NVR User manual

Updated January 3, 2024



NVR is a network video recorder for home and office video surveillance. You can connect third-party IP cameras to the device.

The user can view archived and online videos in Ajax apps. NVR records the received data with corresponding settings and a hard drive (not included). If the hard drive is not installed, the video recorder is used only for integrating third-party IP cameras into the Ajax system. NVR provides users with video alarm verification.

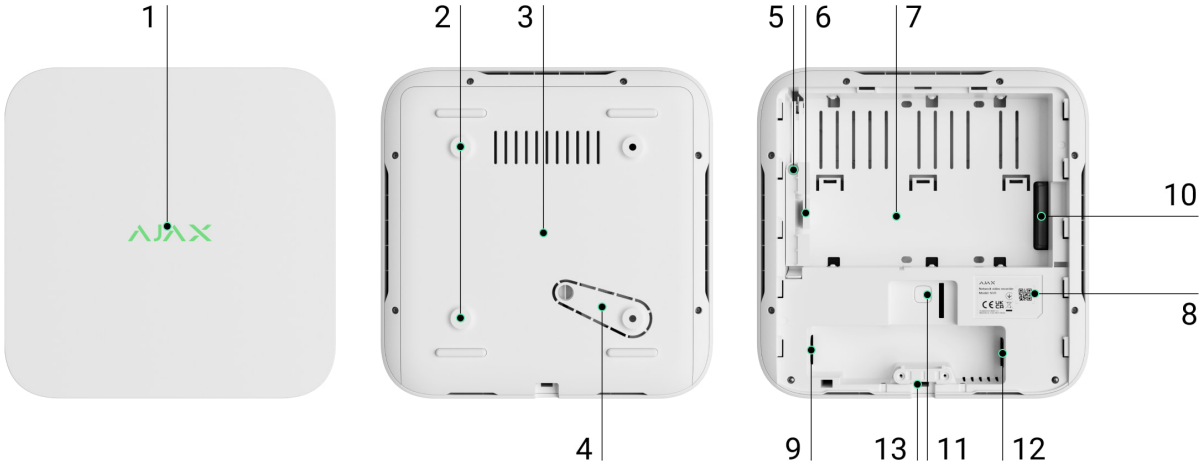
Use a hard drive with a power consumption of no more than 7 W.

The device is compatible with all **hubs**. Connection to **radio signal range extenders**, **ocBridge Plus**, and **uartBridge** is not provided.

NVR requires Internet access to connect to the Ajax Cloud service. The video recorder is connected to the network via Ethernet using the corresponding connector. A hub is only used to add NVR to the Ajax system.

Buy NVR

Functional elements



1. Logo with LED indicator.
2. Holes for attaching the SmartBracket mounting panel to the surface.
3. SmartBracket mounting panel.
4. Perforated part of the mounting panel. Do not break it off. Any attempt to detach the device from the surface triggers a tamper.
5. A hole for attaching a hard drive.
6. Hard drive latch.
7. Place to install a hard drive.
8. QR code with the device ID. Used to add NVR to an Ajax system.
9. Connector for the power cable.
10. Connector for the hard drive.

11. Button to reset parameters (the function will be available later).
12. Ethernet cable connector.
13. Cable retainer clamp.

Operating principle

NVR is a video recorder for connecting third-party IP cameras that have ONVIF and RTSP protocols. Allows you to install a storage device with a memory capacity of up to 16 TB (not included in the NVR package). Also, NVR can work without a hard drive.

NVR enables:

1. Add and configure IP cameras (camera resolution, brightness, contrast, etc.).
2. Watch video from added cameras in real-time with the ability to zoom.
3. Watch videos from the archive, navigating by the recording chronology and calendar (if the hard drive is connected to the video recorder).
4. Choose how to detect motion in the frame — on the camera or on the NVR.
5. Configure motion detection on NVR (detection zones, sensitivity level).
6. View the **Videowall** that combines images from all connected cameras.
7. **Create video scenarios** that send a short video from the selected camera to the Ajax app when the detector is triggered.

    How to export video in PRO Desktop

NVR is designed for indoor installation. We recommend installing the video recorder on a flat horizontal or vertical surface for better heat exchange of the hard drive. Do not cover it with other items.

The device is equipped with a tamper. The tamper reacts to attempts to break or open the lid of the casing, reporting the activation through Ajax apps.

What is tamper

Selecting the device location



It is advisable to choose an installation site where NVR is hidden from prying eyes, for example, in the pantry. It will help to reduce the likelihood of sabotage. Note that the device is intended for indoor installation only.

The device is made in a compact casing with passive cooling. If NVR is installed in insufficiently ventilated rooms, the operating temperature of the memory drive may be exceeded. Choose a hard, flat horizontal or vertical surface for mounting the casing, and do not cover it with other items.

Follow placement recommendations when designing the Ajax system for an object. The security system should be designed and installed by professionals. The list of authorized Ajax partners is **available here**.

Where NVR cannot be installed:

1. Outdoors. This may cause the breakdown of the video recorder.
2. Inside premises with temperature and humidity values that do not correspond to the operating parameters.

