

Superior MegaHub (without casing)

Hybrid control panel supporting photo verification. Works with up to 999 Fibra and Jeweller devices. Connectable via Ethernet, Wi-Fi, and two SIM cards (2G/3G/LTE). Designed for installation in an Ajax casing.

Capacity	<p>Ajax devices up to 999¹ Specifically, up to 10 range extenders.</p> <p>¹ The limit applies only to devices with the new firmware version. If at least one device with the legacy firmware version is added, the limit is divided into two ranges:</p> <ul style="list-style-type: none">• up to 250 devices – with the legacy firmware version• up to 749 devices – with the new firmware version <p>Ajax NVRs up to 36</p> <p>Ajax cameras up to 224 via Ajax NVRs and up to 492 standalone</p> <p>Third-party IP cameras up to 100 when using RTSP via SDK up to 224 when using ONVIF via Ajax NVRs</p> <p>Users up to 1,000</p> <ul style="list-style-type: none">• Any number of admin users within the hub limit.• PRO accounts for installers.• PRO accounts for installation and monitoring companies. <p>Automation scenarios up to 100</p> <ul style="list-style-type: none">• By alarm.• By schedule.• By arming/disarming.• By temperature, humidity, CO₂ concentration.• By pressing Ajax Button.• By actuating Ajax LightSwitch. <p>Security groups up to 100</p> <p>Rooms up to 500</p> <p>Event log</p>
----------	---

	<p>up to 1,000 events Events are saved in non-volatile embedded flash memory.</p>
<p>Wired communication</p>	<p>Fibra communication technology Proprietary wired communication technology to transmit commands, alarms, and events.</p> <p>Key features:</p> <ul style="list-style-type: none"> ● Two-way communication. ● Advanced sabotage protection. ● Instant notifications. ● Remote control and configuration via Ajax apps. <p>Line connection 4-core cable</p> <p>Input 8 Fibra lines Compatible with Fibra devices only.</p> <p>Fibra line length up to 2,000 m up to 6,550 ft When the U/UTP cat.5 4×2×0.51 mm (24 AWG) cable with copper conductor is used.</p> <p>Power supply of devices up to 1.6 A per Fibra line For all connected wired devices.</p> <p>Output voltage range 23–25.1 V_{DC}</p> <p>Maximum rated output up to 3 A</p> <p>Topologies</p> <ul style="list-style-type: none"> ● Beam (Radial wiring) ● Ring ● Tree <p>If the line breaks, the ring splits into two independent beams, allowing connected devices to continue operating normally, and the system notifies a monitoring company and users of the incident.</p> <p>Device polling interval 12 to 300 s Adjusted by PRO or user with admin rights in Ajax apps.</p> <p>Encrypted communication All stored and transmitted data is protected by block encryption featuring a dynamic key.</p>

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.

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 2,000 m

up to 6,550 ft

Between a hub and connected devices (in open space). The maximum range depends on the connected device.

Device polling interval

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.

Wings communication technology

Proprietary wireless communication technology to transmit large data packets.

Key features:

- Two-way communication.
- Advanced sabotage protection.

	<ul style="list-style-type: none"> ● Block encryption featuring a dynamic key. ● Data packet reload in case of transmission errors. ● Photo delivery check. <p>Frequency bands 865.0–868.0 MHz 868.0–868.6 MHz 868.7–869.2 MHz 869.4–869.65 MHz</p> <p>Maximum effective radiated power (ERP) up to 25 mW Automatic power control to reduce power consumption and radio interference.</p> <p>Radio communication range up to 2,000 m up to 6,550 ft Between a hub and connected devices (in open space). The maximum range depends on the connected device.</p> <p>Encrypted communication All stored and transmitted data is protected with advanced encryption, ensuring both confidentiality and integrity.</p> <p>Frequency hopping To prevent radio interference and jamming.</p>
Recommendations	<p>The hub board can be installed in Case E (395) (coming soon) or Case D (430), which are sold separately. Case E (395) is designed for indoor and outdoor use, while Case D (430) is intended for indoor use only.</p>
Communication channels	<p>Ethernet 1 × 8P8C socket Up to 100 Mbps.</p> <p>Cellular 2 × micro SIM slot</p> <p>Cellular bands 2G GSM900/DCS1800 (B3/B8) 3G WCDMA 850/900/2100 (B1/B5/B8) 4G (LTE) FDD B1/B3/B5/B7/B8/B20</p> <p>Wi-Fi 802.11 b/g/n module Up to 72 Mbps.</p>

