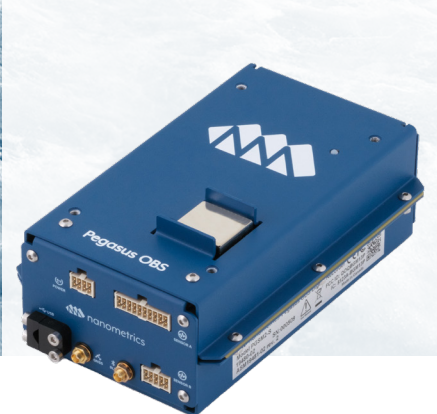




PEGASUS OBS DIGITAL RECORDER DATA ACQUISITION SYSTEM

An intuitive and versatile ecosystem for ocean bottom experiments

Designed specifically for ocean bottom experiments, the Pegasus OBS workflow optimizes onshore and shipboard processes to address common challenges of this demanding environment. A compact and mobile integrated seismic acquisition system, Pegasus OBS combines high fidelity data acquisition with ultra-low power consumption to provide a versatile platform for any experiment.

From Experiment Design to Publishing

Streamlined Workflow

Plan and pre-configure deployments onshore. Adjust settings on-deck via Bluetooth without opening pressure vessels.

Ready-to-Process Data

Automatically generates MiniSEED data and StationXML metadata. Retrieve one year of 4-channel data in under two minutes via an external interface, with an option to automatically apply linear time corrections.

Ultra-Low Size, Weight and Power

Minimal size, weight, and power consumption extends deployment duration, cuts battery costs, and simplifies integration.

Versatile Compatibility

Features 4 input channels supporting active/passive seismometers, geophones, pressure gauges, and hydrophones. Operates on diverse power sources and includes a dedicated backup input to keep the clock running after main battery depletion.

High-Precision Timing

Combines a low-drift clock, real-time clock and internal GNSS receiver. Features one-tap mobile app synchronization before deployment and automatic drift measurement upon recovery.

Precise Orientation with North Finder Feature Support

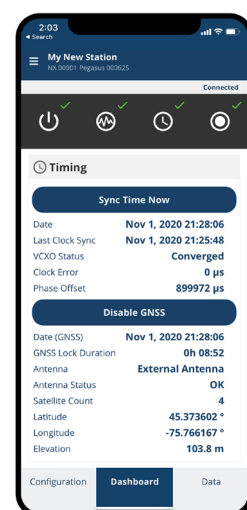
Pegasus OBS supports the integrated north finder technology available on Nanometrics sensors, which automatically determines and records the sensor's azimuth in the metadata, enabling more accurate data analysis and greater deployment flexibility.



Purpose Built, OBS Workflow

Every aspect of the Pegasus OBS ecosystem has been optimized to provide the greatest efficiency for ocean bottom experiments.

- Powerful pre-planning tools
- Bluetooth mobile interface allows you to configure the digitizer without opening the pressure vessels
- Low SWaP (Size, Weight and Power) minimizes battery cost and overall system size
- Retrieve 1 year of 4-channel 100 sps data in less than 2 minutes
- High fidelity data produced by very low noise, high precision digitizer technology
- Complete, ready to analyze datasets



iOS and Android apps connect seamlessly over Bluetooth to provide the primary on-deck interface for the Pegasus OBS.

TECHNICAL SPECIFICATIONS PEGASUS OBS DIGITAL RECORDER

Specifications subject to change without notice

DIGITIZER PERFORMANCE & CAPABILITIES

Sampling: Simultaneous on all channels

Resolution: 28 bit for ≤ 10 sps

26 bit for 20 to 50 sps

24 bit for ≥ 100 sps

Accuracy: Nominal gain accurate within $\pm 0.5\%$

Dynamic Range (typical): 142 dB @ 20 sps, 135 dB @ 100 sps (40 Vpp (1x gain), full-scale peak to RMS shorted-input noise)

