BTM250B/T/E/HT

product presentation

Contents

1   Overview

The BTM250B/T/E/HT will be based on the BlueGecko MCU running the core features of the Mobile Logic platform. The product will add temperature, pressure, and humidity sensing in an upgraded IP67 enclosure. Additionally, many firmware-based enhancements are planned, including over the air firmware updates and configurations.

Table BTM250B/T/E/HT

Feature	BTM250B/T/E/HT
Enclosure	IP67
Button	Momentary Configurable
Bluetooth LE	5.0 , 5.1
MCU	ARM Cortex M4
Temp/Pressure/Humidity	Yes
NIST Temperature	Yes
OTA Configuration	Yes
OTA Firmware Upgrade	Application (Yes), Full Stack (add $)
Mesh Capable	Yes
Mobile Logic Compatible	Yes
Indoor Tracking Support	Precision (sub 1m) AoA based
Basic Beacon Battery Life	5 yrs+
Sensor Beacon Life	2 yrs + (5 yr target)

2   Hardware Features

The BTM250B/T/E/HT will support the following features:

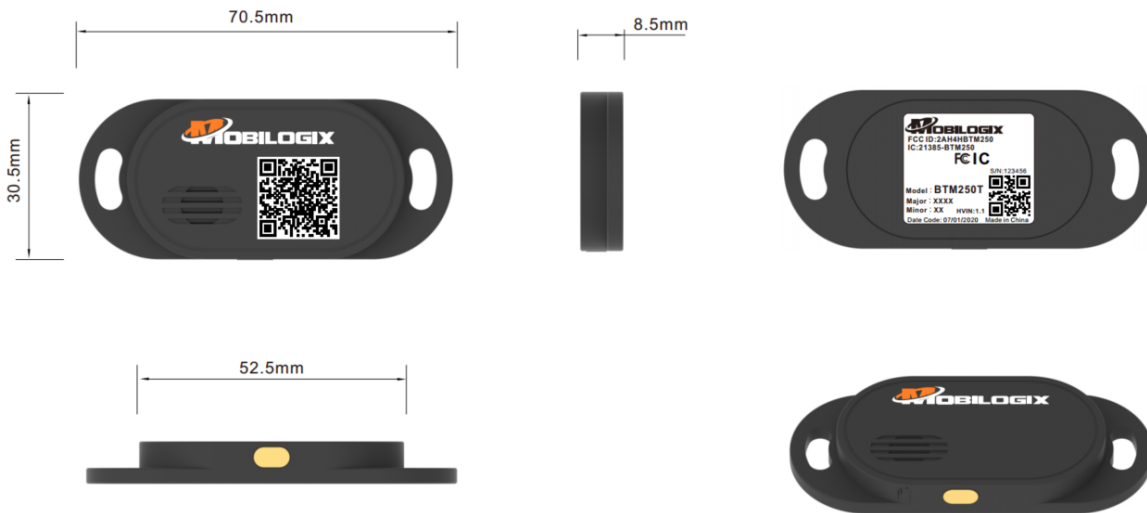| Feature		BTM250B/T/E/HT
Enclosure		IP67
Button		Momentary (Always Powered)
MCU	Bluetooth LE	5.0 , 5.1
	Flash	512K
	RAM	64K
Temp/Pressure/Humidity		BME280
NIST Temperature		STS3X / SHT4X
Basic Beacon Battery Life		5 yrs+*
Sensor Beacon Life		2 yrs + (5 yr target)

2.1   Enclosure

The enclosure shall be IP67 and include mounting provisions. The design would be rugged and low-profile.
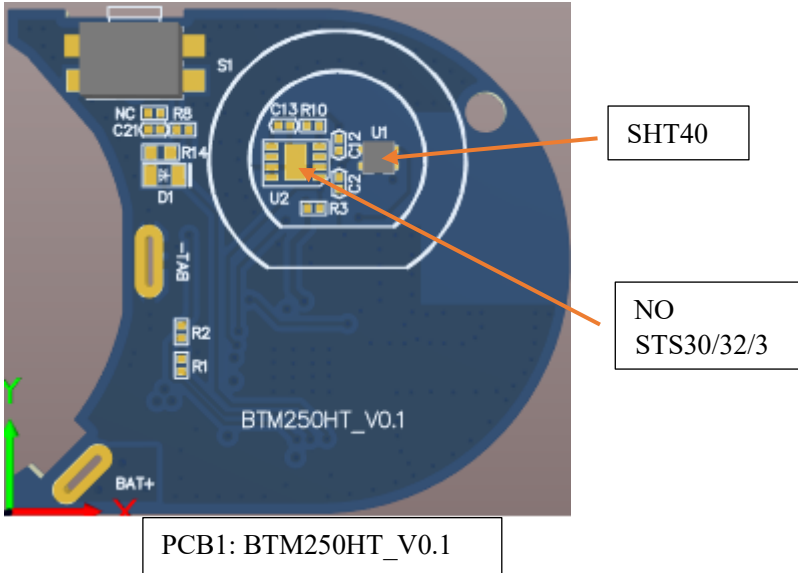White enclosure

