Sensor Connectivity Solution

WSE-1240



Connectivity

- LoRa
- 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

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







Sensor Connectivity Solution

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

In addition to several radios, 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.

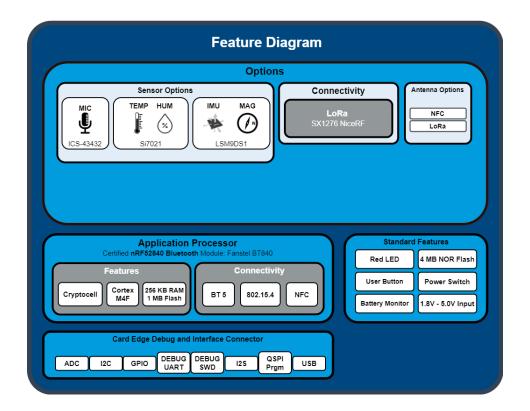
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



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 Antennas	No external connections with each radio having an individual 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

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

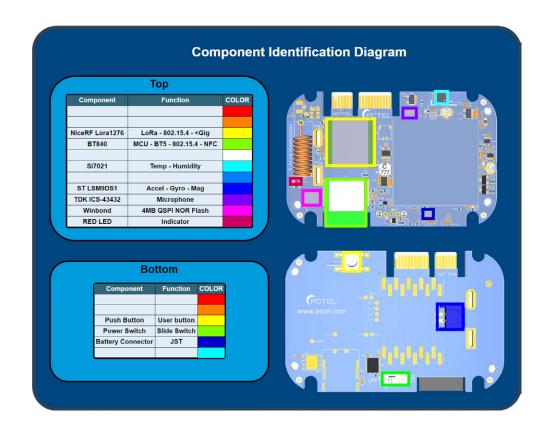
Sensor Specifications

Device	Specification
Relative Humidity / Temperature	±3% RH (max) 0-80% RH / ±0.4°C (max) -10°C to +85°C
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
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS



Wireless Sensor Endpoint

Sensor Connectivity Solution



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Product Usage

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Sensor Connectivity Solution

WSE-1230



Connectivity

- LoRa
- 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, Air Quality, Pressure, Temperature and Humidity
- Microphone





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Wireless Sensor Endpoint

Sensor Connectivity Solution

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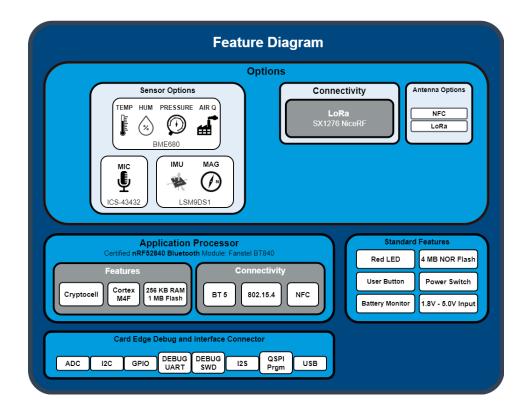
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



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 Antennas	No external connections with each radio having an individual 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

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

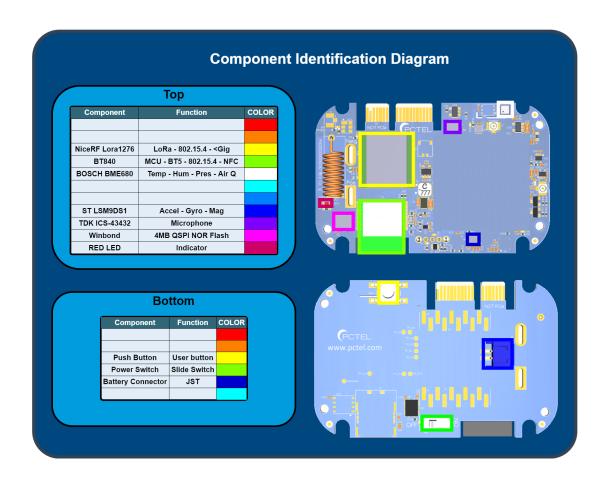
Sensor Specifications

Device	Specification
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
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS
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

Sensor Connectivity Solution



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Sensor Connectivity Solution

WSE-1220



Connectivity

- LoRa
- 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-lon Polymer battery pack

