

# DM814x EZSDK 5.04 Release Notes

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## Easy Software Development Kit (EZSDK) 5\_04\_00\_11 for the DM814x

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This is an Alpha release of the Easy Software Development Kit (EZSDK) 5.04 for the DM814x platform. This EZ SDK Software release gives developers the ability to evaluate the hardware and software capabilities of the DM814x platform. Developers will be able to evaluate the ARM Linux programming environment and easily utilize the hardware support for powerful DSP algorithms and multimedia acceleration.

This document is divided into the following sections:

### Contents

- [1 Easy Software Development Kit \(EZSDK\) 5\\_04\\_00\\_11 for the DM814x](#)
  - ◆ [1.1 Documentation](#)
  - ◆ [1.2 Components](#)
  - ◆ [1.3 What's New](#)
  - ◆ [1.4 Installation and Usage](#)
  - ◆ [1.5 Host Support](#)
  - ◆ [1.6 Dependencies](#)
  - ◆ [1.7 Device Support](#)
  - ◆ [1.8 Validation Information](#)
  - ◆ [1.9 Upgrade and Compatibility Information](#)
    - ◇ [1.9.1 Changes to Uboot](#)
    - ◇ [1.9.2 Filesystem Upgrade](#)
    - ◇ [1.9.3 NAND Flash Changes](#)
  - ◆ [1.10 Known Issues and Limitations](#)
  - ◆ [1.11 Versioning](#)
  - ◆ [1.12 Technical Support and Product Updates](#)
  - ◆ [1.13 Additional Information](#)
    - ◇ [1.13.1 E2E Forum Support](#)

## Documentation

- Latest up to the minute information and updates may be found on the [Texas Instruments Embedded Processors Wiki](#).
- The *Quick Start Guide* contains information on how to set up your EVM for an out of box demo showcase as well as for software development. It is located in the *docs/* folder in the EZ SDK along with other documentation.
- The *Software Developer's Guide* contains information on how to start developing software on the DM814x EVM and is located in the *docs/* folder in the EZSDK along with other documentation.

## Components

The Linux EZSDK for DaVinci DM814x is a single package that includes the following components:

- Platform Support Package
  - ◆ Linux kernel 2.6.37
  - ◆ Boot loaders (u-boot)
- DSP Package
  - ◆ Codec Engine Framework
  - ◆ C6000 code generation tool chain
  - ◆ SYS/BIOS Real Time Operating System
  - ◆ SYS/Link Inter Processor Communication
  - ◆ Remote Processor Execute
- Graphics Package
  - ◆ Neon accelerated Qt application framework
    - ◇ Support for SGX Acceleration in QT (Engineering Release)
  - ◆ 3D Graphics Support
- Multimedia Package
  - ◆ OpenMAX IL libraries
    - ◇ H.264 Encode and Decode
    - ◇ MPEG4 Encode and Decode
    - ◇ VC-1 Decode
    - ◇ AAC-LC Decode
    - ◇ AAC-LC Encode (Requires separate codec download)
    - ◇ MP3 Decode (Requires separate codec download)
  - ◆ GStreamer libraries and plugins
    - ◇ GST-OpenMax
  - ◆ WLAN and Crypto Libraries
- Demos
  - ◆ OMTB - tool to easily create different OpenMAX IL component chains
  - ◆ Matrix GUI Launcher
  - ◆ Benchmarking applications

The Software Build of Materials can be found at [http://processors.wiki.ti.com/index.php/Category:EZSDK\\_Software\\_BOM](http://processors.wiki.ti.com/index.php/Category:EZSDK_Software_BOM).

## What's New

The following high-level features are new from EZSDK 5.03 product release:

- Bug Fixes
- Newer versions of underlying components
- Support for 688M linux memory via two holes
- Support for WLAN and Crypto Libraries
- Inclusion of RPE for lightweight DSP Access from Linux

Details on previous releases and the features as they were introduced can be found at [http://processors.wiki.ti.com/index.php/EZSDK\\_Roadmap](http://processors.wiki.ti.com/index.php/EZSDK_Roadmap)

## Installation and Usage

The *Software Developer's Guide* contains information on how to start developing software on the DM814x EVM and is located in the *docs/* folder in the EZSDK along with other documentation.

## Host Support

This release supports [Ubuntu 10.04 LTS 32-bit](#) and [Ubuntu 11.10 32 bit](#) as your development host.

## Dependencies

The EZSDK requires the CodeSourcery toolchain, a link is provided on the EZSDK 5.04 Release Page or provided with a CD in your EVM kit.

## Device Support

This EZSDK supports the DM814x EVM.

## Validation Information

This release has been tested with ES 2.1 Silicon with EVM Base board Revision-B and an Expansion IO Card Revision-A having an LCD panel attached.

## Upgrade and Compatibility Information

By default, this version of the SDK is designed to work out of the box with a Touchscreen LCD on an Expansion IO Card. If you do not have this card connected to the DM814x/AM387x EVM, then the SDK does support changing HDMI as the default display. Please run the following steps on the target

```
target # cd /usr/share/ti/ti-media-controller-utils
target # ./change_display hdmi
```

Now power cycle your board. Once the board comes up it will be setup to use HDMI by default. For more information please read the *Software Developer's Guide*.

## Changes to Uboot

Uboot needs to be updated from the previous release as this SDK brings in new versions of the PSP U-Boot.

