TMS320C6415, and TMS320C6416 DSPs are all built using TI’s advanced 130-nm copper process technology. Each chip includes 1Mbyte of high-speed memory, as well as high-speed peripherals for real-time processing.

For example, the C6414 DSP has a 64-channel enhanced DMA controller and three multichannel buffered serial ports. The C6415 DSP features host-port and 32-bit, 33-MHz PCI interfaces and supports Duplex Level II ATM connectivity. As for the C6416 DSP, the most highly integrated of the trio, it includes Viterbi and turbo coprocessors to increase the channel capacity of 3G wireless base stations.

Texas Instruments
Incorporated, Houston, Texas; (800) 477-8924, www.ti.com

Video Daughterboard Meets TMS320 DSP Family Standard

The model vDB high-performance, modular video daughterboard complies with v1.0 of Texas Instruments’ TMS320 DSP family cross-platform daughterboard specification. The board works with the EVM6205 evaluation board and PCI drivers to simplify the hardware and software development, using EVB/DSP Start Kits of a wide range of advanced and low-cost video, graphics, and imaging products. The vDB video daughterboard is available with several options, including 10- and 100-Mbps Ethernet connectivity. Prices for the vDB start at $1,395 each.

eInfochips, Ltd., Ahmedabad, India; +91-79-656-3705, www.einfochips.com

DSP Trio Shares 720-MHz Title

Three DBSs, each touting record-breaking 720-MHz clock rates, are designed to boost multichannel density, enhance multifunction flexibility, and raise data bandwidth for higher frame rates and resolution. The TMS320C6414, TMS320C6415, and TMS320C6416 DSPs are all built using TI’s advanced 130-nm copper process technology. Each chip includes 1 Mbyte of high-speed memory, as well as high-speed peripherals for real-time processing.

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Incorporated, Houston, Texas; (800) 477-8924, www.ti.com

32-Channel Data-Processing Card Harnesses TMS320C6711 DSP

Delfin, a high-performance DSP card for PCI-based data acquisition, playback, and coprocessing, features 32 simultaneous analog inputs and six analog outputs, each having 24-bit resolution and a 100-dB spectral dynamic range. The card, which is also available with fewer channels, is built around Texas Instruments’ TMS320C6711 DSP for moving and processing data. The card comes with TI’s Code Composer Studio integrated development environment, a Code Hammer JTAG emulator, and a Pismo toolset. Starting price for Delfin is $7,230. Innovative Integration Inc., Simi Valley, Calif; (805) 520-3300, www.innovative-dsp.com

CodeWarrior Kits for Symbian OS Showcase OMAP Platform

Two additions to the CodeWarrior family of wireless development kits...
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Waveform Generator Breaks Price Barrier
The Agilent 33220A is billed as the first 20-MHz function/arbitrary waveform generator under $1,900 to combine variable-edge pulse and PWM functions with a 50-MHz, 14-bit, 64-kHz point arbitrary waveform capability. The generatorplies direct digital synthesis to create stable, accurate, and clean output signals having low distortion. An optional external time-base reference supplies a 10-MHz clock signal to synchrone multiple units. The Agilent 33220A function/arbitrary waveform generator sells for $1,350. The Opt-00 external time-base reference is $450. Agilent Technologies Inc., Test and Measurement Organization, Santa Clara, Calif.; (650) 752-5000, www.agilent.com

Modular DSP Board Works Alone or In Groups
The HERON HEPC9 PCI DSP carrier board can be used individually or in groups to form extremely powerful DSP systems based on TMS320C6000 DSP platforms, Virtex-II FPGAs, and high-bandwidth analog interfaces. The board accommodates a combination of up to four HERON DSPs, FPGAs, and I/O modules. This modular approach pushes PCI peripheral performance to 9,600 MIPS or 4 GLOPS. Alternatively, each slot can hold a 24-Mgate FPGA or 12- or 14-bit A-to-D and D-to-A converters capable of handling over 100 Mflps. Multiple boards are connected by the HEART communication system, which paves a deterministic 400-MHz data highway. The HERON HEPC9 carrier board sells for $3,570. Optional interboard connectors cost $1,870, and individual DSP, FPGA, and I/O modules start at about $2,000 each. Traquair Data Systems, Inc., Ithaca, N.Y.; (607) 266-6000, www-traquair.com

