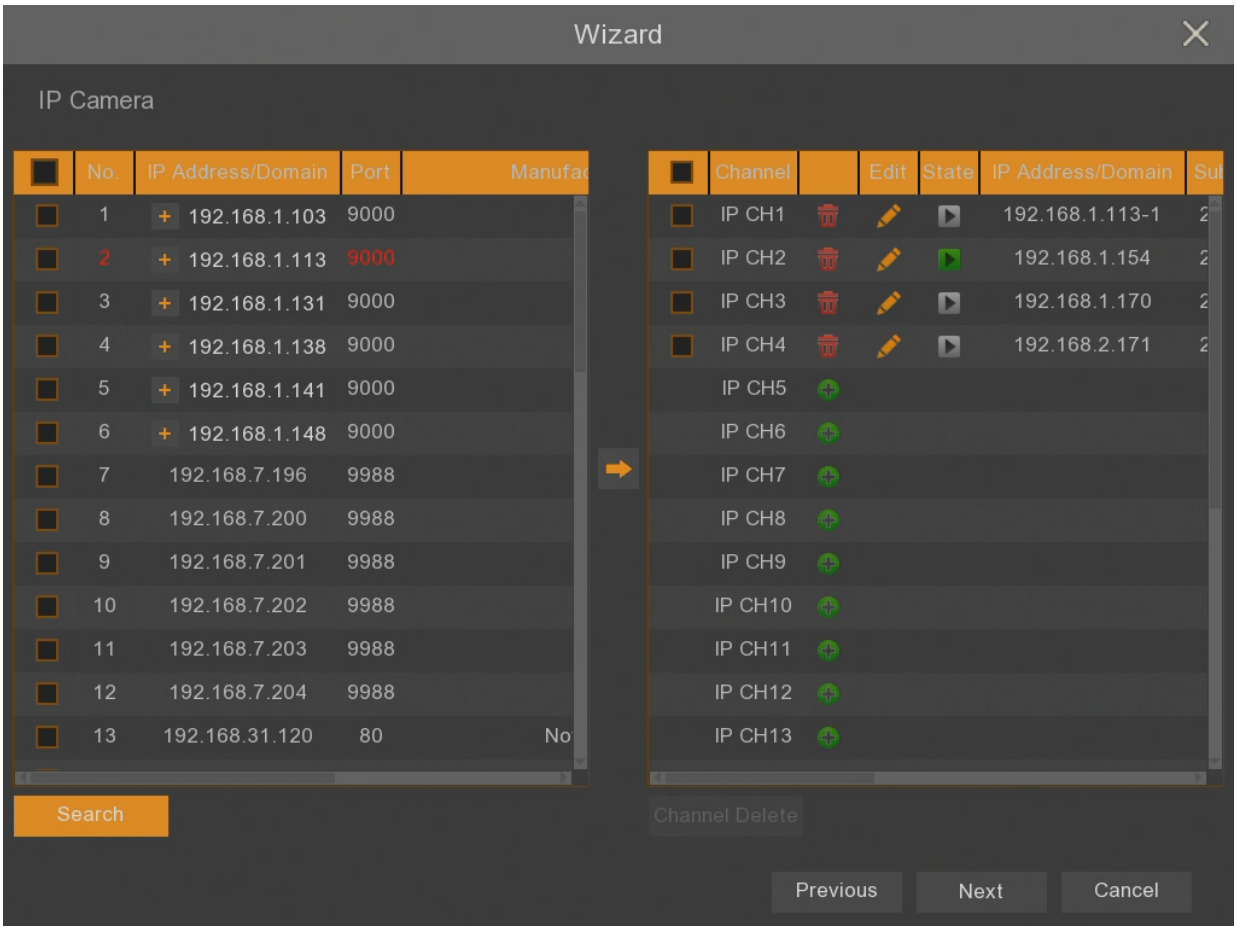
Time Offset - defines time advancing (1Hour, 2Hour)
DST Mode - defines method of switching by specified **Week**, or by specified **Day**.
Start Time - defines first day of DST
End Time - defines last day of DST

3.3.3. Adding IP cameras

The next section allows to add IP channels to the recorder. The DVR automatically searches all IP cameras, NHDR and NVR-4000 from Novus in local IP network.

