# Hub (2G) / (4G) Jeweller user manual

Updated October 9, 2024



**Hub (2G) / (4G) Jeweller** is a control panel of the Ajax system. It controls the operation of connected devices and interacts with users, PROs, and security companies.

Please note that Hub (2G) / (4G) Jeweller does not support some Ajax devices. Refer to the Ajax devices compatibility table for a detailed list of compatible devices.

Learn more

Hub (2G) / (4G) Jeweller requires internet access to connect to the Ajax Cloud server. The available communication channels are Ethernet and a SIM card. Both Hub (2G) Jeweller and Hub (4G) Jeweller have identical technical characteristics

and settings, differing only in the GSM modem. The 2G version supports only 2G networks, and the 4G version supports 4G (LTE) networks.

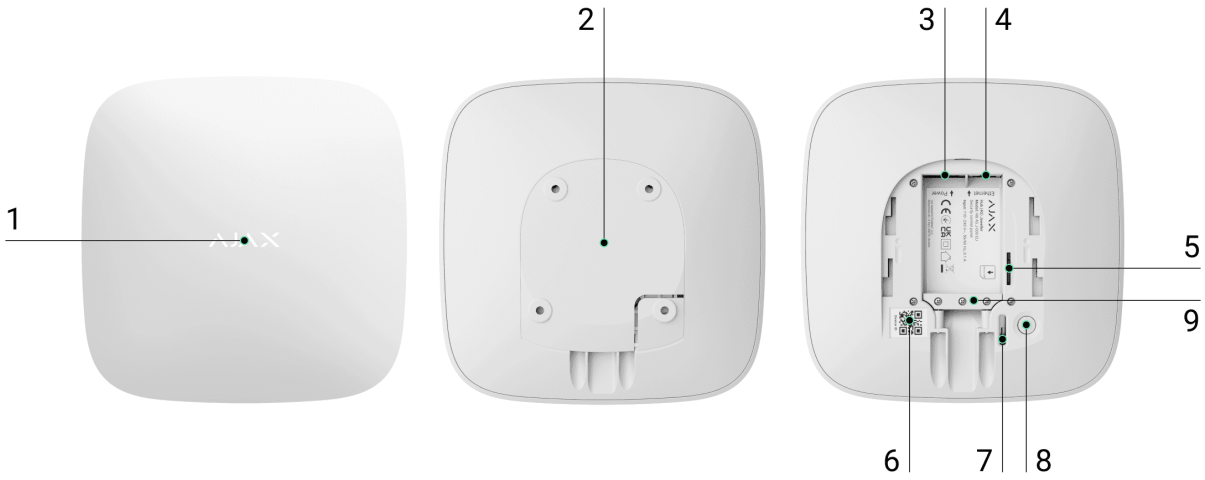
**Buy Hub (2G) / (4G) Jeweller**

Use both communication channels to ensure more reliable communication between the hub and Ajax Cloud, if possible.

Connecting to Ajax Cloud is necessary for configuring and managing the system through Ajax apps, transferring notifications about alarms or events, and updating the software. All data on Ajax Cloud is stored under multilevel protection, and information is exchanged with the hub via an encrypted channel.

You can efficiently manage the system and quickly respond to alarms or notifications with **iOS, Android, macOS, and Windows apps**. Hub admin or PRO with the rights to configure the system can choose the events to inform users about and how to notify them — by push notifications or SMS.

## Functional elements




1. LED logo indicating the hub status.
2. The SmartBracket mounting panel. Slide it down with force to remove it.

Do not break off the perforated part of the mounting panel. It is required for actuating the tamper in case of any attempt to dismantle the hub.