Black enclosure

2.2   Button

The button on the BTM250B/T/E/HT will be a momentary button with configurable firmware based actions. which has a latching on-off power switch. The BTM250 B/T/E/HT will be able to that on/off with respect to whether or not the device transmits, however, the BTM250 B/T/E/HT will always be powered (albeit, in a very low power mode).
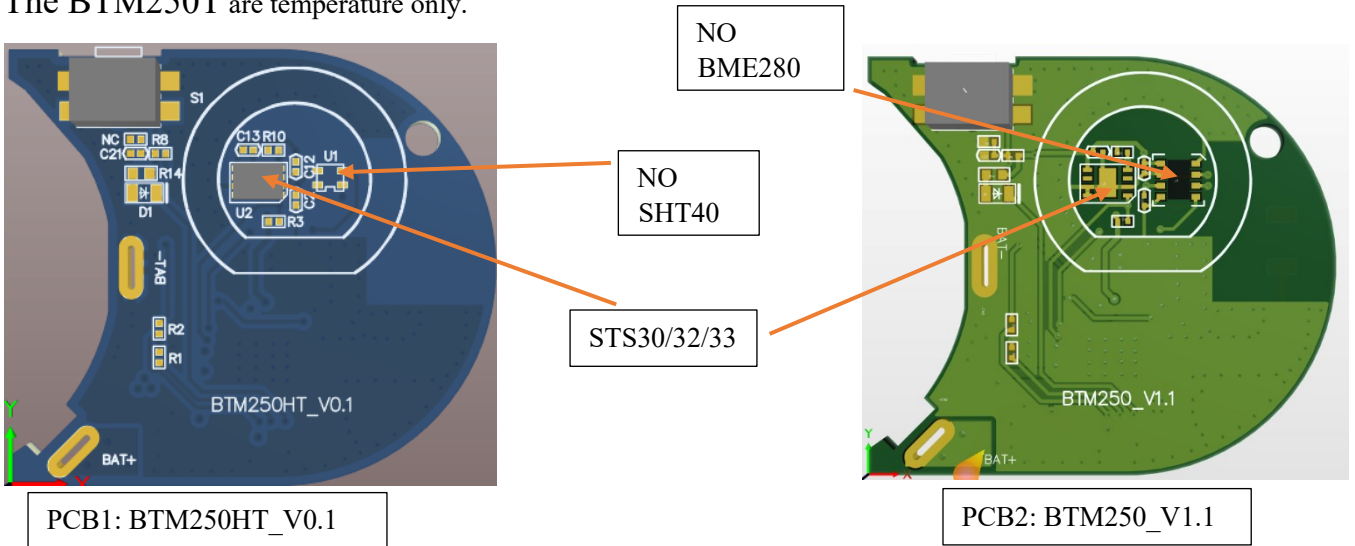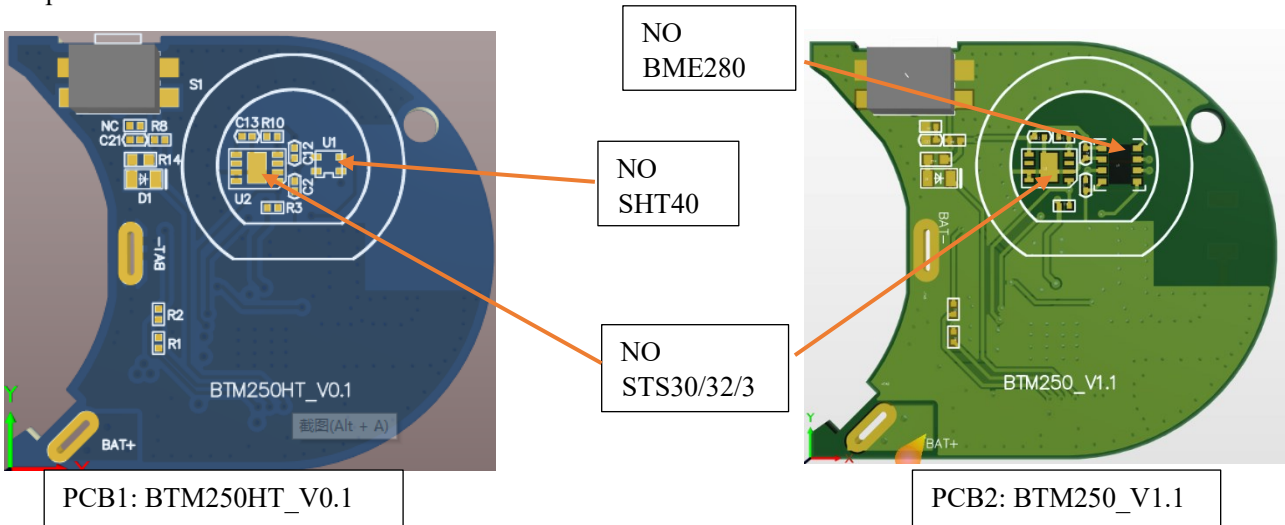
2.3   Sensors

