

The Symmetric Research USB4CH A/D system provides 24 bits of high resolution A/D conversion for 4 analog input channels at fixed sampling rates from DC to 10 kHz. The system also has 4 digital inputs, 4 digital outputs, a GPS interface for precision time stamping, and an on board temperature sensor.

Equipped with an individual 24 bit sigma delta A/D converter per channel, the system provides excellent performance, minimizing crosstalk and channel skew. All analog inputs are differential for low input noise, and a precision buried zener reference along with a TCXO master clock ensure long term stability. On the digital side, acquired data is buffered with a 2 Mbyte DRAM FIFO for continuous acquisition without data loss even on heavily interrupted or networked systems.

Interfacing to standard USB ports, setup for the USB4CH is easy. Support for Windows 7/8/10 and Linux is included. Finished acquisition apps, code examples, circuit diagrams, and software web updates are provided at no additional cost.

HARDWARE FEATURES

- Ideal for applications requiring 24 bit A/D conversion on 4 channels from DC to 10 kHz
- Individual 24 bit A/D converter for each channel with op amp front end
- Continuous sampling at 3, 6, 13, 19, 32, 39, 65, 78, 130, 651, 1302, 2604, 4882, 9765 Hz
- High precision 6 digit analog accuracy, 1 microvolt / count
- Differential analog inputs with +/- 4 volt range and 51K to 10M ohm input impedance
- Precision buried zener analog reference for exceptional stability
- GPS interface (PPS and NMEA) with 800 ns accuracy, compatible with many antennas
- 1.5 PPM master clock for accurate time base even without GPS
- Synchronous digital sampling on 4 inputs along with 4 programmable digital outputs
- On board temperature sensor continuously recorded for TC corrections
- 2 Mbyte FIFO buffering guarantees no data loss even in heavily networked environments
- Simple easy to use USB host computer interface
- Low 100 milliamp current draw, runs for over 20 hours on 8 AA batteries
- Small footprint 5.25" x 6" multilayer board with power and ground planes
- USB cable, external power supply, enclosure, and analog input cables included

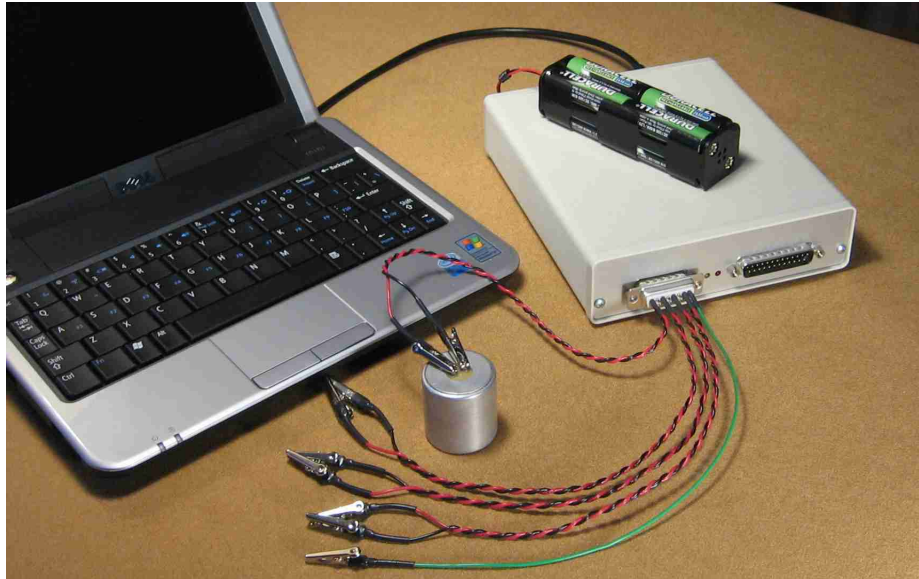
SOFTWARE FEATURES

- Ready to go applications for immediate data acquisition and display
- DVM (digital voltmeter), GUI Scope, and command line acquisition programs
- Pipeline software design, easily customized with additional stages
- Complete PDF User Manual

| SR Product | Description | Price |
|---------------------|--|-------|
| USB4CH - IN THE BOX | 4 channel 24 bit A/D USB data acquisition system with software | \$700 |
| USBGPS | Garmin GPS antenna terminated to USBxCH DB25 | \$125 |

see page 2 for photos ...

One popular USB4CH configuration is with a laptop computer for portable data acquisition. In the photo below, a passive geophone sensor is connected to one analog input.



The red / green twisted pairs are differential inputs for each of the four analog channels. The black wire is AGND, which is not required for a floating sensor. Digital IO and GPS connections are available on the right front panel DB25. The USB4CH can be powered from eight AA rechargeable batteries for over 20 hours. A wide variety of other DC power supplies are also acceptable. Below is a screen shot of the Scope Windows application.

