QUANTERRA

A Division of Kinemetrics

Qantix Q8

ULTRA-LOW POWER, FEATURE-PACKED, HIGH-RESOLUTION SEISMIC SYSTEM

The Q8 is the newest member of the Quanterra® Qantix family of ultra-high resolution data acquisition systems. The Q8 represents the pinnacle of Quanterra's 30+ years' undisputed leadership in designing the most advanced ultra-high performance data acquisition systems in our marketplace.

The core Q8 architecture comes from the legendary Q330 family of data acquisition systems experience that established the global standard for comparison in the performance, reliability and number of units in operation since introduction. With achieved data availability of 99.7% at the USArray including more than 2,000 installations in the 10+ years of operation, the Q8 includes the best features of the Q330 data acquisition system and adds emerging technology features in a much smaller size, lighter weight and power consumption reduced to about half.

Q8 was designed for the upgrade of existing Q330-based global and regional networks, offering the same reliability, extraordinary temperature stability and data redundancy together with new advanced features.

FEATURES

Extremely low power, light weight and small size
Collection of seismic data increasingly demands deployment in the world's most remote locations. Q8 will do the job, with continuous average power as low as < 300mW. Fewer batteries and solar panels means lower costs and simpler logistics. The Q8 bests by half the system that set the global standard for power at highest performance – the Quanterra Q330.

Universal, easy Web-based management
Configuration is quick and intuitive with a universal web-based display compatible with all present and future hand-held devices. No unique support applications required. No app obsolescence!

Extremely Low Noise for passive sensors
Q8 includes a super-quiet Quanterra "front end", with noise levels as low as -166dB VPSD re 1 V^2/Hz, or 5nV/√Hz.

Enhanced Resolution Mode – Ultra-Low Temperature sensitivity
The Q8 can be operated with any selection of channels enabled 1 through 6, or in an enhanced-resolution mode with 3 channels, featuring lowest noise and extremely low thermal drift for operation in environments subject to wide temperature change. No contamination of your data with thermal artifacts.

Built-in 3-axis ±2g MEMS Accelerometer
Never lose a significant earthquake! The accelerometer consumes negligible power, and is digitized on dedicated channels with up to 200 sps, synchronously with the main sensor inputs.

WiFi Interface
In addition to the Gbit Ethernet interface for telemetry, management, and data offload, the WiFi can be used for comfortable unit management using industry-standard browsers even on your mobile phone.

Protocols
In addition to protocols standard in networked environments, e.g. SSH, SFTP, SCP, HTTP, FTP, etc., Q8 supports real-time protocols featuring even lower-latency delivery than the benchmark Q330. Quanterra Q8 native protocols are extensively documented and supported by numerous application software packages.

Onsite parametric reduction – QSCD20 protocol
Supports transmission of MMA parameters in real time.

Plug-and-play with Seedlink and BRTT Antelope
In addition to Q8 native protocols, Q8 supports highly-configurable telemetry in both Seedlink and BRTT Antelope/Orbserver protocols for quick integration in your network.

Universal Sensor Interface
Q8 includes not only Q330-type digital sensor controls, but a universal serial connection to sensors of many manufacturers.

Import of external timing sources
Normally the Q8 uses GPS-derived timing. Q8 can accept an external time input for applications where GPS is unavailable, such as OBS use.

Multiple High-Integrity Storage Media
In addition to the internal 32GB solid-state storage with power-fail safe integrity, Q8 includes a primary, removable, rugged, USB flash drive and a secondary, removable, standard size SD card.

Borehole installation ready
With the input connectors on one end and the digital connectors on the other end, Q8 is ready for installations in boreholes with an I.D. of 5.75 inch.

⚙ SPECIFICATIONS

Channels	6 high resolution channels standard 7th high-res channel to digitize cal signal 6 channels 16-bit auxiliary channels
Dynamic Range	Standard Mode: 140dB ratio Full Scale RMS sine wave to RMS noise, 0.01-7Hz band High-resolution Mode (3 channel): 143dB ratio Full Scale RMS sine wave to RMS noise, 0.01-7Hz band.
Data Flows	Bandwith-optimized 32Bit and 64Bit
Noise	Standard Mode: typical -126 dB VPSD re 1 V^2/Hz at gain 1, or as low as -162 dB at maximum gain. High-resolution Mode: typical -129 dB VPSD re 1 V^2/Hz at gain 1, or as low as -165 dB at maximum gain
Filtering	Linear or Minimum phase FIR
Input Range	40V P-P at gain=1
Gain	Selectable per 3-channel group: 1, 2, 4, 8, 16, 32, 64, 128
Sample Rate	1000, 500, 250, 200, 100, 50, 40, 20, 10, 1
Time Accuracy	<1μs when locked to GPS
Total Harmonic Distortion	Typical better than -120dB, may be as low as -129 dB, depending on configuration
Cross-talk	Typical better than -140dB
Temperature	Fully specified -40 to +60º C
Data Storage and Retrieval	PC/Mac/Linux FAT-formatted removable USB flash drive, standard 32GB (up to 256GB possible); standard 32GB multi-use removable SD card, (up to 256GB possible). Built-in 64G high-reliability eMMC.
Sensor Control	Calibrate: step, low-THD sine wave, MLS or random binary; lock/unlock & re-center. serial "tunnel" mode for native control of sensors supporting a serial interface.

|	
Operational Status	Over 50 State-of-Health channels including temperature, voltages, currents, GPS status, Sensor boom position (6 channels)
Network	Ethernet (10/100/1000BT) Full IP Protocol Stack (Linux)
Auxiliary Data	Wireless Mesh Network for low baud rate communications, such as SOH output or meteo sensor input
Other Ports	2 x USB2.0 – one external, one internal in sealed compartment External Time input (RS-422)
Power	12VDC nominal (10.5-32VDC operational) Consumption depending on configuration (approx. 300mW for 3 channels recording, no telemetry)
Physical	Sealed, molded plastic enclosure, triangular prism 7.5 X 5.5 X 3.5in., 2 lbs.
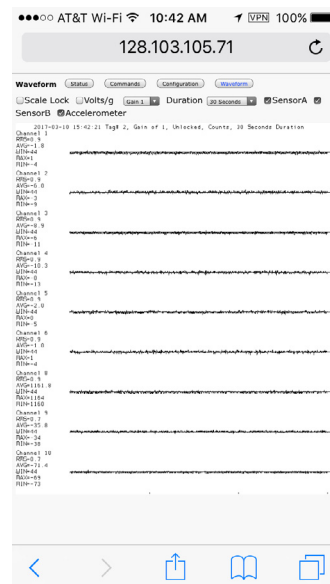
iPhone ™ Screenshot showing real-time waveform display of all 9 channels (6 analog + 3 accelerometer), connected via WiFi
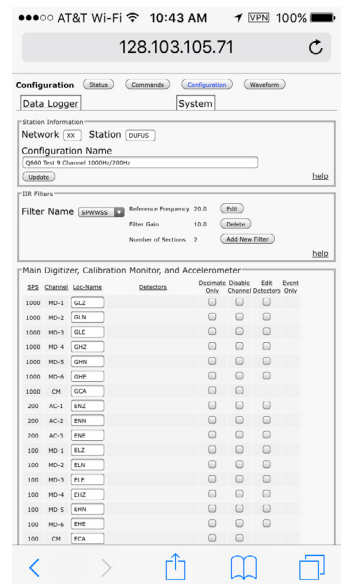
iPhone ™ Screenshot showing one of the MSEED channel-configuration pages, connected via WiFi

Specifications subject to change without notice