![CAS DATALOGGERS]

# NEW PRODUCT ANNOUNCEMENT

ADwin Systems Add Simulink and Matlab functionality

ADwin real-time data acquisition and control systems provide industry leading deterministic performance for critical applications in automation, dynamic test stands, end-of-line testing, and hardware in the loop (HIL) development. Now, with the ADsim/ ADbasic, software tool chain, ADwin systems can be programmed with Simulink® and/or Matlab®. With just a few clicks, insert analog and digital function blocks from the ADwin system into a model and within seconds compile and run the model. It will run on the ADwin system in real-time with absolute timing precision and predictability. Unlike other systems, development and testing can be done very quickly without long delays and overhead while compiling the model.

Key Features of Using Simulink Models with ADwin Systems:

* Run Large, complex models at high speeds
* Execute several models in parallel for example 20x PID loops @ 300kHz
* Suitable for controllers, data acquisition, filters, state machines and more
* Multi-tasking allows multiple jobs to run simultaneously with priority control
* Easy online model parameter adjustment
* Implement user interfaces in VB, C, .NET, Matlab, Python, LabView®, etc.
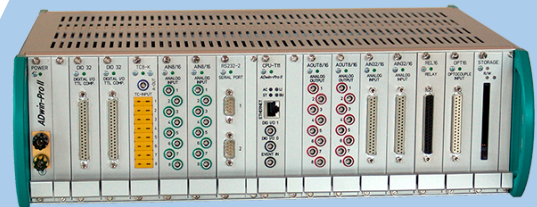
The image in *Figure 1* shows a typical HIL (Hardware-In-The-Loop) model, incl. analog I/O, digital I/O, PWM and CAN channels. Parameter settings from the GUI are fed into the model, while all signals (I/O signals and numeric signals from the model) are fed back to the GUI. Benchmark tests show the ADwin-Pro-II system with the latest T12 processor is capable of executing complex models at 500kHz, or faster if needed. Extremely large models can run at speeds from 10kHz to 100kHz.
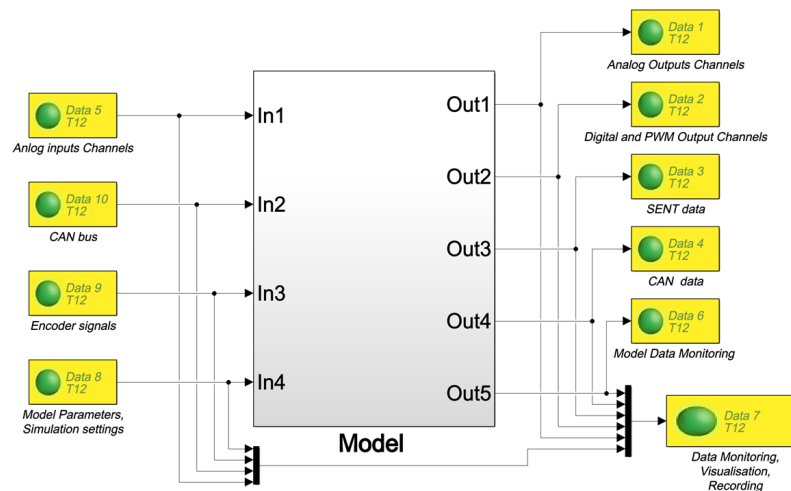

Figure 1. HIL Simulink Model with ADsim Blocks for Analog Inputs and Outputs

A key feature of ADwin system architecture is the partitioning of system operation into two components, a real-time piece that runs on the embedded processor of the ADwin system, and a user interface for data presentation part that runs on the PC. Data is transparently shared between these components via a GB Ethernet interface.

User Interfaces for Simulink Models

In addition to creating and building the model in Simulink®, live data including signals and model parameters can be displayed or modified with the ADsimDesk graphical user interface application. Or, via the standard ADwin drivers, you can build your own user interface for the compiled model in any one of more than a dozen common programming languages including Python, C/C++, .net or Labview® with direct access to all model parameters and signals. For Matlab® users, the combination of ADSim with Matlab® offers a powerful tool for building, viewing and analyzing/tuning models.

The image below shows a typical HIL (Hardware-In-The-Loop) model, incl. analog I/O, digital I/O, PWM and CAN channels. Parameter settings from the GUI are fed into the model, while all signals (I/O signals and numeric signals from the model) are fed back to the GUI. Benchmark tests show the ADwin-Pro-II system with the latest T12 processor is capable of executing complex models at 500kHz, or faster if needed. Extremely large models can run at speeds from 10kHz to 100kHz.

Key Features of Data Acquisition with Matlab:

- Acquisition of various analog and digital signals, and communication bus signals
- Parallel acquisition of multiple channels
- Matlab® based analysis and visualization
- Complex triggers, data reduction, filtering and statistics

ADwin Pro-II Systems

The ADwin-PRO-II is a modular, real-time data acquisition and control (DAQ) system which is available in several models for rack, desktop or portable applications. It offers 5 to 16 slots for plug in I/O cards. The system is built around a dual-core ARM Cortex-A9 processor running at 1GHZ, 1GB of local memory, a GB Ethernet interface and an optimized real-time multi-processing kernel. ADwin-PRO-II covers a large variety of I/O types and interfaces, e.g. such as parallel analog input cards with sample rates of 500kHz, 4 MHz up to 50MHz. In addition to these cards, there is a large variety of additional analog I/O, digital I/O, counters, different kind of serial interfaces for automotive, avionic and industrial serial buses, various expansions and signal conditioning options.

The communication between the ADwin system and the PC is done via Ethernet. Industrial bus interfaces allow the connection to PLCs, while a bootloader supports complete stand-alone operations of the ADwin system.

For more information on ADwin Data Acquisition Systems, or to find the ideal solution for your application-specific needs, contact a CAS Data Logger Applications Specialist at **(800) 956-4437** or visit our website at www.DataLoggerInc.com.