Texas Instruments

DaVinci™-Based Products: TMS320DM6467 Processors

What is the new TMS320DM6467 DaVinci digital media processor?

The new DaVinci™ technology solution for digital video applications requiring HD multi-format, real-time transcoding. This offering includes:

- A digital video processor, the TMS320DM6467, based on an ARM926 EJ-S core, TMS320C64x+™ DSP core and HD Video/Imaging Co-Processor, available for U.S. $35.95 at 50 KU.
- The HD-VICP is optimized for multi-format transcoding and provides up to 720p / 1080i MPEG-2, H.264, VC1, MPEG-4 encode/ decode.
- The DM6467 Digital Video Evaluation Module (DVEVM) complete with demos, multimedia codecs and MontaVista Linux Preview Kit, available for U.S. $1,995.

What are the benefits of the DM6467 processor?

The DM6467 processor is the first multi-format, single-chip solution for real-time HD transcoding capabilities to drive video market evolution and provides:

- More than 10× performance for simultaneous HD encode and decode
- Multi-format, video transcoding at 1/10th the cost
- Flexibility and efficiency enables video system optimization
- Proven DaVinci environment and partner ecosystem eases development

What are the key market drivers for the DM6467 processor?

Transcoding is one of the leading issues facing digital video manufacturers and service providers trying to realize the explosive growth in the video entertainment market today. Consumers need to be able to seamlessly move their video between multiple devices and do it on-demand, which requires the ability to transcode many video formats in real-time. This functionality will be mandatory for all future video products and digital signal processing technology is essential to creating the foundation for transcoding among multiple consumer devices.

DAVINCI™
TEXAS INSTRUMENTS

For what applications is the DM6467 processor best suited?

The DM6467 processor is ideal for both the commercial and consumer spaces:

Commercial Market

- Video Broadcast Transcoding
- Video Surveillance DVRs/DVS
- Media Gateways
- Multi-Conferencing Units
- Medical Imaging

Consumers End Equipments

- Digital Media Adaptor
- IP Video Phone
- Videoconferencing
- IP Netcam
- Advanced IP STB

What is transcoding? Can you give some examples of transcoding scenarios?

Transcoding is the ability to take existing video content and change the format, bit rate and/or resolution in order to play it back on another video playback device. It codes and recodes digital content from one compressed format to another to enable transmission over different media and playback over various devices. Transcoding is an essential technology for delivering digital content to video playback devices that were previously incompatible.

A transcoding example would be moving content from a set-top box (STB) to a portable media player (PMP) or cell phone. Transcoding would change the resolution of the content to meet the lower resolution screens and transcode to a lower bit rate to work within the portable device's power constraints. Formats may also need to change from MPEG-2 HD received by a STB via broadcast down to MPEG-4 simple profile at a lower bit rate and resolution for a PMP – so in this case all three variables would be transcoded.

What is the availability of the DM6467 processor?

Samples of the DM6467 processor are available today. The development tools are available for order entry and will be shipping by 1Q08.

What is included with the TMS320DM6467 Digital Video Evaluation Module (DVEVM)?

The DM6467 DVEVM includes:

Operating Systems & Device Drivers

- MontaVista Linux LSP
- Open Source Linux
- Industry/DaVinci APIs

Middleware

- Codec engine framework
- DSP/BIOS™ Link
- Audio/Video frameworks

Multimedia Codecs

- Single-channel and multi-channel video encode/decode
  - H.264
  - MPEG-4
  - VC-1
  - MPEG-2
- Audio encode/decode
  - AAC
  - AC3
  - MP3
- Speech Encode/Decode
  - G.711
  - G.723

How does the DM6467 processor deliver more than 10× performance increase?

The 10× performance gain is generated by three main features: the HD-VICP, TMS320C64x+™ DSP core and the video data conversion engine. The HD-VICP is dedicated to accelerators for motion estimation/compensation, context adaptive coding/decoding, loop filtering. The DSP core usage is reduced from using 450 MHz of the DSP for MPEG-2 SD to using less than 300 MHz of the DSP for H.264 HD. This results in more DSP headroom, allowing for more MIPS and customized algorithms.

