



Technology for Innovators™

OMAP3x Digital Video Software Development Kit (DVSDK)

DVSDK 3.01.00.06

Important Note: Users must install the OMAP3x DVSDK in order to access certain documentation hyperlinks in this document.

Introduction

This Linux DVSDK Software release for OMAP3525 and OMAP3530 platforms gives developers the ability to evaluate the hardware and software capabilities on OMAP35x DVEVM platform and to begin development using the DSP and video accelerators available on OMAP35x.

This is an OMAP3x DVSDK v3.01 Alpha (2) release that contains support for video encode demonstrations with de-interlacer integrated on OMAP3525 and OMAP3530 platforms. This release is also an improvement to the earlier Alpha (1) release. For more information on the defects fixed, refer to the Defects Fixed section below.

- [Features Supported In Current Release](#)
- [Change Log](#)
- [Migration Guide](#)
- [Documentation](#)
- [DVSDK Package Contents](#)
- [Installation and Usage](#)
- [Upgrade and Compatibility Information](#)
- [Host Support](#)
- [Dependencies](#)
- [Device Support](#)
- [Exceptions and Known Issues](#)
- [Defects Fixed](#)
- [Limitations](#)
- [Special Notes](#)
- [Technical Support and Product Updates](#)

Features Supported In Current Release

This DVSDK release includes support for OMAP3x platforms with the following features:

- Alignment with Linux Platform Support Package (PSP) GIT release v03.00.00.05
- XDM 1.0 Codecs from TI.
 - Audio: AAC LC/HE Decoder
 - Image: JPEG Encoder/Decoder
 - Speech: G.711 Encoder/Decoder
 - Video: H.264 BP Encoder/Decoder, MPEG4 SP Encoder/Decoder, MPEG2 Decoder

- De-interlacer – Converts the interlaced frames to progressive.
- Backward compatible with OMAP35x ES2.1 Silicon version with 128MB LPDDR.
- Digital Video Test Bench: Test bench for evaluating various codecs configurations and Linux PSP.
- The MFP package, DSP Link, DVTB and codec servers are built with Linux PSP GIT release v3.00.00
- DVSDK Decode Demos
 - Standard definition decode and display
 - Display on on-board LCD or external monitor over DVI interface
 - On-board keypad based input interface
- DVSDK Encode Demos
 - Real time standard definition capture and encode with preview
 - Support for both interface as well as command line encode demos
 - Integrated the de-interlacer to reduce the capture artifacts
- DMAI Examples for file based decode and file based encode
- This update can be installed independently of earlier releases

Change Log

Change since DVSDK 3.01.00.03

- Added support for de-interlacer in the encode demos
- Added support for G.711 speech encode in the encode demos as well as G.711 speech decode in the decode demos
- Included support for double buffering in the DMAI
- DSPLink module updated from version 1.64.00.04 to 1.65.00.01
- Linux PSP SDK updated from v3.00.00.03 to v3.00.00.05
- Codec Engine, Framework Components, Linux Utils, XDAIS and XDC tools versions are updated
- Defect Fixes

Refer to the version log

(http://wiki.davincisp.com/index.php/OMAP35x_DVSDK_Version_Log) for version related information on the current and previous releases

Migration Guide

NA

What's broken in this release

NTR

Documentation

- [OMAP3530 DVSDK Getting Started Guide](#) - Hardware and software overview, including how to run demos, install software, and build the demos.
- [BIOS Utilities](#).
- [Contiguous Memory Allocator](#).
- [Codec Engine Release Notes](#).
- [Decode Demo Information](#).
- [Encode Demo Information](#).
- [DaVinci Multimedia Application Interface \(DMAI\) Release Notes](#).
- [Digital Video Test Bench \(DVTB\)](#).

- [Framework Components.](#)
- [XDAIS Release Notes.](#)

DVSDK Package Contents

The DVSDK contains the following components:

biosutils_1_02_02	BIOS Utilities
linuxutils_2_25_01_06	Contiguous memory allocator for Linux
codec_engine_2_25_01_06	The Codec Engine provides a framework for creating and interacting with multimedia codecs
ceutils_1.06	RTSC Package Wizards
Cg_xml_v2_12_00	CG XML Utilities
dvsdk_demos_3_01_00_09	Demo applications that illustrate usage of Linux drivers and codecs
dmai_2_05_00_08	DaVinci Multimedia Application Interface
dvtb_4_20_04	Digital Video Test Bench (DVTB) is an interactive application for evaluating codec performance
dsplink_linux_1_65_00_01	Foundation software for the inter-processor communication across the GPP-DSP boundary.
framework_components_2_25_01_05	Framework Components is a collection of framework-independent utility libraries which other software frameworks can build upon.
kernel binaries	Linux PSP specific prebuilt .ko files
xdais_6_25_01_08	xDAIS product contains the DSP Algorithm Interface Standard specification and related documentation and examples.

