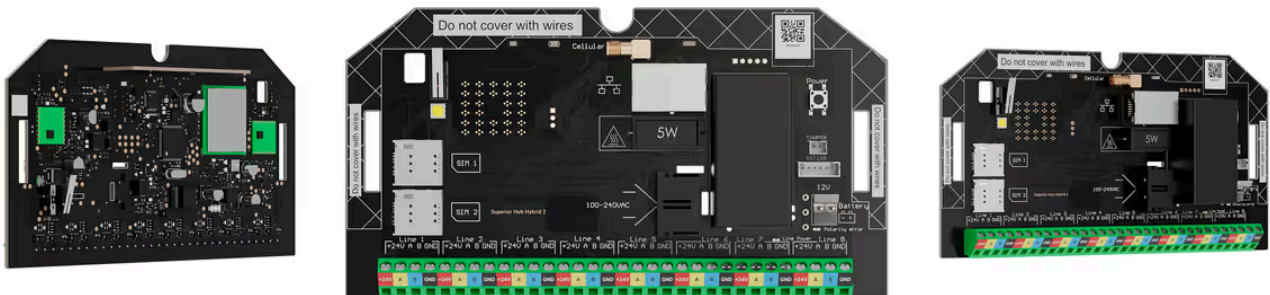


Tech specs

SUPERIOR

Superior Hub Hybrid 2 (without casing)

Hybrid control panel for medium to large setups. Designed for installation in a compatible Ajax casing. Works with up to 250 Fibra and Jeweller devices. Connectable via Ethernet and two SIM cards (2G/3G/LTE).



Devices compatibility

[Check](#) ➔

Capacity

Ajax devices

up to 250

Specifically:

- up to 200 wired devices per one Fibra line;
- up to 5 range extenders.

Learn more [▶](#)

Ajax NVRs

up to 36

Learn more [▶](#)

Ajax cameras

up to 224 via Ajax NVRs and up to 492 standalone

Learn more [▶](#)

Third-party IP cameras

up to 100 when using RTSP via SDK

up to 224 when using ONVIF via Ajax NVRs

Learn more [▶](#)

Users

up to 200

- Any number of admin users within the hub limit.
- PRO accounts for installers.
- PRO accounts for installation and monitoring companies.

Automation scenarios

up to 64

- By alarm.
- By schedule.
- By arming/disarming.
- By temperature, humidity, CO₂ concentration.
- By pressing Button.
- By touching LightSwitch.

Learn more 

Security groups

up to 25

Learn more 

Rooms

up to 50

Event log

up to 1,000 events

Events are saved in the non-volatile onboard flash memory.

Wired communication

◆ Fibra communication technology

Proprietary wired communication technology to transmit commands, alarms, and events.

Key features:

- Two-way communication.
- Advanced sabotage protection.
- Instant notifications.
- Remote control and configuration in Ajax apps.

Learn more [▶](#)

Line connection

4-core cable

Input

8 Fibra lines

Compatible with Fibra devices only.

Fibra line length

up to 2,000 m

When the U/UTP cat.5 twisted pair cable is used.

Calculate the line length at the facility [▶](#)

Power supply of devices

up to 14.4 W

For all connected wired devices.

Calculate the power supply of devices [▶](#)

Output voltage range

23–25.1 V_{DC}

Maximum rated output

0.53 A

Maximum output peak-to-peak ripple voltage

220 mV_{DC}

Topologies

- Beam (Radial wiring)
- Ring
- Tree

If the line breaks, the ring splits into two working segments, the devices continue to operate, and the system notifies a monitoring company and users of the incident.

Learn more [▶](#)

Polling interval

from 12 s to 300 s

Adjusted by a PRO or user with admin rights in Ajax apps.

Encrypted communication

All stored and transmitted data is protected by block encryption featuring a dynamic key.

Wireless communication

Superior Jeweller communication technology

Proprietary wireless technology for transmitting commands, alarms, and events. Superior Jeweller is an upgraded version of the Jeweller radio protocol for Superior devices, ensuring compliance with EN 50131 (Grade 3).

Key features:

- Two-way communication.
- Advanced sabotage protection.
- Enhanced block encryption featuring a dynamic key.
- Instant notifications.
- Remote control and configuration in Ajax apps.

Learn more 

Frequency bands

865.0–868.0 MHz

868.0–868.6 MHz

868.7–869.2 MHz

869.4–869.65 MHz

Maximum effective radiated power (ERP)

up to 25 mW

Automatic power control to reduce power consumption and radio interference.

Radio signal modulation

GFSK

Radio communication range

up to 3,500 m

Between the hub and the devices added to it in open space. The maximum range depends on the added device.

