

The IMS xES is a low power, portable, advanced vibration and seismic monitoring station designed to be rapidly deployed for temporary or permanent installations. IMS has leveraged its extensive experience in developing and manufacturing seismic monitoring technologies to provide the most advanced vibration monitor on the market.

The xES includes seismological-grade digitisers providing best-in-class resolution and lowest noise levels which, paired with advanced processing capabilities, means the xES is truly in a league of its own.

The xES can record full waveform data continuously while simultaneously recording triggered events, histograms and even discrete fourier transforms (DFTs). The xES can operate autonomously in standalone mode or connected to a time-synchronised realtime monitoring network using wireless or wired communications.



Key Features

- Industry's most advanced vibration monitor.
- Simultaneous recording of continuous, triggered, and histogram data.
- Vibration, air overpressure, sound and seismic monitoring applications.
- 32 GB standard storage capacity enables more than 9 days of continuous waveform recording or more than 400 thousand triggered event waveforms at 2000 sps sampling rate.
- DC power supply or direct solar⁸ panel input.
- Optional integrated battery and solar regulator⁸.
- GPS time synchronisation of sampling clock to within 10 microseconds of GPS time.
- Wide range of sensor options including geophone, microphone, seismometer, IEPE accelerometer¹.



Specifications

SENSORS¹

GEOPHONE:

Maximum measurement range.....	300 mm/s
Response standard.....	ISEE (2017) and DIN (45669-1 2019)
Frequency range	
ISEE.....	2 - 250 Hz
DIN.....	1 - 315 Hz
Density.....	2371 kg/m ³

LINEAR MICROPHONE:

Maximum measurement range.....	150 dB SPL
Response standard.....	ISEE (2017)
Frequency range.....	2 - 250 Hz

CUSTOM:

Seismic.....	high frequency geophone, broadband, force balance
Sound.....	IEC 61672 Class 1

RECORDING:

Mode ²	continuous waveforms, triggered, histogram
Trigger modes.....	configurable threshold, STA/LTA
Onboard storage:	

 Capacity³..... 32 GB

 Time⁴..... 9+ days continuous, 400,000+ 2 second triggers

Additional external storage media (via USB port):

 Capacity..... up to 2 TB

Analogue to Digital Conversion

Resolution	
ADC data format.....	32 bits
Geophone (ISEE/DIN).....	0.00017 mm/s
Microphone (ISEE).....	50 dB SPL
Sampling rates.....	250, 500, 1000, 2000, 4000 sps
Time synchronisation (GPS).....	within 10 µs

APPLICABLE COMPLIANCE REPORTING STANDARDS:

ISEE (2017), USBM RI 8507 & OSMRE, AS 2187.2-2006,
NBR 9653:2005 and others upon request

TELEMETRY:

Online..... realtime, live data and state of health streaming
Offline..... completely standalone or periodic polling

PHYSICAL

Mass (including battery, excluding sensor)..... 3.2 kg

Dimensions:

Height.....	155 mm
Width.....	155 mm
Length.....	178 mm

ENVIRONMENT

Standard operating temperature version ⁵	0 to +50 °C
Extended temperature version (no battery) ⁵	-20 to +60 °C
Ingress protection (IP) rating.....	IP67

EXTERNAL INTERFACES

Wi-Fi A/B: MIMO dual-band 802.11ac Wi-Fi and Bluetooth 5

GNSS: Active GNSS Antenna

Comms: 100 Base-TX Ethernet

USB: Type-A female (USB2.0 host)

Power:

DC power supply (9 to 36 V) or solar panel input	
Comms bus for remote alarm panel (or other external device)	

Sensor⁶:

3 analogue signal channels	
1 digital channel for sensor serialisation and calibration data	

Auxiliary⁷:

1 analogue signal channel	
Line power for microphone or external active sensor	
1 digital channel for sensor serialisation and calibration data	

NOTES

¹Standard IMS sensor options listed. Others available on request.

²Recording modes can operate exclusively or in any combination simultaneously.

³Internal storage capacity up to 64 GB can be preconfigured at factory.

⁴Recording time calculated assuming no compression and 2000 sps sampling rate.

⁵Internal battery charging limits standard temperature version. All electronics rated -40 °C to +85 °C. Wider temperature ranges than specified available upon request.

⁶Sensor connector can accommodate most seismic sensors (high frequency geophone, broadband seismometer, force balance accelerometer, tiltmeter), and may other common sensors (e.g. meteorological sensors, strain gauges, geophysical sensors).

⁷Auxiliary connector can be factory configured for microphone (default), generic sensor, geophone or IEPE accelerometer.

⁸Internal battery with DC/solar charger optional.

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