	<p>Automatic switching between communication channels</p> <ul style="list-style-type: none"> ● Switching between SIM cards – up to 4 minutes. ● Switching between 4G, 3G, and 2G networks on one SIM card – instantly. ● Switching between Ethernet, Wi-Fi, and a SIM card – instantly. <p>Communication channel prioritization</p> <ol style="list-style-type: none"> 1. Ethernet 2. Wi-Fi 3. Cellular connection <p>Communication channels work in parallel to increase system reliability. Most of the data is transmitted via Ethernet.</p> <p>External antenna connector</p> <p>Jeweller Wings 4G (LTE)</p> <p>The system will notify users if ExternalAntenna is damaged. ExternalAntenna is sold separately.</p> <p>Alarm transmission system categories</p> <p>SP2, SP5, DP3</p> <p>Control panel operation method</p> <p>pass-through</p> <p>Signaling security</p> <p>S2 Substitution security.</p> <p>Information security</p> <p>I2</p> <p>Encryption algorithm</p> <p>AES 128</p>
<p>Notifications</p>	<p>Notification types</p> <ul style="list-style-type: none"> ● Push notifications ● SMS ● Calls <p>Event types</p> <ul style="list-style-type: none"> ● Alarms ● Video detections ● Malfunctions ● Armed modes ● System events ● Non-security alerts ● Automation devices ● Smart lock events

	<ul style="list-style-type: none"> • Doorbell ringing <p>Notification types are configured individually for each user. Notifications can be customized for A–F schemes according to EN 50131 requirements.</p>
Photo verification	<p>Photo verification types</p> <ul style="list-style-type: none"> • By alarm • By scenario • On demand • By schedule • By arming/disarming • By masking attempt • By tamper alarm • By magnetometer alarm <p>Photo delivery time up to 9 s By default.</p> <p>Photo resolution up to 960 × 720 pixels Depends on the detector type.</p> <p>Number of photos in a series 1 to 5</p>
Monitoring	<p>Supported protocols</p> <ul style="list-style-type: none"> • SIA DC-09 (SIA-DCS) • SurGard (Contact ID) • ADEMCO 685 • Other proprietary protocols <p>Event types</p> <ul style="list-style-type: none"> • System alarms and events • Panic button coordinates • Photo verification
Sabotage protection	<p>Tamper alarm The board has a connector for attaching a tamper board. The tamper board detects when the Ajax Case lid is opened and notifies of attempts to detach Ajax Case with the installed hub from the surface.</p> <p>Protection against spoofing device authentication</p> <p>Frequency hopping The hub sends notifications of jamming or connection loss with the devices to all users and the monitoring company.</p> <p>Jamming detection The hub analyzes the noise level in the channel and the</p>

	<p>communication quality with added devices and sends a notification within 30 seconds.</p>
Power supply	<p>Main power supply type type A</p> <p>Device operating AC voltage range 100–240 V, 50/60 Hz From the main power supply. Maximum current consumption is up to 1.8 A.</p> <p>Device operating DC voltage range 10.5–15 V_{DC}</p> <p>Autonomous operation up to 60 hours Superior MegaHub with an 18 Ah backup battery can power a system with 30 wired devices for 60 hours. Wireless devices operate on batteries and do not require an additional power supply.</p> <p>The Battery power saver feature allows extending the backup battery life.</p> <p>Low battery voltage 11.7 V_{DC}</p> <p>Low battery recovery voltage 12.7 V_{DC}</p> <p>End-of-life battery voltage 10.5 V_{DC} Superior MegaHub switches off.</p> <p>Maximum output peak-to-peak ripple battery voltage 220 mV_{DC}</p> <p>Minimum backup battery energy level in the charged state 100%</p>
Current consumption	<p>Maximum at nominal voltage 240 mA</p> <p>Quiescent at nominal voltage² up to 102 mA When GSM and Ethernet are enabled.</p> <p>up to 61 mA When Ethernet is disabled.</p> <p>² From the backup battery if the main power supply is lost.</p>
Board	Dimensions

	<p>130 × 270 × 60 mm 5.12" × 10.63" × 2.36"</p> <p>Weight 410 g 14.5 oz</p> <p>Operating temperature range from -25 °C to +55 °C from -13 °F to 131 °F</p> <p>Operating humidity up to 95% without condensation</p>
Complete set	<p>Superior MegaHub (without casing) Power cable Screw terminal block adapter (for INCERT compliance only) Battery connection cable LED board LED board connection cable Ethernet cable 8 terminating resistors (120 Ω) Quick start guide</p>
Warranty	24 months