**3.** Power cable socket.

**4.** Ethernet cable socket.

**5.** Slot for the micro SIM.

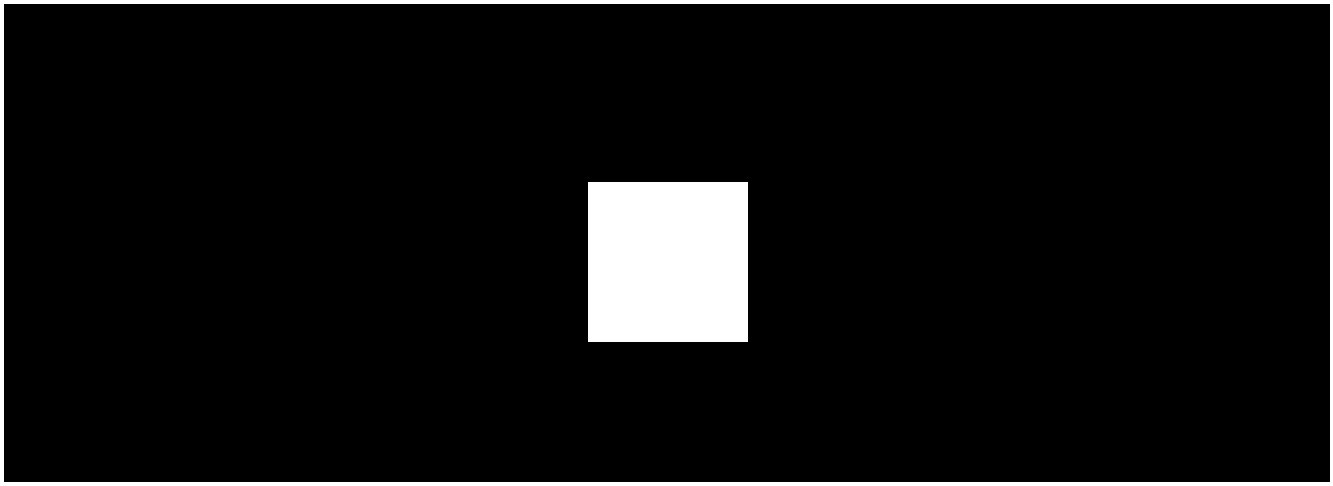
**6.** QR code.

**7.** Tamper.

**8.** Power button.

**9.** Cable retainer clamp.

## Operating principle



00:00 00:12

**Hub (2G) / (4G) Jeweller** monitors the system operation by communicating with added devices via the **Jeweller encrypted protocol**. The communication range is up to 2,000 m in an open space (for example, without walls, doors, or inter-floor constructions). If the detector is triggered, the system immediately raises the alarm, runs scenarios, and notifies the security company's central monitoring station (CMS) and system users about the incident.

You can add up to 100 Ajax devices to the hub to protect the facility against intrusion, fire, and flooding. Control electrical appliances either automatically using

scenarios or manually via Ajax apps.

## Sabotage protection

Hub (2G) / (4G) Jeweller has two communication channels for connecting to the Ajax Cloud server: Ethernet and a SIM card. This allows you to connect the device to different communication providers simultaneously. If one communication channel becomes unavailable, the hub automatically switches to another and notifies the security company's CMS and system users.

In case of interference at Jeweller frequencies or attempted jamming, the system seamlessly switches to an available radio frequency and sends notifications to the security company's CMS and system users.

Learn more

The hub regularly checks the communication quality with all added devices. If any device loses connection with the hub, a notification about the incident will be sent to all system users (depending on the settings) and the security company's CMS.

Learn more

No one can disconnect the hub unnoticed, even when the facility is disarmed. If an intruder attempts to dismount the device, it immediately triggers the tamper. System users and the security company will receive notifications about triggering.

Learn more

The hub regularly checks the connection with the Ajax Cloud server. The polling interval is specified in the hub settings. By default, the server notifies users and the security company within 60 seconds after losing the connection.

Learn more

The built-in backup battery ensures up to 15 hours of autonomous operation when the Ethernet connection is switched off. Due to this, the system continues to operate even if the power supply is cut off at the facility. To increase battery life or connect the hub to a 6 V⎓ or 12–24 V⎓ grid, use a power supply unit:

**Hub (2G) Jeweller** — 12V PSU for Hub/Hub Plus/ReX
**Hub (4G) Jeweller** — 6V PSU (type A), 12–24V PSU (type A)

Learn more

## OS Malevich

**Hub (2G) / (4G) Jeweller** is run by the real-time operating system OS Malevich. The system is immune to viruses and cyberattacks.

How OS Malevich updates

## Video surveillance connection

**Hub (2G) / (4G) Jeweller** is compatible with Ajax cameras and NVRs and with third-party cameras that support RTSP protocol or SDK integration.

