Broadsens

Broadsens edge-computing wireless gateways connect and control multiple wireless low-power sensors such as SVT200-A, SVT300-A, SVT400-A, SVT200-V, SVT300-V and SVT400-V. The gateways include 4-core ARM processor for real-time data visualization and processing. 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 transferred to user's clouds or servers via MQTT protocol. The gateway can be accessed with a web browser, so there is no software installation required and it is ready to use with the sensors immediately.

Wireless gateway GU300

Models	GU200S	GU300	GU300S
Processor	1.5GHz quad-core 64-bit ARM CPU		
Memory	2GB, 4GB or 8GB		
Data storage	32 GB or 64 GB	64GB or 128GB	
Communication with sensor	2.4GHz low power secure wireless, , extended range		
Network interface	Fast Ethernet, dual-band 802.11ac wireless		
Sensor support	Up to 190 (60 SVT-A, 30 SVT-V, and 100 SVT-T sensors)		
Operating system	Linux Debian 64bit		
Software interface	BroadVibra software based on Node-RED		
Communication protocol	MQTT, TCP/IP, UDP, Modbus TCP, OPC UA	MQTT, TCP/IP, UDP, Modbus TCP & RTU, OPC UA	
Vibration analysis	Velocity, RMS, True peak, Peak-peak, STD, Crest factor, Kurtosis, trend analysis, FFT analysis, filtering		
Database	InfluxDB for easy data review and export		
Power supply	9-18v DC isolated		
Power consumption	<15w		
Size	141x127x31mm (5.55x5x1.22 inch)	141x121x31mm (5.5x4.7x1.2 inch)	141x125x28mm (5.5x4.9x1.1 inch)
Weight	555 g (1.22 lb.)	490 g (1.08 lb.)	460g (1.02 lb.)
Working environment	-30 - 60 Celsius (-22 - 140 Fahrenheit), 10% ~ 90%RH		
GPIO	No	Yes	Yes
Cellular network	No	No	Yes
Additional features	Edge computing, real time clock, OTA upgrade, USB	Edge computing, real time clock, OTA upgrade, USB, RS485 RTU, 2nd power connector	Edge computing, real time clock, OTA upgrade, USB, RS485 RTU, 2nd power connector

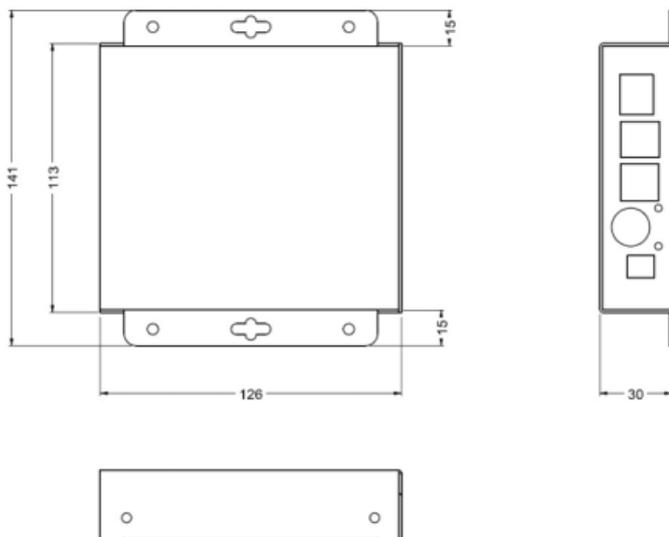| Gateway features	Broadsens	Other gateways
Plug & Play	√	x
Sensor grouping	√	x
Large storage	√	x
Data visualization	√	x
Vibration analysis	√	x
Easy upgrade	√	x
Web interface	√	x
MQTT control	√	x
FFT analysis	√	x
Advanced filtering	√	x

Wireless gateway GU300S
with cellular network

System architecture

AC/DC adapter — 12V → Isolated DC/DC converter

RTC ← I2C → 1.2GHz/1.5GHz quad-core CPU / 32GB/64GB micro-SD storage

5V

Antenna — Filter ← BLE 5.0 IC ← UART → CPU

Oscillator

WIFI/Ethernet Interface
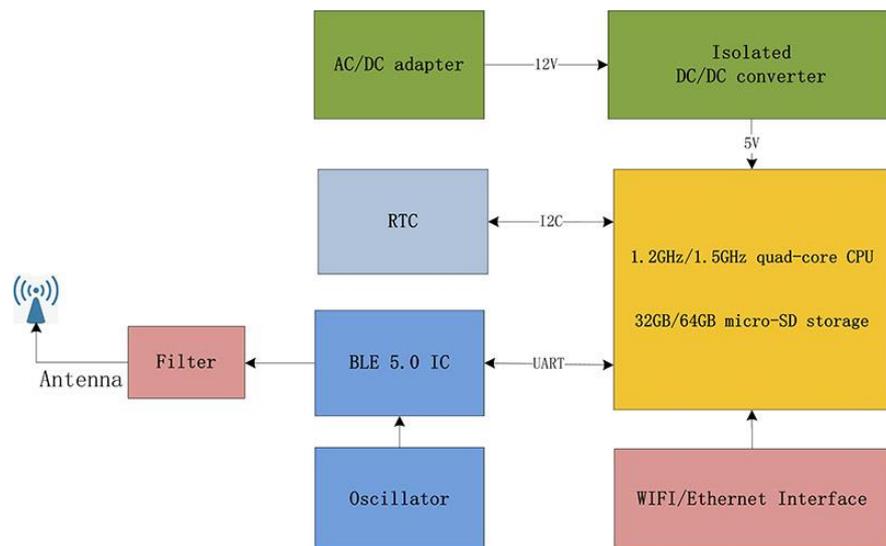
**GU200S mechanical drawing**

