High-Performance DSP from TI Provides Winning Combination for Telecom, Software Radio and Broadcast Applications

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Texas Instruments Incorporated (TI) (NYSE: TXN) further strengthens its high-performance roadmap in the digital signal processor (DSP) market with the announcement of the new TMS320C6418 DSP, the company´s latest DSP based on the TMS320C64x™ core. The C6418 DSP is optimized to provide a well-balanced combination of performance, memory, peripherals and price tailored for telecom, software radio and terrestrial and satellite broadcasting system applications.

The C6418 DSP, with a BDTImark2000™ benchmark score of 5480 at 600 MHz*, complements TI's other high-performance DSPs. The C6418 features 512 Kbytes of L2 memory, a Viterbi coprocessor (VCP) and an impressive capacity for 2400 16-bit million multiply accumulate cycles (MMACs) per second or 4800 8-bit MMACs per second peak performance. The VCP plays an important role in efficiently extending the real-world system performance of the C6418 device by offloading the core. For example, in software radio applications, the Viterbi decoder saves approximately 30% of a DSP´s processing resources. Applications that utilize Viterbi decoding include Japanese broadcast satellites and communication satellites (BS/CS), Digital Terrestrial Television Broadcasting (DTTB) and Digital Broadcasting System, which promises high-precision positioning data and broadband services to rapidly moving vehicles such as cars or trains.

Also included are key peripherals important for radio and broadcast applications, including two Multi-channel Buffered Serial Ports (McBSPs) for synchronous serial communication, two Audio Serial Ports, a 16-/32-bit microprocessor Host Port Interface and two Inter-Integrated Circuit (I2C) control serial ports. Also included is an on-chip oscillator that lowers overall system cost by enabling developers to use a lower cost crystal in place of an external oscillator.

"The software radio market for satellite and terrestrial reception is beginning to take off and telecom is predicted to resume growth this year. These applications demand DSP devices that provide an optimal combination of performance, memory and peripherals at suitable price points," said Will Strauss, President, Forward Concepts. "The on-chip Viterbi coprocessor of the C6418 enables strong communications performance while providing more processor headroom for customer applications."

A Winning Combination
Committed to accelerating customer development and deployment of electronic devices, TI offers low-cost development DSP starter kits (DSK) and Evaluation Modules (EVM) for the C6418, including the TMDSDSK6416 DSK priced at $395 and the C6418 EVM available from Spectrum Digital for $995. These tools include a complete offering of easy-to-use examples, tutorials and ready-to-run Reference Frameworks based on TI´s DSP/BIOS™ and off-the-shelf algorithms. As all C64x™ devices use the same instruction set, these tools provide an excellent way for engineers to begin early development of key pieces of a system, specifically algorithms, control code and initial software system integration, without having to wait for first prototypes. To further accelerate development, a wide variety of telecom and communications algorithms are available through TI´s extensive eXpressDSP™ third-party program. A list of available algorithms can be found at: www.ti.com/c6418pr.

Pricing and Availability

The new C6418 is available in a 23x23sqmm flip-chip 288-ball BGA package. Currently sampling, TI expects the 600 MHz, 512-Kbyte TMS320C6418 to be in production in October at a cost of $49.50 each in 10Ku quantities.

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