

Open Sources, Long Range Bluetooth 5 Sensors

Market Ready Enclosure, Just Add Your Firmware



Bluetooth Sensor with enclosure and certifications are market ready upon completion of firmware and apps development. If you wish to develop your own sensor, this is the best example for PCB layout and mechanical component placement to minimize range degradation.

Connecting to Phone, PC, or Cloud

When used with Fanstel Bluetooth 5 gateway or dongle, sensors can be monitored by cloud servers. It can also be connected to smartphone directly.

Ready for Bluetooth SIG Mesh

Battery powered sensors should be used at low power nodes in Bluetooth SIG mesh. AC adapter is included in sensors for Relay nodes. CryptoCell-310 co-processor in Really node can decrypt and authenticate messages



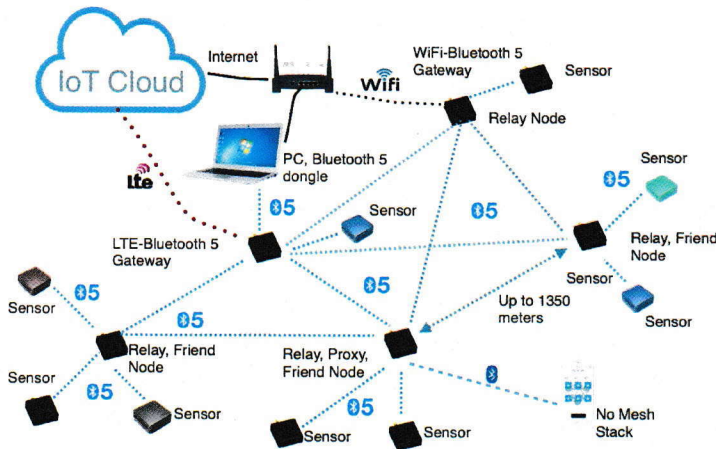
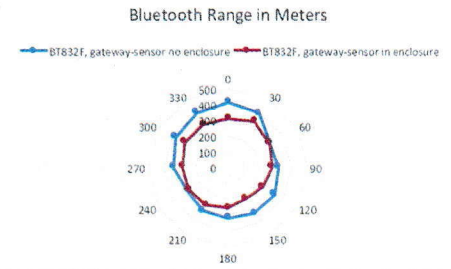
Long Range and Long Battery Life

Life time of 2 AAA batteries can be up to 5 years for Bluetooth range from 280 to over 1000 meters.

BLE Signal Attenuation through Enclosure

Enclosure of gateway and sensor is 2 mm. Bluetooth

BT832F, gateway-sensor		
	no enclosure	in enclosure
0	415	307
30	395	335
60	307	304
90	320	280
120	342	255
150	337	230
180	320	256
210	315	277
240	293	283
270	343	287
300	385	318
330	402	310
Average	348	287



efficiently to improve mesh network performance.

Motion and Environmental Sensors

A TDK motion and a Bosch environmental sensors are used as implementation examples.

- InvenSense ICM-20608G 6-axis, accelerometer and gyroscope
- Bosch BME280, temperature, humidity, pressure sensors

range between 2 BT832Fs is 340 meters and 280 meters, without and with enclosure, respectively. Range degradation for 4 mm of plastic enclosure is about 20%.

Miscellaneous

- Size: 60x60x22mm
- Desk and wall mountable
- Optional magnetic mounting
- Low power node uses 2AAA batteries, not included.
- Relay node, uses AC adapter, included

Market Ready Enclosure, Just Add your Firmware

Demonstration quality firmware, Android OS, and iOS apps source codes are available from Fanstel website to reduce your product development time.

Nordic nRF52 development environment should be used for firmware development. You can use nRF52DK to load firmware or use Over-The-Air Device Firmware Upgrade (OTA DFU) feature.

Customized Sensors

Sensors can be customized to meet requirements.

- Enclosure, logo
- Sensor types
- Integrate with other modules

	Motion Sensor: Accelerometer, Gyroscope			Environmental Sensor: Temperature, Humidity, Pressure		
	SM832AF-T608	SM840F-T608	SMR840E-T608	SE832AF-B280	SE840F-B280	SER840E-B280
	Low power node	Low power node	Relay node	Low power node	Low power node	Relay node
MCU	Cortex M4	Cortex M4F	Cortex M4F	Cortex M4	Cortex M4F	Cortex M4F
Flash/RAM	192KB/24KB	1MB/256KB	1MB/256KB	192KB/24KB	1MB/256KB	1MB/256KB
Antenna	PCB Trace	PCB Trace	ANT060	PCB Trace	PCB Trace	ANT060
Range	280 meters	800 meters, est	1200 meters, est.	280 meters	800 meters, est.	1200 meters, est.
Power supply	2AAA, not included	2AAA, not included	USB adapter, included	2AAA, not included	2AAA, not included	USB adapter, included
1K price, ea	\$12.92	\$21.66	\$34.41	\$16.46	\$25.20	\$37.95
Availability	3/2018	4/2018	4/2018	3/2018	4/2018	4/2018