The DVSDK depends on the following components:

AM35x-OMAP35x-PSP-SDK-03.00.00.05	Linux Platform Support Package. Includes Linux kernel, device drivers, and bootloader with boot support from NAND and Ethernet.
cs1omap3530_1_01_00	Codecs for decoding AAC, MPEG4, etc.
bios_5_41_00_06	Stand-alone DSP/BIOS.
Xdctools_3_16_01_27	TI XDC tool.
cg6x_6.1.12	TI C6x CodeGen tools.
Code sourcery tool chain arm-2009q1-203	OMAP3 Linux toolchain

In addition, different types of Linux Target File Systems are supplied as part of the DVSDK install, each containing Linux runtime tools. Please refer to the Getting Started Guide for more details.

Installation and Usage

Please follow the [OMAP3530 DVSDK Getting Started Guide](#) for detailed installation and usage instructions.

Upgrade and Compatibility Information

The OMAP3530 DVSDK release is independently installable. No upgrade instructions are available with this release.

Host Support

This release supports installation and development on Linux Redhat 4 workstations.

Dependencies

The only known dependencies at this time are Code Composer Studio 3.3, a compatible emulator, and the OMAP35xx CCS 3.3 Chip Support Package. You can access the CSP externally via the Update Advisor site, https://www-a.ti.com/downloads/sds_support/ChipSupportPackages.htm. These are needed for initial (or recovery) flashing of the bootloader (UBL) and U-Boot. As long as these components remain functional, CCS 3.3 is not required.

If you are using an SDI emulator please check the SDK link <http://support.spectrumdigital.com/index.html?osCsid=5f85615239c48ed88e27003660a76dfd> for the latest drivers to enable CCS setup.

mkfs.jffs2 utility is required to build a new NAND image, this may be downloaded from <http://sources.redhat.com/jffs2/>

Device Support

This release supports the Texas Instruments OMAP3530 and OMAP3525 SoC as well as the OMAP35x Evaluation Module (EVM).

Exceptions and Known Issues

[Exceptions and known issues](#)

Defects Fixed

[Defects Fixed](#)

Limitations

[Limitations](#)

Special Notes

- The decode demo does not resize D1 decoded images to VGA before displaying it on the on-board LCD. It performs cropping at the edges.
- The out-of-the-box, pre-built DVSDK decode demo does not support decode of MPEG2 MP video and JPEG image streams. To evaluate these decoders, use either the Digital Video Test Bench (DVTB) or the Davinci Multimedia Application Interface (DMAI). Please refer to the user guides of these modules for more information.
- The default video output display is the on-board LCD.

- The DVSDK release does not contain the MP3, but the productized version of this decoder is available. If interested, kindly download the codec from the DVSDK 3.01 download page or contact the DVSDK support mailing list for more information. Refer [http://wiki.davincidsp.com/index.php?title=How do I Integrate new codecs into DVSDK](http://wiki.davincidsp.com/index.php?title=How_do_I_Integrate_new_codecs_into_DVSDK) to integrate the MP3 Codecs with the existing Codec Combos.
- While using DVTB to test different codecs with various parameter configurations, it is important to change the loadmodules.sh to allocate the CMEM pools as per the configuration used. However, for most test cases, the loadmodules.sh provided with the DVSDK will work.
- In order to experience the demos and examples that comes with OMAP3530 DVSDK, please refer to the [OMAP3530 DVSDK Getting Started Guide](#).
- The mkfs.jffs2 may be downloaded from <http://sources.redhat.com/jffs2/>.

Technical Support and Product Updates

Please register your EVM serial number as instructed on the printed Read Me 1st Card in order to download the updated software release as soon as it becomes available.

- For questions and support on the OMAP3530 DVSDK, please e-mail support@ti.com or post your questions at <http://e2e.ti.com>
- Please be sure to read the Digital Video Software Development Kit (DVSDK) release notes, printed documentation and Getting Started Guide for general information.
- Check for OMAP3530 software updates at www.ti.com/omapsoftwareupdates. This site provides the latest software and device support. To access this site, you must register your EVM first.
- A developer wiki site is available at http://wiki.davincidsp.com/index.php?title=Main_Page. For information on OMAP35x, search for OMAP35x in the google toolbar embedded in the page. User contributions are encouraged.