



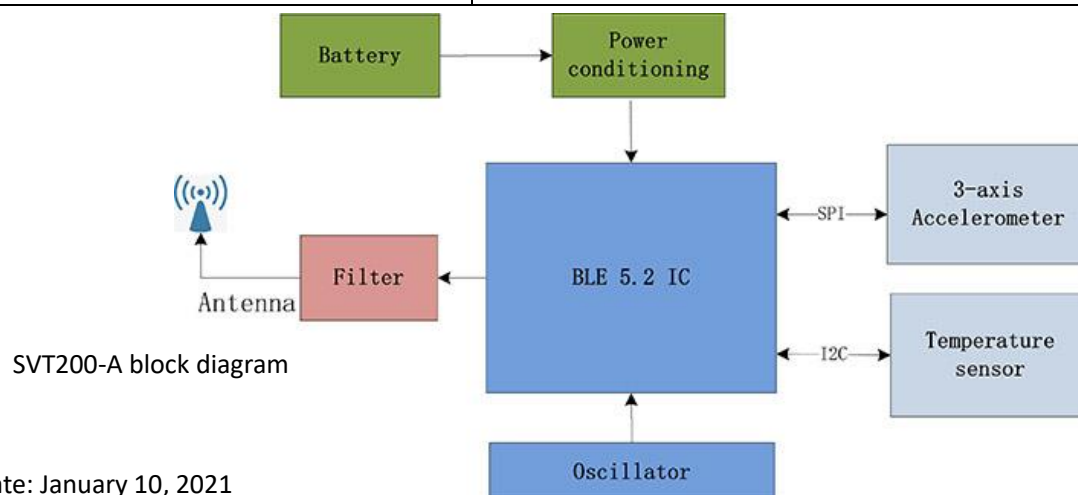
SVT200-A is an ultra-low power wireless vibration and temperature sensor with advanced features. The sensor is super compact, easy to install and easy to use. SVT200-A can monitor the machine condition in real time or by schedules, which is ideal for predictive maintenance. SVT200-A has adjustable sampling rate up to 25.6kHz. Its range is also adjustable. Multiple SVT200-As can be divided into different groups for multi-area monitoring.



Wireless vibration & temperature sensor SVT200-A

Attention: SVT200-A requires to be used with Broadsens's wireless gateway GU200 or GU200S (sold separately)

Parameters	Description
Acceleration range	±2g, ±4g, ±8g adjustable
Selectable sampling rates	50Hz, 100Hz, 200Hz, 400Hz, 800Hz, 1.6kHz, 3.2kHz, 6.4kHz, 12.8kHz, 25.6kHz adjustable
Resolution	16 bit. ±2g:0.06mg/bit; ±8g:0.24mg/bit
Non-linearity	<0.6% of full scale
Noise	0.7mg RMS; 130ug/√Hz density
Sampling modes	Real time, synchronized real time, batch mode & synchronized batch mode; single DAQ; synchronized single DAQ, multi DAQ
Temperature measurement range	-40 - 85 °C
Temperature measurement accuracy	-25 to 85°C: ±0.3 °C; -40 to -25°C: ±0.4 °C without calibration
Temperature measurement period	5s when active in real time mode
Power consumption	idle:2.1uA; real-time sampling & transmission at 50Hz <200uA
Power supply	14250 replaceable battery, 1200mAh capacity. Can last up to 5 years (depending on the frequency of usage and environment)
Wireless protocol	2.4GHz proprietary
FCC/IC ID	X8WBC833M/4100A-BC833M
Wireless distance	Up to 300m in open space, line of sight
Size	Diameter:34mm; height:31mm
Metal base material & total weight	Aluminum alloy 6061 option: 55 g; stainless steel option: 100g
Installation	Epoxy mount; screw mount (M6); stud mount (M8 to M6)
Environment	Working temperature: -40 - 85 °C; storage: -55 - 85 °C; water resistance: IP67



