Texas Instruments Technology for Innovators™

DaVinci Digital Video Software Development Kit (DVSDK)

DVSDK 3.10 Release Notes (3.10.00.19)

22 June 2010
Document Revision: 1.0

Introduction

This is the final product release of the DaVinci Software Development Kit (DVSDK) v3.10 for the DaVinci DM365, DM355 and DM6467T platforms. This DVSDK Software release, coupled with the Linux Platform Support Package (PSP) GIT releases, gives developers the ability to evaluate the hardware and software capabilities of the DaVinci platform. In conjunction with the Linux kernel version 2.6.32-rc2, developers will be able to evaluate the ARM Linux programming environment and easily utilize the powerful hardware support for the DaVinci digital media codecs.

This document is divided into the following sections:

Documentation

- Latest up to the minute DaVinci information and updates may be found on the DaVinci Technology Developers Wiki.
- DVSDK 3.10 Release Page - DVSDK 3.10 Getting Started Guides and download informations.

What's New

Compared with the previous DVSDK 2.x GA releases on these platforms, this release adds the following main features:

- Migration to open source Linux kernel version 2.6.32-rc2
- Support 1 GHz DM6467T EVM and enable H.264 BP Decoder @ 1080p60
- Updates to all components

The following codecs are available as a part of this release

- **DM6467T**: H.264 BP Decoder (1080p60), H.264 MP/HP Decoder (1080p30), H.264 BP Encoder (720p30), H.264 BP Encoder (1080p30), MPEG4 SP Encoder/Decoder, MPEG2 MP Decoder, JPEG Encoder/Decoder, G.711 Encoder/Decoder, AAC HE/LC Decoder
- **DM365**: H.264 HP Encoder (1080p12, 720p30), H.264 HP Universal Decoder (1080p8, 720p24, D1@30fps), MPEG4 SP Encode (1080p20, 720p30), MPEG4 SP Universal Decode (1080p9, 720p24, D1@30fps), MPEG4 ASP Universal Decode (1080p8, 720p20, D1@30fps), MPEG2 MP Encode (1080p12, 720p30), MPEG2 MP Decode (1080p25, 720p30), VC1 AP Decode (720p22, D1@30fps), JPEG Encode (SXVGA@30fps, 60 MP/sec), JPEG Decode (SXVGA@30fps, 60 MP/sec), AAC-LC Encode (128 kbps, 44.1 kHz, stereo, TNS), AAC-LC Decode (128 kbps, 48 kHz, stereo), G.711 Encode (64 kbps, 10 ms frame, mono), G.711 Decode (64 kbps, 10 ms frame, mono)
- **DM355**: MPEG4 SP Encoder/Decoder (720p30), JPEG Encoder/Decoder

Components in DVSDK Package

The DVSDK contains the following components.

linuxutils_2_25_04_10	Contiguous memory allocator, EDMA modules for Linux
codec_engine_2_25_05_16	The Codec Engine provides a framework for creating and interacting with multimedia codecs, running either locally or on another processor (DSP), via a Linux C-callable API that reflects the base XDM interfaces
dm365_codecs_03_10_00_07	MPEG4, JPEG, H264, MPEG2, G.711 codecs for both encoding and decoding & VC1 decoder on DM365 platform
dm355_codecs_03_10_00_02	MPEG4, JPEG codecs for both encoding and decoding on DM365 platform
dvsdk_demos_3_10_00_16	Demo applications that illustrate usage of Linux drivers and codecs
dmai_2_10_00_12	Davinci Multimedia Application Interface
framework_components_2_25_02_06	Framework Components, a collection of framework-independent utility libraries which other software frameworks can build upon.
Kernel Binaries	Platform/LSP specific prebuilt .ko files
xdais_6_25_02_11	xDAIS product contains the DSP Algorithm Interface Standard specification and related documentation and examples. XDAIS includes the XDM interface standard.

