# NVR user manual

Updated March 12, 2026

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

The user can view archived and live videos in Ajax apps. NVR records the received data with corresponding settings and a hard disk drive or solid-state drive (not included). If the storage device 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 storage device with a power consumption of no more than 7 W.

NVR requires Internet access to connect to the Ajax Cloud service. The video recorder is connected to the network via Ethernet using the corresponding

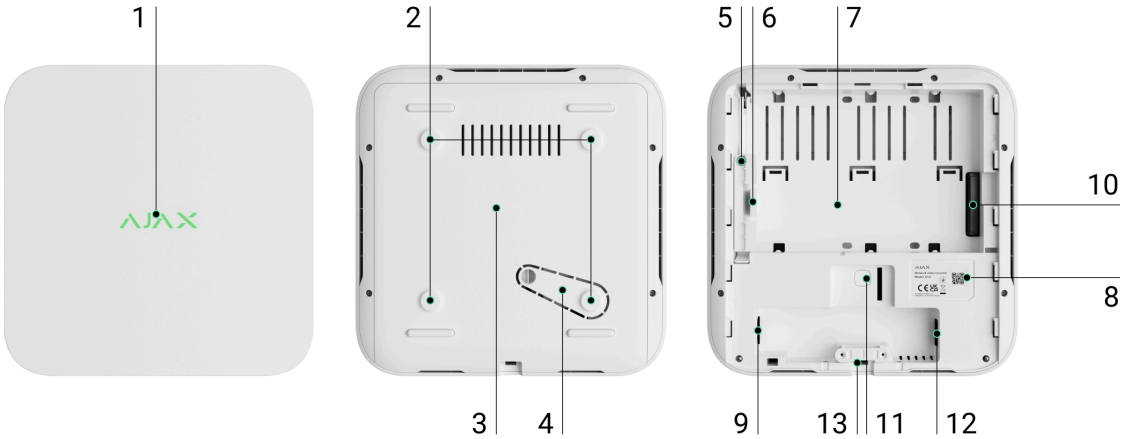
connector.

The device is available in several versions:

- NVR (8-ch);
- NVR (16-ch);
- NVR DC (8-ch);
- NVR DC (16-ch).

**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 3.5" drive latch using a screw.
6. 3.5" drive latch.

7. Place to install a storage device (HDD/SSD). Use a 2.5" to 3.5" mounting adapter to securely install an SSD.
8. QR code with the device ID. Used to add NVR to an Ajax system.
9. Power supply connector.
10. Connector for the storage device.
11. Button to reset parameters.
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 and **Ajax video devices**. 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 storage device.

> Using the video storage calculator, you can calculate the NVR required storage capacity and estimated recording time based on the settings.

**How to choose a storage device**

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 and export videos from the archive, navigating by the recording chronology and calendar (if the storage device 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 **Video wall** 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.

> The video recording segments downloaded from NVR with **firmware 2.244** and later have the **Ajax digital signature** that verifies the integrity of the exported video. To verify the authenticity of the downloaded video recordings, use the **Ajax media player** software.
>
> Learn more about Ajax media player

**How to download videos from the archive in Ajax apps**

**How to configure temporary camera video access**

8. Configure connection via ONVIF to integrate the device with video management systems (VMS) such as Milestone, Genetec, Axxon, and Digifort.

> ONVIF authorization is supported by NVR with a firmware version 2.289 or later.
>
> An admin or PRO with rights to configure the system can set up a connection via ONVIF in:
>
> - Ajax Security System with the app version 3.25 or later.
> - Ajax PRO: Tool for Engineers with the app version 2.25 or later.
> - Ajax PRO Desktop with the app version 4.20 or later.
> - Ajax Desktop with the app version 4.21 or later.

How to configure ONVIF authorization

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 storage device. 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

**NVR installation:**

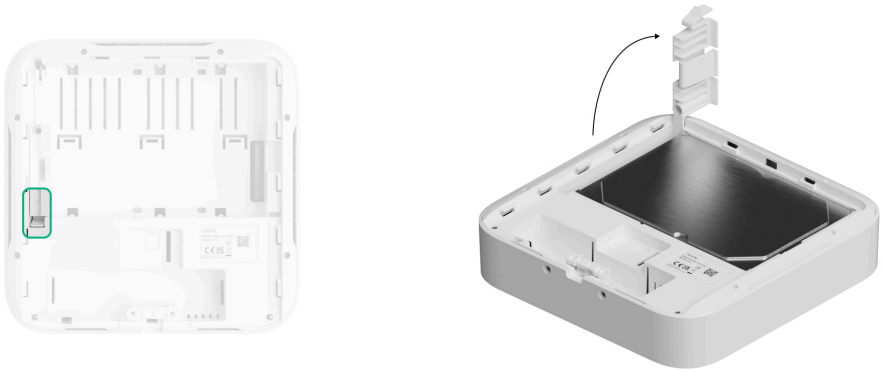
1. Remove SmartBracket from the video recorder by pulling down the back panel.
2. Secure SmartBracket to a hard, flat surface with the bundled screws. Use at least two fixation points. In order for the tamper to respond to disassembly attempts, be sure to fix the enclosure at a point with a perforated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

