Telit Cinterion

BTM Bluetooth Beacon Reference Device Architectures

Reduce IoT project costs and time to market with proven designs that are ready for final customization

BTM Series Beacon Architectures leverage Bluetooth Low Energy (BLE) technology to provide extended range, double the speed, higher density advertising and improved battery life for enhanced operations in existing applications and enabling new solutions in Supply Chain, Cold Chain and Industrial use cases.

The E architecture variant provides the user with location data plus a comprehensive environmental snapshot for peripheral tagged assets and endpoints. Like all BTM variants, the E architecture is cost-optimized to allow scalable deployment in a wide range of applications and use cases.

For critical use cases requiring precise environmental data in addition to location, such as monitoring perishables like agricultural products or vaccines as they move through a warehouse or logistics network, the T and HT architectures are recommended. Both architectures incorporate sensors calibrated for NIST traceability according to ISO17025.

The B architecture variant delivers location data only. It is commonly applied in use cases where condition monitoring and traceability are not requirements. BTM series reference architectures are a smart option for businesses seeking the quickest path to market without sacrificing quality, features, or scalability.

Main Features

- An isolated sensor measurement chamber with environmental membrane ensures the most accurate measurements

- Mounting ears ensure secure attachment. A white enclosure for BTM Series E, HT & T variants keeps the device discrete in coolers

- As part of a full tier end-to-end solution, Bluetooth beacons based on BTM Series reference architectures will closely monitor and create actionable data for tagged assets

- Temperature and Humidity Sensors calibrated to NIST Traceable standards*

*Standard in BTM Series T and HT architectures

Beacon Architectures in IoT Applications

Bluetooth beacons are ideal for asset tracking at scale due to their attractive low cost/high value profile. In terms of functioning, beacons are like lighthouses. Bluetooth Low Energy (BLE) signals are constantly transmitted by these small hardware devices. These signals can be scanned by Bluetooth-enabled devices such as IoT Gateways. The gateway device can harvest the data shared by multiple beacons and make it available to the user via the cloud. Common applications include Cold chain monitoring, Tool tracking, Equipment tracking, Package tracking, and Pallet tracking in Warehouses, Logistics, Transportation, Construction, Healthcare, and Agribusiness.
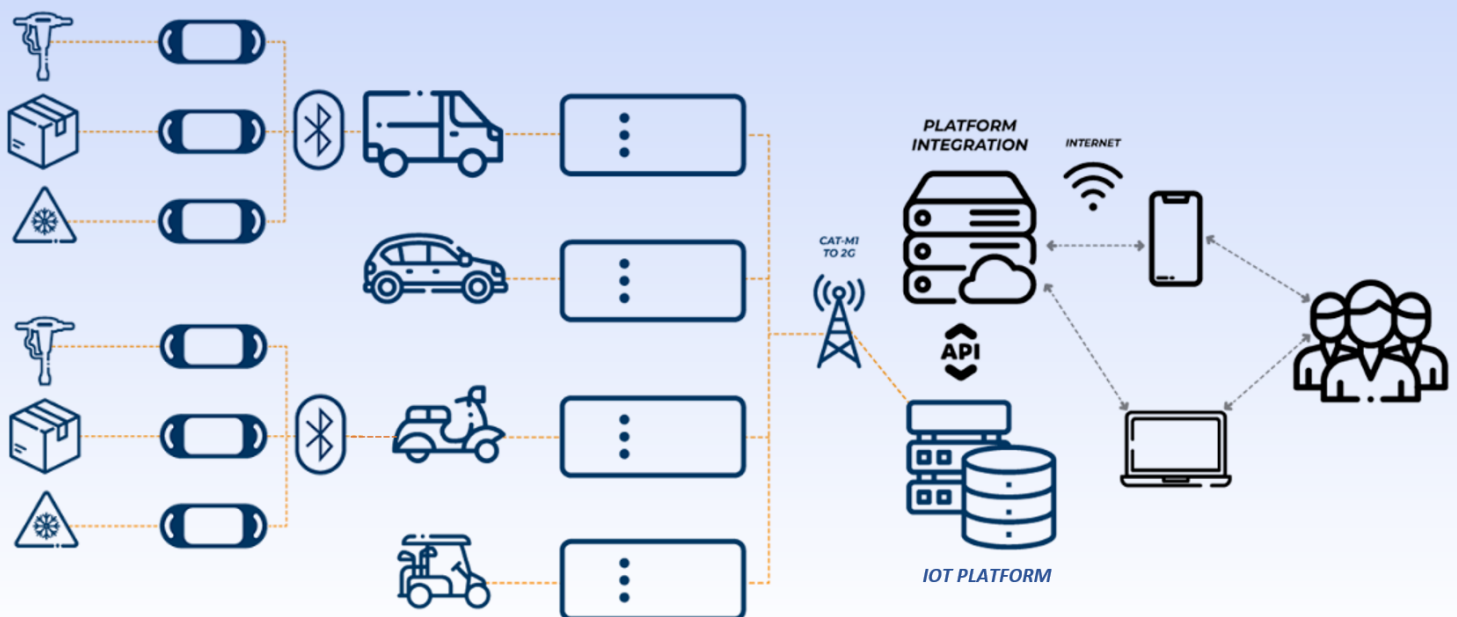
Advantages and Considerations

- Location and condition data at the individual asset-level

- Real-time monitoring of temperature, humidity, carbon dioxide, light and air quality

- Small form factor with indoor/outdoor functionality

- Low maintenance and extended life due to low power demand

Which Device Architecture is Right for You?

	BTM250E	BTM250HT	BTM250T	BTM250B
	Bluetooth 5.1 LE	Bluetooth 5.1 LE	Bluetooth 5.1 LE	Bluetooth 5.1 LE
	Temperature: -40°C to 85°C Accuracy: ±0.5°C to ±1.5°C	Temperature (NIST): -40°C to 125°C Accuracy: ±0.2	Temperature (NIST): -40°C to 125°C Accuracy: 0°C to 65°C ±0.2°C Resolution: 0.01°C	Beacon Only
	Humidity: 0 to 100% RH	Humidity: 0 to 100% RH Accuracy: ±1.8%	---	---
	Pressure: 300hPa-1100hPa Offset temp. coef: ±1.5 Pa/K	---	---	---
	Battery: CR2450 (Li2MnO2); 600 mAh @ 3V	Battery: CR2450 (Li2MnO2); 600 mAh @ 3V	Battery: CR2450 (Li2MnO2); 600 mAh @ 3V	Battery: CR2450 (Li2MnO2); 600 mAh @ 3V
	Run-time: 4 years (std 3s reporting configuration)	Run-time: 4 years (std 3s reporting configuration)	Run-time: 4 years (std 3s reporting configuration)	Run-time: 4 years (std 3s reporting configuration)
	I/O: Momentary Button	I/O: Momentary Button	I/O: Momentary Button	I/O: Momentary Button
	IP67	IP67	IP67	IP67
	70 x 30 x 8mm	70 x 30 x 8mm	70 x 30 x 8mm	70 x 30 x 8mm
	FCC/IC, ANATEL	FCC/IC, ANATEL NIST	FCC/IC, ANATEL NIST	FCC/IC, ANATEL

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