dvtb_4_20_10	Digital Video Test Bench
xdctools_3_16_01_27	XDCtools contains RTSC standard related utilities.
bios_5_41_00_06	DSP BIOS module
biosutils_1_02_02	BIOS Utils for the DM6467 Codec Server
dsplink_linux_1_64	DSP LINK package
edma3_lld_01_11_00_03	EDMA3 Low level Device Driver package
cg_xml	Collection of Perl scripts that do post processing on linker and OFD XML output which is generated by CodeGen Tools

Dependent Components Outside of DVSDK Package

Each of the components listed below need to be downloaded as separate packages. Links to each package is provided in the DVSDK 3.10 download page.

- Code Sourcery 2009 q1 ARM Tool Chain: Cross-compiler tools for ARM
- Codegen 6.1.12 Tools: Cross-compiler tools for DSP (for DM6467T platform)
- Linux Target File System: A complete bootable file system with extensive Linux tools and runtimes
- Linux Product Support Package (PSP) release r37: Linux 2.6.32-rc2 kernel and drivers for DM365/DM355/DM6467T platforms
- CS2DM6467 1.0.0.10: Codec server for DM6467 and DM6467T platforms

Installation and Usage

Please follow instructions in the Getting Started Guide for the each platform.

Host Support

This release was tested using Ubuntu 8.04 LTS. Though other host distributions can be used, they will not be supported.

Dependencies

Code Composer Studio (CCS) 3.3. CCS 3.3 and a compatible emulator is needed for initial (or recovery) flashing of the initial bootloader (UBL) and U-Boot. As long as these components remain functional, CCS 3.3 will not be needed.

Device Support

- **DM365**: This release supports the Texas Instruments DM365 SoC as well as the Spectrum Digital DM365 Evaluation Module (EVM). For Spectrum Digital DM365 Evaluation Module drivers and firmware, please visit the Spectrum Digital DM365 site at http://support.spectrumdigital.com/boards/evmdm365.

- **DM355**: This release supports the Texas Instruments DM355 SoC as well as the Spectrum Digital DM355 Evaluation Module (EVM). For Spectrum Digital DM355 Evaluation Module drivers and firmware, please visit the Spectrum Digital DM355 site at http://support.spectrumdigital.com/boards/evmdm355.

- **DM6467T**: This release supports the Texas Instruments DM6467T SoC as well as the Spectrum Digital DM6467T Evaluation Module (EVM). For Spectrum Digital DM6467 Evaluation Module drivers and firmware, please visit the Spectrum Digital DM6467T site at http://support.spectrumdigital.com/boards/evmdm6467t.

- **DM6467**: This DVSDK release does not explicitly support the older DM6467 EVM platform. However, some components (such as the PSP drivers) may support both the DM6467 and DM6467T EVM platforms. Please refer to the individual components' release notes for the list of devices and platforms that they support. Users who have the older DM6467 EVM are currently advised not to upgrade from the existing DVSDK 2.0.0.22.

Validation Information

This release has gone through a full validation test cycle and is generally available to all customers.

Upgrade and Compatibility Information

Please refer to the DVSDK 3.10 Migration Guide for upgrade and compatibility information.

Known Issues/Limitations

The complete list of defects can be obtained from the DVSDK 3.10 bug list.

Note: If prompted for login/password, close the window and click on the link again.

Technical Support and Product Updates

General Support

- For technical discussions and issues please check out Texas Instruments Embedded Processors Wiki.
- For questions and support on this release, please visit support.ti.com.
- The Embedded Software Linux forum is a forum for discussing the Linux DVSDK development.

Custom Support

Third-Party Developer Support for DaVinci (c) technology: Valued members of the TI DSP Developer Network provide integral components and tools that complement DaVinci technology. Third-party developers offer various levels of video system integration, optimization and system expertise on products based on

DaVinci Technology worldwide. Visit www.ti.com/davinci3p for a list of third-party developers who support DaVinci technology and information on their application.

Additional Resources

For more information, visit www.ti.com.