Bluetooth® Sensor Connectivity Solution

WSE-1140



#### Connectivity

- Bluetooth® 5
- NFC
- 802.15.4

#### **Features**

- Cortex M4F 32-bit application processor with 1MB flash memory / 256K RAM
- 4MB external flash memory
- LED indicator
- Lithium-Ion Polymer battery pack

#### **Sensors**

- 9-axis Inertial
   Measurement Unit
- Gas
- Relative Humidity and Temperature
- Microphone







### Bluetooth® Sensor Connectivity Solution

The PCTEL® Wireless Sensor Endpoint (WSE) family are versatile Industrial IoT products that offer multiple connectivity options including Bluetooth® 5, NFC as well as 802.15.4 support.

In addition, the PCTEL WSE family includes several sensors to monitor a variety of physical conditions. These sensors can detect temperature, relative humidity, acceleration, angular rate of change, magnetic field, and sound.

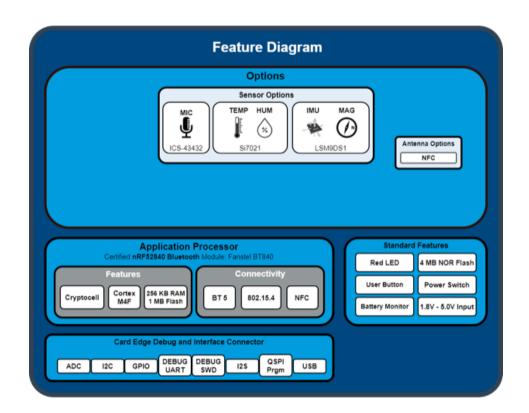
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



## Bluetooth® Sensor Connectivity Solution

#### **Features and Benefits**

Feature	Benefit
ARM Mbed Enabled	Faster time to market leveraging ARM Mbed OS to accelerate application software development.
Internal Radio Antenna	External antenna not necessary with embedded antenna.
Rechargeable Battery Pack	Easily recharge the battery via USB Micro-B connector.
Mounting Tabs	Enclosure with two integrated tabs for easy installation.
Integrated Debug Interface	Ease of software development using the Wireless Sensor Development System.
Power Switch	WSE can be turned on and off as needed.
Push Button	User defined operation.





## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution

#### **General Specifications**

Parameter	Specification
Operating Temperature	-20°C to +60°C
Charging Temperature	0°C to +45°C
Storage Temperature	-20°C to +45°C (1-month) -20°C to +35°C (6-months)
Battery Pack	Li-lon Polymer, 3.7V @ 4400mAh
Dimensions	60mm x 103mm x 43mm

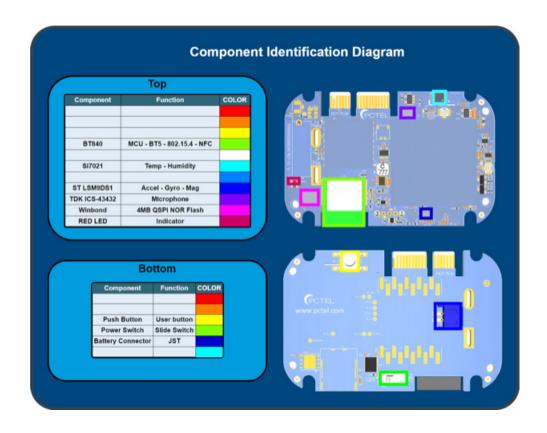
#### **Sensor Specifications**

Device	Specification
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS
9-Axis Inertial Measurement Unit	3-axis Accelerometer: ±2/±4/±8/±16 g (linear) 3-axis Angular rate: ±245/±500/±2000 dps 3-axis Magnetic position: ±4/±8/±12/±16 gauss
Relative Humidity / Temperature	±3% RH (max) 0-80% RH / ±0.4°C (max) -10°C to +85°C



## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution



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#### **Solving Complex Wireless Challenges**

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#### **Product Usage**

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Bluetooth® Sensor Connectivity Solution

WSE-1130



#### Connectivity

- Bluetooth® 5
- NFC
- 802.15.4

#### **Features**

- Cortex M4F 32-bit application processor with 1MB flash memory / 256K RAM
- 4MB external flash memory
- LED indicator
- Lithium-Ion Polymer battery pack

#### **Sensors**

- 9-axis Inertial
   Measurement Unit
- Air Quality
- Gas
- Relative Humidity and Temperature
- Microphone





