

Multicore DSP delivers increased density



Responding to the growing need for increasing channel densities and higher quality media services in mobile networks, Texas Instruments Incorporated (TI) is offering the industry's highest performance multimedia solution based on its TMS320C6678 digital signal processor (DSP). Ideal for applications such as multimedia gateways, IMS media servers, video conferencing servers and video broadcast equipment, the C6678 offers OEMs a highly dense media solution that is both power and cost efficient at the system level. Based on its newest DSP generation of devices, the TMS320C66x, TI's C6678 features eight 1.25 GHz DSP cores with 320 GMACs and 160 GFLOPs of combined fixed- and floating-point performance on a single device, enabling users to consolidate multiple DSPs to save board space and cost, as well as reduce overall power requirements.

"There is no other DSP in the industry that can support all of the key features needed for the development of high density and high quality multimedia infrastructure products in one device, like ours," said Brian Glinsman, general manager of TI's communications infrastructure business. "Our C6678 based multimedia solution delivers superior levels of performance coupled with improved channel density, providing customers with the right tools, software and support to help accelerate their designs to market."

To ease application development, TI's new multimedia solution includes a comprehensive portfolio of video, audio and voice codecs, which will be accessible through TI's website. The available portfolio of video codecs includes the H.264, H.263, MPEG4, MPEG2, JPEG, VC1, Soren Spark encoders and decoders. New codecs and functions including Universal SVC, MVC, AVC Intra and H.265 are also supported on the C6678 DSP. The portfolio of audio codecs includes the AAC, AACv2, AC3, MP3, WMA8, WMA9 encoders and decoders. The codec portfolio also includes a

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comprehensive set of wireline and wireless voice codecs.

Combined with the multicore software developer's kit (MC-SDK), suite of multicore tools, free codecs and a rich ecosystem of software and hardware partners, the power of TI's multicore DSP enables customers to develop new multimedia infrastructure products that offer greater channel densities, at lower power levels and more cost efficiently. The C6678 is also software compatible with TI's existing TMS320C6000™ DSPs, enabling vendors to reuse their existing software and preserve their investment in TI embedded processors.

The C6678 enables high density solutions for numerous multimedia applications, such as:

Multimedia Application	System Solution Density (# of channels)	
	PCIe card - 8 C6678 DSP	ATCA card - 20 C6678 DSP
Mobile Voice Applications AMR Encode + Decode, 12.2Kbps	11,000	27,500
Mobile Video Applications H.264 BP encode + decode, CIF, 30fps	240	600
Content Delivery Network H.264 BP Encode + Decode, SD, 30fps	120	300
HD Conferencing MCU, MRFP H.264 BP Encode + Decode, 1080p30	12	30
HD Broadcast AVCIntra-50, 10-bit, 4:2:0, 60fps	8	20

Availability

Designers can begin development on the C6678 DSP with the low-cost TMDXEVM6678L evaluation module (EVM) for \$399. The EVM also includes a free

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MC-SDK, Code Composer Studio (CCS) integrated development environment, and suite of application/demo codes to allow programmers to quickly come up to speed on the new platform. Pricing for the C6678 DSP starts at \$169 for 1Ku and order entry is open today for both the C6678 and EVM.

TI's comprehensive suite of multimedia codecs and third party ecosystem solutions will be available in March.

For more information, go to www.ti.com [1].

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Links:

[1] <http://www.ti.com>