

SHAKEdot is a vibration meter featuring LTE-M and NB-IoT wireless communication and provides tri-axial vibration and temperature measurements. It is powered by two 18650 lithium batteries and supports 5–18 VDC charging, enabling long-term measurement, data logging, and upload to the dot Cloud web service. A built-in 32 GB microSD card provides sufficient storage capacity for over one million data records. SHAKEdot integrates a Peak Particle Velocity (PPV) trigger function compliant with DIN 4150-3 and BS 7385-2 standards. It is designed for monitoring vibration impacts on structural safety, including construction vibration monitoring for urban civil engineering projects, bridge structures, high-tech industrial facilities, and historical buildings.

Features



LTE-M and NB-IoT Wireless Transmission



Real-time monitoring enabled via LTE-M / NB-IoT and dot Cloud integration.



Low Power Consumption

The device uses two 18650 lithium batteries and transmits data once per hour. When no trigger events occur, it provides an operating life of at least 3 months at $\text{RSSI} < 15$, and up to 6 months at $\text{RSSI} \geq 15$.



Cloud-based Software for Real-time Trigger Monitoring

When vibration exceeds the set threshold, data is instantly sent to the cloud for 24/7 real-time monitoring and early warning.

MQTT Protocol
Supports MQTT for versatile data acquisition and integration.

Best Suited



Construction Site and Civil Engineering Project



Bridge Engineering



High-Tech Industrial Facilities



Historical Buildings



Applications

- Customizable vibration threshold setting: When the value exceeds the threshold, it will automatically trigger and transmit data to the cloud platform
- Damage assessment of buildings or historical sites in vibration environments

Specifications

Sensor Type	MEMS Tri-axial Accelerometer	Operation Mode	PPV (DIN 4150-3 / BS 7385-2)
Measuring Range	$\pm 2g$	<input checked="" type="checkbox"/> PPV Output	
Sampling Rate	250 Hz (derived from 1000 Hz sampling)	Data Format	PPV _{xyz} (mm/s) and f _{xyz} (Hz)
Bandwidth	DC-500 Hz	Velocity Range	0-60 mm/s
Storage	32 GB Micro SD Card	Velocity Resolution	0.01 mm/s
LPWAN	LTE-M / NB-IoT	Frequency Range	1 - 100 Hz
Network Protocol	MQTT	Frequency Accuracy	$\pm 1\%$
Temperature Output	Resolution 0.1°C	Frequency Resolution	0.12 Hz
Power Supply	18650 Li-ion Rechargeable Battery x2 (Supports 5–18 Vdc charging via solar panel or external source)		
Dimension (L x W x H)	100 x 100 x 60 mm (Excluding Antenna)		