

Advancement through Innovation

[www.kinemetrix.com](http://www.kinemetrix.com)

# Introducing Qantix Q8

## The Most Capable Data Acquisition System



- History
- Features and Benefits

# Qantix Q8

## History

Quanterra, Inc., a Division of Kinemetrics, Inc., co-invented the seismic broadband technology in the 1980s together with Wielandt and Streckeisen.

Thousands of Quanterra® dataloggers in operation worldwide.

**Qantix** = The latest family of Quanterra® dataloggers.

**Q8** = The first member of the Qantix family





# The most successful seismic network ever

## The Antelope & Quanterra-based USArray/TA

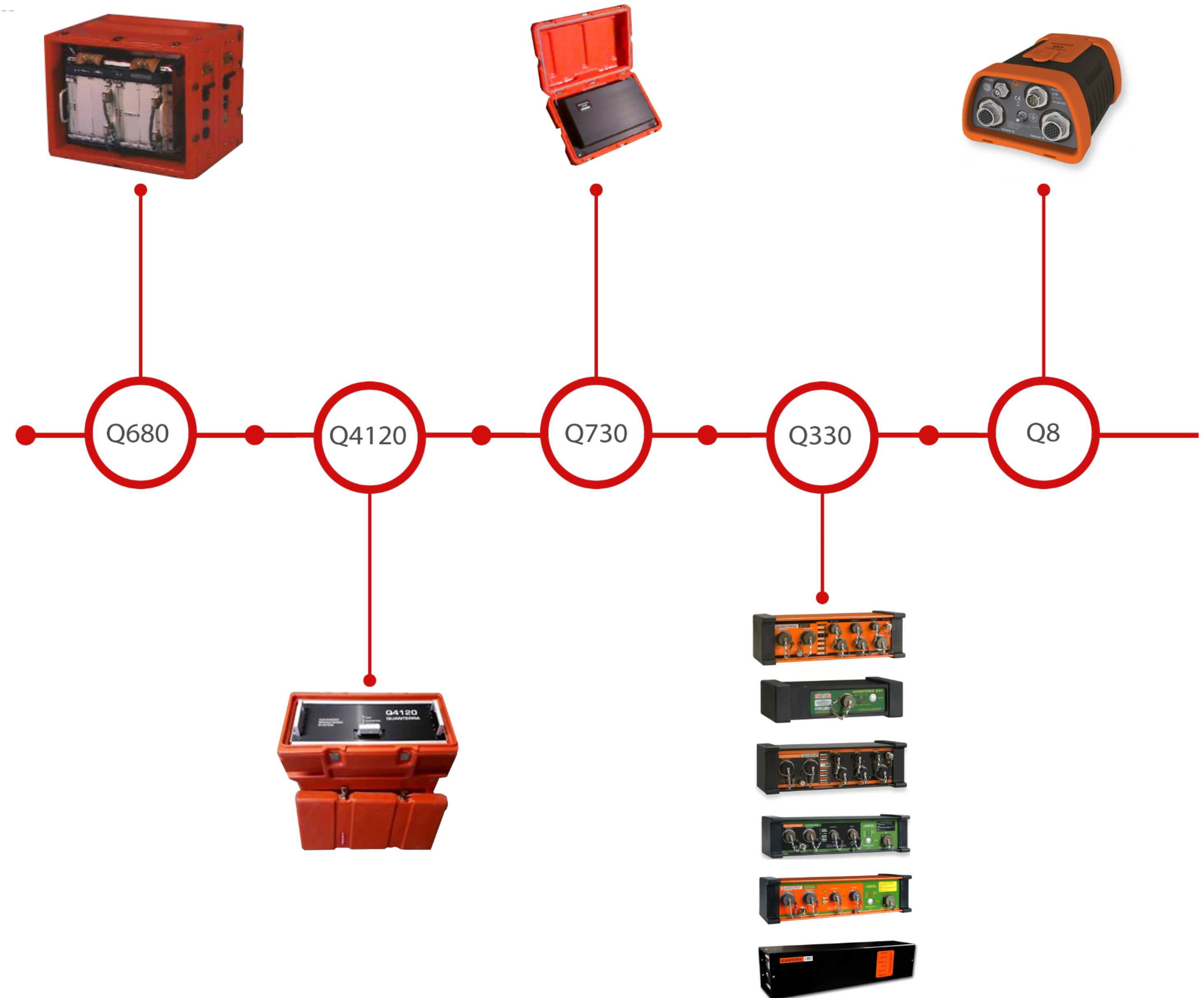


- The most “epic science project of humankind of the last 15 years” (*Popular Science Magazine*)
- ~ 450 stations totaling 23,000 channels (including SOH)
- Antelope Data Acquisition Platform
- 99.5% data availability
- 5 commissioning/decommissioning cycles per station: huge metadata handling effort for ~2,000 installations!
- The 6<sup>th</sup> cycle moved the array (~200 stations) to the “dark and cold” Alaska (installation completed)
- Posthole broadband sensor installations, 70% STS-5
- More than 130 Ph.D. dissertations and 250 peer-reviewed papers published



# Features and Benefits

An Evolution Process  
An Outstanding  
Pedigree





# Features and Benefits

- 6 x 24-bit channels
- 7<sup>th</sup> 24-bit channel to loopback calibration signal
- 6 x 16-bit auxiliary channels
- Built-in  $\pm 2g$  MEMS 3-comp. accelerometer
- 142 dB full RMS sinewave to RMS noise\*
- 145 dB Enhanced low noise mode & low-thermal drift (for 3 channels only)