How does the DM6467 processor reduce the price by one-tenth the cost?

The DM6467 is available at one-tenth the cost of previous application systems while maintaining the flexibility needed to address multiple video formats. For example, a multi-conferencing unit (MCU) today requires three 1-GHz TMS320C6415T DSPs per HD video channel for processing HD video at a cost of $507 per HD channel. With a DM6467-based MCU, the system is reduced to a single chip HD solution, reducing the per channel cost to U.S. $35.95.

IMPORTANT NOTICE

Texas Instruments Incorporated and its subsidiaries (TI) reserve the right to make corrections, modifications, enhancements, improvements, and other changes to its products and services at any time and to discontinue any product or service without notice. Customers should obtain the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to TI's terms and conditions of sale supplied at the time of order acknowledgment.

TI warrants performance of its hardware products to the specifications applicable at the time of sale in accordance with TI's standard warranty. Testing and other quality control techniques are used to the extent TI deems necessary to support this warranty. Except where mandated by government requirements, testing of all parameters of each product is not necessarily performed.

TI assumes no liability for applications assistance or customer product design. Customers are responsible for their products and applications using TI components. To minimize the risks associated with customer products and applications, customers should provide adequate design and operating safeguards.

TI does not warrant or represent that any license, either express or implied, is granted under any TI patent right, copyright, mask work right, or other TI intellectual property right relating to any combination, machine, or process in which TI products or services are used. Information published by TI regarding third-party products or services does not constitute a license from TI to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from TI under the patents or other intellectual property of TI.

Reproduction of TI information in TI data books or data sheets is permissible only if reproduction is without alteration and is accompanied by all associated warranties, conditions, limitations, and notices. Reproduction of this information with alteration is an unfair and deceptive business practice. TI is not responsible or liable for such altered documentation. Information of third parties may be subject to additional restrictions.

Resale of TI products or services with statements different from or beyond the parameters stated by TI for that product or service voids all express and any implied warranties for the associated TI product or service and is an unfair and deceptive business practice. TI is not responsible or liable for any such statements.

TI products are not authorized for use in safety-critical applications (such as life support) where a failure of the TI product would reasonably be expected to cause severe personal injury or death, unless officers of the parties have executed an agreement specifically governing such use. Buyers represent that they have all necessary expertise in the safety and regulatory ramifications of their applications, and acknowledge and agree that they are solely responsible for all legal, regulatory and safety-related requirements concerning their products and any use of TI products in such safety-critical applications, notwithstanding any applications-related information or support that may be provided by TI. Further, Buyers must fully indemnify TI and its representatives against any damages arising out of the use of TI products in such safety-critical applications.

TI products are neither designed nor intended for use in military/aerospace applications or environments unless the TI products are specifically designated by TI as military-grade or "enhanced plastic." Only products designated by TI as military-grade meet military specifications. Buyers acknowledge and agree that any such use of TI products which TI has not designated as military-grade is solely at the Buyer's risk, and that they are solely responsible for compliance with all legal and regulatory requirements in connection with such use.

TI products are neither designed nor intended for use in automotive applications or environments unless the specific TI products are designated by TI as compliant with ISO/TS 16949 requirements. Buyers acknowledge and agree that, if they use any non-designated products in automotive applications, TI will not be responsible for any failure to meet such requirements.

Following are URLs where you can obtain information on other Texas Instruments products and application solutions:

Products		**Applications**	
Amplifiers	amplifier.ti.com	Audio	www.ti.com/audio
Data Converters	dataconverter.ti.com	Automotive	www.ti.com/automotive
DSP	dsp.ti.com	Broadband	www.ti.com/broadband
Interface	interface.ti.com	Digital Control	www.ti.com/digitalcontrol
Logic	logic.ti.com	Military	www.ti.com/military
Power Mgmt	power.ti.com	Optical Networking	www.ti.com/opticalnetwork
Microcontrollers	microcontroller.ti.com	Security	www.ti.com/security
RFID	www.ti-rfid.com	Telephony	www.ti.com/telephony
Low Power Wireless	www.ti.com/lpw	Video & Imaging	www.ti.com/video
		Wireless	www.ti.com/wireless

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265