ADwin Data Acquisition and Control Systems are Cutting Edge

ADwin Provides Nanosecond Timing in Test Stands and Automation Worldwide

ADwin Data Acquisition systems are designed by Jager project engineers with input from customers around the world. The ADwin design combines mechanics, electronics and information technology to create independent real-time systems with modular flexibility.

Each ADwin Data Acquisition and Control system has its own CPU executing all time-critical tasks in real time. A key feature of these advanced systems is their tightly-coupled analog and digital I/Os along with add-on options like counters and bus interfaces forming the connection to the test stand and allowing extremely low-latency operation.

ADwin systems offer highly reliable operation in many different test applications including: X-by-Wire systems, engine mountings, shock absorbers, clutch disks, gearboxes, engine control units, hydraulic valves, springs, relays, sensors, actuators, potentiometers, semiconductors and electric motors.

Engine Test Stands--Data Acquisition and Control with Angular Synchronization

Engine manufacturers use ADwin for highly-detailed analysis of combustion engine design and performance. Successful optimization of the fuel-injection and combustion processes increasingly demands shorter and shorter reaction times.

The ADwin high-performance real-time systems are capable of parallel, individually-controlled processes while running independently of a PC's operating system. In this way they can provide deterministic operation with response times of 1µs or less.

Vibration Test Stands--Determination of Dynamic Characteristics

For vibration test stand applications in the automotive and aviation industry, ADwin acts as a single solution where otherwise users would require multiple pieces of equipment such as

digital signal generators and closed-loop controllers. ADwin generates wave-forms, runs force and position feedback controls, evaluates amplitude and phase, and monitors threshold values in single- and multi-axis vibration test stands. ADwin can record many test parameters including Vibration, Force, Frequency, Pressure, Shock, Temperature, and more.

Innovative Production Methods—Online Development

ADwin executes the time-critical control and data acquisition tasks necessary for laser and electron beam welding, control and online correction of weld quality, surface refinement with electron beam vaporizers, laser engraving, and molecular beam epitaxy.

Microscopy--All-in-one Data Acquisition, Open- and Closed-loop Control

In Microscopy applications the ADwin system precisely controls the measuring head by driving servo and stepping motors. This exact positioning can even be achieved when working with single molecule spectroscopy such as scanning tunneling, electron beam, laser and force microscopes.

Production Test Stands--A Solid Investment

Here the PC becomes a reliable component for your measuring, testing or automation system in the production line by running real-time tasks on an ADwin. These systems are always a safe investment for your testing needs.

Education, Research and Development—Go from Simulation to Reality

Here ADwin allows the implementation of signal generators for electron beams, laser and high-voltage pulses as well as feedback controls and digital filtering with sampling rates up to 500 kHz. ADwin is used for the hardware-in-the-loop simulation of sensors and dynamic systems or for the adaptive track data generation. In education, students can quickly become familiar with operating these state-of-the-art industry products. ADwin also has drivers for many popular programming environments including VB, VC/C++, LabVIEW, TestPoint and others.

Functions:

- Intelligent Data Acquisition
- Digital PID Feedback Control
- Signal Generators: Sinus, Ramp, Noise, Sweep, Pulse, Step
- Dynamic characteristics evaluation
- Hardware-in-the-Loop
- Digital Filtering
- Complex Trigger Conditions
- Min/Max, Average, RMS
- Statistics, Correlations
- Integrals, Derivatives
- FFT, Amplitude and Phase Response

ADwin Software

The user-friendly ADwin software environment can be used under Windows (95/98/ME/NT/2000/XP/Windows 7/10) and LINUX or as a reliable stand-alone data acquisition system. Additionally, the ADbasic control language allows users to program mathematical operations and functions which are executed immediately after each sampling step, even at sampling rates as high as 1.25 MHz Every sampled value or event can be evaluated in the same step so users can immediately perform a control function or online analysis, and more than one processor can be used in the system for the most demanding applications requiring the highest possible throughput.