Broadsens

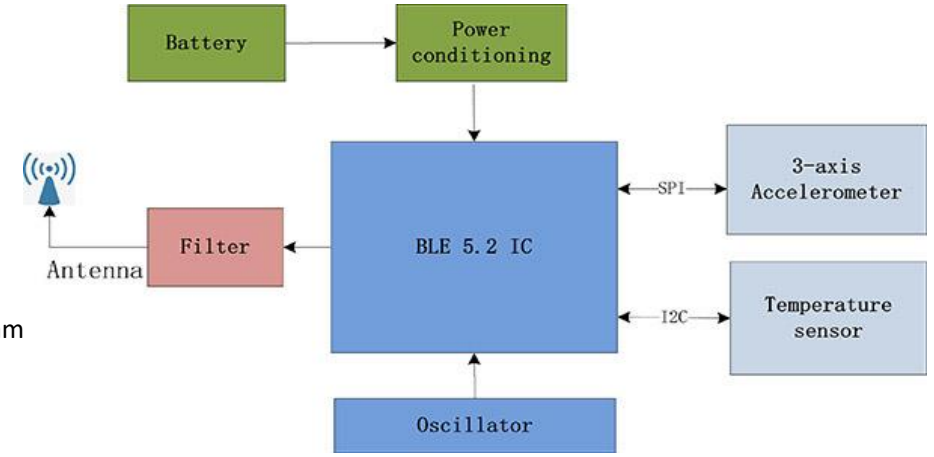
PRODUCT PRESENTATION

SVT-L series wireless vibration & temperature sensors have ultra-long range to the edge-computing gateways. The sensors can reach up to 1km (0.6 mile) in open space, with high data rate for real-time monitoring and advanced vibration analysis.

SVT-L series wireless vibration & temperature sensors have two sub-categories: SVT-LA and SVT-LV, which match the functions of SVT-A series sensors and SVT-V series sensors respectively.

SVT-L series long-range wireless vibration & temperature sensor

Parameters	Description
Acceleration range	SVT200-L: up to 8g; SVT300-L: up to 16g; SVT400-L: up to 64g
Sampling rate	SVTx00-LA: 50Hz to 25.6kHz adjustable; SVTx00-LV: 6.4kHz in high-speed mode; 3.13Hz in low-speed mode
Resolution	16 bit; ±8g:0.24mg/bit; ±16g:0.48mg/bit; ±64g:1.95mg/bit
Nonlinearity	< 0.6%
Noises	SVT200-L/SVT300-L: 130ug/$\sqrt{Hz}$ density; SVT400-L: 330 ug/$\sqrt{Hz}$
Temperature sensor range	-40 - 85 ^{0}C (-40 – 185 Fahrenheit)
Temperature accuracy	-25-85^{0}C: ±0.3 ^{0}C; -40- -25^{0}C: ±0.4 ^{0}C; no calibration needed
Measurement & transmit mode	Continuous low-speed sampling, periodic high-speed sampling & transmission, and triggered high-speed sampling & transmission
Power consumption	<10uA idle; < 3mA with data transmission and DAQ
Power supply	ER18505 battery, 4000mAh, replaceable
Wireless protocol	2.4GHz ultra-low power proprietary
FCC ID/IC ID	X8WBC833M / 4100A-BC833M
Transmission distance	**Up to 1km (0.6 mile) line of sight, open space**
Size	37x71 mm (1.46x2.80 inch) diameter x height
Material & weight	Material: Aerospace aluminum 7075 industrial plastic cover; weight: 117g (4.1 oz)
Mounting method	Epoxy, stud, pad or magnet mount
Environment	Working temperature: -55 - 85 ^{0}C; storage temperature: -55 - 85 ^{0}C; IP68 waterproof (IP69K optional)



Sensor block diagram

Revision date: April 8, 2024

SVT-L Series Sensors Details

SVT-L series sensors have unmatched long-range, high data rate and battery life. SVT-L series wireless vibration sensors integrate seamlessly with existing Broadsens's edge-computing gateways. SVT-LA sub-series include: SVT200-LA, SVT300-LA and SVT400-LA; SVT-LV series include SVT200-LV, SVT300-LV and SVT400-LV.

Besides ultra-long range, SVT-L series sensors measure surface temperature, since the temperature sensor is located at the bottom.

The SVT-L series sensors are ideal for applications that require longer distance, or in locations where there is strong interference from structures. Users can directly use the long-range SVT-L sensors to replace the standard sensors for these applications.

SVT-LV series sensors have auto-range adjustment ability, which have high sensitivity for low vibration machines, and high dynamic range at the same time.

Note: SVT-L series long-range wireless vibration sensors require to be used with Broadsens's wireless gateways.

Monitoring Software

Software at wireless gateway is based on open-source software node-RED. No software installation is required. It can be accessed with all major web browsers.

Software advantages

. True real-time vibration monitoring
. Intuitive data visualization
. Alarm & threshold setup
. Scheduled data acquisition
. Time-series database
. Vibration trend charts
. FFT analysis
. OTA firmware upgrade
. Easy expansion
. Secure data transmission

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