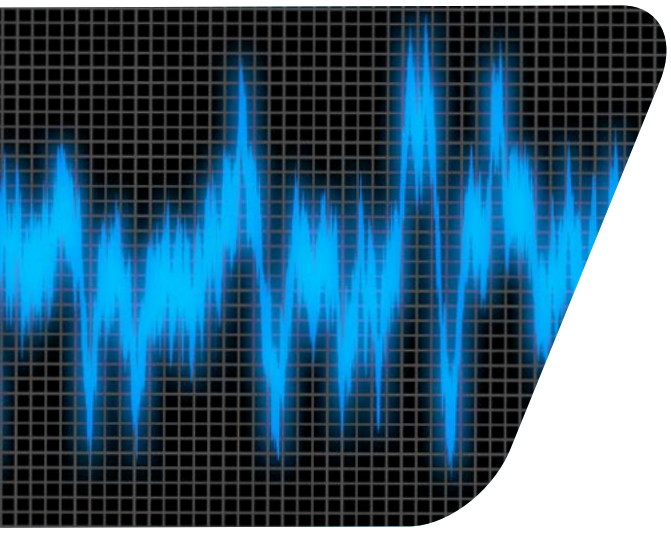
APPLICATION NOTE

CAS DATALOGGERS

Precision Waveform Generation is Key for Electronic Stimulus & Response Testing

ADwin System Generates Any Waveform You Need



A signal generator is a device that produces analog or digital signals in either repeating or terminating modes. The aim of signal waveform generation is to produce signals that conform as closely as possible to a desired shape using frequency, phase, and magnitude. CAS DataLoggers offers ADwin Real-Time Data Acquisition and Control systems for many common automation and test applications where specific waveform shapes are required.

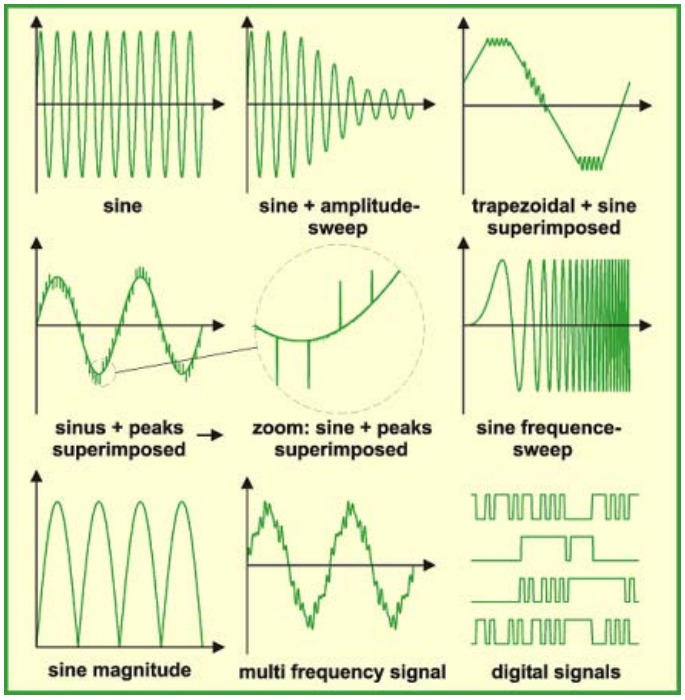
Practical applications for precision waveform generation include control of lasers, electron beams and high-voltage pulsers most often used in research environments. Signal generation is also used in R&D for simulation of sensors and dynamic excitation for determining system characteristics for design, tuning and troubleshooting. As a side note, there are also artistic applications for audible tone waveform generation for music making.

ADwin High Performance Real-Time Control

Frequency, phase and offset can be smoothly adjusted online, often in a single step. Users can also generate arbitrary waveforms by the superposition of various base signals.

The numerically-generated waveforms can either be output directly or used internally as set-point values for digital closed-loop or open-loop controllers running simultaneously on the same ADwin system. Additionally, input signals can be acquired and evaluated at the same time for monitoring system or device response or to check for limit values.

Additionally, users can set up complex controls by using the ADwin system's capability of synchronously outputting multiple analog and digital signals on a time- or event-triggered base.



When an ADwin system is used as a signal generator it falls under the adaptive signal generator category. This means you can define each signal's properties by adjusting set points and based on how the system responds to measured values. Any waveform is possible and it doesn't matter what your application is ADwin can control it!

ADwin Pro-II System Features

- Analog Input (Multiplexed or Parallel A/D), Analog Output, Digital I/O, Counters, CAN, LIN, and Serial Cards
- Modular design for easy customization
- Up to 480 Analog Inputs, Digital I/O or a Combination of both
- With 1 GHz clock speed, 768 MB internal memory and 256 MB of RAM, the PRO-II processor capability has grown considerably
    - processor 40-bit internal calculation enables precise floating-point calculations
- The ADwin accelerated Ethernet interface enables high-speed data transmission at more than 10 MB/s.
- Full, Half and Quarter-Rack Mainframes with AC or DC-Power option
- Optional TICO Co-Processor Modules for local Pre-processing on the I/O module

Real-Time for Complex Applications

The ADwin data exchange with a PC is fully compatible to work with the interfaces for VB, Matlab, etc. Users save considerable time by reusing valuable ADbasic source code after just a few changes to the tried and tested algorithms. The Pro-II system provides extraordinary speed that enables demanding applications at high data rates. In addition, the fast T-12 processor allows an intelligent process to pre-determine relevant data, mathematical functions, or digital channel filtering.

Benefits

All Pro-II modules automatically sync when running in the Pro II chassis which allows fully-synchronized time measurements from multiple modules without any special software to program. The ADwin ARM processors enable complex calculation, for example it processes up to 50 ADbasic lines in under 1ms! The T12 processor also has extremely short response times so your control or regulatory processes can run reliably on the with cycle frequencies far above 1 MHz

For more information on ADwin data acquisition and control systems, waveform generation or to find the ideal solution for your application-specific needs, contact a CAS DataLogger Application Specialist at **(800) 956-4437** or www.DataLoggerInc.com.