

xRover

Multi-channel Real-Time Data Acquisition with Central Recording and Processing

xRover



Key Features:

- Rugged aluminum enclosure with IP67 protection
- Voyager® central acquisition software included
- High quality AD conversion with 32-bit, 24-bit or 32-bit Delta Sigma resolution
- Number and type of channels: per request
- User configurable sampling rate
- Ethernet/GSM
- Internal SSD Memory for local storing of the event files
- GPS or RTC time and data synchronization

Applications:

The xRover provides data acquisition and analysis for:

- Structural Response Monitoring: including earthquakes, dynamic wind effects, temperature effects, and blasts
- Structural Element Monitoring: including stress, temperature, relative displacement, differential foundation settling, soil structure interaction and acceleration

Overview

Our high-performance, custom-configured **xRover** is a multi-channel, real-time data acquisition and structural analysis system with both manual and event-driven triggering. The system is capable of supporting user-specified sampling rates for all Digitex Accelerometer inputs (>120dB dynamic range) or any additional third-party sensors (strain, voltage, current, resistance, fiber optic). The Digitex xRover can integrate and manage all sensor types to provide a more complete picture of a structure's health. By taking advantage of the extreme performance and small size, xRover 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 xRover.

xRover can be connected in a network using standard CAT5e cable for easy installation. xRover can accept different type of accelerometers and various type of sensors required for SHM instrumentation. The system can be set up to run reliably for days, months, or years without stopping.

The Voyager® central acquisition software, integrated into xRover, provides Real-Time acquisition, management and analysis of data from all connected sensors. xRover capable for automatic creation of PDF reports for every event. WEB based interface is accessible from any internet enabled computer. Access to xRover is granted to specific group of people with appropriate Login Information. Users can view the stored event records or schedule On-Demand event.

Available Digitex PC software, Observer®, for advanced analysis.

General	
Processing	Done by Voyager®
Storage	64GB SSD
Communication	Ethernet
Synchronization	RTC, GPS, System Clock
Automated PDF	FFT, PA, PV, PD, AVG, His.
Rebroadcast	Multiple Users
Trigger	Configurable, Voting M.
Recordings	Trigger, Schedule, Buffer
Compression	miniSEED, Digitex
Filter	5 Filter Topologies
Notifications	email, SMS
Digital Output	Up to 10 (Option)
Device Config	Add/Edit/Remove
Units Connected	Up to 254

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

ADC Features	
Resolution	32-bit, 24-bit or 16-bit
Sampling Rate	User selectable
Filtering	Anti-aliasing, HW, SW
No. of Channels	Per request

User Interface	
Web based server, Informational LED	

Power	
Powering	110/220VAC
Battery Backup	Internal, 12V
Power Cons.	Up to 15W
Sensor Powering	13.8VDC or ±12VDC

