Abeeway
Improve your position

SMART BADGE

IECEx **Ex**

Available on the **App Store**   GET IT ON **Google Play**   Microsoft **Azure Certified Device**

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]
1 WiFi position / hour	1.6 year
Standby	>1.8 years

Data communication support

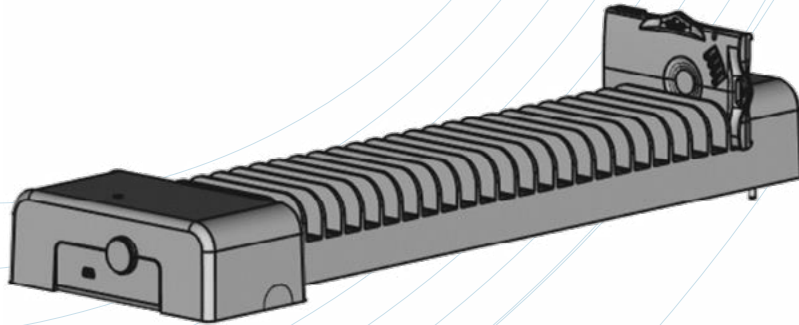|	
LoRaWAN® Modem	Semtech SX1262 transceiver
Protocol	LoRaWAN Class A
LoRaWAN® frequency bands[9]	EU868MHz / US915MHz / AS923MHz / AU915 MHz
Configuration supported	LoRaWAN® OTA or ABP
RF power	14 dBm / 18 dBm (max)
Min sensitivity of LoRaWAN® receiver	-130 dBm in SF 10 -135 dBm in SF 12
Wi-Fi Frequency 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

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[14] (Standard deviation)	3 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	DEABE316-XXEU - DEABE313-XXEU-Ex2 - DEABE360-XXEU-Ex1[13]
Smart Badge EU868 – no GPS and WiFi	DEABE3XX-XXEU-BLE Only
Smart Badge US915	DEABE320-XXUS - DEABE314-XXUS-Ex2 - DEABE361-XXUS-Ex1[13]
Smart Badge US915 – no GPS and WiFi	DEABE3XX-XXUS-BLE Only
Smart Badge AS923	DEABE320-XXAS - DEABE314-XXAS-Ex2- DEABE361-XXAS-Ex1[13]
Smart Badge AS923 – no GPS and WiFi	DEABE3XX-XXAS-BLE Only
Smart Badge AU915	DEABE320-XXAU - DEABE314-XXAU-Ex2- DEABE361-XXAU-Ex1[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
USB Magnetic ATEX Zone I charger (one port)	ACHUN8000WW[15]
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 I: (Ex) Ex II 2G Ex ib IIB T4 Gb (-20 °C ≤ Tamb ≤ +50 °C)
         (Ex) Ex II 2D Ex ib IIIC T170°C Db (-20 °C ≤ Tamb ≤ +50 °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 2022
(13) - ATEX Zone 2,22 and 1,21 versions of the product
(14) - Assuming the tracker has acquired Almanac by placing the tracker in open sky in good conditions. The Almanac acquisition can take 15 mins – 1 hour depending on the conditions
(15) - ATEX Zone I charging adapter must always be used to charge ATEX Zone I Smart Badge to comply with ATEX regulations

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.