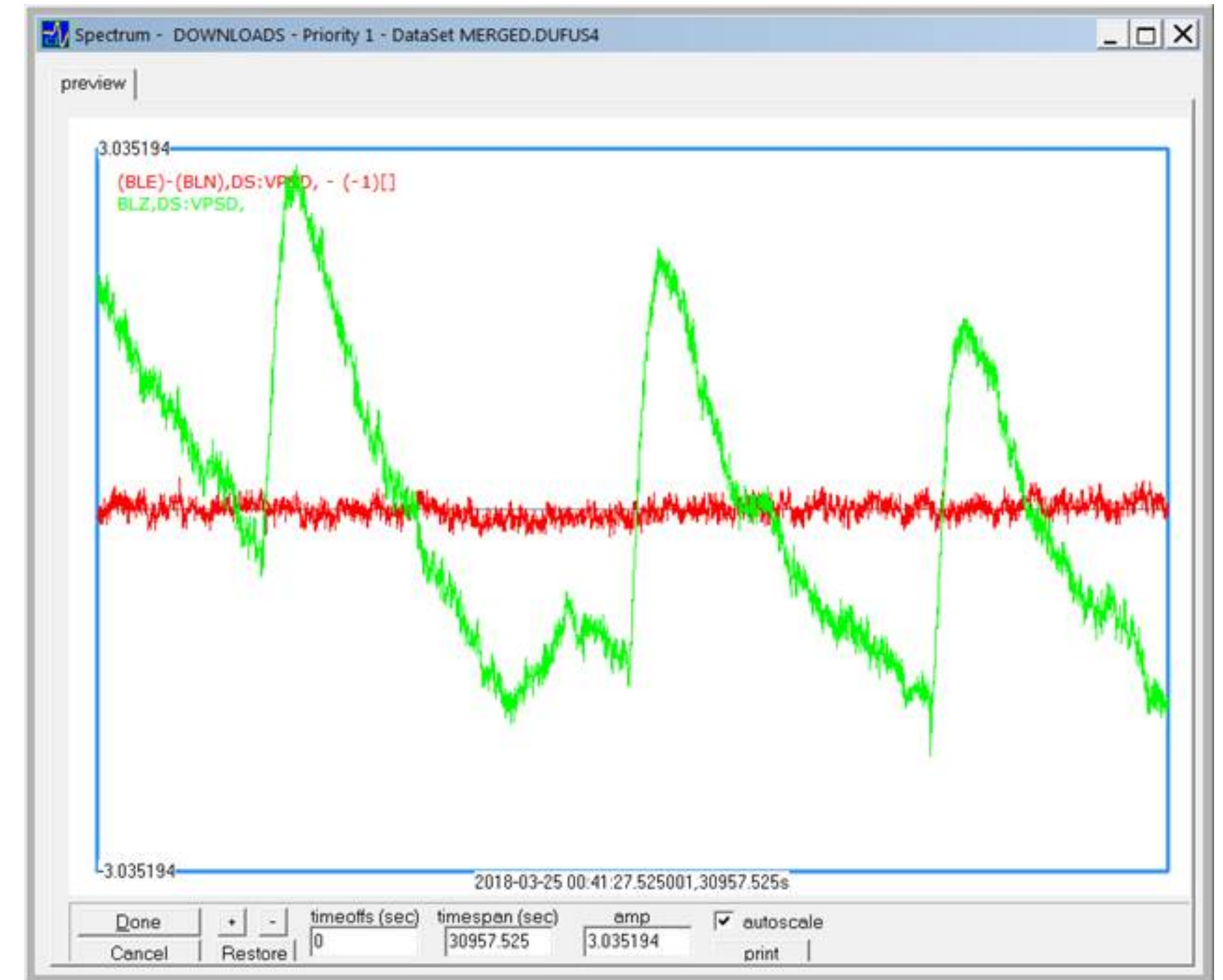
# Features and Benefits

- Low power **<300mW** (for 3 channels, no telemetry); light weight **<1kg**
- Small footprint: **7.5 X 5.5 X 3.5in**
- Fully specified from **-40°C to +60°C**
- Over **50 State-of-Health** channels including temperature, voltages, currents, GPS status, Sensor boom position
- **1...4,000 sps; gain x1...x512**





# Unique Feature



- The **red trace** is a Q8 **low-thermal drift channel**, the green trace is a standard channel.
- The data are acquired in a typical building environment over a period of 9 hours, with the HVAC system cycling every few hours, resulting in several deg. C variation.