## Filesystem Upgrade

It is recommended that the filesystem from this SDK release is used as it brings in the newer linux libraries, new kernel objects and updated demo applications.

## NAND Flash Changes

1. The default ECC scheme used across Uboot, Kernel and File System is changed to 8-bit BCH ECC.
2. The release supports both 8 and 16 bit NAND flash. To use 8-bit NAND, set the CS0BW (buswidth) switch on the EVM to OFF state. To use 16-bit NAND, set the CS0BW (buswidth) switch on the EVM to ON state.

Please read the PSP Release notes for details on the NAND Flash changes. Note that you must to change CS0BW switch to ON state in order to access the NAND on the EVM.

**Note:** CS0BW switch is the 8th Pin on the EVM Boot Mode Switch.

## Known Issues and Limitations

### Known Issues

1. SDOCM00073168 - SDK installer deletes the entire contents of the install folder when installation is cancelled (Cloned from DVSDK 4.0).
2. SDOCM00085969 - Syslink Sample applications do not run out of the box. Workaround - The BIOS dmtimer has to be reconfigured for 20MHz. The samples need to be rebuilt and run.
3. SDOCM00085970 - Codec Engine Example applications do not run out of the box. Workaround - The BIOS dmtimer has to be reconfigured for 20MHz. The examples need to be rebuilt and run.
4. SDOCM00086122 - QT Multi: Driver does not repaint all regions. As a result when using multiple graphics planes, only one will be refreshed. No Workaround exists.
5. SDOCM00087096 - Unable to display on some TVs at 1080i. Workaround none exist.

### Limitations

1. The EZSDK does not ship with a full Graphics SDK installation but only contains the Kernel sources, OpenGL libraries and header files. As a result it is not possible to build the OpenGL Demos from within the EZSDK. To get the full Graphics SDK which includes demos, you can download the latest version from [http://software-dl.ti.com/dsps/dsps\\_public\\_sw/sdo\\_sb/targetcontent/gfxsdk/latest/index\\_FDS.html](http://software-dl.ti.com/dsps/dsps_public_sw/sdo_sb/targetcontent/gfxsdk/latest/index_FDS.html)
2. The Multimedia demo for Decode and Display on LCD is tuned for the LCD. If the target filesystem is booted in HDMI display mode and this demo is run then the display will not be shown correctly. This limitation is by design and this demo should be run only when the display is set to LCD mode.
3. This release has a degradation in the overall out of the box boot time of the EZSDK. Please see the Wiki topics on Fast Boot and Fast Boot Streaming on TI's Processor's wiki on more information on how to improve the boot time.

## Errata

Additional Errata information is maintained on TI's Processor Wiki at [http://processors.wiki.ti.com/index.php/Category:EZSDK\\_Errata](http://processors.wiki.ti.com/index.php/Category:EZSDK_Errata).

## Versioning

This is an Alpha release (EZSDK 5\_04\_00\_11) for DM814x.

## Technical Support and Product Updates

Latest up to the minute information and updates may be found on the [Texas Instruments Embedded Processors Wiki](#).

The [Embedded Software Linux forum](#) is a forum for discussing the Linux EZSDK development. New versions of the EZSDK are also announced here.

The [EZSDK download page](#) is a top level page for finding the latest EZSDK releases for all TI platforms.

## Additional Information

1. EZ SDK FAQ is available and will contain updated information on questions - [http://processors.wiki.ti.com/index.php/EZ\\_SDK\\_FAQ](http://processors.wiki.ti.com/index.php/EZ_SDK_FAQ)
2. Embedded Processor Wiki - [http://processors.wiki.ti.com/index.php/Main\\_Page](http://processors.wiki.ti.com/index.php/Main_Page)
3. Open Source Wireless Connectivity Wiki  
[http://processors.wiki.ti.com/index.php/ARM\\_Processor\\_Open\\_Source\\_Wireless\\_Connectivity](http://processors.wiki.ti.com/index.php/ARM_Processor_Open_Source_Wireless_Connectivity)
4. WLAN Demos:
  1. WLAN Station  
[http://processors.wiki.ti.com/index.php/Open\\_Source\\_Wireless\\_Connectivity\\_WLAN\\_and\\_Bluetooth](http://processors.wiki.ti.com/index.php/Open_Source_Wireless_Connectivity_WLAN_and_Bluetooth)
  2. WLAN Access Point  
[http://processors.wiki.ti.com/index.php/Open\\_Source\\_Wireless\\_Connectivity\\_WLAN\\_and\\_Bluetooth](http://processors.wiki.ti.com/index.php/Open_Source_Wireless_Connectivity_WLAN_and_Bluetooth)
  3. WiFi Direct  
[http://processors.wiki.ti.com/index.php/Open\\_Source\\_Wireless\\_Connectivity\\_WLAN\\_and\\_Bluetooth](http://processors.wiki.ti.com/index.php/Open_Source_Wireless_Connectivity_WLAN_and_Bluetooth)

## E2E Forum Support

1. E2E Linux Forum - <http://e2e.ti.com/support/embedded/f/354.aspx>
2. E2E DaVinci Processor Forum - [http://e2e.ti.com/support/dsp/davinci\\_digital\\_media\\_processors/default.aspx](http://e2e.ti.com/support/dsp/davinci_digital_media_processors/default.aspx)
3. E2E WLAN Applications Forum - [http://e2e.ti.com/support/low\\_power\\_rf/f/307.aspx](http://e2e.ti.com/support/low_power_rf/f/307.aspx)