Installation and connection

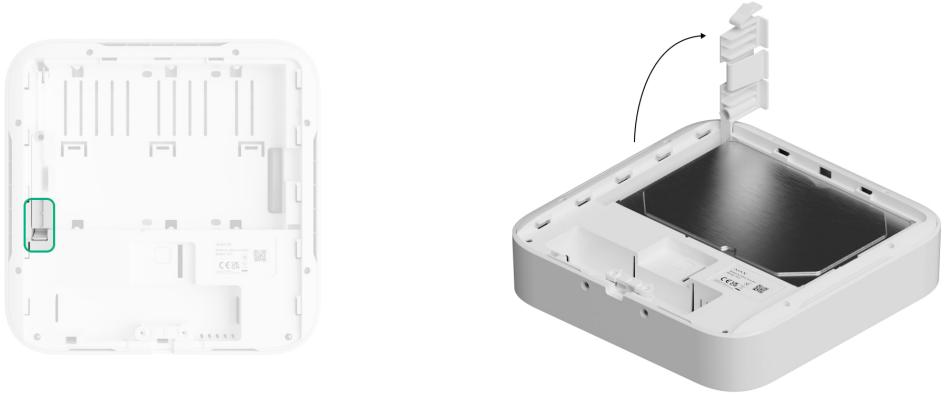
NVR installation:

1. Remove SmartBracket from the video recorder by pulling down the back panel.
2. Secure SmartBracket to a hard, flat surface with the bundled screws. Use at least two fixation points. In order for the tamper to respond to disassembly attempts, be sure to fix the enclosure at a point with a perforated area.



3. Lift the hard drive latch by pressing the button.

> When replacing the hard drive, wait 10 seconds after disconnecting the device from the power source. The hard drive contains rapidly rotating platters. Sudden movements or impacts can disable the mechanism, leading to physical damage and data loss.
>
> Do not move or flip NVR until the hard drive has stopped spinning.



4. Install the hard drive in the NVR enclosure so that the connectors match.



5. Lower the hard drive latch.
6. Secure the hard drive in the NVR enclosure with the bundled screw, using the location for fixation.



7. Connect external power supply and Ethernet connection.
8. Insert the video recorder into SmartBracket.
9. Turn on the power supply of NVR. The LED indicator lights up yellow and turns green after the connection to Ajax Cloud. If the connection to the cloud fails, the logo lights up red.

Adding to the system

Before adding a device

1. Install an **Ajax app**. Sign in to the account.
2. Add a hub to your app. Configure the settings and create at least one **virtual room**.
3. Make sure the hub is disarmed.

How to add NVR

1. Open the **Ajax PRO app**. Select the hub to which you want to add NVR.
2. Go to the **Devices** tab and click **Add device**.
3. Assign a name to the device.
4. Scan the QR code or enter it manually. Find the QR code on the back of the enclosure under the SmartBracket mounting panel and on the packaging.
5. Select a virtual room.
6. Press **Add**.
7. Make sure that the video recorder is powered on and has access to the Internet. The LED logo should light green.
8. Press **Add**.

The device connected to the hub will appear in the list of hub devices in the Ajax app.

NVR only works with one hub. To connect the video recorder to the new hub, remove NVR from the device list of the old hub. This must be done manually in the Ajax app.

How to add IP camera to NVR

To add an IP camera automatically:

1. Open the **Ajax app**. Select the hub with NVR added.
2. Go to the **Devices** tab.
3. Find **NVR** in the list, and click **Cameras**.
4. Wait until the network scan is completed and the available IP cameras connected to the local network appear.
5. Select the camera.

6. Enter the username and password (specified in the camera documentation) and click **Add**.
7. If the login and password are entered correctly, the video preview from the added camera will appear. In case of an error, check the correctness of the entered data and try again.
8. Make sure the video matches the added camera. Click **Next**.

To add an IP camera manually:

1. Open the **Ajax app**. Select the hub where NVR is added.
2. Go to the **Devices** tab.
3. Find **NVR** in the list, and click **Cameras**.
4. Click **Add manually**.
5. Select the camera type: **ONVIF-** or **RTSP-compliant camera**. The documentation for this camera indicates which protocol the camera supports.
6. Enter the IP address, port, username, and password. The username and password are specified in the documentation for this camera.
7. For a camera supporting the RTSP protocol, enter **Mainstream** and **Substream**. Information is specified in the documentation for this camera.
8. Press **Add**.
9. If the username and password are entered correctly, the video from the added camera will appear. In case of an error, check the correctness of the entered data and try again.
10. Make sure the video matches the added camera. Click **Next**.

The IP camera connected to the video recorder will appear in the list of NVR cameras in the Ajax app.

Icons

The icons show some device statuses. You can view them in Ajax apps:

1. Select a hub in the Ajax app.
2. Go to the **Devices** tab.
3. Find **NVR** in the list.

Icon	Value
	The hard drive is connected.
	The hard drive is not connected.
	The hard drive is being formatted or has periodic malfunctions. If formatting does not start, replace the hard drive.
	The hard drive malfunctions have been detected. Rebooting NVR or formatting the hard drive is recommended.
	NVR does not communicate with the Ajax Cloud via Ethernet.