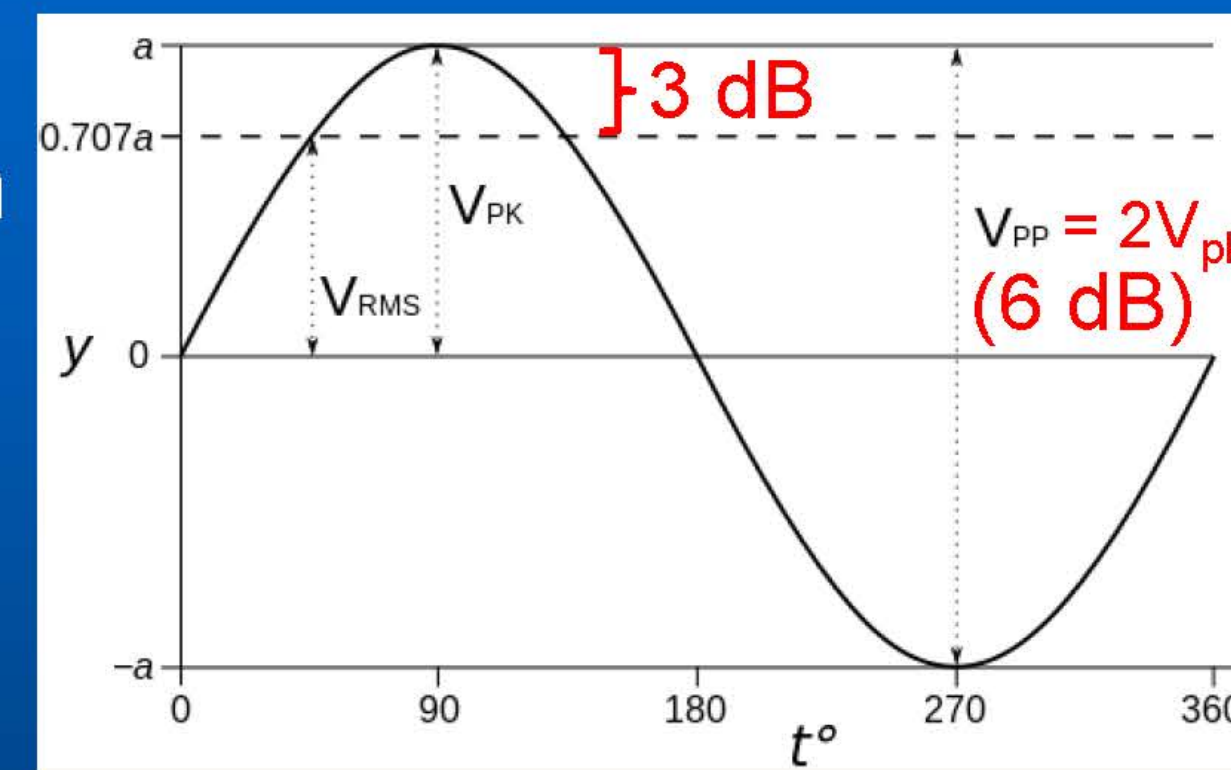
# Dynamic Range Revisited

For the record...Kinematics uses the IEEE definition

## ON DYNAMIC RANGE DEFINITION

Dynamic range = the ratio between clip level and noise level

IEEE definition =  
Full scale RMS / Noise RMS



Loose definition = Full scale peak-to-peak / Noise RMS

Full scale peak-to-peak / Full scale zero-peak ( $V_{pk}$ ) = 2 = 6 dB

Full scale p-p / Full scale RMS =  $20 \log (1 / 0.707) = 3 \text{ dB}$

9 dB higher!

\* we do not inflate our performance claims, using a non-standard specification.



