

DM816x C6A816x AM389x EZSDK 5.02 Release Notes

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Easy Software Development Kit (EZSDK) 5_02_02_60 for the DM816x/C6A816x/AM389x

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This is an Early Adopter release of the Easy Software Development Kit (EZSDK) 5.02 for the DM816x/C6A816x/AM389x platform. This EZ SDK Software release gives developers the ability to evaluate the hardware and software capabilities of the DM816x/C6A816x/AM389x 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.

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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 DM816x/C6A816x/AM389x EVM and is located in the *docs/* folder in the EZSDK along with other documentation.

Components

The Linux EZSDK for DaVinci DM816x, Integra C6A816x and Sitara AM389x 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
 - ◆ C6Accel - easy access to DSP accelerated function libraries
 - ◆ C6Run - tool to easily run C code on the DSP
- Graphics Package
 - ◆ Neon accelerated Qt/WebKit application framework
 - ◆ 3D Graphics Support
- Multimedia Package
 - ◆ OpenMAX IL libraries
- Demos
 - ◆ OMTB - tool to easily create different OpenMAX IL component chains
 - ◆ Signal Analyzer Demo that showcases DSP Acceleration with QT 2D Graphics
 - ◆ Matrix GUI Launcher
 - ◆ Benchmarking applications

What's New

The following high-level features are new from EZSDK 5.01 product release:

- This release adopts a new directory structure for the EZSDK.
- This release adds new OMX features such as OMX on DSP and fixes critical issues such as OMX Teardown.
- This release changes the directory names of Sys/Bios, Codec Engine and Framework Components to fix Eclipse plugin integration issues.
- This release integrates new versions of underlying linux libraries.
- This release has a new memory map with support for reconfiguration.
- This release adds support for MP3 and AAC audio codecs.

This release fixes the following issues.

1. SDOCM00083663 Missing target to build Media Controller Utils in toplevel Makefile

Installation and Usage

The *Software Developer's Guide* contains information on how to start developing software on the DM816x/C6A816x/AM389x EVM and is located in the *docs/* folder in the EZSDK along with other documentation.

Host Support

This release only supports Ubuntu 10.04 LTS 32-bit as your development host.

Dependencies

The EZSDK requires the CodeSourcery toolchain, a link is provided on the EZSDK 5.02 Release Page or provided with a CD in your EVM kit.

Device Support

This EZSDK supports the DM816x/C6A816x/AM389x EVM.

Validation Information

This release has been tested with EVM Base board Revision-C and Expansion IO Card.

Upgrade and Compatibility Information

Changes to Uboot

Uboot needs to be updated from the previous release as this SDK brings in new versions of the PSP U-Boot. An additional bootarg needs to be added to previous bootargs - `notifyk.vpssm3_sva=0xBF900000`

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.

DDR2 EVMs Compatibility

This release supports for EVMs with DDR3 memory by default. If you have a DDR2 EVM, then this release will not work out of the box.

Special instructions for DDR2 EVMs

1. The U-Boot needs to be rebuild for DDR2 EVMs. Please refer the *Software Developers Guide* for instructions on how to update U-Boot and rebuild it.
2. In the target filesystem move `/etc/rc5.d/S10load-hdvicp2-firmware.sh` to `/etc/rc5.d/K10load-hdvicp2-firmware.sh`. This ensures that HDVICP2 Hardware is not loaded.

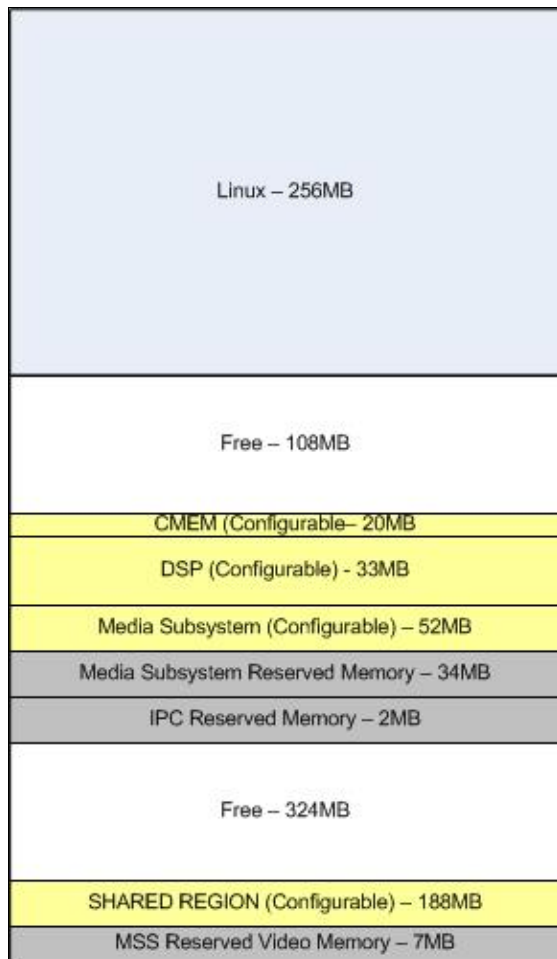
Expansion IO Card Requirement

Multimedia applications will not run if you have an older DDR2 EVM or a DDR3 EVM without a Expansion IO (EIO) Card. To run the Multimedia demos on the DDR3 EVM you will need the EIO Card affixed to the lower part of the Base EVM.

