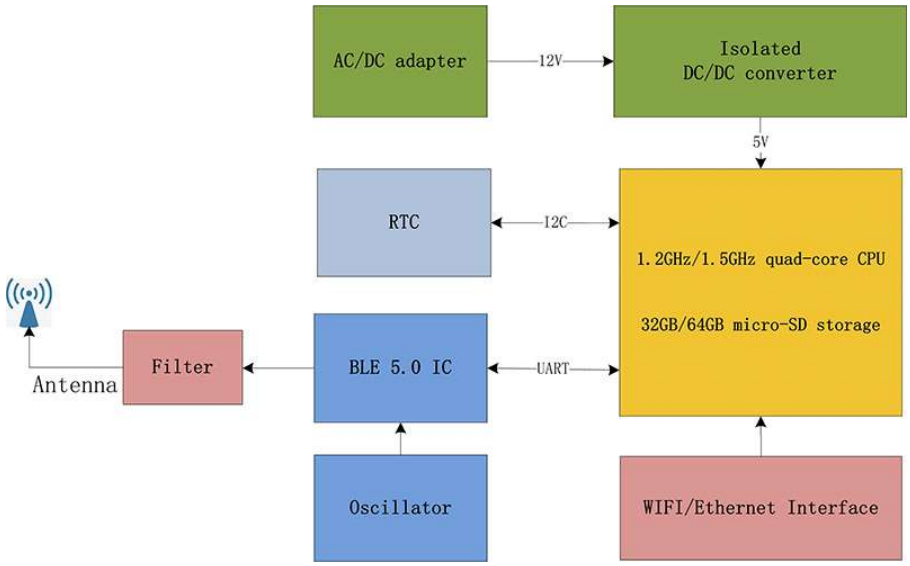
Broadsens

PRODUCT PRESENTATION

Wireless gateway GU200 connects multiple wireless low power sensors such as SVT100-A and SVT100-T to user's servers and clouds. GU200 includes a powerful microcontroller for real-time data visualization. It integrates a time-series database InfluxDB for data review and 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

型号	GU200	GU200s
Microcontroller	ARM Cortex-A53 1.2Ghz 64 bit	ARM Cortex-A72 1.5Ghz 64 bit
Operating system	Linux Debian	
RAM	1GB	2GB
Data storage	32GB	64GB
Network interface	WIFI/Ethernet	WIFI/Gigabit Ethernet
Sensor interface	BLE 5.0	
Number of wireless sensors	Up to 256 (8 temperature sensors, 248 vibration temperature sensors). Recommended usage: Up to 8 temperature sensors, up to five zones, with three sensors at each zone for the maximum performance	
Power supply	9-18 VDC	
Power consumption	10W	15W
Weight	700g	
Size (L*W*H)	141*126.5*30.5mm	
Working environment	Temperature: -30℃～60℃; humidity: 10%～90%RH	
Additional features	Real-time hardware clock; Over-the-Air update, USB interface	



Features	GU200	Competitors
• Plug & Play	√	x
• Sensor grouping	√	x
• Large storage	√	x
• Data visualization	√	x
• Data analysis	√	x
• Easy upgrade	√	x
• Web interface	√	x

Software Interface

GU200 software interface is based on Node-RED, which is easy to expand and adjust. InfluxDB database is used for data storage

Software Advantages

. Data visualization
. Real time monitoring
. Alarm setup
. Threshold adjustment
. Monitoring timer
. Data replay
. Data trend analysis
. Power spectrum analysis
. Parameter adjustment
. Firmware update
. Secure data

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Website: www.broadsens.com
Sales: sales@broadsens.com
Support: support@broadsens.com

USA Headquarter
. 1601 McCarthy Blvd, Milpitas, CA, 95035
China Offices
. 1707-A066, No.9 North Fourth Ring West Rd, Beijing
. Rm 803, No.152, Huixin Rd, Nanhu District, Jiaxing

