Abeeway
Improve your position

SMART BADGE

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 beaconning

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

SMART BADGE SPECIFICATIONS

Physical configuration

Size	90mm x 65 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	1.5 month [8]
1 LPGPS position / hour	9.6 months [8]
1WiFi position / hour	1.6 year
Standby	>1.8 years

Data communication support

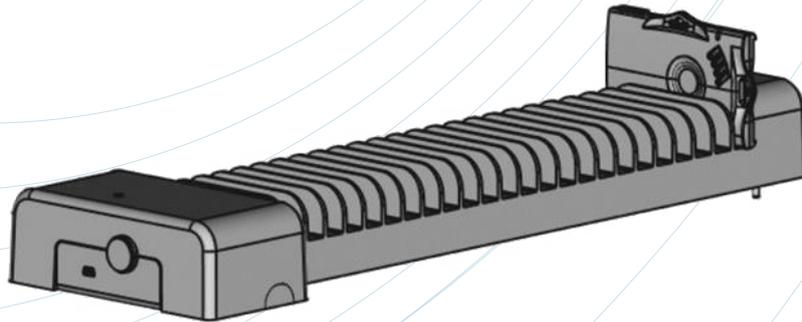|	
LoRaWAN® Modem	Semtech SX1261 transceiver
Protocol	LoRaWAN Class A
LoRaWAN® frequency bands[9]	EU868MHz / US915MHz / AS923MHz
Configuration supported	LoRaWAN® OTA or ABP
RF power	14 dBm / 18 dBm (max)
Min sensitivity of LoRaWAN® receiver	-130 dBm in SF 10 -135 dBm in SF 12
Wi-Fi Frequency band	2412 – 2472MHz
BLE sensitivity	-88 dBm
BLE RF output power	4 dBm max
BLE frequency band	2402 – 2480MHz
GNSS band	1559 – 1610MHz

Standards and Certifications

LoRa Alliance EU868, US915, AS923
Radio regulatory certification : EC, FCC, IC, TELEC, IMDA

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-Ex1[13] - DEABE3XX-XXEU-Ex2[14]
Smart Bade EU868 – no GPS and WiFi	DEABE3XX-XXEU-BLE Only
Smart Badge US915	DEABE3XX-XXUS - DEABE3XX-XXUS-Ex1[13] - DEABE3XX-XXUS-Ex2[14]
Smart Badge US915 – no GPS and WiFi	DEABE3XX-XXUS-BLE Only
Smart Badge AS923	DEABE3XX-XXAS - DEABE3XX-XXAS-Ex1[13] - DEABE3XX-XXAS-Ex2[14]
Smart Badge AS923 – no GPS and WiFi	DEABE3XX-XXAS-BLE Only
USB Magnetic charging cable	ACHYT0000WW
25 magnetic ports charging dock	SKU-charging-dock
25 magnetic ports charging dock with USB hub function	SKU-charging-dock-data
5V Power Supply for single charging dock	SKU-power-supply

(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 1: ⟨Ex⟩ ib IIC T4 Gb -20°C < Tamb < 40°C
       ⟨Ex⟩ ib IIIC 135°C Db -20°C < Tamb < 40°C
   - ATEX Zone II: ⟨Ex⟩ II 3 G Ex ic IIB T4 Gc (-20 °C ≤ Tamb ≤ +40 °C)
       ⟨Ex⟩ II 3 D Ex ic IIIB T135 °C Dc (-20 °C ≤ Tamb ≤ +40 °C)

(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 2020
(13) - ATEX Zone I version of the product. On-pre-order
(14) - 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.