

HiDRA

Low-noise short-period seismometer and accelerometer, in one instrument

ORDER CODE	REVISION	ISSUED
SQ-HDR-6C	A	2026-09-14



DESCRIPTION

Six channels in one instrument: three short-period velocity channels for earthquake monitoring, and three 20-bit acceleration channels for strong motion — recording simultaneously. Most operators build two separate networks to cover both. Sensor and digitiser are integrated too, so a station is one thing to buy, install and configure rather than three.

KEY CAPABILITIES

Earthquake and strong motion, at the same time

The short-period channels resolve small and distant events. The accelerometers stay on scale through shaking that would clip a seismometer. Both record simultaneously, so one station covers the regional catalogue and the strong-motion record — where that usually takes two networks, two installs and two sets of metadata.

The analysis runs on the instrument

A quad-core processor in every unit runs the full stack. Peak ground motions, intensities, PPSD and spectral ratios are computed where the signal is recorded, so a station on a slow LTE link still reports a result rather than a backlog.

Sub-millisecond timing

External GNSS pulse-per-second keeps the clock aligned to UTC, so phase arrivals correlate across the network and hypocenters locate cleanly.

9–36 V, any source

Solar, battery, mains, or any combination — the wide input range removes the need for extra regulation at the site.

SPECIFICATIONS

SENSOR

Type	6-channel — 3 short-period velocity, 3 acceleration
Short-period channels	3-component, 1 Hz corner frequency
ADC resolution	24-bit velocity, 20-bit acceleration
Dynamic range	139 dB
Noise density	-140 dB at 1 Hz relative to 1 m ² /s ⁴ /Hz
Acceleration range	±2 g, ±4 g or ±8 g, selectable
Sampling rate	40–500 SPS, selectable
Analog gain	1×, 2×, 4× pre-amplification

CONNECTIVITY & PHYSICAL

Network	Ethernet, optional LTE
Enclosure rating	IP67
Operating temperature	-20 °C to +85 °C (-40 °C on request)
Storage temperature	-40 °C to +85 °C

TIMING & POWER

Time synchronisation	External GNSS PPS, sub-millisecond
Power input	9–36 V DC
Power consumption	~5 W typical, configuration dependent

COMPUTING, STORAGE & INTERFACES

Processor	Quad core
Storage	Industrial pSLC NAND
Firmware	Customizable SeismiQ firmware, OTA A/B updates
Data access	MiniSeed, SeedLink, FDSN Webservice, StationXML
Real-time products	PGA/PGV, instrument intensities, PSD, H/V spectra and more
Custom processing	Project-specific plugins run on the instrument itself
Calibration	Factory-calibrated, optional site calibration through local and remote interfaces

COMPUTED ON THE INSTRUMENT

STA/LTA trigger

Event detection on the instrument itself with configurable thresholds

Real-time RMS

Local noise conditions, continuously

PGA / PGV

Peak ground acceleration and velocity

Instrument intensities

Spectral and Mercalli scales

PPSD

Probabilistic power spectral densities

H/V spectra

Spectral ratios for site response and resonance tracking

Autocorrelation

Single-station ambient noise autocorrelation, for rapid change detection

... and more

New products arrive by firmware update, on instruments already in the field

IN DEVELOPMENT — NOT AVAILABLE TODAY

AI de-noising (DeepDenoiser)

Real-time seismic noise reduction, streamed via SeedLink.

AI phase detection and annotation

Continuous scanning for P and S arrivals using PhaseNet and SeisBench.

WHAT YOU OWN

You own the instruments Direct sale. The hardware is yours, the network is yours, and platform access comes with it. There is no per-seat licence and no subscription standing between you and your own sensors.

You own the data MiniSEED waveforms, StationXML metadata, QuakeML catalogs. Everything the network produces is in a format your existing tooling already reads, and will still read in twenty years.

Your workflows stay portable Customizable firmware supports project-specific processing. SeedLink and FDSN keep live and archived data accessible through established tools rather than a proprietary export path.

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