

DT9837A FAQ

What is the DT9837A?

The DT9837A is a **highly accurate** USB data acquisition module that is ideally suited for portable noise and vibration measurement and analysis. **Four 24-bit IEPE** (ICP) sensor inputs are **synchronized with a tachometer input** to provide data streams that are matched in time for field or laboratory use. A read-back channel from the analog output guarantees perfect correlation of all signals in the input stream, the output stream, and the tachometer.



Can you explain more about this synchronous operation?

The DT9837A supports synchronous analog input, tachometer input, and analog output operations. Data is streamed synchronously to and from host memory. The synchronous operation allows all I/O data to be processed and correlated for all inputs and outputs. This is very valuable in determining the response across a device-under-test (DUT) to stimuli at the same exact instant.

The DT9837A has 4 simultaneous IEPE sensor inputs plus a synchronous tachometer input and is ideal for portable noise and vibration measurement

What are the main features of this module?

- **Four simultaneous 24-bit Delta-Sigma A/Ds** with support for IEPE inputs including 4mA current source and AC or DC sampling.
- **Portable operation**, no external power supply needed.
- **Tachometer input support** in the A/D data stream for synchronizing measurements with two measurement modes for precise edge detection
- **Programmable sampling** rates from 195Hz up to 52.7 kHz
- **Read-back channel** for synchronization of the analog output with all inputs
- **Expansion for multiple modules** - Programmable Master/Slave synchronization mode

- **Programmable analog threshold trigger** - 0.2V to 9.8V
- **Simultaneous operation of A/D and D/A subsystems** for maximum performance.
- **One 24-bit Delta-Sigma D/A converter** for single value or ultra smooth waveform generation

Can I synchronize multiple modules for additional channels?

Yes. Two modules can be triggered simultaneously for perfectly synched measurements on both modules. In this scheme, module one is configured as the master and the other module is configured as the slave. When the master module is triggered (using any of the supported trigger sources), both the master and slave modules start acquiring data at the same time (within one A/D conversion of the clock, watched to 0.02%). The quartz oscillator clock is shared through the sync port to allow both modules to use the same time base.

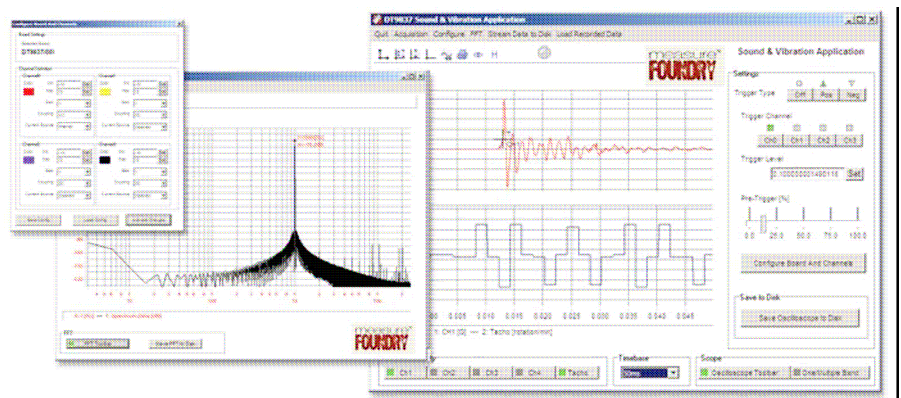
What software supports this board?

There are many software choices available for application development with the DT9837A. Each option offers development capability at different levels.

The DT9837A ships with a software applet to get you up and running right out-of-the-box. This applet supports basic operation of the module and can be easily modified for more advanced capabilities using Measure Foundry®, Data Translation's popular rapid application builder software.

With **Measure Foundry** customers can **create noise and vibration** applications quickly and easily with the drag and drop graphical user interface. Measure Foundry offers a specially designed component that allows perfect synchronization of two modules. This reduces valuable

development time as two DT9837A's in a Master/Slave configuration are presented in a single component as if they are one device with twice the channels. Additionally, the **Spectrum Analyzer panel** allows the user to display and analyze the frequency spectrum of an input signal. Users can **perform an FFT**, an auto-correlation, or a power spectrum and store the data to either an ASCII data file or a high performance .DCF file. Several window functions are provided such as Rectangle, Hanning, Hamming, Hann, Blackman, BlackmanHarris 67db or 92 db. Measure Foundry also



provides digital filter functions including Bessel, Butterworth, Chebyshev, and Elliptic.

Finally, the DT9837A is supported by all DT-Open Layers for .NET Class Library compliant software to meet any application need, including quickDAQ, LV-Link, and DAQ Adaptor for MATLAB®.

How about pricing and availability?

The DT9837A is shipping in April and is priced at \$1,795 U.S. A board-only OEM version is also available.