

# DAQlink 5-24 Seismograph



## High Resolution Seismic Recording System with High Speed, Compact Size & Low Power

DAQlink 5 is the fifth generation of portable seismograph systems. It can be configured as a stand-alone monitoring system, a refraction system or a distributed seismic reflection system.

Vscope software controls the seismograph, providing acquisition control, data QC and file storage. This seismograph utilizes industry standard Ethernet for command, control, and fast data file transfer.

### DAQlink5-24

### 24 Channel Seismograph



## System Features:

### Cutting-Edge Performance

- 1 to 24 channels per seismograph
- High-Speed 24bit ADC – up to 64,000 sps
- Wide Bandwidth – DC to 27 KHz
- Low Distortion – <0.00008% THD @ 500 sps
- Wide Dynamic Range – >124 dB @ 500 sps typical
- Low Noise – <0.15  $\mu$ V RMS @ 500 sps typical

### Multiple Time Synchronization Modes

- GPS Clock Discipline for Continuous Recording
- Supports PTP to time synchronize multiple units
- VHF/UHF Radio for Underground Use

### Multiple Trigger Modes

- Trigger on hammer switch for shot acquisition
- Trigger using GPS time for noise monitoring
- Trigger using LTA/STA for event monitoring
- Two trigger circuits available, one for standard and a second for low-voltage inputs

### Multiple Data Storage Methods

- 16 Gbytes internal memory card standard
- External mounted, USB-compatible Memory Plug for data backup and transfer
- Ethernet connection for fast data transfers and remote data storage

### Twin Built-in Ethernet Networks

- Use network to configure seismograph and monitor acquisition
- Compatible with cables, Wi-Fi and Cellular Data
- Internal FTP server for external data access
- Optional network extenders for connecting DAQlinks together for high channel count systems

### Built-in Acceptance Testing

- Instrument Tests:
  - Distortion, Cross-feed, CMRR, Impulse & Noise
- Sensor Tests:
  - Resistance, Frequency, Damping, Sensitivity

## Operation Modes:

### Record Active-Source Data

- Use with a sledgehammer and hammer switch source for lightweight and fast crew
- Use with a vibrator and controller to acquire data in noisy and/or difficult situations
- Network a computer to monitor acquisition, quality control data, and store shot Records

### Record Passive Data

- True Continuous Recording
- Use Cellular Modem for Remote Data Collection
- Works with surface or downhole sensors

### Use for Event Detection & Monitoring

- Continuously record and store data
- Use LTA/STA Tolerance (Long Term Average / Short Term Average) to detect events
- Includes automatic email notifications as events are located



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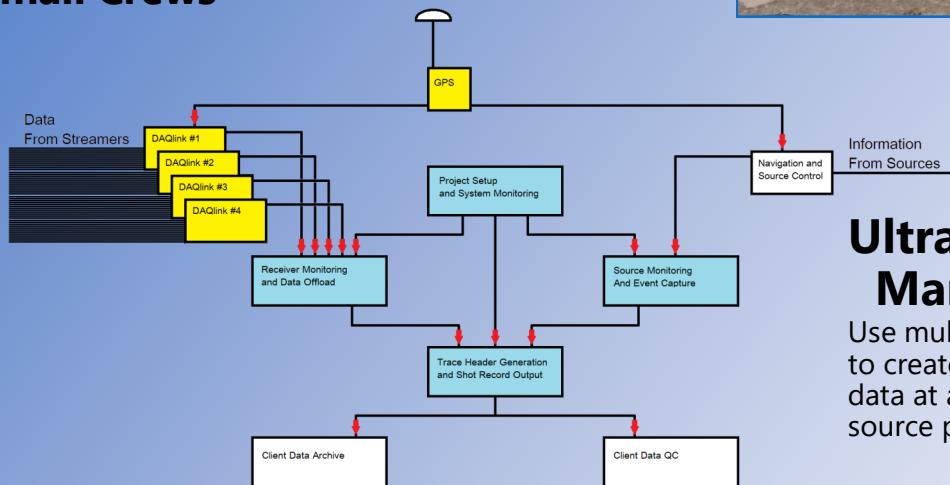
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# A Stand-Alone Seismograph



Small Crews

## Downhole Data Acquisition



## Ultra High Resolution Marine Seismic

Use multiple DAQlink 5-24 seismographs to create a system for acquiring seismic data at a fast sample rate and dense source point spacing.

## Expandability and Flexibility

All DAQlink5-24 seismographs are compatible with the entire line of Seismic Source Co source control electronics. This includes the Force 3 Vibroseis controller, the Boom Box 3 dynamite synchronizer and the RTM 3 remote trigger module. DAQlink seismographs are also compatible with the Universal Encoder 3. Use the UE 3 for precise source operation.





