



DSP Board Tunes-Up LabVIEW for Real Time

The SI-C6713DSP-PCI Board from Sheldon Instruments enables engineers to develop a variety of measurement and digital control systems under LabVIEW, thus achieving very high execution speeds necessary for most Real-Time applications.

LabVIEW is an important industry standard in the instrumentation and control field because of its convenient Virtual Instruments (VI) paradigm that has also proven to be highly stable. However, the downside of this convenience is the relatively slow execution speed, inadequate for most real time processing requirements.

DSP Hardware

The Sheldon Instruments family of SI-C6713DSP DSP carrier boards are ideally suited for those kinds of real time processing applications, especially when it is configured with an analog IO module. The architecture of the 32-bit floating point DSP is optimized for algorithms typically used in most real time applications, i.e. point by point or block processing such as basic arithmetic, digital controllers, FFTs, and digital filters. As a self-contained processing entity, the DSP board also runs independently of the host PC's platform. The SI-C6713DSP-PCI features a 300 Mhz TMS320C6713 DSP from Texas Instruments, up to 256 Mbytes of SDRAM and an expansion site for a family of multifunction I/O modules for test/measurement and control applications.

Multifunction I/O Modules

Expansion I/O modules are designed to mate with the DSP carrier to only occupy a single slot inside the PC. Their highly integrated functionality includes an analog interface with up to 64 inputs and 16 outputs; timing interface with 2 digital synthesizers and 4 counters; and a digital interface that comprises 32-bit of general purpose I/O, 2 quadrature encoders, 2 frequency counters, and 2 PWMs outputs.

Software

In order to accelerate LabVIEW with the DSP, Sheldon Instruments developed the original real-time engine called QuVIEW, and since 1991 has been continually updating it with the latest DSP technology. QuVIEW is a set of DSP resident, real time accelerator libraries that run under LabVIEW. Depending upon the application, LabVIEW may be accelerated by as much as 100 times! QuVIEW libraries include functionality for processing data on a point by point as well as on a block basis, in addition to DMA driven data exchange between the host PC and the DSP. As an added benefit, the DSP will continue to run the acquisition/control routines even after LabVIEW is shut down, and it is not affected irrespective of any other applications running. This also allows engineers to design fully embedded solutions which can run even without a PC in standalone mode, with a VI burned into optional flash memory.

Pricing

The price for a SI-C6713DSP-PCI DSP board with 64MB of SDRAM starts at only US-\$1,985, with I/O modules starting at another US-\$595. The QuVIEW software is included free of charge with any DSP board. More detailed information is available at www.sheldoninst.com.

**About Sheldon Instruments:**

Founded in 1987, Sheldon Instruments Inc. is the leading supplier of DSP based solutions for real time applications in test and measurement, digital control, instrumentation and automation systems. Sheldon Instruments products are available on a wide range of platforms, including PCI, CompactPCI, PC/104plus, PMC and embedded standalone. For more information about Sheldon Instruments visit www.sheldoninst.com.

Contact:

Sheldon Instruments, Inc.
Andy Kohl
609 West Date Street
San Diego, CA 92101
Phone: (619) 702-6565
Fax: (619) 702-6360
Email: andy.kohl@sheldoninst.com
Web: www.sheldoninst.com

Attachments:

Photo "DSP Board Tunes-Up LabVIEW for Real Time" in JPEG Format

Date:

April 27, 2005

Key Words:

Test and Measurement, Data Acquisition, Digital Control, Digital Signal Processing, Real Time Processing, LabVIEW