How to connect cameras to the Ajax system

Cameras and NVRs that can be connected to Hub (2G) / (4G) Jeweller:

| Devices | Quantity |
|---|---|
| **Ajax cameras via Ajax NVRs** | up to 224 |
| **Third-party cameras via Ajax NVRs using ONVIF** | up to 224 |
| **Standalone Ajax cameras** | up to 200 |
| **Standalone third-party cameras using RTSP or SDK** | up to 10 |

## Automation scenarios

Use scenarios to automate the system and decrease the number of routine actions. Adjust the security schedule and program actions of **automation devices** in response to an alarm, **Button** press, or by schedule. A scenario can be created remotely in the Ajax app.

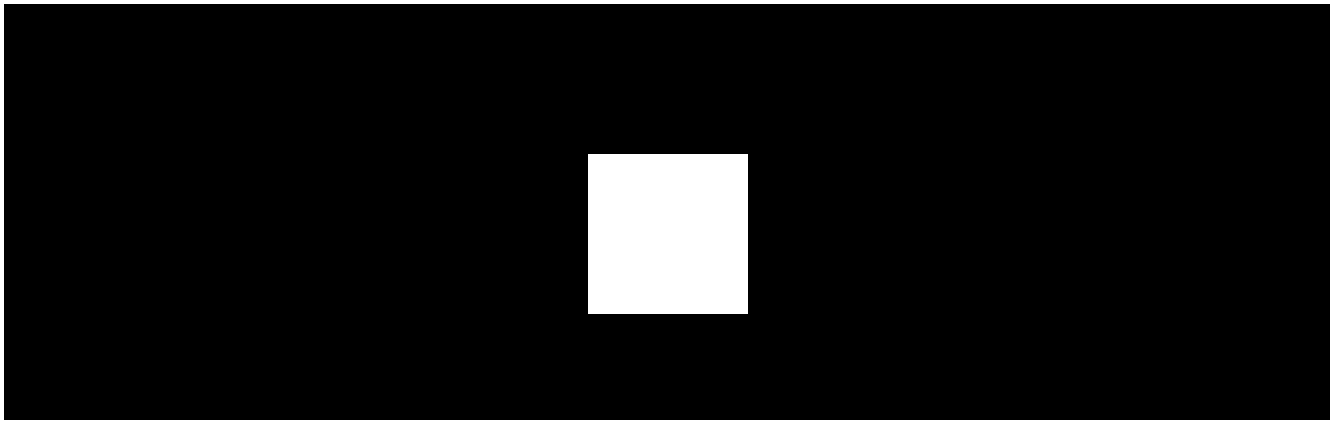
Hub (2G) / (4G) Jeweller doesn't support scenarios by temperature, humidity, $CO_2$ concentration, and touching LightSwitch Jeweller.

How to create and configure a scenario in the Ajax system

## LED indication

Hub has two LED indication modes:

- **Hub – Server Connection**.
- **British Disco**.



00:00 00:06

## Hub – Server Connection

**Hub – Server Connection** mode is enabled by default. The hub LED has a list of indications showing the system state or events occurring. The Ajax logo on the front side of the hub can light up red, white, purple, yellow, blue, or green, depending on the state.

| Indication | Event | Note |
|---|---|---|
| Lights up white. | Two communication channels are connected: Ethernet and a SIM card. | If the external power supply is off, the indicator flashes every 10 seconds.<br><br>In case of a power outage, the hub indicator starts flashing not immediately, but after 180 seconds. |
| Lights up green. | One communication channel is connected: Ethernet or a SIM card.<br><br>Learn more | If the external power supply is off, the indicator flashes every 10 seconds.<br><br>In case of a power outage, the hub indicator starts flashing not |

| | | |
|---|---|---|
| | | immediately, but after 180 seconds. |
| Lights up red. | The hub is not connected to the internet, or there is no connection with the Ajax Cloud server. | If the external power supply is off, the indicator flashes every 10 seconds.<br><br>In case of a power outage, the hub indicator starts flashing not immediately, but after 180 seconds. |
| Lights up for 180 seconds after a power outage, then flashes every 10 seconds. | The external power supply is disconnected. | The color of the LED indication depends on the number of connected communication channels. |
| Flashes red. | The hub is reset to factory settings. | |

If you see an indication not listed in this user manual, please contact our Technical Support.

