

RAEM2

IoT-AE Monitoring System



RAEM2 is an integrated wireless unmanned industrial condition monitoring system with internal battery, AE sensor, and wireless communication module. It is well-suited for the continuous acoustic emission signals monitoring such as leakage and wear signals.

- Single channel, time triggering
- Communications: 4G, LoRa, Bluetooth
- Data transmission to local devices (PC, phones) and cloud servers
- Suitable for timing monitoring for continuous signals, eg. leakage or wear signals.

Built-in sensor version



- 1. Stand-alone monitoring system, no intrusive
- to your equipment.
- 2. Unattended monitoring.
- 3. Wireless data communication, various

communication methods available, 4G, LoRa,

Bluetooth.

- 4. Based on Linux Operating System, long-term stable running.
- 5. Suitable for most structural health / conditional monitoring.
- 6. Quantitative monitoring results, leakage rate, etc.
- 7. The cloud server for uploading data can be customized.
- 8. Bluetooth onsite inspection.



External sensor version

Email: sales2@ae-ndt.com



Technical specifications:

Channel	Single channel signal input	Input frequency	10kHz-400kHz		
	16-Bit		Optional 200k/s, 500k/s, 1000k/s, 2000k/s		
Sampling accuracy Communication method		Sampling Rate			
	4G/LoRa, Bluetooth	Mobile phone inspection	Bluetooth		
Bandwidth of 4G	LTE-FDD: B1/B3/B5/B8	Bluetooth maximum	13m in open area		
	LTE-TDD: B34/B38/B39/B40/B41	communication distance			
Operating temperature	-20℃~+60℃	Charging voltage	8.4V		
Protection level	IP65	Trigger mode	Time trigger		
Dynamic Range	Built-in sensor version: 60dB	Maximum signal	100dB		
	External sensor version: 70dB				
Sampling length	2000Ksps: 500us~15000us	Sensor	GI150 (60kHz-400kHz) or GI40 (15kHz-		
	1000Ksps: 1000us~30000us		70kHz)		
	500Ksps: 2000~60000us				
	200Ksps: 5000~150000us				
Sampling method	Continuous sampling mode, Interval sampling mode, Timing sampling mode (Note: Only interval sampling mode in				
	Lora version)				
System noise (Amplitude)	Built-in sensors version ≤ 40dB, external sensor version ≤ 30dB				
Voltage output to preamplifier	28V40dB/12V34dB/5V26dB				
Digital filter	128-order, the filtering range is related to the sampling rate, the maximum is 1/2 of the sampling rate				
Data output	Parameters (amplitude, RMS, power, ASL), waveform				
Power supply	Various methods are available:				
	1. External 8.4VDC power supply				
	2. Built-in rechargeable battery (3000mA@8.4V)				
	3. Built-in lithium battery with low self-discharge rate (7000mAh@8.4V, non-rechargeable)				
Timing acquisition sleep time	±1min (±2min with LoRa version)				
accuracy					
Battery life in internal sampling	Wake up every day 1 time, 1 second each time				
mode					
	1 year (with rechargeable battery)				
Battery life in continuous sampling	24h (with lithium battery),				
mode	15h (with rechargeable battery)				
Weight	<500g (including battery, magnet, antenna)				
Dimensions	Built-in sensor version: diameter ϕ 60mm, height 105mm (including 150k sensor but not antenna); height 117mm				
	(including 40k sensor but not anten	na)			
	External sensor version: diameter d	þ60mm, height 105mm (Antenna n	ot included)		
LoRa gateway theoretical	200 units				
maximum number of connected					
RAEM2 devices					
The longest communication	10km in open area				
distance of LoRa gateway					
distance of LoRa gateway LoRa gateway network access	Wired Ethernet, Wi-Fi,4G				
	Wired Ethernet, Wi-Fi,4G				



Brief introduction of IoT cloud platform:

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Real-time display of waveform and AE parameter.

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Remote configure hardware.





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