



DM648 Digital Video Development Platform

TMDSDVP648



Description

DaVinci™ TMS320DM648 Digital Video Development Platform (DVDP) simplifies development of digital video applications. The DM648 DVDP provides developers with a comprehensive hardware and software platform that can be used throughout the entire design process to accelerate the development of a wide range of applications such as multi-channel video security and infrastructure applications, including digital video recorders (DVRs), IP video servers, machine vision systems and high-performance imaging applications.

The DM648 EVM offers multiple expansion slots for extending connectivity to virtually any hardware prototype or peripheral. The PCI Host Driver expands configuration options for developers by enabling them to plug the DM648 EVM directly into a PC to use the PC as a host during initial development before prototype hardware is designed and available. The EVM board is populated with a standard JTAG header for compatibility with XDS560-based emulators and the 60-pin high density trace connector for capturing real-time data values non-intrusively with the [Blackhawk XDS560 Trace Emulator](#).

The DVDP includes TI's field-proven DSP/BIOS™ kernel as well as the DSP/BIOS-based DVSDK. The DVSDK features TI's Codec Engine Framework, xDAIS™ interface standard developers kit and framework components, XDC configuration tools and platform support such as drivers, examples and documentation. The DVSDK also includes an evaluation version of the Network developers kit and a variety of A/V codec packaged to use with the codec engine framework.

The DM648 DVDP kit also contains demonstration software of a video server based on Ittiam's Video Security Media System (VSMS). This video server demonstration consists of an 8-channel streaming server with H.264 BP at CIF-PAL and CIF-NTSC with Bit Optimal CBR (BOCBR) capability. BOCBR achieves higher

storage efficiency. It optimizes bit allocation based on motion and can achieve zero bit consumption at user defined control point.

The demo comes in two configurations:

- One supporting 8 camera inputs
- The other supporting one camera and duplicating 8 instances of the video encoded and streamed (enabling multi-channel in the absence of 8 cameras).

VSMS has been optimized for the DaVinci architecture and supports configurable bit-rate, frame rate & resolution; any xDM compliant codec; multiple video, image, audio, speech coding standards and multiple streaming formats. In addition, VSMS is portable across the DaVinci generation.

Rounding out the software offering is SoC Analyzer, TI's high-level system tuning and visibility tool which enables developers to visualize SoC streaming data rather than be limited to post-mortem static data analysis. By being able to capture and graphically display system interactions and load distribution, isolate bottlenecks, identify unexpected behaviors, and benchmark application performance, developers are able to maximize efficiency and overall performance while eliminating tedious manual data collection and comparison.

Features

Note: DM648 DVDP requires registration, in order to download the related software. Look for instructions in the box with purchase.

The DVDP comes with multiple demo options, leveraging the complete DaVinci infrastructure which can be used as a how-to for developers or as a starting point for product development. Sample A/V files are included for immediate out-of-the-box evaluation.

1. Simple self-contained demos burnt into boot flash memory - Runs out of the box
 - a. DM648 EVM video demo with PC host application
 - b. Capture/Preview
 - c. Simultaneous Video Encode/Decode
 - H.264 (Baseline Profile) Video Encode/Decode, G.711 Speech Encode/Decode (CIF)
2. PC-based high-level demos (Ethernet-to-PC connection)
 - a. Encode demo modes
 - H.264 BP Encode + G.711 Speech Encode
 - MPEG-4 SP Encode + G.711 Speech Encode
 - MPEG-4 SP Video Encode + MPEG-4 SP Video Decode + G.711 Encode/Decode
 - b. Decode demo modes
 - MPEG-4 SP Video Decode + G.711 Speech Decode
 - H.264 BP Video Decode + G.711 Speech Decode
 - c. Host PC Application for data transfer and storage

[TI Software Codecs](#) - Demo codecs, optimized for the DM648, are available with the DVDP. TI has additional production-licensed codecs available for download.

What's Included

- [TMS320DM648, Digital Media Processor](#)
- Connectivity - CD-quality audio input and output
- Connectivity - Daughter card connections to most peripheral interfaces
- Connectivity - Gigabit Ethernet
- Connectivity - PCI, 10/100 Ethernet MAC
- Connectivity - S/PDIF Interface, analog, and optical interface for CD-quality audio I/O
- Connectivity - UART, CAN I/O, and VLYNQ
- Connectivity - Video input via NTSC/PAL
- Connectivity - Video input via NTSC/PAL composite or S-video input
- Emulation – Standard JTAG header and 60-pin high density trace header
- Hardware - TMS320DM648 DaVinci™ processor-based Evaluation Module (EVM)
- Hardware - Universal power supply (+5V) and US, UK and Euro power cords
- Hardware – Ethernet Cable, VGA to Component video cable, S-Video break-out cable
- Software - Codec evaluation including: H.264, MPEG-4, G.711
- Software - Network Developers' Kit (NDK) Evaluation (Real-time TCP/IP stack)
- Software - PC-based demo video application and sample Audio/Video files
- Software - Register CSL/ BIOS Drivers and board support package
- Software - SoC Analyzer for system-level tuning and optimization
- Software – Ittiam Video Security Demonstration software
- Software – Operating Systems (OS) – DSP/BIOS
- Software – TI's DSP/BIOS Based DVSDK with Codec Engine and Framework components