Preamplifier 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

- Selectable linear phase (noncausal) or minimum phase (causal)
- -140 dB (linear phase) at output Nyquist frequency, 0 dB at 80% Nyquist

SENSOR INPUTS

Channels: 3-channel Sensor A port and 1-channel Sensor B port

Input Voltage Range (Peak-to-peak differential): 40 V, 10 V, 4 V, 1 V, 0.5 V

Also compatible with single-ended inputs: Up to 20 V peak-to-peak (± 10 V)

Input Impedance: 1.7 M Ω (40 k Ω for 40 Vpp range)

SENSOR COMPATIBILITY

Sensor Types: Differential analog sensors such as broadband seismometers, geophones, accelerometers, hydrophones, pressure gauges

Control Lines: 3 on Sensor A and 1 on Sensor B port — typically used for mass center, and selecting XYZ/UVW or SP/LP modes

Sensor Power:

- Supply power pass-through to sensor channels (9-17 V DC, 1 A)
- Over-current protected

Auto Mass Centering:

Configurable thresholds, intervals

Serial Interface: Sensor A supports digital management of Nanometrics sensors

DATA RECORDING & RETRIEVAL

Data sets:

- Waveform data: miniSEED, STEIM2 compressed or export in SEG-Y
- Station metadata including instrument response: StationXML
- State-of-Health: miniSEED
- Instrument logs

Internal Memory: High reliability 128 GB eMMC

Data Download: USB3.0 Superspeed (>100 MB/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

TIMING - GNSS & PRECISION NETWORK TIMING

Timing System: Internal VCXO clock disciplined to Seacscan time base module, synchronized to GNSS UTC timing source pre/post deployment

Free-running Timing Source: Seacscan SISMTB time base module (customer serviceable)

Free-running Timing Stability:

- Pre-correction: 4.3 msec/day
- Post-correction: 0.04 msec/day (typical)

GNSS Timing Receiver: Internal 33-channel GNSS module

GNSS Timing Source: Selectable from GPS, GLONASS, BeiDou, Galileo, QZSS

GNSS Timing Accuracy: Typical $< 3 \mu$ s to UTC with GNSS lock

GNSS Power: Selectable: OFF or Temporarily ON (pre/post deployment)

Timing Clock Output: 1 Hz Pegasus system time top of second, 125 Hz passthrough from Seacscan

POWER

Main Power Supply: 9-17 V DC non-isolated input (via Power connector) or 5 V DC USB for Harvesting

Timing System Reserve Power: 4-17 V DC

Automatically enabled when main power drops below reserve power voltage

Reserve power voltage must be less than the configured low-voltage shutdown for main power

Power-up: < 5 seconds

Protection: Electronic resettable fuse design,

reverse battery protection

Battery Manager: User-configurable low

voltage shutdown and restart thresholds

CERTIFICATIONS

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

POWER USAGE (TYPICAL)

Normal Mode: < 200 mW for 3 channels, < 240 mW when 4th channel is enabled

Timing System Reserve Mode: 6 mW for persistent timing system when on reserve battery

CONNECTORS & LEDS

Sensor A (3-channel): 20-pin Samtec connector for timing outputs and reserve power input

Sensor B (1-channel): 10-pin Samtec connector for timing outputs and reserve power input

Power/Telemetry: 8-pin Samtec connector for timing outputs and reserve power input

USB: USB-C receptacle

BLE Antenna: MCX (female) for dipole antenna

GNSS Antenna: MCX (female) with 3.3 V supply for active antenna

Rear Auxiliary Header: 16-pin Samtec connector for timing outputs and reserve power input

Seacscan Timing Mount: 26-pin Samtec connector for Seacscan time base modules with .230" pins or .320" pins (when used with alternate standoffs supplied)

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



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3001 Solandt Road, Kanata, Ontario, Canada K2K 2M8 | Tel: +1 613 592 6776

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