# Features and Benefits

## Qantix Q8 – The Datalogger of the Future

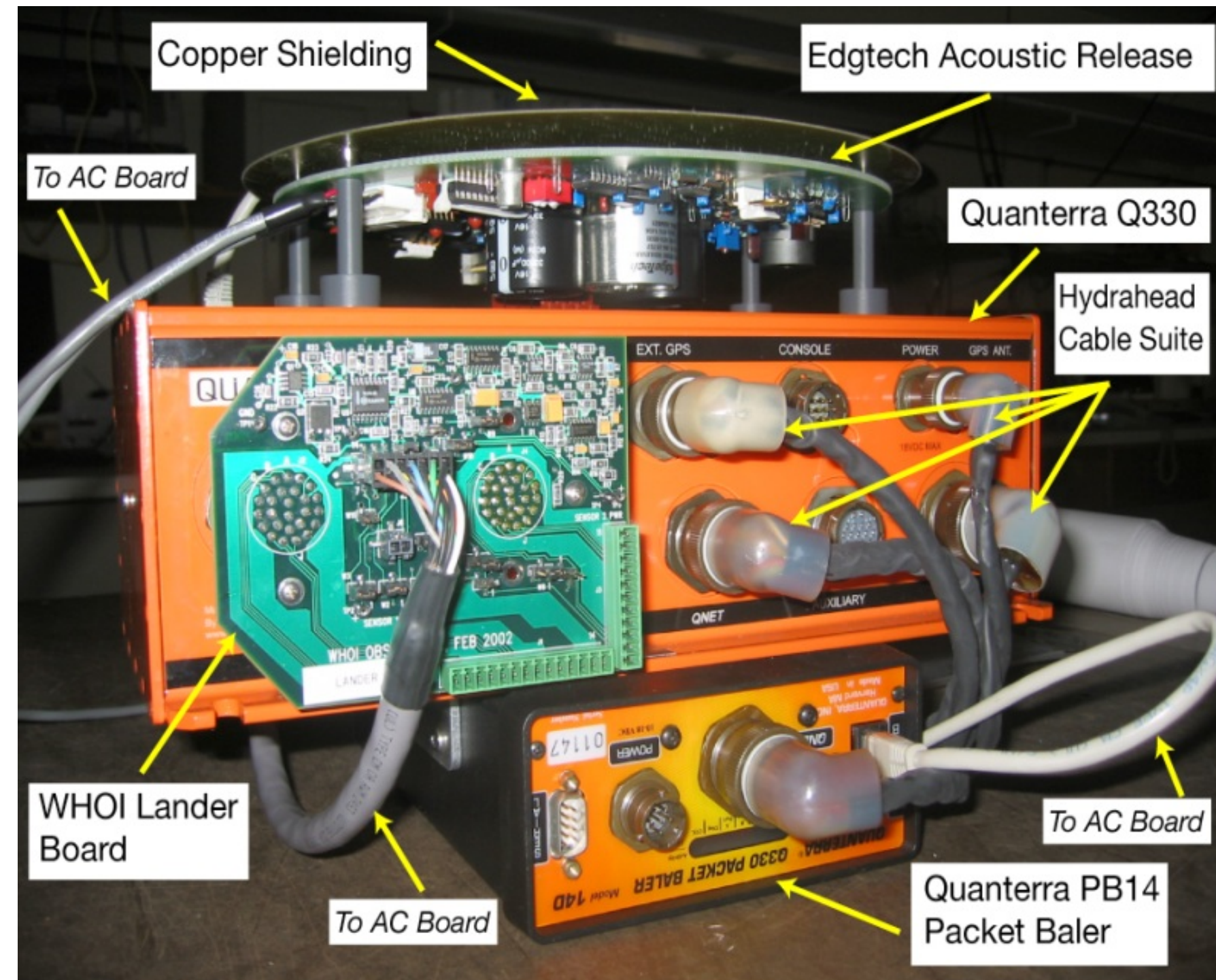
- **WiFi, Ethernet and Mesh** communication interfaces
- **Multiple High-Integrity Storage Media** (internal 32GB eMMC, and removable USB flash drive and SD card up to 256GB)
- **Web-based** management
- **Universal** serial sensor interface
- **GNSS timing** or **external timing** via RS-485
- Streaming **low-latency (<1s)** data packets for EEWS applications
- **Antelope backward compatibility**
- **Feature-packed, higher-performance replacement** of Q330 family digitizers!