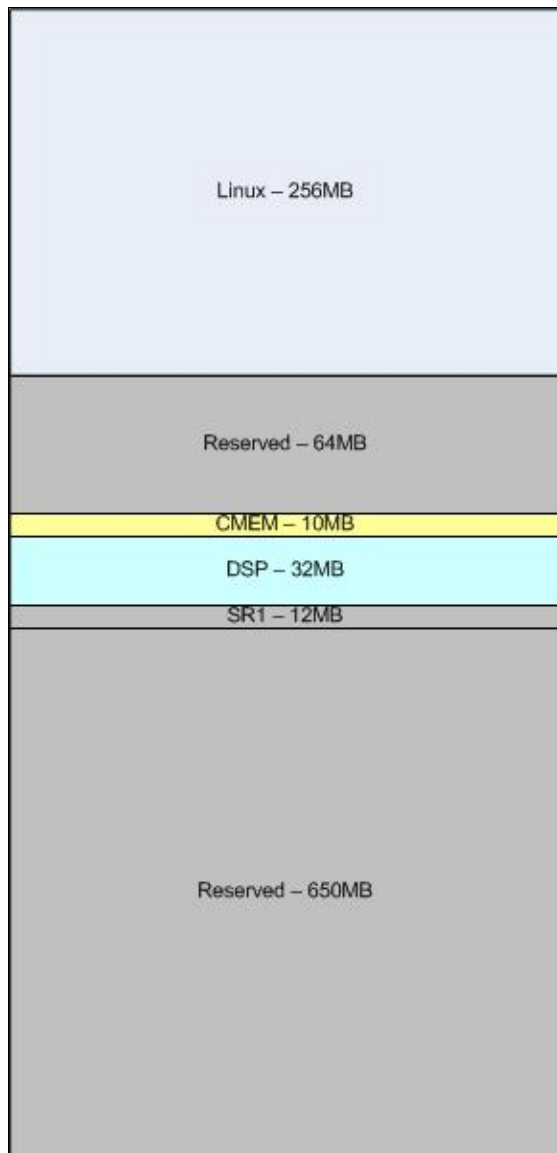
Memory Map Changes

This release changes the memory map in order to support the DM816x device. The memory map for EZSDK 5.0 has been changed.

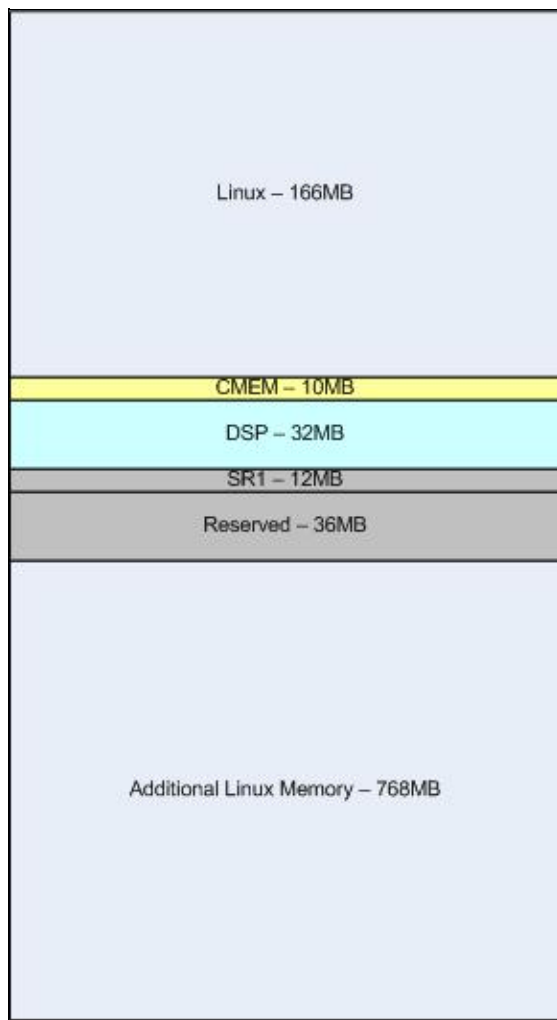
EZSDK 5.02 Memory Map



EZSDK 5.01 Memory Map



EZSDK 5.00 Memory Map



Known Issues and Limitations

Known Issues

1. SDOCM00073168 - If Installation is cancelled before completion, the SDK installer corrupts the host pc filesystem. **Workaround** - Allow the installer to complete and delete the installed files after completion. This will be fixed in the next release.
2. SDOCM00078655 - USB mouse devices are not always recognized on bootup on DDR3 EVM. **Workaround** - The board needs to be power cycled by holding down the reset button for a five seconds.
3. SDOCM00080848 - syslink ringio sample application fails
4. SDOCM00083560 - GUI Installer does not launch the SDG on completion

Limitations

1. External video capture is only supported through the TVP7002 video decoder via I2C1. Customers are required to maintain the same configuration on their boards. The EZSDK will support additional capture devices in future releases. Customers will also be able to add capture

devices of their choice in future releases.

2. **The Media Controller HDVICP2 firmware initializes and configures the EIO (Expansion IO) card. Existing Integra/Sitara customers with DDR2 or DDR3 boards and who do not have the EIO card need to manually remove the initialization for HDVICP2 from linux initscripts.**
3. The installer no longer supports installation of subsets. Full software has to be installed.
4. 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 no longer 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

Planned Feature Enhancements

1. Support for Video Capture and Display via V4L2 APIs.
2. Support 3 Channel 1080p60 Encodes.
3. Support for additional Video Decoders (MPEG4, VC-1).
4. Integrated GStreamer support and packaging in the EZSDK.
5. Support for OpenCV APIs.

Versioning

This is an early adopter release (EZSDK 5_02_02_60) for DM816x/C6A816x/AM389x.

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
2. Embedded Processor Wiki - http://processors.wiki.ti.com/index.php/Main_Page

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
3. E2E Integra Processor Forum - http://e2e.ti.com/support/dsp/integra_dsparm/default.aspx
4. E2E Sitara Processor Forum -
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