States

The states display information about the device and its operating parameters. You can find out about the states of the video recorder in Ajax apps:

1. Select a hub in the Ajax app.
2. Go to the **Devices** tab.

3. Select **NVR** from the list of devices.

Parameter	Value
Connect via Bluetooth	Ethernet setup using Bluetooth.
Ethernet	NVR connection status to the Internet via Ethernet: • **Connected** — NVR is connected to the network. Normal state. • **Not connected** — NVR is not connected to the network. Check your wired internet connection or change the **settings via Bluetooth**. Clicking the icon ⓘ displays the network parameters.
CPU Usage	Displayed from 0 to 100%.
Memory Usage	Displayed from 0 to 100%.
Hard Drive	Hard drive connection status to NVR: • **OK** — hard drive is communicating with NVR. Normal state. • **Error** — an error occurred when connecting the hard drive to the NVR. Check the connection and compatibility of the memory drive and video recorder. • **Formatting Required** — hard drive formatting is recommended. If the drive contains data, it will be permanently deleted. • **Formatting…** — the hard drive is being formatted. • **Not installed** — the hard drive is not installed in the NVR.
Hard Drive Temperature	The temperature of the hard drive.

Cameras (Online / Connected)	The number of IP cameras connected to the video recorder.
Lid	The tamper status that responds to detachment or opening of the casing: • **Closed** — the device enclosure is closed. Normal state of the enclosure. • **Open** — the enclosure lid is open or otherwise violated the integrity of the enclosure. Check the enclosure state. **Learn more**
Current Archive Depth	The depth of hard drive recording. Shows how many days from the first record.
Uptime	NVR operating time since the last reboot.
Firmware	Firmware version of the NVR.
Device ID	NVR ID/Serial Number. Also available on the back part of the casing under the SmartBracket mounting panel and the packaging.

Settings

To change video recorder settings in an Ajax app:

1. Go to the **Devices** tab.
2. Select **NVR** from the list.
3. Go to **Settings** by clicking on the gear icon.
4. Set the required parameters.
5. Click **Back** to save the new settings.

Settings	Value

Name	Video recorder name. Appears in the list of hub devices, SMS text and notifications in the events feed. To change the video recorder name, click on the text field. The name can contain up to 12 Cyrillic characters or up to 24 Latin characters.
Room	Selection of the NVR virtual room. The room name is displayed in the text of SMS and notifications in the events feed.
Firmware Update	NVR firmware version.
Ethernet	The setting of the connection type of NVR to Ajax Cloud service via Ethernet. Available connection types: • **DHCP;** • **Static.**
Archive	Selection of the maximum archive depth. It can be set in the range of 1 to 360 days or can be unlimited. • Allows to format the hard drive.
Service	
Time zone	Time zone selection. Set by the user and is displayed when viewing video from IP cameras.
LED Brightness	The brightness level of the LED frame of the smart plug is adjusted with a scrollbar.
Server Connection	
Delay of Cloud Connection Loss Alarm, sec	The delay is required to reduce the risk of a false event about the lost connection with the server. The delay can be set in the range of 30 to 600

	seconds.
NVR-Cloud Polling Interval, sec	The frequency of polling the Ajax Cloud server is set in the range of 30 to 300 seconds. The shorter the interval, the quicker the cloud connection loss will be detected.
Get notified of server connection loss without alarm	If enabled, the app uses a standard notification sound instead of a siren alert.
Report a Problem	Allows to describe a problem and send a report.
User Guide	Opens the NVR user manual
Unpair Device	Unpairs NVR from the hub.

NVR settings via Bluetooth

If NVR has lost connection with the server or failed to connect the video recorder due to incorrect network settings, you can change the Ethernet settings via Bluetooth. The user with administrator rights to whose account this NVR is added has access.

To connect NVR after losing connection to Ajax Cloud:

1. Go to the **Devices** tab.
2. Select **NVR** from the list.
3. Go to settings via Bluetooth by clicking on the gear icon.
4. Make sure that Bluetooth is enabled on your smartphone. Click **Next**.
5. Reboot NVR by powering it off and then on.

The Bluetooth of the video recorder will be enabled within three minutes after the power is on. If the connection fails, reboot NVR and try again.

6. Set the required network parameters.

7. Click **Connect**.

Indication

Event	Indication	Note
NVR boots after connecting to power.	Lights up yellow.	If NVR is connected to Ajax Cloud, the color indication changes to green.
NVR has power and is connected to the Internet.	Lights up green.	
NVR is not connected to the Internet or there is no communication with the Ajax Cloud server.	Lights up red.	

Maintenance

The device does not require maintenance.

Technical specifications

Technical specifications NVR (8-ch)

Technical specifications NVR (16-ch)

Compliance with standards

Warranty

Warranty for products of Limited Liability Company “Ajax Systems Manufacturing” is valid for 2 years after purchase.

If the device does not function correctly, please contact Ajax Technical Support first. In most cases, technical issues can be resolved remotely.

Warranty obligations

User Agreement

Contact Technical Support:

- email
- Telegram

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Email

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