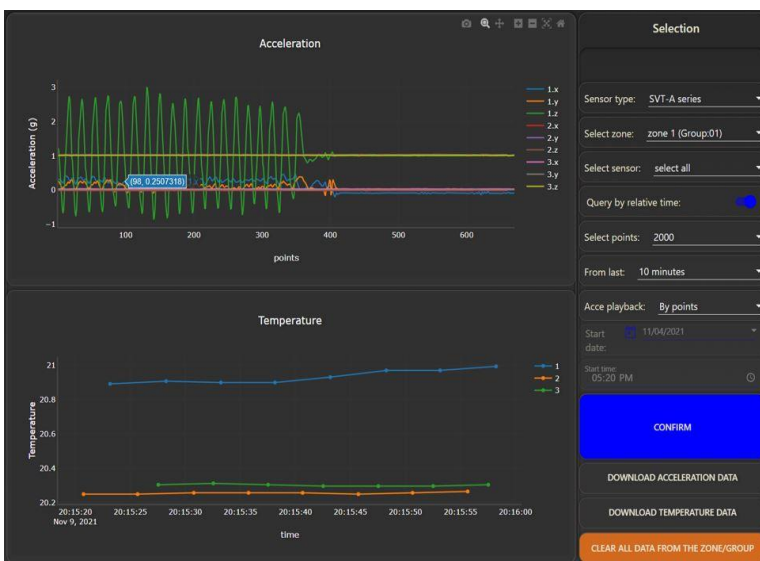
Advantages of SVT200-A

Thanks to its unique low-power design, SVT200-A can work for up to 5 years before replacing the battery (depending on the frequency of usage and environment). SVT200-A is easy to install and configure. SVT200-A can work under harsh environment. It has a secure boot loader for improved security. It supports OTA (Over the Air) firmware upgrade. SVT200-A has seven working modes: real time mode, synchronized real-time mode, batch mode, synchronized batch mode, single DAQ and synchronized single DAQ, multi DAQ.

- . Real-time mode: when sensor wakes up, it starts data acquisition and transmission immediately.
 - . Batch mode: When sensor wakes up, it takes a fixed amount of data at the given sample rate and transmit the data together to the gateway, and then repeat the process.
 - . Single DAQ: When sensor wakes up, it takes a fixed amount of data at the given sample rate and transmit the data to the gateway for one time only. The sampling rate is guaranteed and is ideal for frequency domain analysis.
 - . Synchronized mode: Synchronized mode can be combined with real-time mode, batch mode or single DAQ. After waking up, the sensors in the same group start taking data and transmission at the same time.
 - . Multi DAQ: Continuous run of single DAQ mode. Great for frequency domain analysis with no point or time limit.
- The compact size and light weight of SVT200-A improve the accuracy of vibration monitoring.

Monitoring Software

BroadVibra Vibration monitoring software at the gateway is based on open-source architecture. It can be accessed with all major web browsers. Database is also included



Software advantages

- . Real-time monitoring
- . Intuitive data visualization
- . Alarm & threshold setup
- . Scheduled data acquisition
- . Time-series database
- . Key parameters trend charts
- . FFT analysis
- . Advanced filtering
- . OTA firmware upgrade
- . Open source
- . Secure transmission

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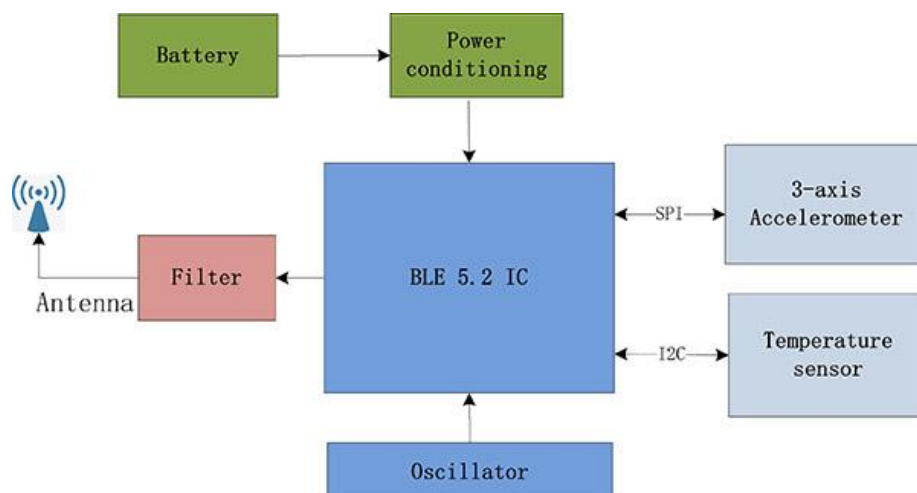