### Bluetooth® Sensor Connectivity Solution

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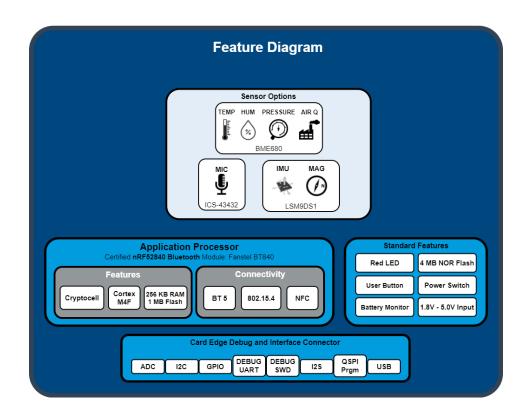
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



## Bluetooth® Sensor Connectivity Solution

#### **Features and Benefits**

Feature	Benefit
ARM Mbed Enabled	Faster time to market leveraging ARM Mbed OS to accelerate application software development.
Internal Radio Antenna	External antenna not necessary with embedded antenna.
Rechargeable Battery Pack	Easily recharge the battery via USB Micro-B connector.
Mounting Tabs	Enclosure with two integrated tabs for easy installation.
Integrated Debug Interface	Ease of software development using the Wireless Sensor Development System.
Power Switch	WSE can be turned on and off as needed.
Push Button	User defined operation.





## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution

#### **General Specifications**

Parameter	Specification
Operating Temperature	-20°C to +60°C
Charging Temperature	0°C to +45°C
Storage Temperature	-20°C to +45°C (1-month) -20°C to +35°C (6-months)
Battery Pack	Li-Ion Polymer, 3.7V @ 4400mAh
Dimensions	60mm x 103mm x 43mm

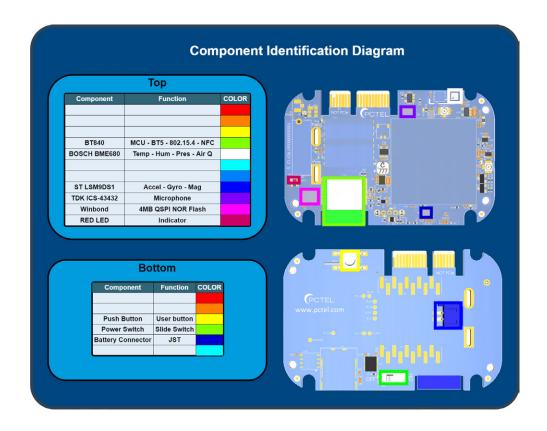
#### **Sensor Specifications**

Device	Specification
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS
9-Axis Inertial Measurement Unit	3-axis Accelerometer: ±2/±4/±8/±16 g (linear) 3-axis Angular rate: ±245/±500/±2000 dps 3-axis Magnetic position: ±4/±8/±12/±16 gauss
Environmental Gas / Air Quality	Gas (VOC): 20% tolerance; 5% accuracy
	Pressure: 300 to 1100 hPa (±0.6 hPa)
	Air Quality Score: 0 to 500 (±15%)
Relative Humidity / Temperature	±3% RH (max) 0-80% RH / ±0.4°C (max) -10°C to +85°C



## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution



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Bluetooth® Sensor Connectivity Solution

WSE-1120



#### Connectivity

- Bluetooth® 5
- NFC
- 802.15.4

#### **Features**

- Cortex M4F 32-bit application processor with 1MB flash memory / 256K RAM
- 4MB external flash memory
- LED indicator
- Lithium-Ion Polymer battery pack

#### **Sensors**

- 6-axis Inertial
   Measurement Unit
- Relative Humidity and Temperature
- Microphone







### Bluetooth® Sensor Connectivity Solution

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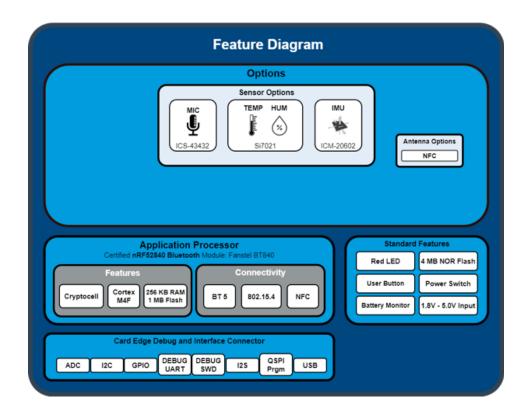
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



## Bluetooth® Sensor Connectivity Solution

#### **Features and Benefits**

Feature	Benefit
ARM Mbed Enabled	Faster time to market leveraging ARM Mbed OS to accelerate application software development.
Internal Radio Antenna	External antenna not necessary with embedded antenna.
Rechargeable Battery Pack	Easily recharge the battery via USB Micro-B connector.
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Push Button	User defined operation.





## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution

#### **General Specifications**

Parameter	Specification
Operating Temperature	-20°C to +60°C
Charging Temperature	0°C to +45°C
Storage Temperature	-20°C to +45°C (1-month) -20°C to +35°C (6-months)
Battery Pack	Li-lon Polymer, 3.7V @ 4400mAh
Dimensions	60mm x 103mm x 43mm

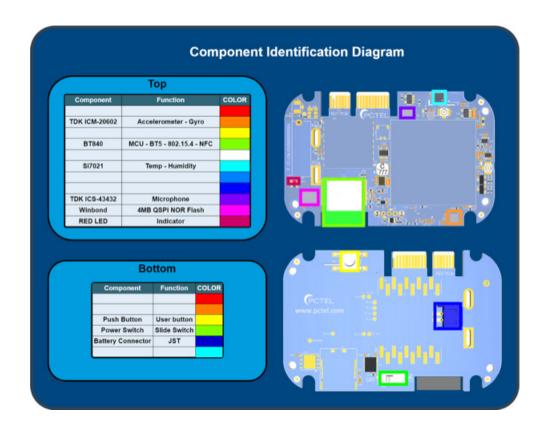
#### **Sensor Specifications**

Device	Specification
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS
6-Axis IMU Motion Tracking Device	3-axis Accelerometer: ±2/±4/±8/±16 g linear 3-axis Gyroscope: ±250/±500/±1000/±2000 dps
Relative Humidity / Temperature	±3% RH (max) 0-80% RH / ±0.4°C (max) -10°C to +85°C



## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution



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Bluetooth® Sensor Connectivity Solution

WSE-1110



#### Connectivity

- Bluetooth® 5
- NFC
- 802.15.4

#### **Features**

- Cortex M4F 32-bit application processor with 1MB flash memory / 256K RAM
- 4MB external flash memory
- LED indicator
- Lithium-Ion Polymer battery pack

#### **Sensors**

- 6-axis Inertial
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- Air Quality
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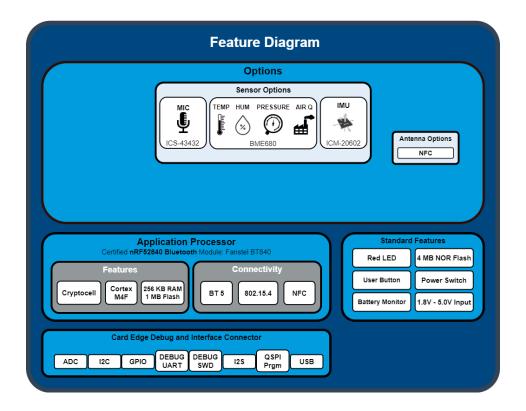
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## Bluetooth® Sensor Connectivity Solution

#### **Features and Benefits**

Feature	Benefit
ARM Mbed Enabled	Faster time to market leveraging ARM Mbed OS to accelerate application software development.
Internal Radio Antenna	External antenna not necessary with embedded antenna.
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Power Switch	WSE can be turned on and off as needed.
Push Button	User defined operation.





## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution

#### **General Specifications**

Parameter	Specification
Operating Temperature	-20°C to +60°C
Charging Temperature	0°C to +45°C
Storage Temperature	-20°C to +45°C (1-month) -20°C to +35°C (6-months)
Battery Pack	Li-lon Polymer, 3.7V @ 4400mAh
Dimensions	60mm x 103mm x 43mm

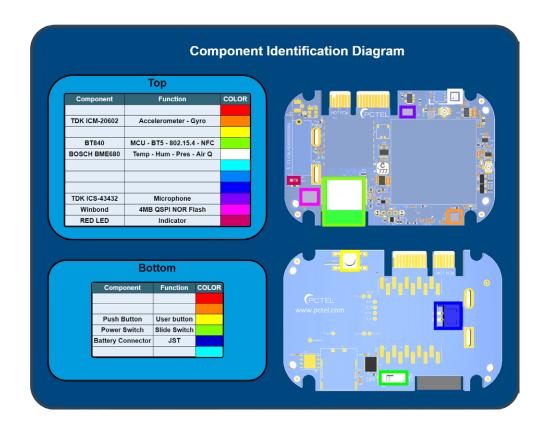
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Environmental Gas / Air Quality	Gas (VOC): 20% tolerance; 5% accuracy
	Pressure: 300 to 1100 hPa (±0.6 hPa)
	Humidity: 10% to 90% RH (±3%) at 0°C to +65°C
	Temperature: -40°C to +85°C (±1°C), 25°C (±0.5°C)
	Air Quality Score: 0 to 500 (±15%)



## **Wireless Sensor Endpoint**

## Bluetooth® Sensor Connectivity Solution



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