



Sleek – smart - made for people

The Abeeway Smart Badge is a portable multi-mode tracker in ID card format with embedded sensors combining multi-constellation GNSS⁽¹⁾, Low-power GPS⁽²⁾, Wi-Fi Sniffer⁽³⁾, BLE and LoRaWAN[®] TDoA⁽⁴⁾ geolocation technologies, supporting **seamless outdoor and indoor geolocation**.

This device is ideal for **contact back-tracing, zone notification and monitoring of workforce safety and security**. Simple to use, a single button gives you access to the numerous functionalities you may personalize for your needs, e.g. as a **Panic/SOS Button**. A local zoning feature is able to **signal danger zones** with a 96 dBA buzzer. It has a robust, **industrial-grade magnetic connector** for recharging the battery, and optional multi-slot charging/upgrade dock.

Applications

- Multi-mode tracking for employees, workers, visitors
- Contact back-tracing, proximity detection for sanitary policy enforcement
- SOS panic alarm for indoor and outdoor lone workers
- Danger zones or restricted areas access notifications
- Automated attendance monitoring and zoning
- Safety evacuation monitoring
- Location heatmaps, e.g. for optimization of supervisor/worker ratio in large construction or industrial sites

Product Highlights

Multiple operating modes:

- **Motion Tracking:** High-resolution position when motion is detected
- **Permanent tracking:** Periodic interval position
- **Fix on demand:** Obtain tracker position when needed (very low power operating mode)
- **Activity tracking:** Monitor activity rate with embedded sensors

Geolocation technologies:

- **Multi-constellation GNSS/GPS⁽⁵⁾**
- **Low power GPS⁽⁶⁾**
- **Wi-Fi indoor and outdoor APSSID sniffing**
- **BLE:** Sniffing and beaconing

Other features:

- **Geofencing zone detection**
- **Edge computing for Proximity detection and exposure assessment**

- **User interface:** 96 dBA buzzer, bicolor LEDs, button
- **Temperature monitoring**
- **LoRaWAN[®] Class A radio**
- **High Pressure Water-spray resistant enclosure (IP65)**
- Magnetic USB connector for Rechargeable battery
- Large 1.3Ah battery
- Firmware Upgrade
- ATEX (Certified for explosive atmosphere)⁽⁷⁾
- Holder to slide ID or RFID Card
- BLE scan function for inventory of tools and accessories
- Indoor BLE/WiFi fingerprinting with HERE Tracking (requires subscription)
- Indoor BLE based geolocation with Quuppa Intelligent Location (requires Quuppa infrastructure)
- BLE based safe/hazard zone detection

Physical configuration

| | |
|------------------------|-----------------------------------|
| Size | 104mm x 68 mm x 11 mm (L x l x h) |
| Weight | 64g |
| Waterproof capability | IP65 |
| Operating temperatures | -10°C to 55°C |
| Charging temperatures | 0°C to 45°C |
| Storage temperature | 10°C to 30°C (recommended) |
| Time storage max | 6 months |
| Humidity | 5% to 95% non-condensing |

Estimated battery lifetime

| Use Case | Battery Life (Approx.) |
|-------------------------|-------------------------|
| 1 GNSS position / hour | 6 weeks ⁽⁸⁾ |
| 1 LPGPS position / hour | 38 weeks ⁽⁸⁾ |
| 1WiFi position / hour | 1.6 year |
| Standby | >1.8 years |

Data communication support

| | |
|---|--|
| LoRaWAN [®] Modem | Semtech SX1262 transceiver |
| Protocol | LoRaWAN Class A |
| LoRaWAN [®] frequency bands ⁽⁹⁾ | EU868MHz / US915MHz / AS923MHz / AU915 MHz |
| Configuration supported | LoRaWAN [®] OTA or ABP |
| RF power | 14 dBm / 18 dBm (max) |
| Min sensitivity of LoRaWAN [®] receiver | -130 dBm in SF 10 -135 dBm in SF 12 |
| Wi-Fi Frequency band | 2412 – 2472MHz |
| BLE sensitivity | -88 dBm |
| BLE RF output power | 4 dBm max |
| BLE frequency band | 2402 – 2480MHz |
| GNSS band | 1559 – 1610MHz |

Standards and Certifications

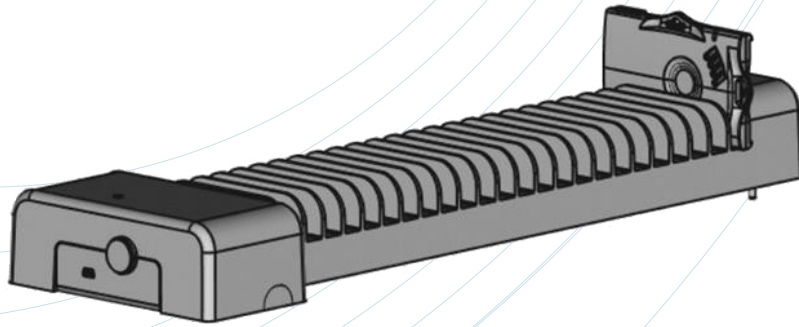
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|--|
| LoRa Alliance EU868, US915, AS923, AU915, IN865 |
| Radio regulatory certification : EC, FCC, IC, TELEC, IMDA, WPC |