Ultra-low power wireless vibration sensor SVT200-V provides real-time machine condition monitoring continuously 24/7 non-stop. The sensor samples x, y and z axis acceleration in low frequency, and switches to high frequency mode immediately if the sensor detects a vibration event. It acquires a fixed number of samples, calculates the vibration velocity and acceleration RMS value, and sends the result to the wireless gateway. The sensor also measures temperature with high accuracy.



Ultra-low power wireless vibration sensor SVT200-V

Parameters	Description
Acceleration range	±2g, ±4g or ±8g. Default 8g, fixed by the factory
Sampling rate	6.4kHz or 12.8 kHz. Default 6.4kHz, fixed by the factory
Resolution	16 bit; ±2g:0.06mg/bit; ±8g:0.24mg/bit
Nonlinearity	< 0.6%
Noises	0.7mg RMS; 130ug/√Hz density
Sampling method	Fixed 340 sample points at x, y and z axis in high-speed mode
Temperature sensor range	-40 - 85 °C
Temperature accuracy	-25-85°C: ±0.3 °C; -40- -25°C: ±0.4 °C; no calibration needed
Measurement & transmit mode	Continuous low-speed sampling, periodic high-speed sampling & transmission, and triggered high-speed sampling & transmission
Power consumption	12uA at periodic high-speed sampling & transmission, and 88uA at continuously triggering & transmitting
Power supply	14250 intrinsic safe battery, 1200mA capacity, Replaceable
Wireless protocol	2.4GHz ultra-low power proprietary
FCC ID/IC ID	X8WBC833M / 4100A-BC833M
Transmission distance	Up to 300m line of sight, open space
Size	Diameter 33mm; height 26mm
Weight	45 g including battery
Mounting method	Epoxy mount; screw mount; wire mount
Environment	Working temperature: -40 - 85 °C; Storage temperature: -55 - 85 °C; IP67 waterproof



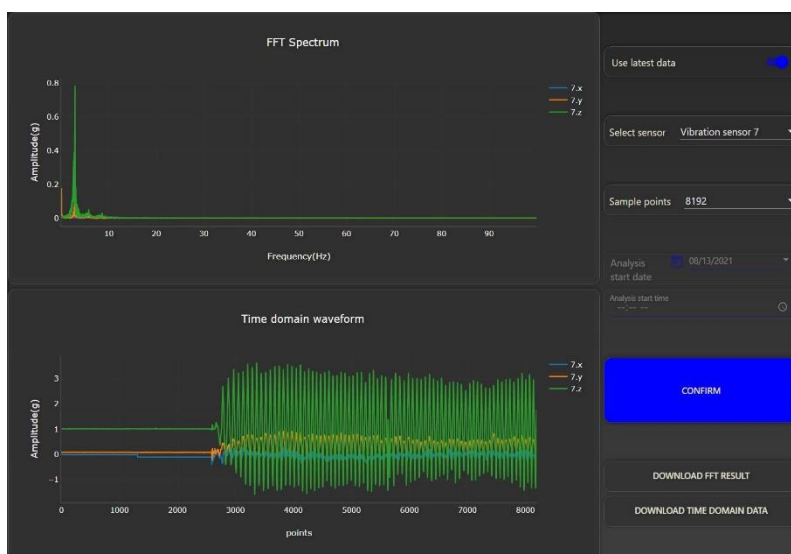
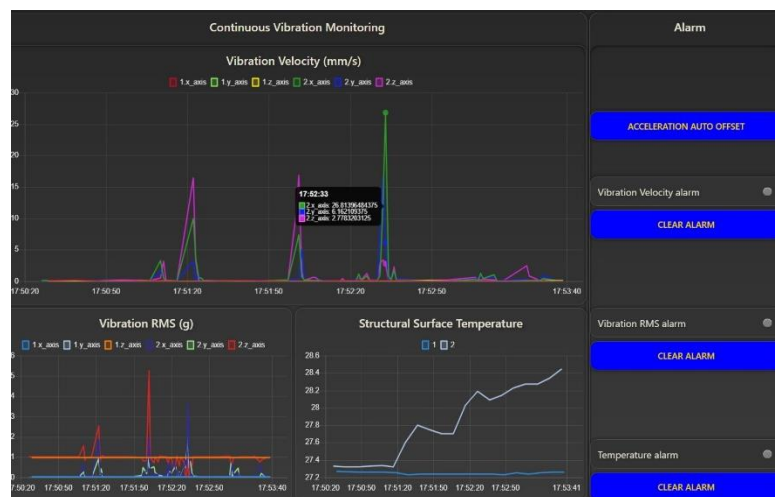
SVT200-V Advantages