The BTM250HT

will include an Environmental sensor that supports humidity along with temperature. Environmental Sensor (Humidity, Temperature),The BTM250HTwill include a SHT4X or better environment sensor. The SHT4X provides reasonable accuracy over all three parameters while only consuming 0.4uA with 1s sampling.

SHT40

NO
STS30/32/3

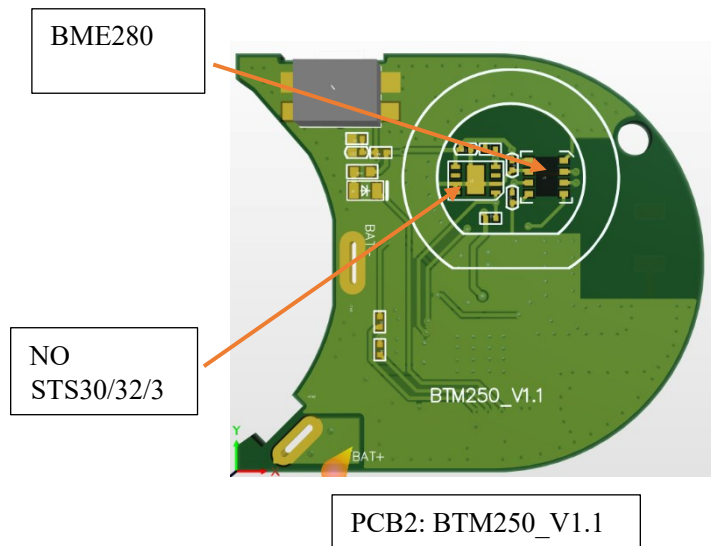PCB1: BTM250HT_V0.1

The BTM250T are temperature only.

NO
SHT40

STS30/32/33

PCB1: BTM250HT_V0.1

NO
BME280

PCB2: BTM250_V1.1

The BTM250B no include an Environmental sensor that supports humidity and pressure along with temperature.

NO BME280

NO SHT40

NO STS30/32/3

PCB1: BTM250HT_V0.1

PCB2: BTM250_V1.1

The BTM250E

will include an Environmental sensor that supports humidity and pressure along with temperature. Environmental Sensor (Pressure, Humidity, Temperature),The BTM250E will include a BME280 or better environment sensor. The BME280 provides reasonable accuracy over all three parameters while only consuming 3.6uA with 1s sampling.

BME280

NO STS30/32/3

PCB2: BTM250_V1.1

2.3.1 NIST Temperature Sensor

Many uses cases specifically call out NIST qualified Temperature Sensors. Utilizing one of these sensors ensures that the vendor follows established practices to ensure the device meets published accuracy numbers - It does not imply a certain level of accuracy. Nevertheless, when a customer requests a NIST temperature sensor, they usually are requesting one with higher accuracy. The BTM250 should target a NIST temperature sensor that is +/- 0.5C over the full temperature range from -20C to 85C.

2.4 Battery

Model No. : CR2450. Battery Life: 2 years

3 Warning

3.1 FCC WARNING:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

—Reorient or relocate the receiving antenna.

—Increase the separation between the equipment and receiver.

—Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

—Consult the dealer or an experienced radio/TV technician for help.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science, and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

(1) This device may not cause interference, and

(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil nedoit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISEDC RF EXPOSURE STATEMENT:

The device comply with RF exposure guidelines, users can obtain Canadian information on RF exposure and compliance.
Le présent appareil est conforme Après examen de ce matériel aux conformité ou aux limites d'intensité de champ RF,les utilisateurs peuvent sur l'exposition aux radiofréquences et la conformité et compliance d'acquérirles informations correspondantes.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body.
Cet émetteur ne doit pas être Co-placé ou ne fonctionnant en même temps qu'aucune autre antenne ou émetteur. Cet équipement devrait être installé et actionné avec une distance minimum de 20 centimètres entre le radiateur et votre corps.

This Class B digital apparatus complies with Canadian ICES-003."

Cet appareil numérique de classe b est conforme à la norme nmb - 003 du canada.