On the left side is a list of found devices, on the right side the list of connected channels.

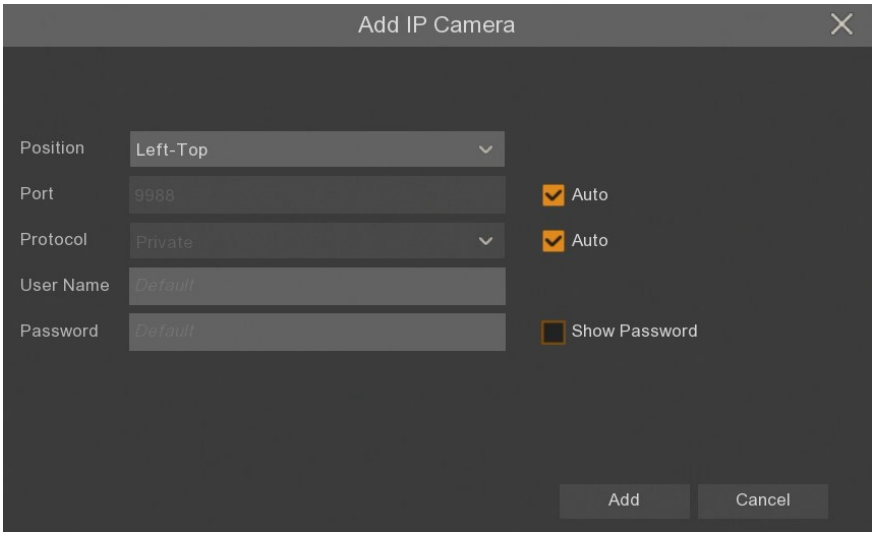
DVR OPERATING



The **Search** button starts researching IP devices. The recorders IP addresses are with sign, which allow to add separated channels from recorders. If a channel has already been added from the recorder, then its IP address is indicated by a red color.

There is an arrow in the center of the window which allow to add channels.

If there are selected multiple channels, the following dialog box appears to add a group, where are defined the same **User Name** and **Password**.