141
113
15
15
126

30

GU300 mechanical drawing

120.50
141
62.50
30
113
15   15
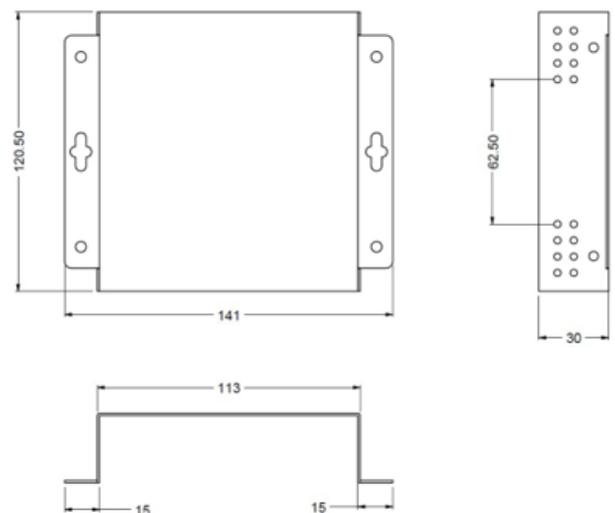
BroadVibra Software

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
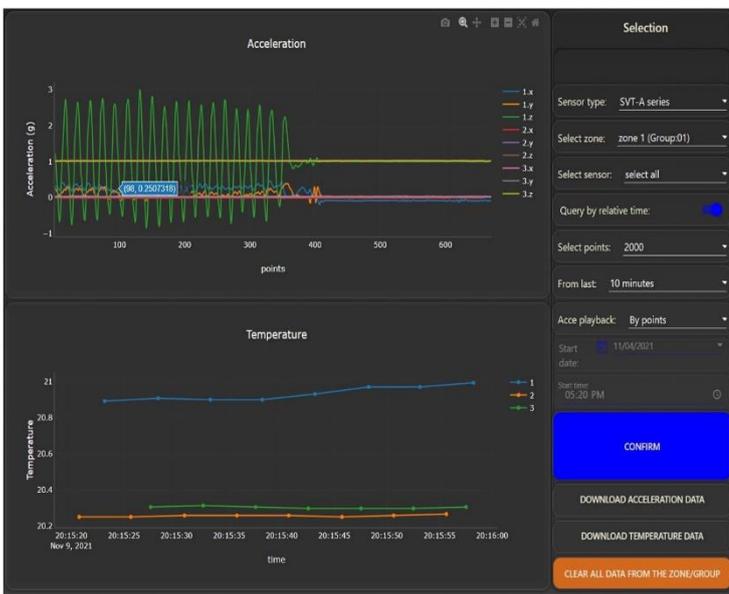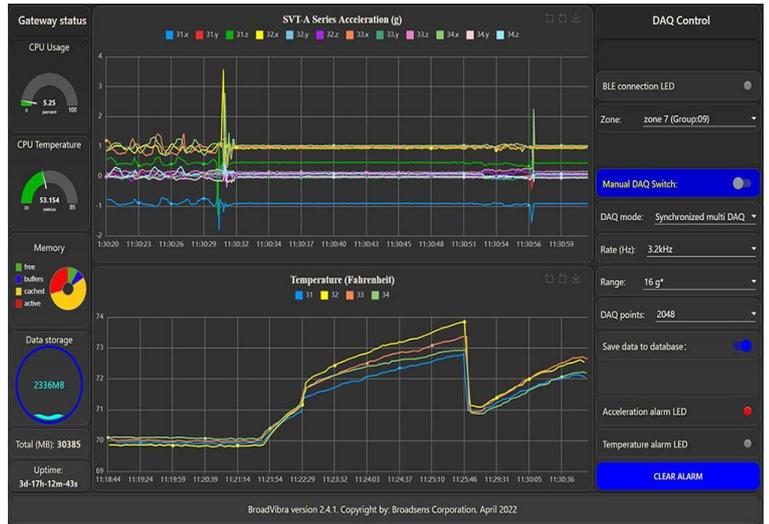
Software Advantages

. 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

FFT analysis can be performed at each SVT-A sensor. In the figure, the top chart is the FFT waveform, and the bottom chart is the corresponding time-domain waveform. FFT result and time-domain data can be exported to CSV file. Advanced filters can be added for the time domain data and FFT analysis. User can select acceleration or velocity parameters for analysis.

"Broadsens, sense the broader world"

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