## Access to indications

Hub users can see the **British Disco** indication after they:

- arm/disarm the system using the Ajax keypad;
- enter the correct user ID or personal code on the keypad and perform an action that has already been performed (for example, the system is disarmed, and the disarm button is pressed on the keypad);
- press the button on **SpaceControl** to arm/disarm the system or enable **Night Mode**;
- arm/disarm the system using Ajax apps.

## Alert indication

If the system is disarmed and any of the indications from the table are present, the yellow LED flashes once per second.

> In case there are several states in the system, the indications are displayed consecutively in the same sequence as shown in the table.

## Ajax account

To configure the system, install the **Ajax app** and create an account. Installers, security and monitoring companies use Ajax PRO accounts to configure the system for users.

**How to create the Ajax account**

**How to create the Ajax PRO account**

There is no need to create a new account for each hub, as one account can manage multiple systems. Separate access rights can be configured for each hub if needed.

Both user and system settings, as well as parameters of connected devices are stored in the hub. Changing the hub admin, adding or removing users does not reset the settings of devices added to the hub.

## Connecting the hub to Ajax Cloud

1. Remove the SmartBracket mounting panel by shifting it down with force.

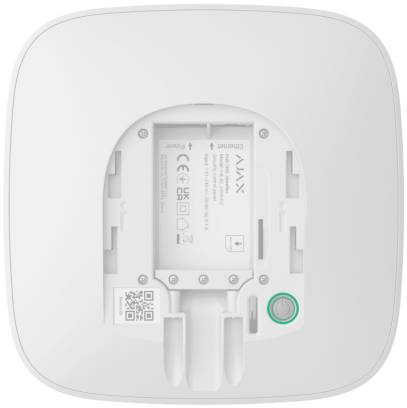


**2.** Connect the power supply and Ethernet cables to the appropriate sockets.




1 — Power cable socket.
2 — Ethernet cable socket.
3 — Slot for the micro SIM.
4 — Cable retainer clamp.

**3.** Press and hold the power button for 2 seconds until the logo lights up. The hub needs approximately 2 minutes to identify the available communication channels.



The bright green or white logo color indicates that the hub is connected to Ajax Cloud.

If the Ethernet connection does not occur automatically, disable proxy and filtration by MAC addresses and enable DHCP in the router settings — the hub will receive an IP address. During the next setup, you will be able to set a static IP address in Ajax apps.

To connect the hub to the GSM network, you need a micro SIM card with a disabled PIN code request (you can disable it using the mobile phone) and a sufficient amount of funds on the account to pay for the GPRS, and SMS services.

In some regions, Hub (2G) / (4G) Jeweller is sold with the Ajax SIM card or a third-party SIM card.

If the hub is not connected to the cellular network, use Ethernet to set up the network parameters: roaming, APN access point, username, and password. Contact your telecom operator to find out these options.

## Adding a hub to the Ajax app

Granting access to all system functions (to display notifications in particular) is a mandatory condition for managing the Ajax system via the smartphone/tablet.

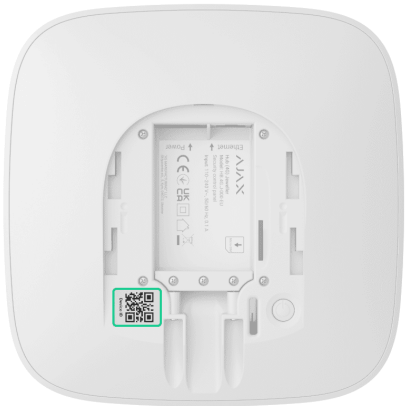
1. Open the Ajax app and log in to your account.
2. Select a space or create a new one.

   What is a space

   How to create a space

> The space functionality is available for apps of such versions or higher:
>
> - Ajax Security System 3.0 for iOS;
> - Ajax Security System 3.0 for Android;
> - Ajax PRO: Tool for Engineers 2.0 for iOS;
> - Ajax PRO: Tool for Engineers 2.0 for Android;
> - Ajax PRO Desktop 4.0 for macOS;
> - Ajax PRO Desktop 4.0 for Windows.

