

DaVinci™ Processor Offers First Multi-Format, Single-Chip Solution for Real-Time HD Transcoding



Multi-format transcoding enables seamless video transmission across products.

Texas Instruments is offering a new DaVinci digital media processor for video transcoding in commercial and consumer end equipments. The TMS320DM6467 processor enables multi-format, High Definition (HD) video processing at 1/10 the cost and more than 10x the performance for simultaneous HD encode and decode than current solutions. Today's set-top box becomes tomorrow's new digital media adaptor engine that converts video data on demand, in real-time, in any format.

OEMs can now have the optimal solution for seamless interaction

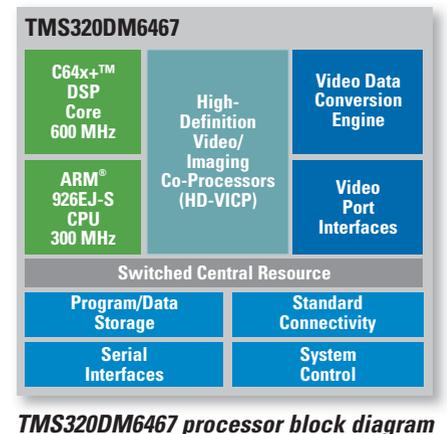
between video content on-the-go, across different devices and in different video formats. The demand for HD video means applications must have more horsepower and memory to manage local transcoding between compression formats with the data-heavy HD formats. The level of integration and optimization of the DM6467 processor delivers performance while maintaining the flexibility and efficiency needed to address multiple video formats.

The new multi-core DaVinci processor comes with an integrated ARM926 core, TMS320C64x+™ DSP core, High-Definition Video/Imaging Co-Processor (HD-VICP), video data conversion engine and targeted video port interfaces. The HD-VICP offers more than 3 GHz of equivalent DSP processing power through dedicated accelerators for HD 1080i H.264 high-profile transcoding, while the video data conversion engine manages video processing tasks,

including downscaling, chroma sampling and menu overlay functionality.

The DM6467 processor is specifically designed to address the HD transcoding challenge for commercial and consumer markets, such as media gateways, multi-point control units, digital media adaptors, digital video servers and recorders for the security market and IP set-top boxes.

Learn more at www.ti.com/dm6467nl.



New Video Casts Highlight the DM6467 Processor Story

Looking for a technical overview of the DM6467 DaVinci processor and tools, along with tech tips, system block diagrams, and more? TI DaVinci experts talk shop in the DM6467 video casts, all under five minutes. Take a few minutes to view the new DM6467 video

casts to learn why this processor is ideal for HD transcoding.

Some of the videocasts include:

- TMS320DM6467 Product Overview
- Transcoding – Shaping the Future of Video Applications
- DM6467 DVEVM Overview

- Broadcast Transcoder and Media Server System Block Diagrams
- Trends and Solutions for Video Surveillance Market

Visit www.ti.com/dm6467videosl for the full selection of DM6467 DaVinci video casts.

TMS320DM6467 Technical Documents Ready for Download

Get technical with the wealth of technical documentation available for the DM6467 processor. Find data manuals, reference guides and user guides for everything from the ARM® subsystem and CPU migration to the USB. Preview a sample of the more than 20 DM6467 technical documents. Visit www.ti.com/dm6467techdocsnl for the complete list.

- TMS320DM6467 Data Manual
- TMS320C64x™ to TMS320C64x+™ CPU Migration Guide
- TMS320DM646x DMSoC ARM Subsystem Reference Guide
- TMS320DM646x DMSoC Peripherals Overview Reference Guide
- TMS320DM646x DMSoC ATA Controller User's Guide
- TMS320DM646x DMSoC Clock Reference Generator (CRGEN) User's Guide
- TMS320DM646x DMSoC DDR2 Memory Controller User's Guide
- TMS320DM646x DMSoC Enhanced Direct Memory Access (EDMA) Controller User's Guide

DM6467 Digital Video Evaluation Module Debuts in 1Q08

The TMS320DM6467 processor takes full advantage of TI's proven DaVinci™ development environment including complete hardware, software and development tools with the DM6467 Digital Video Evaluation Module (DVEVM). The DM6467 DVEVM includes a demonstration version of MontaVista Linux, industry standard and DaVinci application programming interfaces (APIs), DaVinci Codec Engine and a host of multimedia codecs for evaluation. In addition to standard video, imaging, speech and audio codecs, the system includes new transcoders, such as MPEG-2 to H.264. The DM6467 DVEVM will be available in 1Q08.

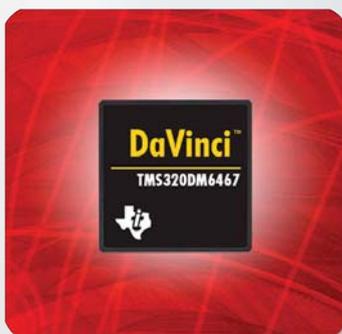
www.ti.com/dm6467dvevml



DaVinci DM6467 At-A-Glance

Get started today with the DM6467 processor and tools for your HD transcoding application. Go to www.ti.com/dm6467nl for all the DM6467 resources available:

- DM6467 Digital Media Processor
- DM6467 Technical Documents
- DM6467 Digital Video Evaluation Module (DVEVM)
- DM6467 Q&A
- DM6467 Video Casts
- Code Composer Studio™ Integrated Development Environment
- eXpressDSP™ Digital Media Software
- TI's DSP Third Party Network



Optimized System Block Diagrams Leveraging the DM6467 Processor

The DM6467 processor is specifically designed to address the HD transcoding challenge for commercial and consumer markets such as media gateways, multi-point control units, digital media adapters, digital video servers and recorders for the security market and IP set-top boxes. Check out system block diagrams to see just how well the DM6467 processor solves the transcoding challenge.

www.ti.com/dm6467blockdiagramsnl

TMS320DM6467 DaVinci™ Processor Q&A

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 technology environment and partner ecosystem eases development

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

Consumer End Equipments

- Digital Media Adaptor
- IP Video Phone
- Video Conferencing
- IP Network Camera
- Advanced IP-STB

Plus many other HD applications.

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.

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 an STB via broadcast up 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.

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

The 10x performance gain is generated by three main features: the HD-VICP, C64x+™ 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 processor 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.

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

The DM6467 DVEVM includes:

Operating Systems & Device Drivers

- Demonstration version of MontaVista Linux LSP
- Open Source Linux
- Industry/DaVinci APIs

Middleware

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

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TMS320DM6467 DaVinci™ Processor Q&A

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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

To view more DaVinci Technology FAQs, please visit www.ti.com/dm6467faqnl.

Organize Your DaVinci Design Schedule

Chart your next DaVinci video application design on this free, erasable DaVinci Design Planner. Sign up to receive your design planner at www.ti.com/designplannernl.



Updated DaVinci Technology Overview Brochure

View the latest edition of the DaVinci Technology Brochure featuring the new TMS320DM6467 processor and tools, along with the array of all DaVinci solutions. It's available for easy download at www.ti.com/dm6467brochurenl.



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