Position - specifies the location of the channel name

Port - Port number to connect devices. It is automatically recognized by default

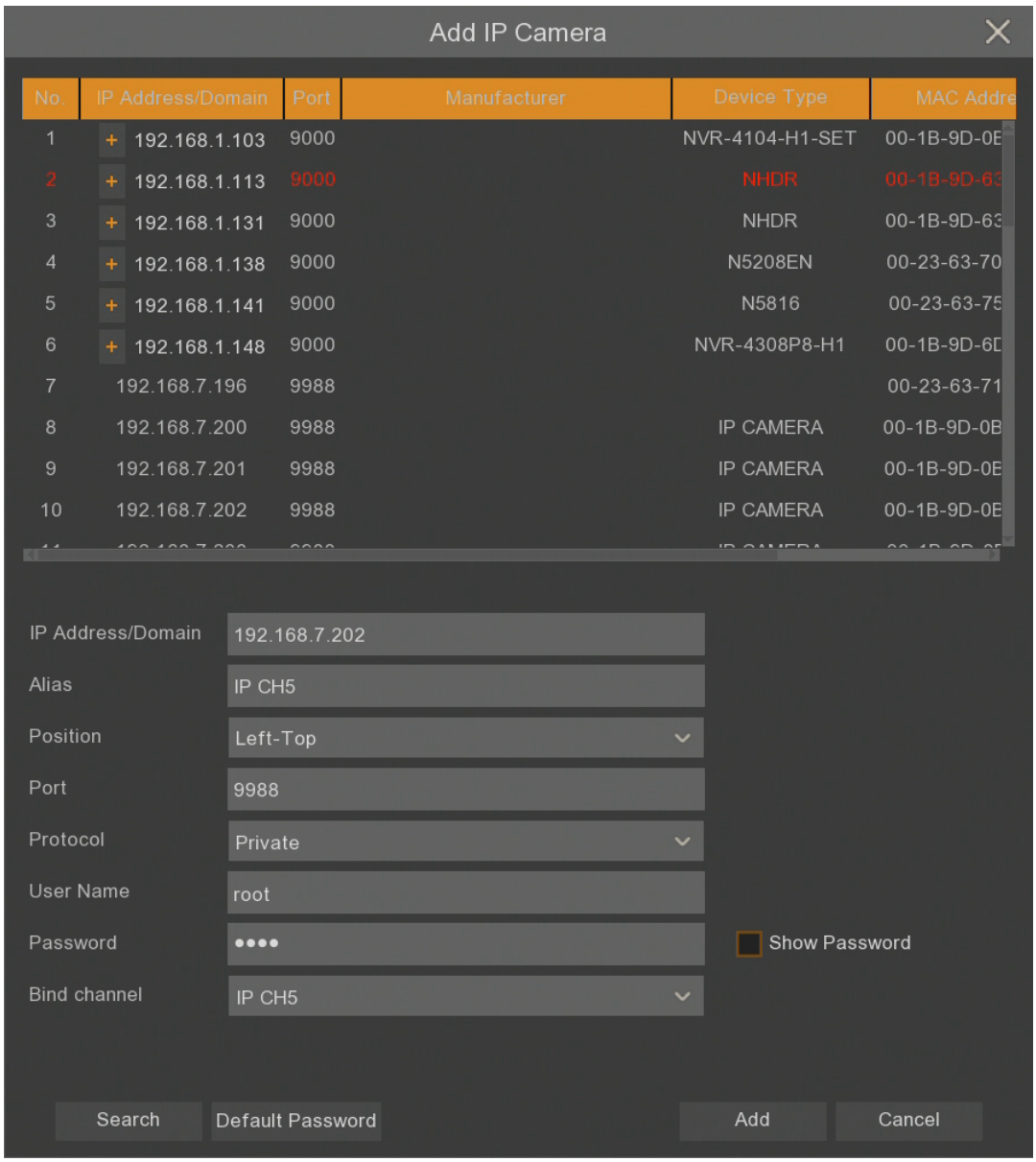
Protocol - protocol to connect devices. The NOVUS 2000 and 4000 IP cameras, NHDR and NVR-4000 recorders are using **Private** protocol. Another devices are using **ONVIF** protocol. The protocol is automatically recognized by default

User Name - name of the user which is used to log in to the device. The default user name is **root**.

Password - user password which is used to log in to the device. The default password is **pass**

The **Add** button confirms the entered data.

Adding a single channel there shows the following window, where can be defined the above parameters, the IP address (or domain), channel name (Alias) and channel number to assign a specific camera.



DVR OPERATING

In the right part of the wizzard window you can find the following indications:

- Adding a single camera. The Add IP Camera window from the previous page appears