[Learn more](#) 

Polling interval

from 12 s to 300 s

Adjusted by a PRO or user with admin rights in Ajax apps.

Encrypted communication

All stored and transmitted data is protected with advanced encryption, ensuring both confidentiality and integrity.

Frequency hopping

To prevent radio interference and jamming.

[Learn more](#) 

Wings communication technology

Proprietary wireless communication technology to transmit large data packets.

Key features:

- Two-way communication.
- Advanced sabotage protection.
- Enhanced block encryption featuring a dynamic key.
- Data packet reload if a transmission error occurs.

- Photo delivery check.

Frequency bands

865.0–868.0 MHz

868.0–868.6 MHz

868.7–869.2 MHz

869.4–869.65 MHz

Maximum effective radiated power (ERP)

up to 25 mW

Automatic power control to reduce power consumption and radio interference.

Radio communication range

up to 3,000 m

Between the hub and the devices added to it in open space. The maximum range depends on the added device.

[Learn more](#) 

Encrypted communication

All stored and transmitted data is protected with advanced encryption, ensuring both confidentiality and integrity.

Frequency hopping

To prevent radio interference and jamming.

[Learn more](#) 

Recommendations

The device is powered by 100–240 V~ mains and designed for indoor use only.

It could be installed in Case D, which is sold separately.

How to install devices in Case [▶](#)

Case configurator [▶](#)

Communication channels

Ethernet

1 × 8P8C socket

Up to 100 Mbps.

Cellular

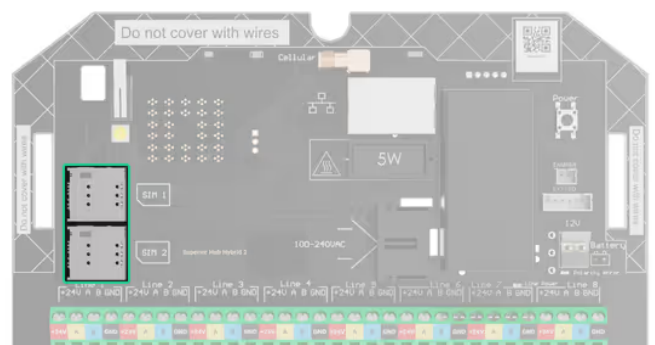
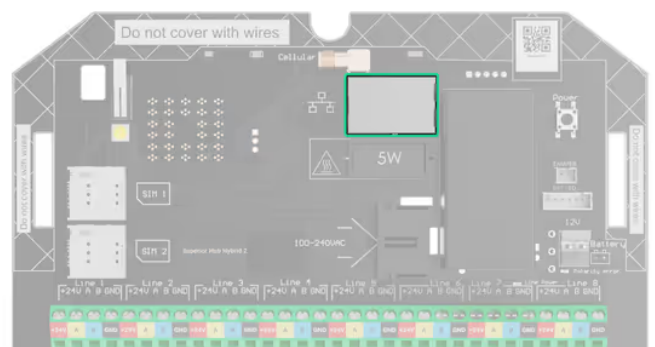
2 × micro SIM slot

Cellular bands

2G

GSM900/DCS1800 (B3/B8)

3G



WCDMA 850/900/2100 (B1/B5/B8)

4G (LTE)

FDD B1/B3/B5/B7/B8/B20

Automatic switching between communication channels

- Switching between SIM cards – up to 4 minutes.
- Switching between 4G, 3G, and 2G networks on one SIM card – instantly.
- Switching between Ethernet and SIM card – instantly.

Communication channel priority

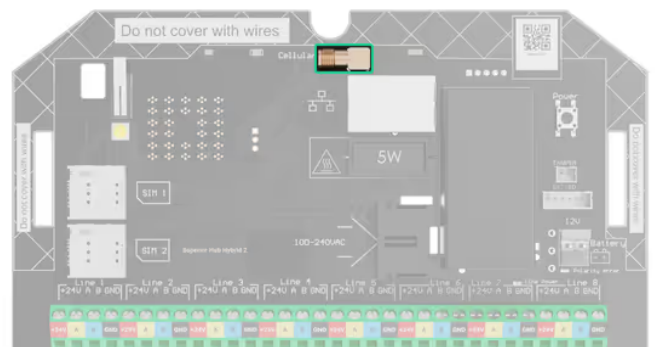
1. Ethernet
2. Cellular connection

Communication channels work in parallel to increase system reliability. Most data is transmitted via Ethernet.

External antenna connector

4G (LTE)

The system will notify users if the antenna is damaged. ExternalAntenna is sold separately.



Alarm transmission system categories

SP2, SP5, DP3

Control panel operation method

pass-through

Signaling security

S2

Substitution security.

