



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 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



SMART BADGE SPECIFICATIONS

Physical configuration

Size	90mm x 65 mm x 11 mm (L x l x h)
Weight	80g
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 (EU) / 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

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	