- Deleting a single camera

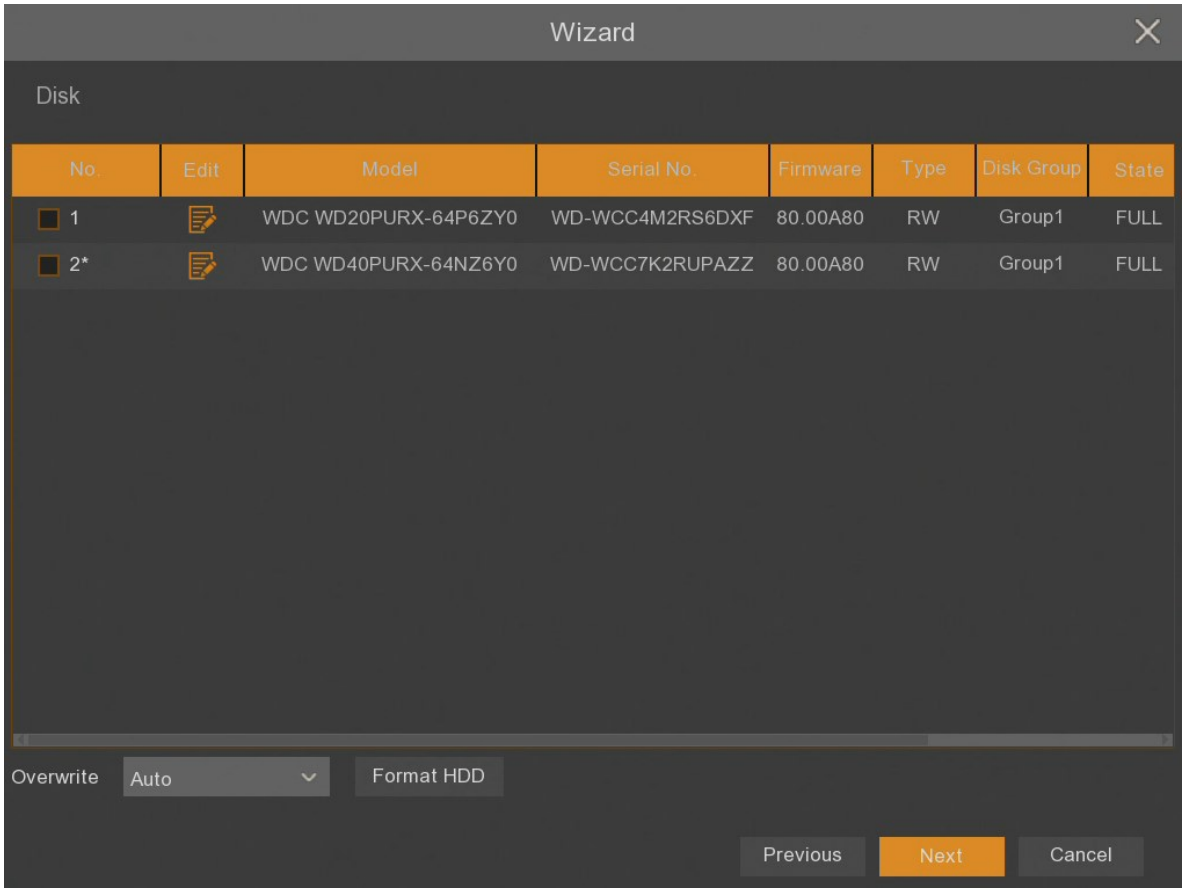
- Editing added camera parameters. A completed window appears from the previous page.

- Information, that the camera is connected, Show the video image of camera.

- Information, that there is no connection to the camera. Check the entered parameters and the network connection

3.3.4. Hard discs

The next section of the wizard displays a list of disks connected to the DVR.



No. - number of the disk. ***** means recording.

Edit - allow to change the HDD mode . HDD modes: Read/Write, Redundance, Read Only.

Model, Serial No., Firmware - disk information

Type - information about HDD mode, which can be changed in Edit field. Default mode is Read/Write