SVT200-V is the only compact real-time wireless vibration sensor that can monitor machine condition continuously 27/7 non-stop with more than 3-year battery life in typical usage. SVT200-V has two sampling modes: continuous low-speed sampling mode and high-speed sampling mode. It acquires x, y and z axis data in 16-bit resolution continuously. When the sensor detects a vibration event, then it switches to high-speed mode at fixed sampling rate of 6.4kHz or 12.8kHz (default 6.4kHz), takes a fixed amount of data, calculates vibration velocity and acceleration rms value, and sends the result to the wireless gateway. When there is no vibration event, the sensor still switches to high-speed mode every 10 seconds, calculates the vibration velocity and acceleration rms value, and sends the result to the wireless gateway.

The smart algorithm inside SVT200-V adjusts the sampling mode dynamically and optimizes the energy usage. It can capture both high frequency and low frequency defects from the machine and structures. SVT200-V can be mounted with epoxy, screws or hanging wires for long-term continuous machine condition monitoring. **Note: SVT200-V needs to be used with Broadsens's wireless gateway**

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

- Real-time 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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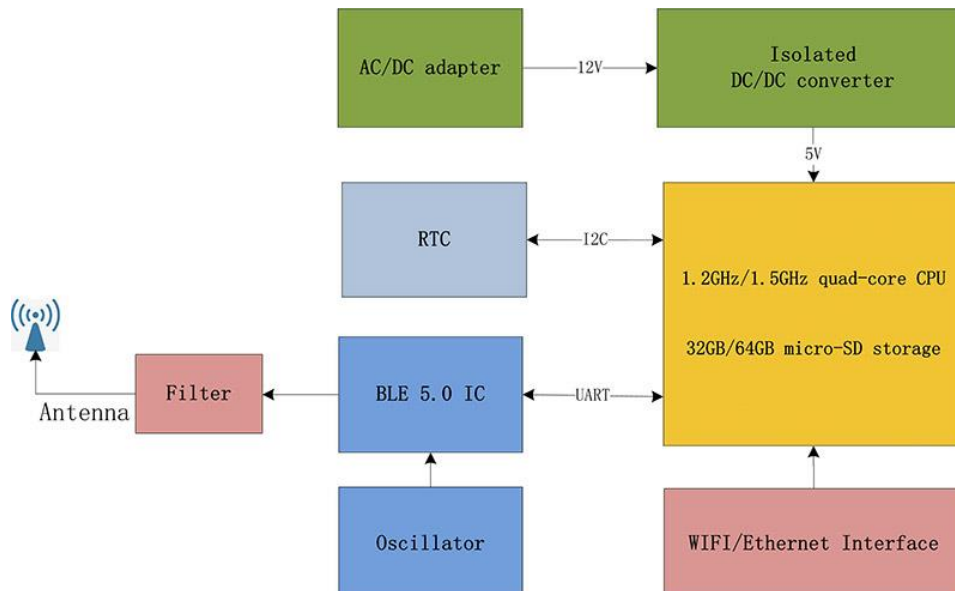
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Wireless gateway GU200 connects and controls multiple wireless low power sensors such as SVT200-A, SVT200-V and SVT100-T. GU200 includes a powerful microcontroller for real-time data visualization. It integrates a time-series database InfluxDB for data review and export. Vibration analysis software BroadVibra is installed at the gateway for time-domain and frequency domain vibration analysis. Data can be further transferred to user's private clouds or servers via MQTT protocol. GU200 can be accessed with a web browser, so there is no software installation required and it is ready to use immediately.