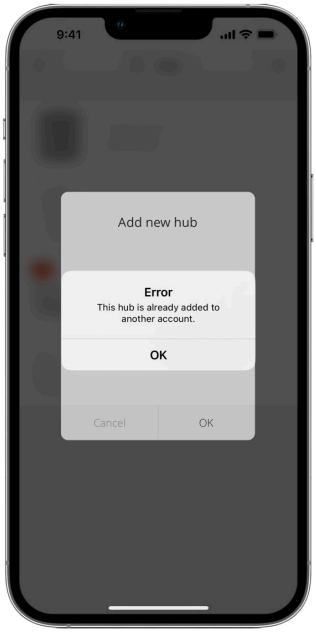
3. Open the **Add Hub** menu and select how to add a new hub: manually or using step-by-step tutorial.
4. At the registration stage, type the name of the hub and scan the QR code under the SmartBracket mounting panel (or enter the ID manually).



5. Wait until the hub is registered and displayed in the app.

If there are already users on the hub, the hub admin, PRO with the rights to configure the system, or the installation company maintaining the selected hub can add your account. You will be notified that the hub has already been added to another account. Contact our Technical Support to determine who has admin rights on the hub.

User account types and rights

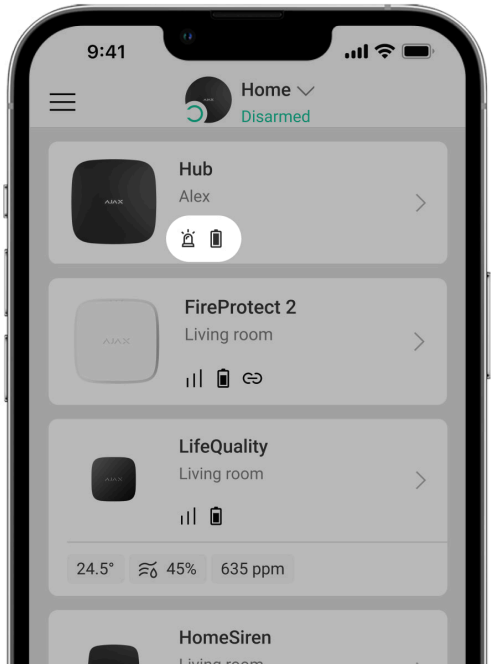



## Malfunctions

The hub may notify about malfunctions. Clicking on ⓘ opens the list of all malfunctions. The **Malfunctions** field is available in device **States** and is displayed only if a malfunction is detected, e.g.:

- no external power supply;
- low battery charge;
- lid opening;
- high level of interference at Jeweller frequencies.

# Icons

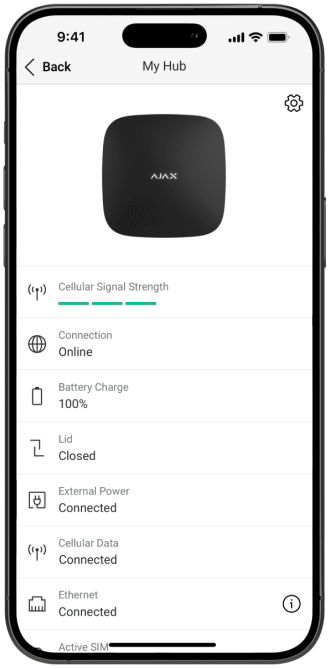



Icons display some hub states. You can see them in the Ajax app in the **Devices** menu.

| Icons | Meaning |
|---|---|
| 2G | The SIM card operates in a 2G network. |
| 4G | The SIM card operates in a 4G (LTE) network.<br><br>**Available for Hub (4G) Jeweller only.** |
| | The SIM card is not installed. |
| | The SIM card is defective or has a PIN code on it. |
| | The hub battery charge level. Displayed in 5% increments. |
| | The hub malfunction is detected. The list is available in the hub states menu. |
| | The hub is directly connected to the security company's CMS. |

| | |
|---|---|
| | The hub has lost connection with the security company's CMS via a direct connection. |

## States




States can be found in the **Ajax app**:

1. Select the space if you have several of them or if you are using a PRO app.
2. Go to the **Devices** tab.
3. Select **Hub (2G) / (4G) Jeweller** from the list.