State - information about HDDs filling

Free / Total - information about free and total HDD space

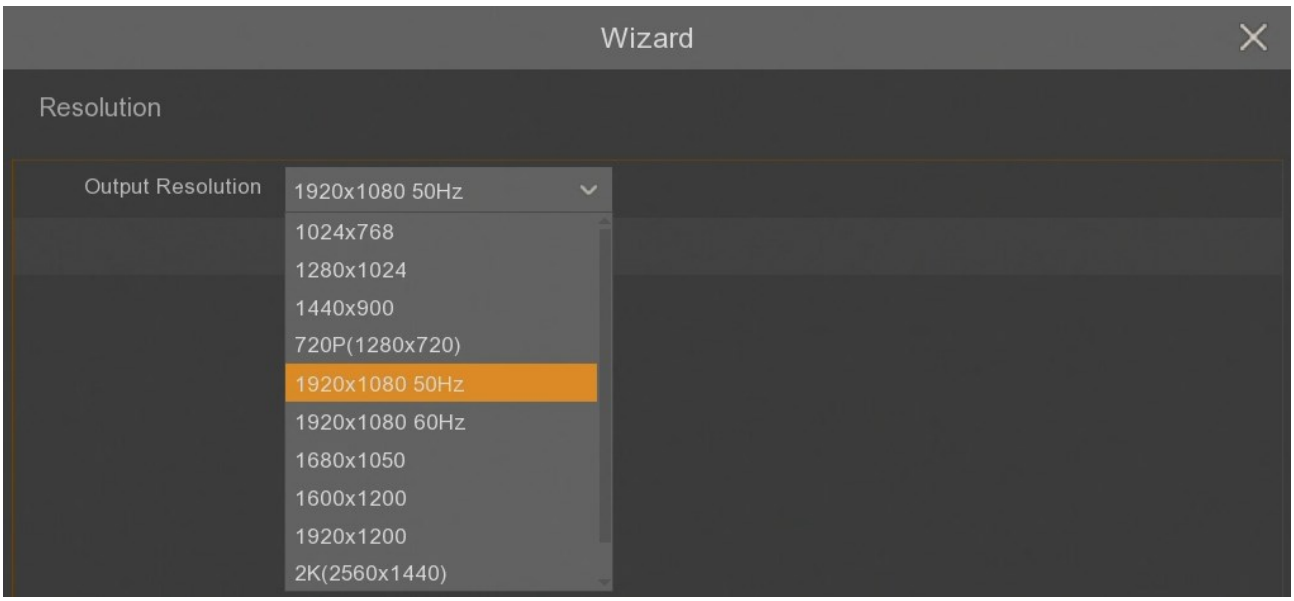
Free / Total Time - estimated time of recording, which should be recorded on the free hard disk space and the total recording time. The time depends on the encoding and the amount of video frames.

Overwrite - the default **Auto** setting cause recordings overwriting from the oldest when there is no free space on HDDs. When overwriting is **OFF**, the DVR will stop recording when the disc is full. It is also possible to set the time after which recordings will be overwritten: **1 day, 3 days, 7 days, 14 days, 30 days** and **90 days**. It means the longest time of stored recordings, after which the recordings will be deleted.

Format HDD - formatting the hard disk. Select the HDD before it.

Caution! You need to format the disc to start recording. Formatting deletes all data permanently from the hard disk.

3.3.5. Monitor output resolution



The next section allows to select the monitor output resolution. Following HDMI output resolutions are supported: 1024x768, 1280x1024, 1440x900, 1280x720, 1920x1080, 1680x1050, 1600x1200, 1920x1200, 3840x2160. VGA output supports resolutions up to 1920x1080.

Press the **Apply** button after selecting the resolution. When you change the resolution, you are prompted to confirm the change. If the change is not confirmed within 20 seconds, the previous resolution is reverted.

Note! During the first launch the image resolution on the HDMI and VGA outputs is set to 1280x1024.