JTAG Emulator Reaches Back to Expand Coverage
The USB560 JTAG emulator now connects to XDS510-class drivers, extending its compatibility to legacy versions of the TMS320 DSP family. This capability adds to the USB560's existing support of the latest DSP technology, including CCS v2.x and later, through a 480-Mbps USB 2.0 interface. Blackhawk, Mount Laurel, N.J.; (877) 983-4514, www.blackhawk-dsp.com

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DPS Analysis Tool Kit Speeds DSP System Simulation
The Analysis Tool Kit for TMS320C5000 and TMS320C6000 DSP platforms simulates DSP designs up to 21 times faster than prior products. It offers developers full system-level modeling to help optimize code, as well as visibility into hardware and software to catch and fix bugs early in the design cycle. The tool kit is a key component of the Code Composer Studio (CCStudio) Integrated Development Environment, and includes an on-chip cache-memory conflict analyzer; pipeline stall analyzer; code coverage analyzer, and multivariant function profiler. The Analysis Tool Kit is available free of charge to registered users of CCStudio 2.2, which sells for $3,595. Texas Instruments Inc., Dallas, Texas; (800) 477-8924, www.ti.com


Traquair Data Systems, Inc., Ithaca, N.Y.; (607) 266-6000, www-traquair.com

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• TMS320C6416 DSP
• 105 MHz, 14-bit 2 Ch. Analog I/O
• 32 MB RAM
• 6 Million gate Virtex II FPGA
• 32/64-bit PCI bus
• PMC expansion site
• STAR Fabric interface

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In today’s fiercely competitive marketplace, there is a strong need for faster chips to drive new applications and more powerful functionality. The stream of new end products and equipment that execute demanding algorithms also need higher-performance DSPs for more channels so that base stations, for example, can handle more subscribers.

New capabilities such as DSL modems are enabled by high-performing DSPs. At home and central office sites, DSL modems require more powerful DSPs to perform their functions and service multiple channels. New standards such as VDSL and G.fast require more highly compressed media. These conversions require the larger amount of computing ability that higher-performance DSPs offer.

Users also push the infrastructure for more performance. The greater capabilities of the newest cell phones for sending and receiving messages and photos mean the pressure on infrastructures to deliver ever faster service, requiring continual upgrades to avoid user complaints.

In telecommunication infrastructures, an ADSL central office, for example, needs more power to process multiple incoming and outgoing ADSL connections. In digital video, signal transmission is greatly improved by adaptive antenna arrays that can now tune themselves.

The message is clear. The market urgently demands more power, features and functionality from end products and equipment. To compete successfully in this market, developers must use higher-performance DSPs, software and development tools.

Some benefits that application designers reap from higher-performance DSPs, software and development systems include:

- Increased channel density - more channels per card - to facilitate handling more subscribers
- Software compatibility for a better upgrade path, leveraging the code developed on one DSP for more efficient migration to new DSP platforms
- Higher quality video from higher frame rates for faster updating of pixels for better resolution
- Better audio quality at higher compression rates
- Less need for memory storage because of more highly compressed media

The demand for higher-performance DSPs is growing as developers require more processing power and flexibility to meet the needs of today’s demanding applications. DSP Research, Inc. is dedicated to serving the DSP community with modular systems and boards, OEM products, and emulators. We are a trusted partner for reliable solutions in the world of DSP research and development.

Ray Simar is a Texas Instruments Fellow and advanced architecture development manager, Digital Signal Processing, at Texas Instruments, Inc. in Stafford, TX.
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