# Recent Selection: New U.S. OBS Facility @ WHOI

## Qantix Q8 – The Datalogger of the Future

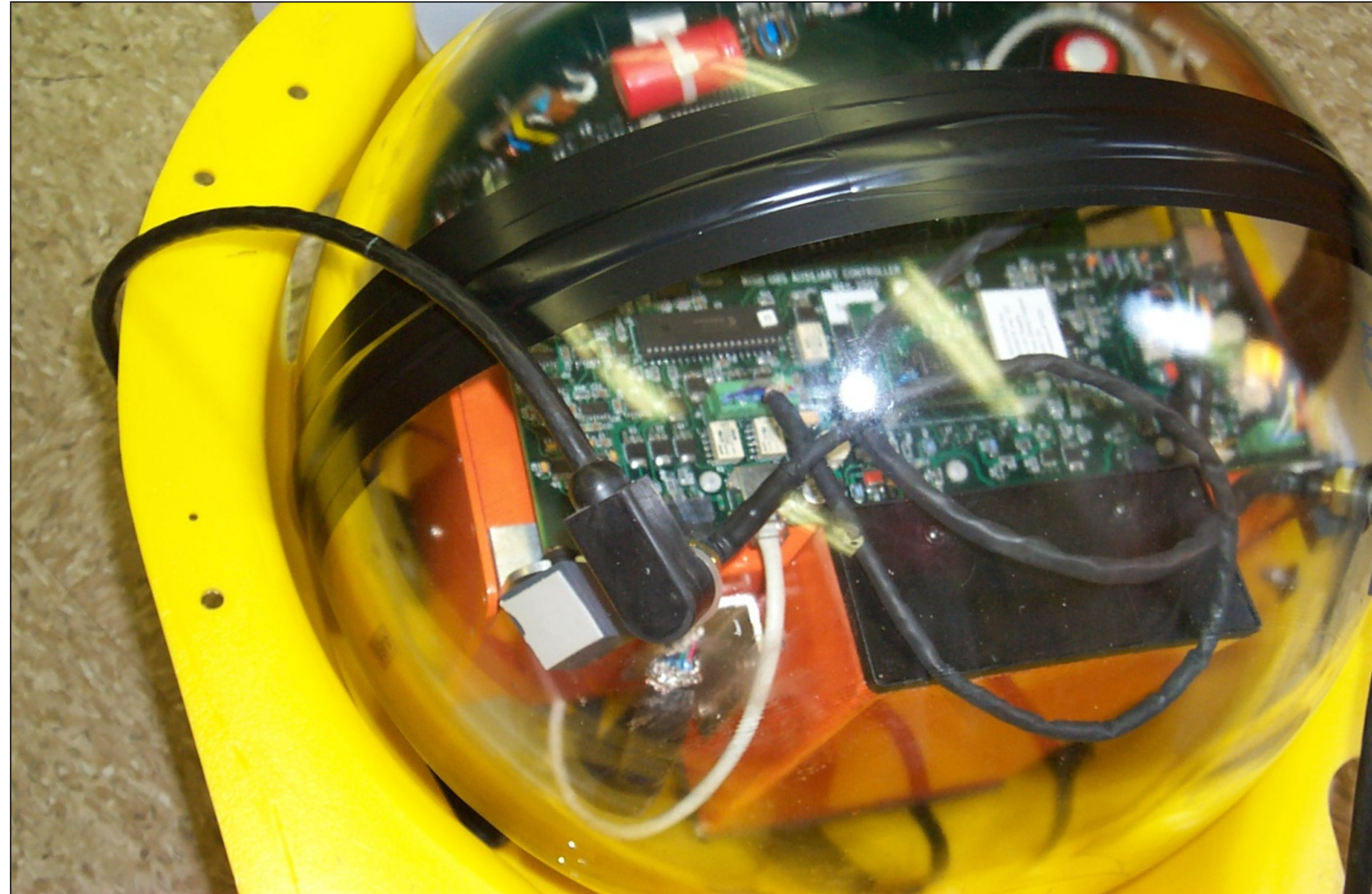


The new OBS facility was awarded to the winner on the basis of the track record established by the Q330, and on the incorporation of Q8 in the future. This illustrates a unique capability, and technological leadership.



# Recent Selection: New U.S. OBS Facility @ WHOI

Qantix Q8 – The Datalogger of the Future



The new OBS facility was awarded to the winner on the basis of the track record established by the Q330, and on the incorporation of Q8 in the future. This illustrates a unique capability, and technological leadership.



# Qantix Q8 and MBB-2

“The world’s only Broadband Seismic System under **0.5 W**”