3.3.6. P2P identifier

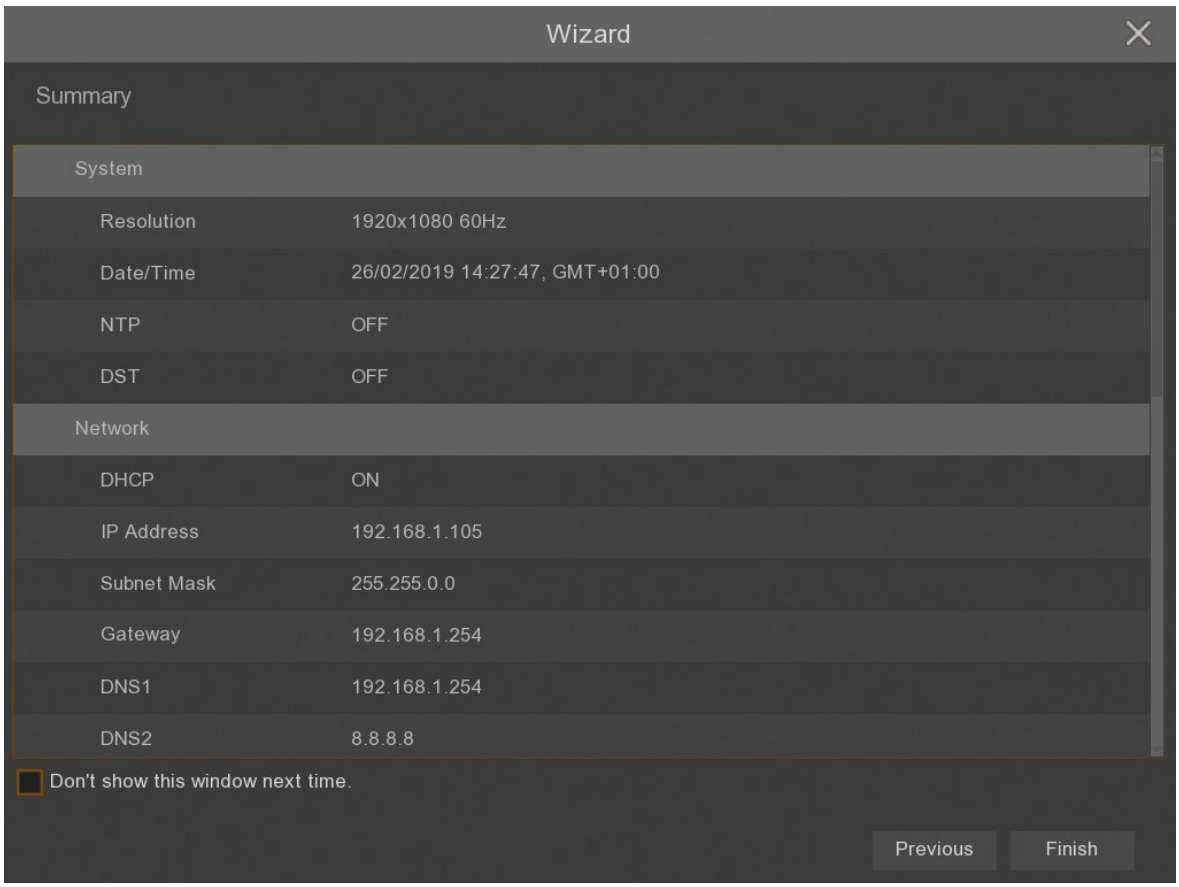
DVR allows to connect over the Internet using P2P service. The connection to the recorder is done by an external server, even if the recorder does not have a public IP address. The recorder need Internet access only. The connection to the DVR via the **P2P ID** is available from the NHDR-5000viewer software or Rxcamview application.

DVR OPERATING

The **QR code** contains the **P2P ID** and can be scanned eg. in the RXCAMview application.

Caution! P2P service is provided by third-party companies. AAT HOLDING S.A. is not responsible for the operation of the service.

