Next-generation real-time simulation and control platform

Procyon is A&D Technology’s ultra-high-performance real-time simulation and control platform. The open and configurable system architecture supports multiple CPUs with multiple cores and user-programmable FPGAs, as well as HyperTransport, PCI Express and conventional PCI interconnects.

Procyon open-system architecture allows third-party development of simulation models, and for FPGAs scaled to specific applications.

With A&D’s VirtualConsole as a visual front end, Procyon offers the most advanced real-time target for model-based development with MATLAB/Simulink.

- Drag-and-drop menu-driven GUI application design and execution tool
- Flexible and customizable architecture
- Fully compatible with iTest test cell applications

The Procyon SBC features an AMD Opteron processor, and connects to peripheral boards via HyperTransport, CompactPCI or PCI Express.

- Broadcom HT2100/HT1000 chipset
- DDR2 DIMM x 2
- Gigabit Ethernet x 2
- USB 2.0 x 4
- VGA
- SATA and eSATA
- System monitor function
- AMI BIOS

Features

- Multi-core/multi-CPU system support
- Direct connection of I/O interface to CPU provides faster closed-loop control
- Real-time application development environment with MATLAB/Simulink and A&D VirtualConsole
- Open system specification enables third-party I/O board development
- Flexible system configuration

Sample Applications

- Distributed processing and control
- Hardware-in-the-loop simulation
- Real-time NVH and combustion data acquisition, processing and analysis
- Advanced research and development
- Wheel slip applications
- Shift simulation
Procyon System Architecture

Procyon System Boards

- Procyon Single Board Computer (SBC) with up to 8 quad core AMD Opteron processors
- CPU and FPGA Co-processor boards
- Engine HiL board
- Analog input board, 32ch, 16bit @800kHz
- Analog input board, 16ch, 250kHz (simultaneous sampling)
- Analog output board, 32ch, 16bit @ 800kHz
- Digital I/O board (Flex channel)
- Multi-function I/O board (A/D 12ch, D/A 8ch, DI 16ch, DO 16ch)
- Servo-controller board (4ch input/1ch output)
- Box-to-box synchronization board
- PWM I/O board
- Box-to-box Communication board
- Network board (CAN, Serial, K-Line, LIN)

Specifications

- Third-party I/O boards supported on the Procyon backplane: PCI, PCI Express, HyperTransport
- Supports ncHT & cHT FPGAs
  - Xilinx - Virtex 6
  - Altera - Stratix 4
- Closed-loop analog control capabilities
  - CPU resident model = <10µS
  - FPGA resident model = -5µS
- Closed-loop digital control capabilities
  - CPU resident model = -5µS
  - FPGA resident model = -2µS