# A Stackable & Modular System



## Stacking DAQlink 5-24 Units

The DAQlink 5-24 seismograph is designed to be stacked into 48 channel (and more) systems. Simply buckle the individual units together and connect the cables

The DAQlink 5-24 features network system timing, so a single GPS module can synchronize all the modules in a stack of DAQlink 5-24 units, increasing overall timing precision.

The entire system is connected to a computer which controls the seismograph network and stores the acquired seismic data. This computer can also simultaneously provide Quality Control as data is being acquired. Using supplied software, seismic data can be stored in Raw (\*.dat), SEG-2 (\*.sg2), SEG-D (\*.sgd), SEG-Y (\*.sgy), ASCII (\*.csv), or MiniSEED formats.



## Stackable DAQlink 5-24 A 48 channels Package

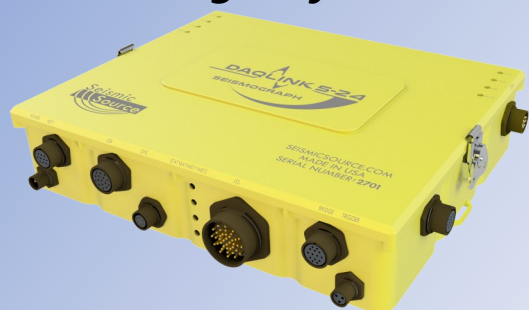
## Distributed Node Systems



## For Large Projects



## Link Units Together For Larger Systems



## Distributed DAQlink 5-24

## Distributed Connection Options

Besides stacking DAQlink 5-24 units together, seismograph networks can be constructed using a 100Base-T network:

- Cable Solution - Distributed DAQlinks increase distance between units from 100 meters to 3 kilometers
- Wi-Fi solution - Typical line of sight distances using standard Wi-Fi transceivers
- Internet Solution - Connect each DAQlink, or the entire DAQlink system, to a cellular data modem and CloudConnect to download data from anywhere.

# DAQlink 5-24 Specifications



## Technical Features

### A/D Conversion:

24-bit, high-speed, delta-sigma converters

### Typical Dynamic Range:

Greater than 124 dB (measured @ 500 sps)

### Crossfeed:

Better than 124 dB (measured @ 500 sps)

### Common Mode Rejection:

Better than 100 dB (measured @ 500 sps)

### Total Harmonic Distortion

Better than 0.00008% (measured @ 500 sps)

### Typical Noise Floor:

0.15  $\mu$ V RMS (measured @ 500 sps)

### Bandwidth:

0 to 27 KHz (unfiltered)

### Preamp Gain (User Selectable):

x1 (0 dB), x4 (12 dB), x16 (24 dB), x256 (48 dB)

### Maximum Input Signal:

x1 gain - 6.5 Volts peak to peak

### Input Impedance:

100 K Ohms

### Digital Filter (User Selectable):

Low-Cut Filter - Disabled, 0.001-120 Hz

Filter Type - Linear or Minimum Phase

### Anti-Alias Filter:

85% of the Nyquist frequency

### Sampling Interval:

0.016, 0.032, 0.0625, 0.125, 0.250, 0.500,  
1.0, 2.0, 4.0, 8.0, & 16.0 milliseconds

### Sampling Rate:

64,000, 32,000; 16,000, 8000, 4000, 2000,  
1000, 500, 250, 125, & 62.5 sps

### Record Length:

Unlimited (with Continuous Recording)

### Record Modes:

DAQlink (Triggered by External Event)

Sigma (Continuous Recording)

### Trigger Accuracy:

$\pm 1$  microsecond at any sampling frequency

### Pre-Trigger Delay:

Up to 32 seconds

### Post-Trigger Delay:

Up to 100 seconds

## Physical Features

### Internal Network:

Twin 100-BaseT Ethernet Chips

Supports PTP clock synchronization  
between systems

Includes real-time data transfer

### Internal CF-Card Memory:

16 Gbytes Standard (can be expanded)

### Optional External Removable Memory:

32 Gbytes (can be expanded)

### GPS Interface Standard

Internal Clock synchronized to GPS time

GPS Time and Position saved with data

### Power Consumption (per 24 channels):

Less than 0.13 watts/channel

### Power Requirements:

11 to 28 VDC

### Included Tests:

Internal tests for verification of the  
instrument and the geophone spread

### Dimensions (standard version):

Size: .....280 x 246 x 56 mm

.....11.0 x 9.7 x 2.2 inches

Weight:.....2.0 kg

.....4.4 pounds

### Operating Temperature:

-40° to 80° C

### Case:

Sturdy Milled Aluminum

Weatherproof seal - IP67

## DAQlink5-24 24 Channel Seismograph



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