3.3.7. Wizard Summary

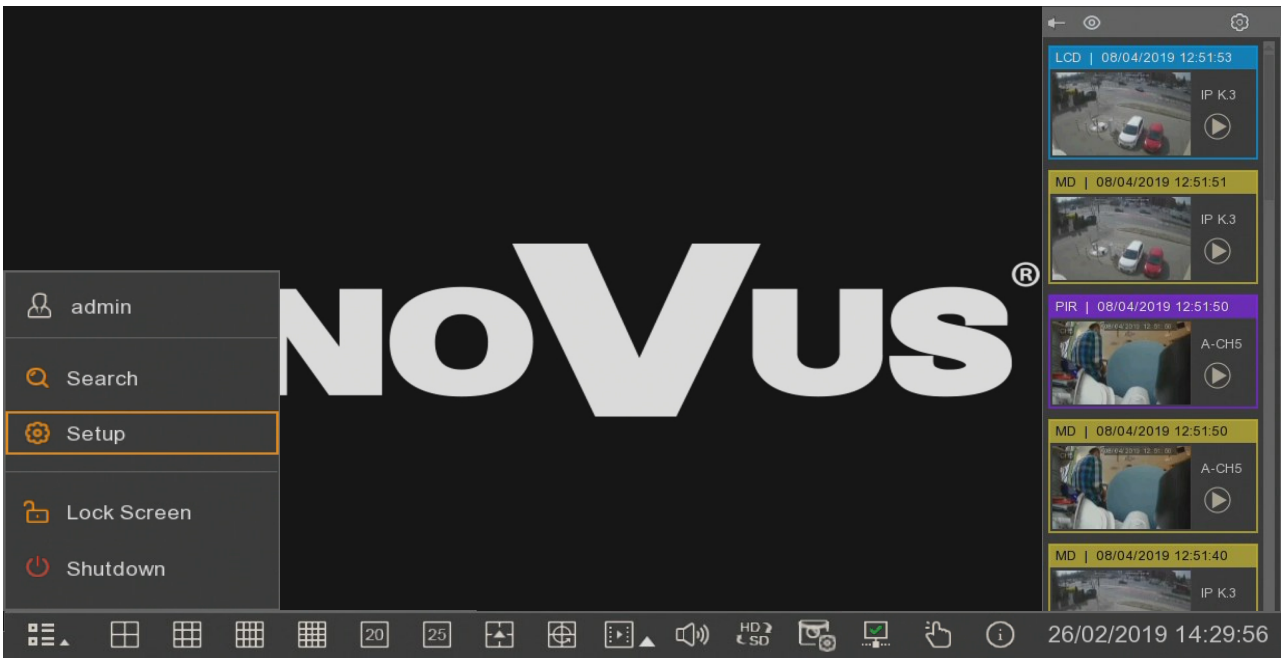


The summary displays parameters settings. The user can select **Don't show this window next time** check box to stop displaying the wizard. The **Finish** button saves all settings and closes the wizard.

4. MAIN SCREEN

When the initialization process is complete, live camera images are displayed on the monitor screen.

Moving the mouse cursor to the bottom of the screen displays the menu bar.



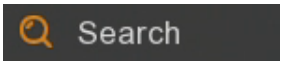
To display the menu in the recorder, press menu button  , then select **Settings**. A detailed description of the menu is provided in the full version of the manual.

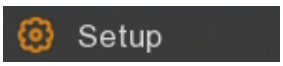
Then, log in with the using created user and password.

The menu bar contains the following options:

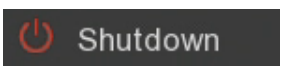
 -Expands the additional menu described below

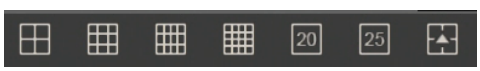
 -Currently logged in user, click to switch user

 -Starts the playback mode of recordings

 -Displays the recorder menu

 - User logout

 -Allows to disable DVR, reboot, log out

 -Select the split video window (double-click on the image displays the camera in full screen mode. Double-clickg again reverts to split.)

MAIN SCREEN

 - Start sequence display

 - Start playback mode. Click on triangle mark to start quick playback recent recordings (5sec. - 5min)

 - Switches on/off audio, change audio level, mute

 - Switches the stream of all cameras, HD means main stream, SD means substream

 - Preview policy - allow to select Realtime, Balanced, Smooth. Mode defines buffer used for smoothness the video

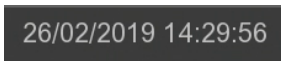
 - Network connection status: no connection

 - Network connection status: no connection with the router

 - Network connection status: connection OK

 - Manual mode allows for switch on record manually

 - Displays DVR information window, recorded channels, network



- Displays date and time

The channel menu is displayed when you press the left mouse button on the selected video window

 - Switches on/off manual record

 - Takes a screenshot of a given channel

 - Starts quick playback last 5 minutes recordings

 - Open PTZ panel

 - Turns on digital zoom

 - Picture settings - allows to adjust hue, brightness, contrast, saturation, sharpness levels (only for AHD cameras, IP 2000 and 4000 series)

- Switches the stream of camera, HD means main stream, SD means substream (only for IP channels)

 - Add tags (the camera must be in recording process)

MAIN SCREEN

Note! For IP cameras, the DVR displays main or substream depending on the display performance. If the main stream is choosen, depending on the available hardware resources, some channels may not be displayed. The message "Resource not enough" will appear in the place of the channel that cannot be displayed.