...and ALL under **<4Kg**



*Power in the palm of your hand.*



Small

Rugged

Powerful

What we do....MATTERS.



Headquarters, Corporate, Kinometrics, Pasadena, California – USA  
Headquarters, Quanterra, Harvard, Massachusetts – USA  
Headquarters, Metrozet, Los Angeles, California – USA  
Headquarters, BRTT, Boulder, Colorado – USA  
Network Operation, Denver, Colorado – USA

Headquarters, Streckeisen, Pfungen – Switzerland  
Office in Switzerland  
Training Center, Vienna – Austria  
Network Operation, Italy

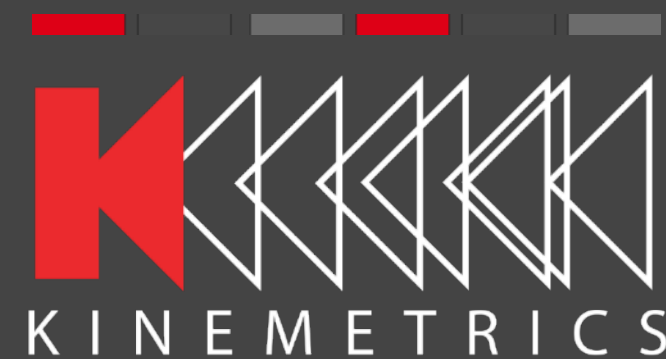


Office in Abu Dhabi  
Network Operation, Abu Dhabi  
Network Operation, Saudi Arabia

Office in Japan

Network of over 60  
representatives worldwide

# THANK YOU



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