3. Lift the 3.5" drive latch by pressing the button.

When replacing the hard disk drive (HDD), wait 10 seconds after disconnecting the device from the power source. The HDD 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 HDD has stopped spinning.



4. Install the storage device in the NVR enclosure so that the connectors match.

5. Lower the 3.5" drive latch.
6. Secure the storage device in the NVR enclosure with the bundled screw, using the location for fixation.

7. Connect external power supply and Ethernet connection.
8. **Add the device to the system**.
9. Insert the video recorder into SmartBracket.

The LED indicator lights up yellow and turns green after the connection to the Internet. If the connection to Ajax Cloud server fails, the logo lights up red.

## Adding to the system

## Before adding a device

1. Install an **Ajax app**.
2. Log in to your **account** or create a new one.
3. Select a **space** or create a new one.
4. Add at least one **virtual room**.
5. Ensure the space is disarmed.

> ⚠ Only a PRO or a space admin with the rights to configure the system can add the device to the space.

**Types of accounts and their rights**

## Adding to the space

1. Open the **Ajax app**. Select the **space** to which you want to add NVR.
2. Go to the **Devices** tab and tap **Add device**.
3. 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.
4. Assign a name to the device.
5. Select a virtual room.
6. Tap **Add**.
7. Make sure that the video recorder is powered on and has access to the Internet. The LED logo should light green.
8. Tap **Add**.

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

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

## Adding an IP camera to NVR

You can calculate the number of cameras and NVRs that can be added to the space using the **video device calculator**.

**To add an Ajax camera:** **To add a third-party IP camera automatically:** **To add**

1. Open the **Ajax app**. Select the **space** with NVR added.
2. Go to the **Devices** tab.
3. Find the video recorder in the list, and tap **Cameras**.

4. Tap **Add device** and wait until the network scan is complete and the available devices connected to the local network are displayed.
5. Select the camera. You will see the live image from the device.
6. Make sure the video matches the desired camera. Tap **Add**.

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

> Note that one camera can be paired with several video recorders in one space at the same time.

## Resetting to the default settings

To reset NVR to the default settings:

1. Turn it off by disconnecting the power supply.
2. Press and hold the reset button.
3. Power NVR while the reset button is pressed, and wait until the LED indicator lights up violet. This will take about 50 s.

> The NVR LED indicator lights up yellow for 20 s after powering the video recorder with a pressed reset button. Then it turns off for 30 s and lights up violet. This means that NVR has been restored to the default settings.

4. Release the reset button.

## Icons

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

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

| Icon | Meaning |
|---|---|
| | The storage device is connected. |
| | The storage device is not connected. |
| | The storage device is being formatted or has periodic malfunctions. If formatting does not start, replace the storage device. |
| | The storage device malfunctions have been detected. Rebooting NVR or formatting the storage device is recommended. |
| | A firmware update is available. Go to the device states or settings to find the description and launch an update. |
| | New firmware installation has failed. |
| Offline | The device has lost connection with the Ajax Cloud server. |
| ONVIF | The device connection via ONVIF is enabled.<br>Learn more |

## 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 **space** in the Ajax app.
2. Go to the **Devices** tab.
3. Select **NVR** from the list of devices.

| Parameter | Meaning |
|---|---|
| Connect via Bluetooth | Ethernet setup using Bluetooth. |
| Firmware update | The field is displayed when the firmware update is available:<br>• **New firmware version available** — the new firmware is available for download and installation.<br>• **Downloading...** — firmware downloading is in progress. It is displayed as a percentage.<br>• **Installing...** — the firmware is being installed.<br>• **Failed to update firmware** — the new firmware could not be installed.<br>Tapping on ⓘ opens more information about the device's firmware update. |
| Ethernet | NVR connection status to the Internet via Ethernet:<br>• **Connected** — NVR is connected to the network. Normal state.<br>• **Not connected** — NVR is not connected to the network. Check your wired internet connection or change the **settings via Bluetooth**. |