Wireless gateway GU200

Models	GU200	GU200s
Microcontroller	ARM Cortex-A53 1.2Ghz 64 bit	ARM Cortex-A72 1.5Ghz 64 bit
Operating system	Linux Debian	
RAM	1GB	2GB standard, 4GB & 8GB optional
Data storage	32GB, integrated database	64GB, integrated database
Network interface	WIFI/Ethernet	WIFI/Gigabit Ethernet, extended range to wireless sensors
Sensor interface	2.4GHz ultra low power wireless protocol (FCC approved)	
Number of wireless sensors	Recommended usage: Up to 4 SVT200-V real-time vibration monitoring sensors, and 60 SVT200-A vibration sensors for predictive maintenance	
Power supply	9-18 VDC	
Power consumption	10W	15W
Weight	700g	
Size (L*W*H)	141*126.5*30.5mm	
Working environment	Temperature: -30°C~60°C; humidity: 10%~90%RH	
Additional features	Real-time hardware clock; Over-the-Air firmware OTA secure update, 1-click BroadVibra software update, USB interface	



Gateway features

- Plug & Play
- Sensor grouping
- Large storage
- Data visualization
- Vibration analysis
- Easy upgrade
- Web interface
- MQTT control
- FFT analysis
- Advanced filtering

GU200

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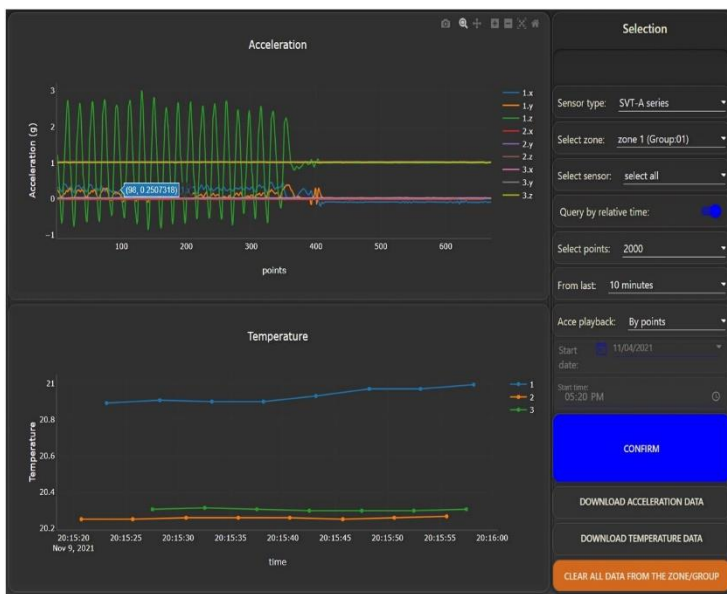
Other gateways

- ✗
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BroadVibra Software

BroadVibra software is installed inside the wireless gateway. The software has intuitive interface and can be accessed from all major web browsers remotely. The software is ideal for predictive maintenance and conditional based monitoring



Software Advantages

- Data visualization
- Real time monitoring
- Alarm setup
- Threshold adjustment
- Monitoring timer
- Data replay
- Vibration trend analysis
- FFT analysis
- Parameter adjustment
- Firmware update
- Secure data
- Filtering

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