| Parameter | Meaning |
|---|---|
| Malfunction | Clicking (i) to open the hub malfunctions list.<br><br>The field appears only if a malfunction is detected. |

| | |
|---|---|
| System restore required | The field appears only if the appropriate option is enabled, and some alarms and/or malfunctions should be fixed before arming.<br><br>**Learn more** |
| Cellular signal strength | Shows the signal strength of the cellular network for an active SIM card.<br><br>We recommend installing the hub in places with the signal strength of 2–3 bars. If the signal strength is weak (0 or 1 bar), the hub cannot send an SMS about an event or alarm. |
| Connection | Connection status between the hub and Ajax Cloud:<br><br>• **Online** — the hub is connected to Ajax Cloud.<br><br>• **Offline** — the hub is not connected to Ajax Cloud. |
| Battery charge | Battery level of the device. Displayed as a percentage.<br><br>**Learn more** |
| Lid | Status of the tamper that responds to hub dismantling:<br><br>• **Closed** — the hub lid is closed.<br><br>• **Opened** — the hub is removed from SmartBracket.<br><br>**Learn more** |

| | |
|---|---|
| External power | Supply connection status:<br><br>• **Connected** — the hub is connected to external power supply.<br><br>• **Disconnected** — no external power supply. |
| Cellular data | The hub connection status to the mobile Internet:<br><br>• **Connected** — the hub is connected to Ajax Cloud via mobile Internet.<br><br>• **Disconnected** — the hub is not connected to Ajax Cloud via mobile Internet.<br><br>If the hub has enough funds on the account or has bonus SMS it can send SMS messages even if the **Not connected** status is displayed in this field. |
| Ethernet | Status of the hub internet connection via Ethernet:<br><br>• **Connected** — the hub is connected to Ajax Cloud via Ethernet.<br><br>• **Disconnected** — the hub is not connected to Ajax Cloud via Ethernet. |
| Active SIM | Displays active SIM card. |
| Average noise (dBm) | Noise power level at Jeweller frequencies at the hub installation site.<br><br>The acceptable value is –80 dBm or lower. For example, –95 dBm is considered acceptable and –70 dBm is invalid.<br><br>**What is security system jamming** |
| Monitoring station | The status of the hub's direct connection to the security company's CMS: |

| | |
|---|---|
| | • **Connected** — the hub is directly connected to the security company's CMS.<br>• **Disconnected** — the hub is not directly connected to the security company's CMS.<br>If this field is displayed, the security company uses a direct connection to receive events and system alarms.<br>**Learn more** |
| Hub model | Hub model name. |
| Hardware | Hardware version. Cannot be updated. |
| Firmware | Firmware version. Can be updated remotely. |
| Device ID | Hub ID / serial number. Also located on the device box, circuit board, and the QR code under the SmartBracket mounting panel. |
| IMEI | A unique 15-digit serial number for identifying the hub's modem on a GSM network. It is shown only when a SIM card is installed in the hub.<br>Displayed on Hub 4G Jeweller only. |

## Hub settings

Settings can be changed in the **Ajax app**:

1. Select the space if you have several of them or if you are using a PRO app.
2. Go to the **Devices** tab.
3. Select **Hub (2G) / (4G) Jeweller** from the list.

**4.** Go to **Settings** by clicking on the gear icon in the upper right corner.

**5.** Set the required parameters.

**6.** Click **Back** to save the new settings.

**Name**

**Room**

**Ethernet**

**Cellular**

**Keypad access codes**

**Security schedule**

**Detection zone test**

**Jeweller**

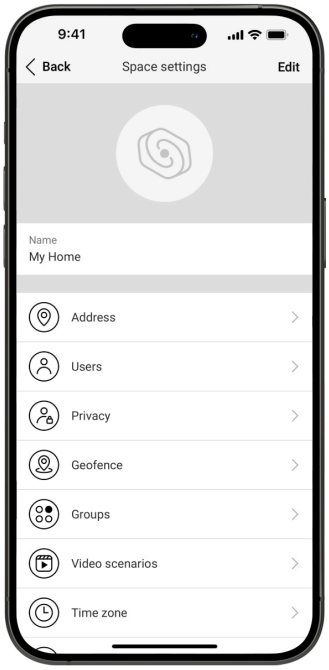
**Service**

**User guide**

**Transfer settings to another hub**

**Remove hub**

## Space settings




Settings can be changed in the **Ajax app**:

1. Select the space if you have several of them or if you are using a PRO app.
2. Go to the **Control** tab.
3. Go to **Settings** by tapping the gear icon in the bottom right corner.
4. Set the required parameters.
5. Tap **Back** to save the new settings.