Information security

I2

Encryption algorithm

AES 128

Notifications

Notification types

- Push notifications
- SMS
- Calls

Learn more [▶](#)

Event types

- Alarms
- Video detections
- Malfunctions



- Armed modes
- System events
- Non-security alerts
- Automation devices
- Smart lock events
- Doorbell ringing

Notification types are configured individually for each user. Notifications can be customized for A–F schemes according to EN 50131 requirements.

Photo verification

Photo verification types

- Photo by alarm
- Photo by scenario
- Photo on demand
- Photo by schedule
- Photo by arming/disarming
- Photo by anti-masking
- Photo by tamper alarm
- Photo by magnetometer

Photo delivery time

up to 9 s

By default.

Learn more 

Photo resolution

up to 960 × 720 pixels

Depends on the detector.

Number of photos in a series

from 1 to 5

Monitoring

Supported protocols

- SIA DC-09 (SIA-DCS)
- SurGard (Contact ID)
- ADEMCO 685
- Other proprietary protocols

Learn more [➤](#)

Event types

- System alarms and events
- Panic button coordinates
- Photo verification

Learn more [➤](#)

Sabotage protection

Tamper alarm

The board has a connector for attaching a tamper board. It detects when the Case lid is opened and notifies of attempts to detach Case with the installed hub from the surface.

[Learn more](#) 

Protection against spoofing

device authentication

Frequency hopping

The hub sends notifications of jamming or connection loss with the devices to all users and the monitoring company.

[Learn more](#) 

Jamming alert

Superior Hub Hybrid 2 analyzes the noise level in the channel and the communication quality with the added devices and sends a notification in 30 seconds.

Power supply

Main power supply type

type A

Device operating AC voltage range

100–240 V, 50/60 Hz

From the main power supply. Up to 10 W of mains power consumption.

Device operating DC voltage range

10.5–15 V_{DC}

Autonomous operation

up to 60 hours

Superior Hub Hybrid 2 with a 7 Ah backup battery can power a system of 15 wired devices for 60 hours. Wireless devices operate on batteries and do not require an additional power supply.

[Learn more](#) 

Battery power saver mode allows extending the backup battery life.

[Learn more](#) 

Low battery voltage

11.7 V_{DC}

Low battery recovery voltage

12.9 V_{DC}

End-of-life battery voltage

11 V_{DC}

Superior Hub Hybrid 2 switches off.

Minimum backup battery energy level in the charged state

100%

Current consumption

Maximum at nominal voltage

240 mA

Quiescent at nominal voltage*

up to 102 mA

When GSM and Ethernet are enabled.

up to 61 mA

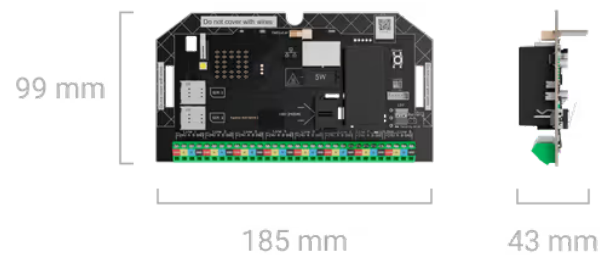
When Ethernet is disabled.

* From the backup battery after loss of the main power supply.

Board

Dimensions

185 × 99 × 43 mm



Weight

184 g

Operating temperature range

from -10 °C to +40 °C

Operating humidity

up to 75%

Complete set

Superior Hub Hybrid 2 (without casing)

Power cable

Screw terminal block adapter (for
INCERT compliance only)

Battery connection cable

LED board

LED board connection cable

Ethernet cable

Eight 120 Ω terminating resistors

Quick start guide

Certification and compliance with standards



Superior Hub Hybrid 2 (without casing)




Additional information

Compliance with standards


Learn more 

User manual

Learn more 

Warranty

24 months

Learn more 


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Solutions

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Commercial fire detection and alarm system
Wireless Grade 3 solution
Video surveillance solution
Integration with Yale smart locks
Upgrades and retrofits
Why Ajax
How it works

Software

Ajax Security System
Ajax PRO: Tool for Engineers
Ajax Desktop
Ajax PRO Desktop
Ajax TV
Ajax Translator PRO
Ajax Cloud Signaling
Scenarios



Available on
App Store



Available on
Google Play

Support

Manuals and articles
Compliance with standards

Tools

Ajax device compatibility
CMS software compatibility
Ajax Services availability
Video storage calculator
Video device calculator
Battery life calculator
Radio communication range calculator
Switches and outlets configurator
Fibra power supply calculator
All web tools

Monitoring solutions and integrations

Intrusion alarm monitoring
Video monitoring and visual alarm verification
Audio alarm verification

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