PEGASUS DIGITAL RECORDER
DATA ACQUISITION SYSTEM

The foundation of a new ecosystem for portable broadband and passive node deployments

The Pegasus digital recorder is a highly portable, low-power and mobile integrated seismic acquisition system that delivers an intuitive, efficient workflow with a fast and reliable data delivery system that ensures a complete data set.

The Pegasus digital recorder provides high fidelity data acquisition tailored to the needs of portable monitoring campaigns. The power consumption of <200 mW represents a reduction of 60% for a typical sensor and digitizer station. With the small size, weight and power (SWaP) of Pegasus, you can deploy more stations for a longer period of time with less investment.

From Experiment Design to Publishing

Ultra-low Size, Weight and Power
The exceptionally low power consumption of Pegasus significantly reduces battery requirements, overall station size and weight allowing for the efficient deployment of more stations for a longer period of time.

Modular and versatile
The modular nature opens up broad choices in battery chemistry and sensor technologies, facilitating transport logistics and matching station design to the needs of the science.

Easy-to-Use
Whether you are working with a handful of units or many hundreds, well-designed friendly and intuitive workflows for all scenarios allow even the most inexperienced operator to work with confidence.

Quick to configure, deploy, retrieve data, process and publish
Boot time in less than 10 seconds and intuitive responsive Apps make configuration and deployment fast and fail-safe. Data recovery is via lightning-fast USB 3.0, where one month of data can be seamlessly downloaded ready for processing in under 10 seconds.

Complete ready-to-process data
Ready-to-use data is delivered in MiniSEED format along with StationXML metadata and comprehensive project audit information, such as field notes and photos.
TECHNICAL SPECIFICATIONS

PEGASUS DIGITAL RECORDER

Specifications subject to change without notice

DIGITIZER PERFORMANCE & CAPABILITIES

Type: 24-bit ADC per channel
Accuracy: Nominal gain accurate within ±0.5%
Dynamic Range (typical): 142 dB @ 20 sps, 135 dB @ 100 sps (40 Vpp (1x gain), full-scale peak to RMS shorted-input noise)
Preamp Gain: 1x, 4x, 10x, 40x, 80x
Sensor A and B independently selectable
Sample Rates: 1, 2, 5, 10, 20, 40, 50, 100, 200, 250, 500, 1000 sps
Sensor A and B independently selectable
Decimation Anti-Aliasing Filter
• Linear phase (also known as non-causal or acausal)
• -140 dB (linear phase) at output Nyquist frequency, 0 dB at 80% Nyquist

SENSOR PERFORMANCE & CAPABILITIES

Type: 24-bit ADC per channel
Accuracy: Nominal gain accurate within ±0.5%
Dynamic Range (typical): 142 dB @ 20 sps, 135 dB @ 100 sps (40 Vpp (1x gain), full-scale peak to RMS shorted-input noise)
Preamp Gain: 1x, 4x, 10x, 40x, 80x
Sensor A and B independently selectable
Sample Rates: 1, 2, 5, 10, 20, 40, 50, 100, 200, 250, 500, 1000 sps
Sensor A and B independently selectable
Decimation Anti-Aliasing Filter
• Linear phase (also known as non-causal or acausal)
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DATA RECORDING & RETRIEVAL

Data sets:
• Waveform data: miniSEED, STEIM2 compressed
• Station metadata including instrument response: StationXML
• State-of-Health: miniSEED
• Instrument logs

Internal Memory: High reliability 32 GB
Data Download: USB3.0 Superspeed (>100MB/s) to application available for Windows, OSX, and Linux

User Interface: Bluetooth connectivity with mobile application (iOS and Android) for configuration and live view of waveforms and state-of-health

Telemetry: Periodic state-of-health via auxiliary serial interface on Power Telemetry Connector

TIMING - GNSS & PRECISION NETWORK TIMING

Timing System: Internal VCXO clock disciplined to selectable timing source
Timing Source: GNSS (selectable from GPS, GLONASS, BeiDou, Galileo, QZSS), or free-running
Timing Accuracy: <5 psec (GNSS Always on)
<100 psec (GNSS duty cycled)

GNSS Receiver: Internal 33-channel GNSS receiver

GNSS Power: Selectable: Always on, Duty cycled or Off (free running)

CERTIFICATIONS

Regulatory: CE 2014/53/EU (RED), FCC, IC, RoHS

POWER

Power Supply: 9-17 V DC non-isolated input
Power-up: <10 seconds
Protection: Electronic resettable fuse design, lightning surge (IEC61000), reverse battery protection
Battery Manager: User-configurable low voltage shutdown and restart thresholds

POWER USAGE (TYPICAL)

3-channel model: <200 mW (Duty-cycled GNSS)
4-channel model: <200 mW plus 40 mW when 4th channel is enabled (Duty-cycled GNSS)

CONNECTORS & LEDS

Sensor A (3-channel): 19-pin, shell size 14, female
Sensor B (1-channel): 7-pin, shell size 10, female
Power/Telemetry: 7-pin, shell size 8, male
External Status LEDs: Single multicolor LED for timing, system, and local communications status
USB: USB-C waterproof receptacle (capped)
GNSS Antenna: Internal and/or TNC (female) with 3.3 V supply for units with optional external active antenna

EXTERNAL POWER

Power Supply: 9-17 V DC non-isolated input
Power-up: <10 seconds
Protection: Electronic resettable fuse design, lightning surge (IEC61000), reverse battery protection
Battery Manager: User-configurable low voltage shutdown and restart thresholds

PHYSICAL CHARACTERISTICS

Housing: UV, impact, and chemical resistant plastic
Ingress Protection: Rated to IP68 to 1.0 m with connectors mated or capped
Humidity: 0 to 100%
Operating Temperature: -20°C to +60°C
( Ultra-low temperature option available. Please contact Nanometrics.)
Storage Temperature: -40°C to +70°C
Weight: 650 g
Size: 83.5 mm (L) x 96.5 mm (W) x 164 mm (H) not including connectors/195 mm (H) including connectors

Contact a product expert Toll Free: 1 855 792 6776 | sales_mkt@nanometrics.ca

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