Sensors

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





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Wireless Sensor Endpoint

Sensor Connectivity Solution

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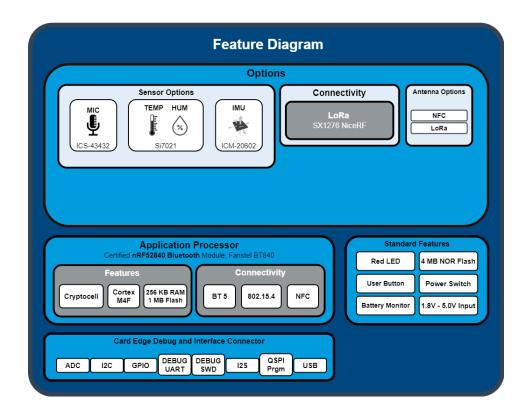
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



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 Antennas	No external connections with each radio having an individual 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

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

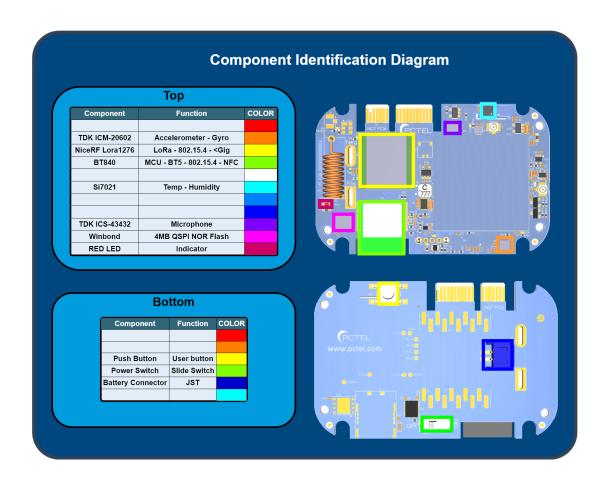
Sensor Specifications

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



Wireless Sensor Endpoint

Sensor Connectivity Solution



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Sensor Connectivity Solution

WSE-1210



Connectivity

- LoRa
- 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
- Gas, Air Quality, Pressure, Temperature and Humidity
- Microphone





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Wireless Sensor Endpoint

Sensor Connectivity Solution

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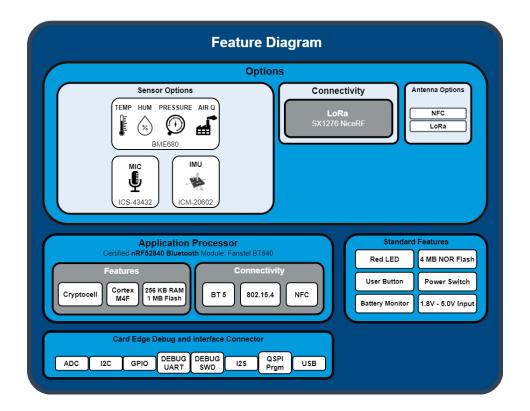
The PCTEL WSE is powered by a high capacity Lithium-Ion Polymer battery pack. The enclosure also has two mounting tabs for easy installation.



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 Antennas	No external connections with each radio having an individual 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

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

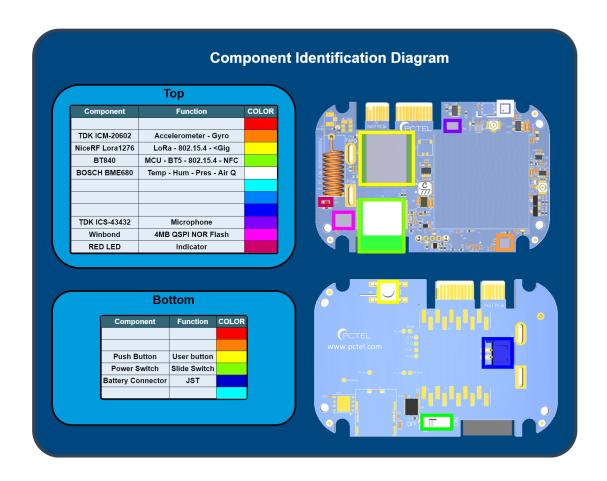
Sensor Specifications

Device	Specification
6-Axis IMU Motion Tracking Device	3-axis Accelerometer: ±2/±4/±8/±16 g linear 3-axis Gyroscope: ±250/±500/±1000/±2000 dps
Microphone	Frequency response: 50 Hz to 20 kHz SNR: 65 dBA, Sensitivity -26 dB FS
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

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