

xWave Ambient

Portable Digital Accelerometer Unit

xWave Ambient

Key Features:

- Rugged aluminum enclosure with IP67 protection
- Can be used as standalone accelerograph or as a digital accelerometer in a AVM system
- High quality AD conversion with 32-bit Delta Sigma resolution
- Embedded 3 channel accelerometer. Seismic Class A, B or C variants
- User configurable sampling rate
- Ethernet/Wi-Fi/DigiMESH® communication protocols
- Internal Micro SD card for local storing of the event files
- GPS or RTC time and data synchronization
- Leveling plate for alignment
- Battery powered
- POE capability
- Ultra low power consumption
- Wide range of Operating Temperature: -40°C ~ 85°C



Overview

xWave Ambient is a fully portable digital accelerometer for field ambient vibration measurements. It offers an affordable and flexible solution for field measurements and structural data analysis. xWave Ambient is designed for applications in harsh environments and small places. Size, weight, and cabling are critical design requirements in almost any field measurement. By taking advantage of the extreme performance, small size and power autonomy, xWave Ambient is able to deliver unprecedented control and acquisition capabilities in a compact, rugged package with extreme industrial certifications and ratings for operation in harsh industrial environments. Temperature ranges of -40° to 55° C (-40° to 131° F) and a variety of international safety, electromagnetic compatibility (EMC), and environmental certifications and ratings are all available with xWave Ambient.

xWave Ambient contains seismic class A embedded tri-axial accelerometer required in a most demanding measurements. xWave Ambient is powered by battery that can offer more than 24 hours continuous measurement. Leveling plate for easy field adjustment is included. The unit can be connected in a private network using Wi-Fi or standard CAT5e cable. xWave Ambient can be offered with different type of accelerometers (Seismic Class A, B or C *) for less demanding applications.

Technical Information

Software

Proprietary Digitex Software included with xWave Ambient. Fully compatible with xPlorer hardware and server software, xWave Ambient can work as part of xDAS SHM or AVM systems.

Hardware

General	
Type	32-bit ADC
Sampling Rate	200 sps (100, 500,1000)
Filters	Anti-aliasing, HW & SW
Communication	Ethernet, Wi-Fi, MESH
No. of Channels	3 Differential

Power	
Powering	Internal 5Ah SLA Battery
Charging	From xPlorer or external
Power Cons.	1-2W (w/o sensor)
Sensor Power	Supplied from digitizer

User Interface	
Informational LED	
System Configuration Panel	
Web Application Panel	

Embedded Accelerometer (Class A *)	
Full Scale	±3g
White Noise	0.7µg/√Hz
Dynamic Range	110dB
Scale Factor	900mV/g
Bandwidth (3dB)	550Hz