| | |
|---|---|
| | Tapping the icon ⓘ displays the network parameters. |
| CPU usage | Displayed from 0 to 100%. |
| RAM usage | Displayed from 0 to 100%. |
| Hard drive | Storage device connection status to NVR:<br><br>• **OK** — the storage device is communicating with NVR. Normal state.<br><br>• **Error** — an error occurred when connecting the storage device to the NVR. Check the connection and compatibility of the memory drive and video recorder.<br><br>• **Formatting required** — storage device formatting is recommended. If the drive contains data, it will be permanently deleted.<br><br>• **Formatting...** — the storage device is being formatted.<br><br>• **Not installed** — the storage device is not installed in the NVR. |
| Hard drive temperature | The temperature of the storage device. |
| Cameras (online / total) | The number of cameras connected to the video recorder. |
| Lid | The tamper status that responds to detachment or opening of the casing:<br><br>• **Closed** — the device enclosure is closed. Normal state of the enclosure.<br><br>• **Open** — the enclosure lid is open or otherwise violated the integrity of the enclosure. Check the enclosure state.<br><br>Learn more |

| | |
|---|---|
| Current archive depth | The depth of storage device recording. Shows how many days from the first record. |
| ONVIF integration | Shows the current status of the device's ONVIF integration.<br><br>This state is displayed only when ONVIF integration is enabled. |
| 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 tapping on the gear icon.
4. Set the required parameters.
5. Tap **Back** to save the new settings.

An Ajax system enables PROs to apply multiple preconfigured settings to multiple video devices simultaneously via setting templates.

Learn more about settings templates

| Settings | Meaning |
|---|---|

| | |
|---|---|
| Name | Video recorder name. Appears in the list of devices and notifications in the events feed.<br><br>To change the video recorder name, tap on the text field.<br><br>The name can contain up to 12 Cyrillic characters or up to 24 Latin characters. |
| Room | Selection of the NVR virtual room.<br><br>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.<br><br>Available connection types:<br><br>• **DHCP;**<br><br>• **Static.** |
| Archive | Selection of the maximum archive depth. It can be set in the range of 1 to 360 days or can be unlimited.<br><br>Allows to format the storage device. |
| Service | Opens a menu with **Service** settings.<br><br>Learn more |
| Monitoring | The setting is available in Ajax PRO apps. |

| | |
|---|---|
| | Allows a PRO with rights to configure the system to set up **Zone number for CMS events** — unique identifier of the device in events it reports to CMS.<br><br>For cameras connected to NVR, the **Send events on detections to CMS** option can be set up additionally. This option defines whether the camera will send notifications on motion or object detection to CMS. To do this, open the settings of the connected camera and click the **Monitoring** menu. |
| Report a problem | Allows to describe a problem and send a report. |
| User manual | Opens the NVR user manual. |
| Delete device | Unpairs NVR from the space. |

## Service settings

| Settings | Meaning |
|---|---|
| Time zone | Time zone selection.<br><br>Set by the user and is displayed when viewing video from IP cameras. |
| LED brightness | The brightness level of the LED frame of the device is adjusted with a scrollbar. |
| Connection via ONVIF | Configuring the device's connection via ONVIF to third-party VMSs.<br><br>Learn more |
| Security certificates | Allows downloading a security certificate for use in third-party systems to ensure a secure connection between an Ajax video device and a third-party video management system. |

| Server connection | |
|---|---|
| Delay of cloud connection loss alarm, sec | The delay helps to reduce the risk of a false event about the lost connection with the server.<br><br>The delay can be set in the range of 30 to 600 seconds. |
| Cloud polling interval, sec | The frequency of polling the Ajax Cloud server is set in the range of 30 to 300 seconds.<br><br>The shorter the interval, the faster the cloud connection loss will be detected. |
| Get notified of server connection loss without alarm | When the toggle is enabled, the system notifies users about server connection loss using a standard notification sound instead of a siren alert. |

## 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.

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 tapping on the gear icon.
4. Make sure that Bluetooth is enabled on your smartphone. Tap **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. Tap **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. | |
| • NVR does not have a storage device installed.<br>• The storage device is installed but does not work correctly. For example, when formatting, if it has errors, or when it needs to be formatted. | Flashes green or red every second, depending on the status of the connection with the Ajax Cloud server. | The indicator flashes until one of the following conditions is met:<br>• The storage device is formatted/installed.<br>• All cameras added to NVR are configured not to record video to the NVR's storage device. |

## Maintenance

The device does not require maintenance.

## Technical specifications

Technical specifications NVR (8-ch)

Technical specifications NVR (16-ch)

Technical specifications of NVR DC (8-ch)

Technical specifications of NVR DC (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

Manufactured by “AS Manufacturing” LLC