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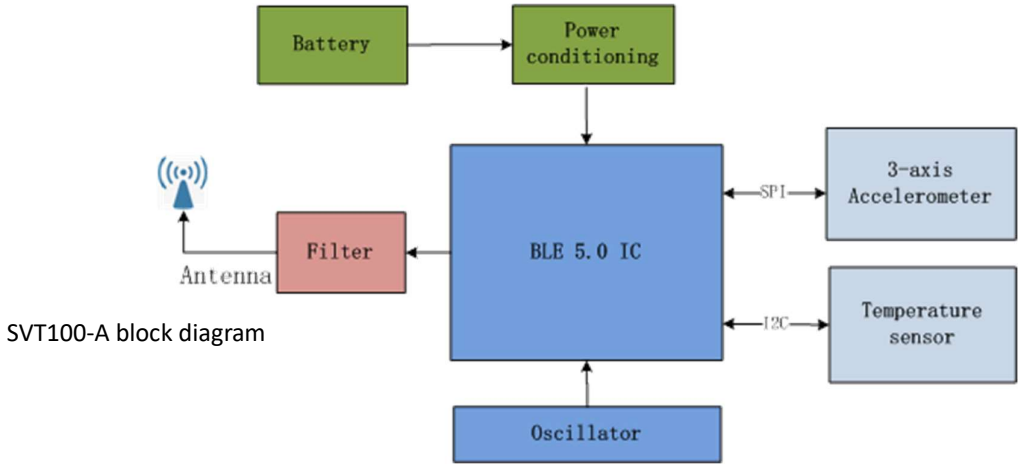
PRODUCT PRESENTATION

SVT100-A is an ultra-low power wireless vibration and temperature sensor designed for machine condition monitoring. It has the advantages of easy installation, easy usage and high battery efficiency. SVT100-A consists of low power wireless IC, high performance 3-axis accelerometer and high precision temperature sensor. It can monitor the machine status in real time or by schedules. Multiple SVT100-As can be grouped together and divided into different groups at the gateway GU200 (sold separately). They can be synchronized to provide advanced monitoring and analysis ability.

Wireless vibration & temperature sensor SVT100-A

Parameters	Description
Acceleration range	±2g, ±4g, ±8g
Selectable sampling rates	50Hz, 100Hz, 200Hz,400Hz,800Hz,1.6kHz,3.2kHz,6.4kHz, 12.8kHz, 25.6kHz
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
Temperature measurement range	-40 - 125 ^{0}C
Temperature measurement accuracy	-25-85^{0}C：±0.3 ^{0}C；-40-125^{0}C：±0.4 ^{0}C
Temperature measurement period	5s when active
Power consumption	Sleep mode:4-8uA; Sampling & transmission<400uA (measured at 1.6 kHz，batch mode)
Power supply	14250 replaceable battery, 1200mAh capacity. Can last more than 5 years (depending on the frequency of usage and mode)
Wireless protocol	BLE 5.0 at 2.4GHz
FCC ID	X8WBC840M
Wireless distance	Up to 100m
Size	Diameter:34mm; height:31mm
Weight	110 g (including battery)
Installation	Epoxy mount; screw mount (M6); stud mount (M6)
Working environment	Temperature: -30 - 65 ^{0}C; water resistance: IP67



SVT100-A block diagram

Advantage of SVT100-A

Thanks to its unique low-power design, SVT100-A can work for up to 5 years without replacing the battery (depending on the frequency of usage and work mode). SVT100-A is easy to install and configure, which solves the problem of complicated setup process of wireless sensors. SVT100-A can work under harsh environment. It has a secure boot loader for improved security. It supports OTA (Over the Air) firmware upgrade. SVT100-A has six working modes: real time mode, synchronized real-time mode, batch mode, synchronized batch mode, single DAQ and synchronized single DAQ.

. Real-time mode: when sensor wakes up, it starts data acquisition and transmission immediately.

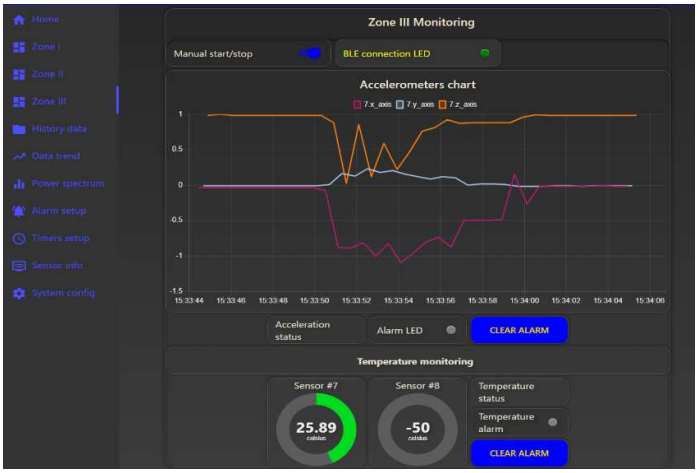
. Batch mode: When sensor wakes up, it takes a fixed amount of data at the given sample rate and transmit the data together to the gateway, and then repeat the process.

. 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. This feature is useful for advanced analysis.

Monitoring Software

Monitoring software at the gateway GU200 is based on Node.js's open-source architecture. It is web-based and 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
. Key parameters trend charts
. Power spectrum analysis
. OTA firmware upgrade
. Open source
. Secure data transmission

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