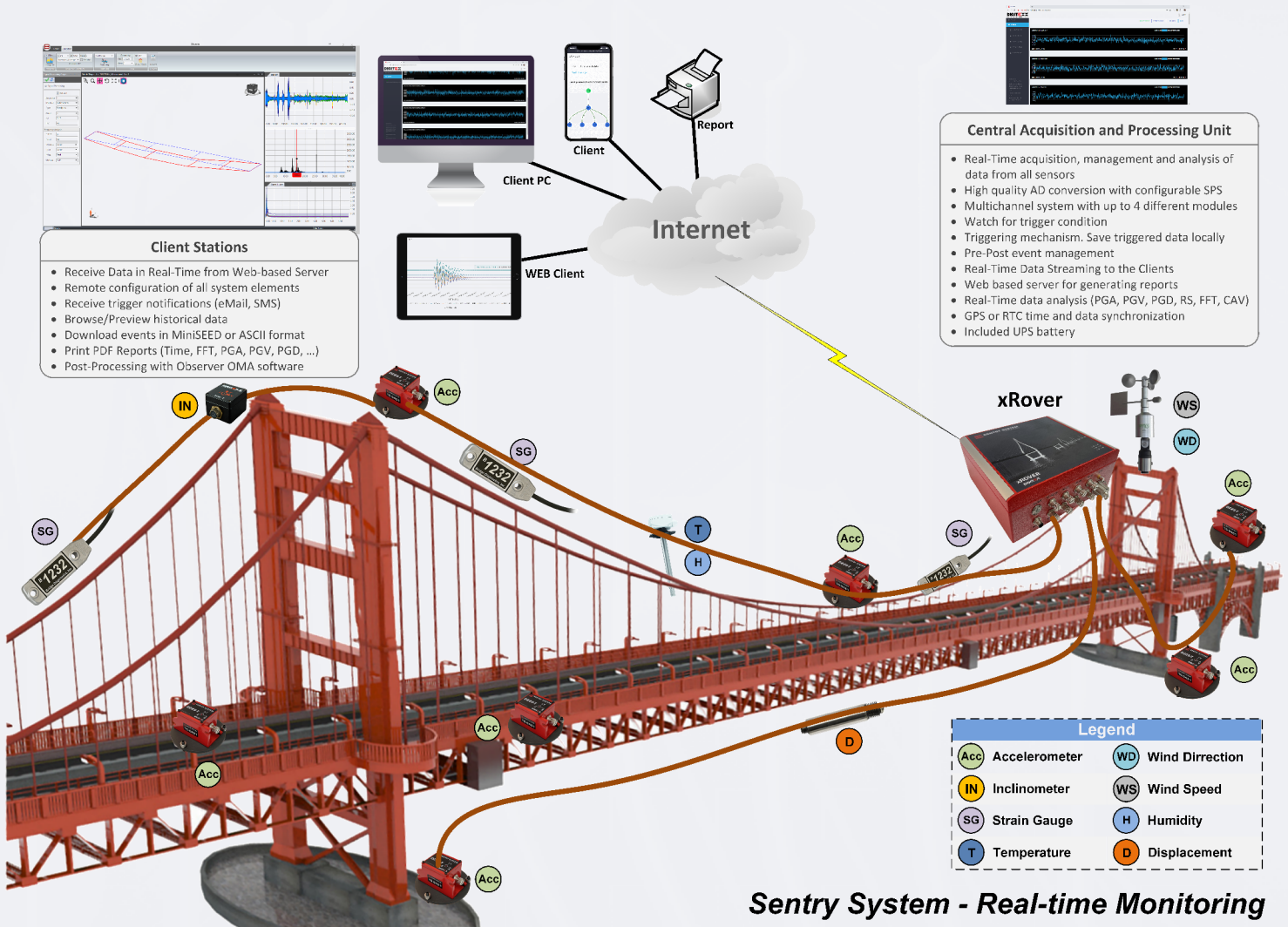
Physical	
Packaging	Rugged aluminum
Protection	IP66/IP67
Weight	7500g (with battery)
Dimensions	280x250x120mm



Customizable number and type of inputs for custom multi-channel system

xRover is fully customizable according to the user needs. The user can select the type and number of channels depending on the needs for monitoring by combining different types of sensors.

Accelerometer Channels		Voltage Channels		Wheatstone Bridge Channels	
Type	32-bit $\Delta\Sigma$	Type	16-bit SAR	Type	24-bit $\Delta\Sigma$
Sampling Rate	200 sps (100, 500,1000)	Sampling Rate	200 sps(100, 500,1000)	Sampling Rate	200 sps (100, 500,1000)
Filters	Anti-aliasing, HW, SW	Filters	Anti-aliasing, Software	Filters	Anti-aliasing, Software
Wiring	SE / DIFF with Acc. PW	Wiring	SE / DIFF	Wiring	SE / DIFF; 5V Excitation
Channels [mV]	up to $\pm 5000\text{mV}$	Channels [V]	0-5, 0-10, ± 5 , $\pm 10\text{V}$	Channels [mV/V]	$\pm 39.06\text{mV}$ to $\pm 5000\text{mV}$
Sensor Power	$\pm 12\text{V}$	Sensor Power	$\pm 12\text{V}$	Gain	1, 8, 16, 32, 64, 128
Number of Ch.	3 to 21	Number of Ch.	8 to 48	Number of Ch.	4 to 48



Sentry System - Real-time Monitoring

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.

Rev 03/22