Position accuracy

| | | | |
|--|---|--------------------------------|---------------|
| GNSS⁽⁸⁾ (GPS/Baidu/Glonass/ Galileo) | Position Accuracy (50%-90%) | 10 to 20 meters | |
| | Time To First Fix | Cold start | 30-50 seconds |
| | | Hot start | <5 seconds |
| Acquisition sensitivity | -140 dBm | | |
| Low power GPS⁽⁸⁾ | Position Accuracy (50%-90%) | 15 - 30 meters | |
| | Time To First Fix | <10 seconds | |
| | Acquisition sensitivity | -144 dBm | |
| Wi-Fi⁽¹⁰⁾ | Indoor and Deep Urban Position Accuracy | 20 - 50 meters | |
| | Time to get a position | 3 seconds | |
| | Sensitivity | -86 dBm | |
| BLE for positioning⁽¹⁰⁾ | Indoor Position Accuracy | 5 - 15 m | |
| | Time to get a position | 1 second | |
| BLE for proximity | Proximity Detection Accuracy | See Proximity Application Note | |

Power management

| | | |
|------------------------------------|---|--------|
| Rechargeable Battery | 3.7V | 1.3 Ah |
| Battery type | Lithium Polymer | |
| Charging cable | 5V from a magnetic USB charger | |
| 25 port charging dock | With magnetic connectors, Docks can be chained for large capacity charging (requires external 5V PSU) | |
| 25-port charging dock with USB hub | Adds integrated USB hub option for mass configuration and firmware upgrades ⁽¹¹⁾ | |



Product references⁽¹²⁾

| Product | SKU |
|---|---|
| Smart Badge EU868 | DEABE3XX-XXEU - DEABE3XX-XXEU-Ex2 ⁽¹³⁾ |
| Smart Badge EU868 – no GPS and WiFi | DEABE3XX-XXEU-BLE Only |
| Smart Badge US915 | DEABE3XX-XXUS - DEABE3XX-XXUS-Ex2 ⁽¹³⁾ |
| Smart Badge US915 – no GPS and WiFi | DEABE3XX-XXUS-BLE Only |
| Smart Badge AS923 | DEABE3XX-XXAS - DEABE3XX-XXAS-Ex2 ⁽¹³⁾ |
| Smart Badge AS923 – no GPS and WiFi | DEABE3XX-XXAS-BLE Only |
| Smart Badge AU915 | DEABE3XX-XXAU - DEABE3XX-XXAU-Ex2 ⁽¹³⁾ |
| Smart Badge AU915 – no GPS and WiFi | DEABE3XX-XXAU-BLE Only |
| USB Magnetic charging cable | ACHYT0000WW |
| USB Magnetic charging+data cable | ACHYT0003WW |
| USB Magnetic charging+data cable (with fuse) | ACHYT0103WW |
| 25 magnetic ports charging dock | ACISN0000WW |
| 25 magnetic ports charging dock with USB hub function | ACISN0100WW |
| 5V Power Supply for single charging dock | ACISN1000XX |

(1) - Option, GNSS/GPS not available in all models (refer to SKU list)

(2) - Option, requires GNSS enabled model and server-side Assisted GPS subscription to ThingPark Location

(3) - Option, requires WiFi enabled model and ThingPark Location WiFi solver subscription

(4) - Requires TDoA Location Solver option in ThingPark Wireless, ThingPark Enterprise or 3rd party LoRaWAN® network server

(5) - Precise outdoor position with GPS, GLONASS, Galileo and Beidou

(6) - Fast Time To First Fix in outdoor and light indoor conditions

(7) - ATEX Zone II:  (-20 °C ≤ Tamb ≤ +40 °C)

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(8) - Assuming 6 satellites at -130 dBm

(9) - Channel frequencies and Transmit output power level are country specific and controlled by the operator. Supported frequencies and regional certifications differ according to ordering codes (refer to SKU list)

(10) - Requires location solver. Accuracy depends on the BLE beacon or WiFi AP density and physical layout of the premises

(11) - Separate Linux based PC required for Firmware Update

(12) - All SKUs subject to MOQ. Contact local sales representative to enquire for conditions and pricing. Some SKUs are pre-orders that will be available in Q4 2022

(13) - ATEX Zone II version of the product.

Abeeway is the market leader in low-power geolocation and a provider of disruptive IoT tracking solutions worldwide. Abeeway offers the most energy-efficient, reliable and flexible geolocation solutions using unique tracking devices and a smart multi-technology location system optimized for long-range and low-power-consumption LoRaWAN™ connectivity. The system makes precise geolocation power-efficient for various environments by combining high-precision GPS, our patented cloud computing Low Power GPS technology and ultra-low-consumption Wi-Fi sniffing technique. Offering the fastest time-to-market, Abeeway delivers a complete end-to-end solution for mass-market IoT sectors for asset tracking and management, process optimization and personal safety. Abeeway is a member of LoRa Alliance™ and is part of the Actility Group. Actility Group is a leading provider of LPWA IoT connectivity solutions, tools, business services and applications.