**How to configure a space**

## Installation

Hub (2G) / (4G) Jeweller is intended for indoor installation only.

Before installing the hub, make sure that you have selected the optimal location: the SIM card demonstrates consistent signal reception, all the devices are tested for radio communication, and the hub is hidden from direct view.

When installing and operating the device, follow the general electrical safety rules for using electrical appliances and the requirements of electrical safety regulations.

The hub should be reliably attached to the surface (vertical or horizontal). We do not recommend using double-sided adhesive tape: it cannot guarantee secure attachment and simplifies the removal of the device.

**Do not place the hub:**

- outside the premises (outdoors);
- nearby or inside any metal objects that cause attenuation and shielding of the radio signal;
- in places with a weak GSM signal;
- close to radio interference sources: less than 1 meter from the router and power cables;
- in premises with temperature and humidity over the permissible limits.

**To install the hub:**

1. Fix the SmartBracket mounting panel on the surface using bundled screws. When using other fixing accessories, ensure they do not damage or deform the hub lid.
2. Fix the power and Ethernet cables with the supplied cable retainer clamp and screws. Use cables with a diameter no larger than the supplied ones. The cable retainer clamp must fit tightly to the cables so the hub lid closes easily.



The cable retainer clamp helps to prevent sabotage — the power and Ethernet cables will not be pulled out on purpose.

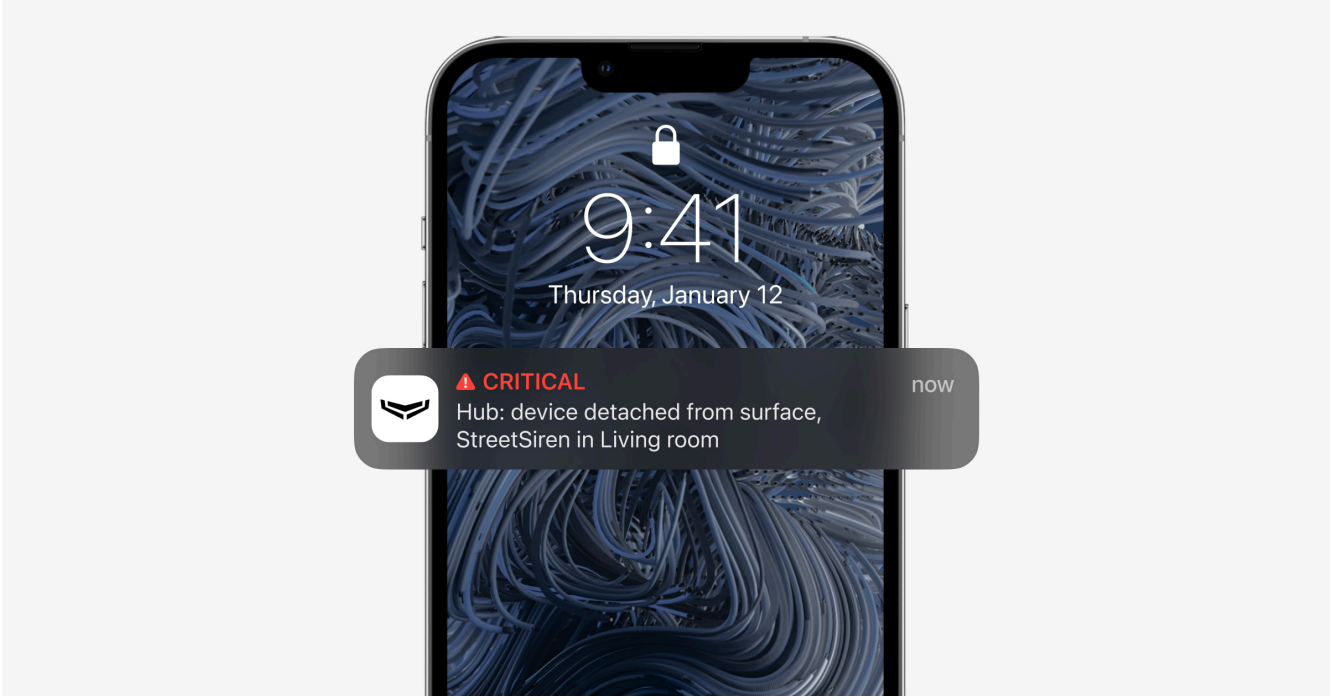
3. Put the hub on the SmartBracket mounting panel and fix it with bundled screws.