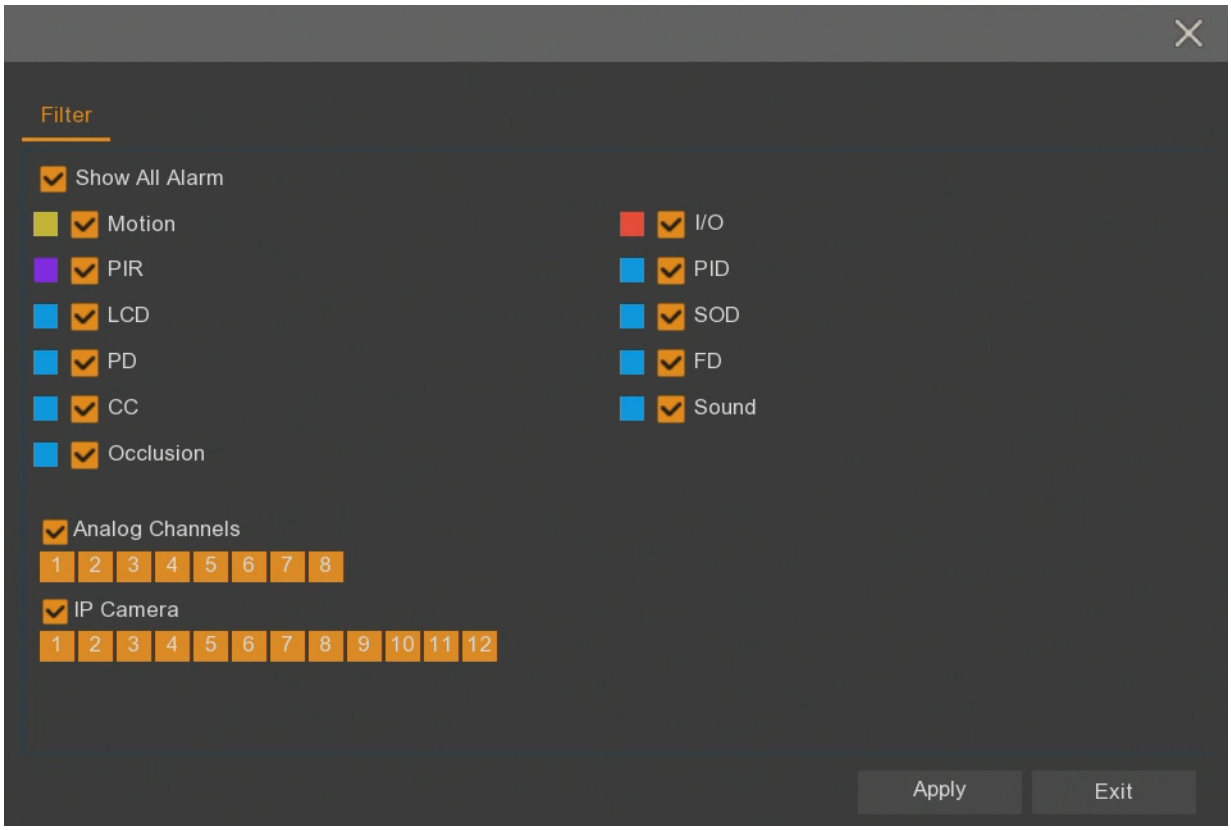
A pop-up window with current events appears on the right side of the screen. It shows the events with different colours: yellow (motion detection), red (alarm input), purple (PIR), blue (intelligent analysis). Each event has an additional summary description, date and time of occurrence and the camera name. The  icon allows to quick play a records with a specific event.

There are icons at the top of the pop-up window:

 -Pin allows to clip the window permanently so that it does not obscor the video images

 - Hide / show pop-up window

 - Opens the filter window



The filter window allow to define what kind of events and which cameras appears in the pop-up window.

ATTENTION! DETAILED INFORMATION CONCERNING DVR USAGE ARE IN FULL VERSION OF THE USER MANUAL AVAILABLE AT WWW.NOVUSCCTV.COM WEBPAGE.

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