

Paladin® 5 Digital Seismic Recorder



The Paladin® 5

The Paladin® 5 is ESG's new and improved web-enabled digital microseismic recorder. The device is designed to monitor microseismic events related to surface or underground mining, petroleum and geotechnical applications.

The Paladin® 5 has powerful on-board DSP capabilities for filtering and triggering as well as flexible timing options including an updated GPS module. The new design provides improved reliability and reduced power consumption. Features of the new design include a digital interface port for instrumentation, an optional Bluetooth® interface and updated lightweight housing.

This high resolution, low power seismic server provides flexibility and superior performance with sampling rates from 50 Hz to 20 KHz. The Paladin® 5 can operate as a standalone unit, or in a multi-station configuration, using a GPS-based time stamp or built-in IEEE 1588 Precision-Time Protocol to synchronize event data over multiple stations in the field. Each unit integrates seamlessly into a LAN or remote wireless network, permitting access, configuration and diagnosis through the internet.

Industrial Microseismic Monitoring

- Small, lightweight, low power
- 1 to 6 seismic channels
- Individual channel selection, gain control and sampling rate
- Sampling frequencies from 50 Hz - 20 kHz available
- Integrated programmable gain amplifier
- Continuous and/or triggered recordings
- Built-in calibration and integrated internal SIB with diagnostics (optional)
- Internal DSP engine for filtering and triggering
- Timing via IEEE 1588 precision-time protocol (optional)
- Multi-sensor instrumentation inputs (tilt, temperature, pressure)
- Optional data storage to USB flash memory
- Easy-to-use web interface
- Intrinsically safe solutions available
- Bluetooth® (optional)

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Features	Details
Physical Characteristics	
Operating temperature (ambient)	-20°C to 60°C (-4°F to 140°F)
Optional operating temperature	-40°C to 80°C (-40°F to 176°F)
Dimensions (L x W x H)	6.9" x 5.2" x 1.6" (17.5 cm x 13.2 cm x 4.1 cm)
Weight	600 grams
Weather Resistance	Installation in NEMA4 enclosure recommended. IP67 option available.
System Features	
Power Supply Voltage	6.0 - 18 V
Power Consumption (w/GPS)	1.7 W with no USB
Time Synchronization	Internal/external GPS, IEEE 1588 PTP (optional)
Recording Mode	Continuous (ring buffer) or triggered events
Storage Capacity	USB 2.0, 4 GB SDHD card
Triggering Mode	Threshold level, STA/LTA
Configuration	Standalone or multi-station network
System Status	LED indicators, Active, Comm, USB Active, Time Sync, PPS
System Interface	Web-enabled configuration for all parameters
Communication	Ethernet TCP/IP via cable, wireless, radio, fiber, internet, Bluetooth® (optional)
Seismic Channel Characteristics	
Seismic Channels	1 to 6 channels
Sampling Frequency	In steps up to 50 Hz to 20 kHz (programmable)
Bandwidth	0.2 Hz to 70% Nyquist DC to 70% Nyquist option available.
Resolution	32-bit (24-bit or 32-bit modes available)
Effective Resolution	24.4-bit
Effective Number of Bits (ENOB)	22.6-bit
Dynamic Range	144 dB
Gain Settings	In steps up to 36dB (extended gain optional)
Data Format	
Output	HSF or MiniSEED
Instrumentation Module	
Instrumentation Channels	8 analog inputs, 16-bit resolution Tilt, thermocouple, pressure, GMM, cables
Range	0-4 V DC
Digital input/output channels	2 Digital i/o and 2 RS-485
Standards	
Complies with:	(2014/53/EU), (2014/30/EU), (2014/35/EU), (2011/65/EU)

Specifications are subject to change.



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