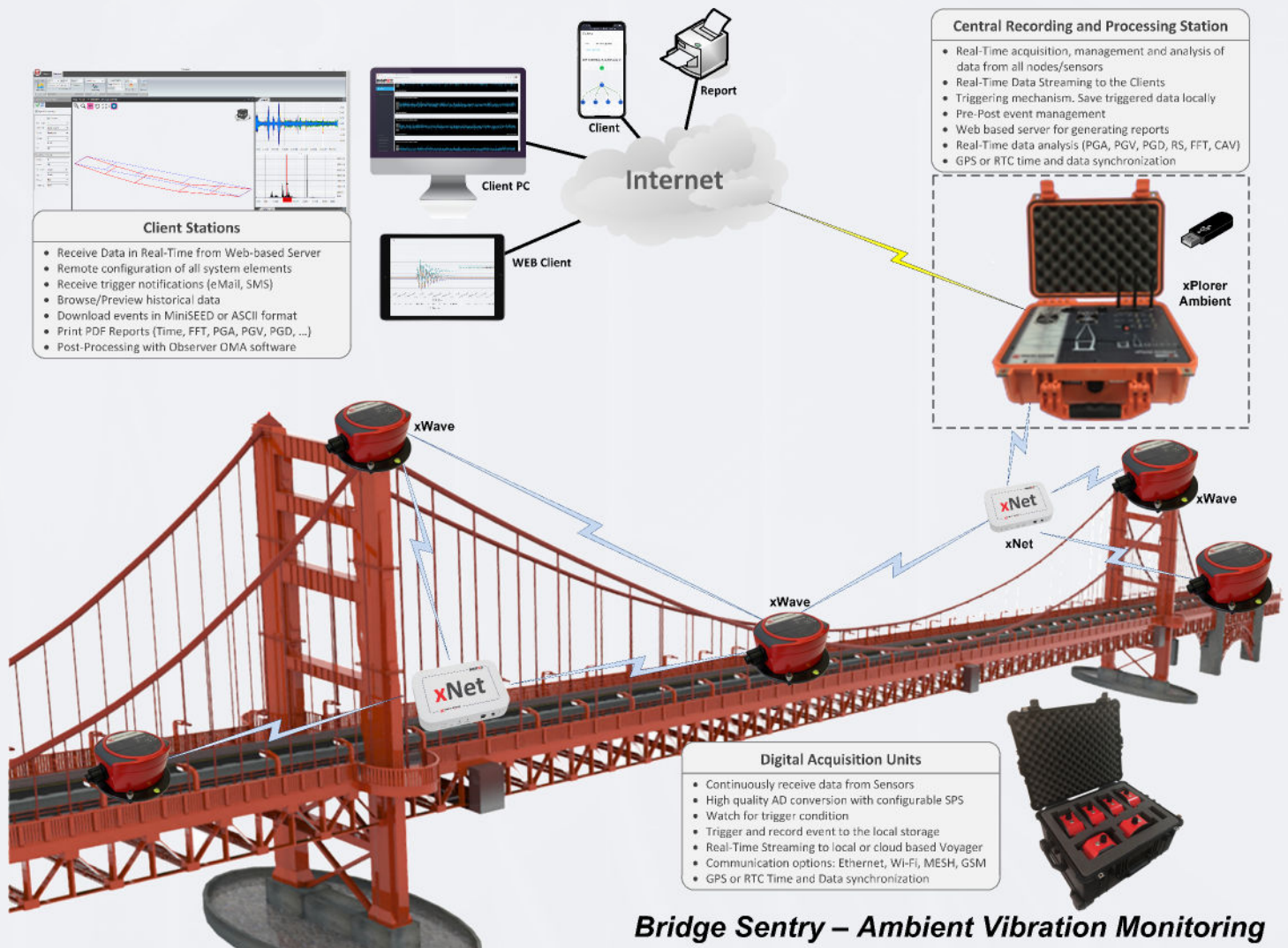
Physical	
Packaging	Rugged aluminum
Protection	IP66/IP67
Weight	3.6Kg (with Battery)
Dimensions	190x180x90mm

Environmental	
Operating Temp.	-40°C to 55°C
Humidity	90% non-condensing

Real Time Ambient Vibration Measurement System Architecture

The Digitex xDAS AVM System is a fully portable battery-operated equipment that measures data from vibrations surrounding the structure. Measurement data is automatically transmitted over the local wireless network to your PC, tablet or smartphone. The Digitex xDAS AVM System also offers an option for extending the wireless network coverage in harsh and noisy environments.

The Digitex xDAS AVM System is designed to work unattended around the clock, without external power sources, for an extended period of time in demanding outdoor environments. In the field, measurements are started and stopped with one push of a button. Place the sensors at the designated measurement points, start the measurement and leave the battery-operated instrument for the duration of the field test. Initial test results are obtained very easy in form of an automated PDF report that can be seen on the laptop or smartphone. A very energy efficient design provides up to 24h of battery operation, which together with the simple handling provides for superior project economy.



About Digitex

Digitex is a company specialized in design and development of real time structural health monitoring systems for a variety of industries and applications including: bridges, tall buildings, campuses, windmills, oil rigs and more. Digitex's innovative solution for ambient vibration measurements and quick health assessment of structures is jointly developed and validated with our partners and advisors from the Universities. When properly configured, the Digitex system is capable of measuring and responding to both natural and man-made events such as: earthquakes, wind, explosions and accidental heavy impacts.

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