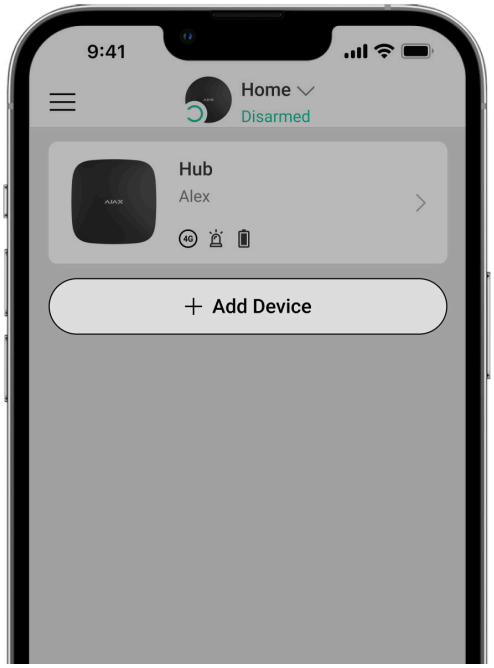
Do not flip the hub when attaching vertically (for instance, on a wall). When properly fixed, the Ajax logo can be read horizontally.

Fixing the hub on the SmartBracket mounting panel with screws prevents any accidental shifting of the hub and minimizes the risk of device theft.

If the hub is firmly fixed, the attempt to tear it off triggers the tamper, and the system sends a notification.




## Adding devices




During the first hub registration in the app, you will be prompted to add devices to protect the room. However, you can refuse and return to this step later.

An admin or PRO with the rights to configure the system can add the device only when the system is disarmed.

1. Open the Ajax app. Select the space if you have several of them or if you are using a PRO Ajax app.
2. Go to the **Rooms** tab.
3. Open the room and select the **Add Device** option.
4. Name the device, scan the **QR code** (or enter the ID manually), select the room, and go to the next step.
5. When the app starts searching and launches countdown, switch on the device: its LED will flash once. For detection and pairing to occur, the device should be located within the coverage area of the wireless network of the hub (at a single protected facility).

If the connection fails on the first try, switch off the device for 5 seconds and retry.

## Hub settings reset

To reset the hub to the factory settings:

1. Turn on the hub if it is off.
2. Remove all users and installers from the hub.
3. Hold the power button for 30 seconds, and the Ajax logo on the hub will start flashing red.
4. Remove the hub from your account.

All the connected detectors, room settings, and user settings will be deleted. User profiles will remain connected to the system.

## Maintenance

Check the operational capability of the Ajax system regularly. The optimal frequency of checks is once every three months. Clean the hub enclosure from dust, cobwebs, and other contaminants as they emerge. Use a soft and dry cloth that is suitable for equipment care.

Do not use any substances containing alcohol, acetone, petrol, or other active solvents for cleaning the hub.

If the hub battery becomes faulty, and you need to replace it, use the following guidance:

**How to replace hub battery**

**Learn more about Ajax accessories for hubs**

## Complete set

1. Hub (2G) Jeweller or Hub (4G) Jeweller.
2. The SmartBracket mounting panel.

3. Power supply cable.
4. Ethernet cable.
5. Installation kit.
6. GSM start package or **Ajax SIM** (not available in all countries).
7. Quick start guide.

## Technical Specifications

**All technical specifications of Hub (2G) Jeweller**

**All technical specifications of Hub (4G) Jeweller**

**Compliance with standards**

## Warranty

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

If the device does not function properly, we recommend contacting the support service first, as technical issues can be resolved remotely in half of the cases.

**Warranty obligations**

**User Agreement**

**Contact Technical Support:**

- **email**
- **Telegram**

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