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 10x 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.
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

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.

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