

DM816x C6A816x AM389x EZSDK 5.01 Release Notes

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Easy Software Development Kit (EZSDK) 5_01_00_77 for the DM816x/C6A816x/AM389x

May IST

This is an Early Adopter release of the Easy Software Development Kit (EZSDK) 5.01 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 the previous SDKs:

- This release adds support for DM816x.
- This release supports DM816x/C6A816x/AM389x EVMs that use DDR3 Memory.

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- This release integrates Multimedia components such as OpenMAX IL Libraries.
- This release integrates new versions of underlying components such DSP Packages, Linux Kernel etc.
- This release support multi display graphics on HDMI and Component output.
- This release adds the DSP Benchmarks Demo

This release fixes the following issues.

1. SDOCM00075450 - linux driver examples are missing in the PSP folder
2. SDOCM00076267 - PSP package included in the SDK doesnt contain host-tools directory
3. SDOCM00076310 - Software Developer guide documentation issues
4. SDOCM00079128 - Unable to run syslink examples

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 5.01 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. This release has been sanity checked with DDR2 boards.

Upgrade and Compatibility Information

DDR2 EVM Compatibility

This release adds support for EVMs with DDR3 memory. If you have a DDR2 EVM, then this release will not work out of the box. Please follow the steps mentioned in the SDG for changes required for DDR2 EVMs.

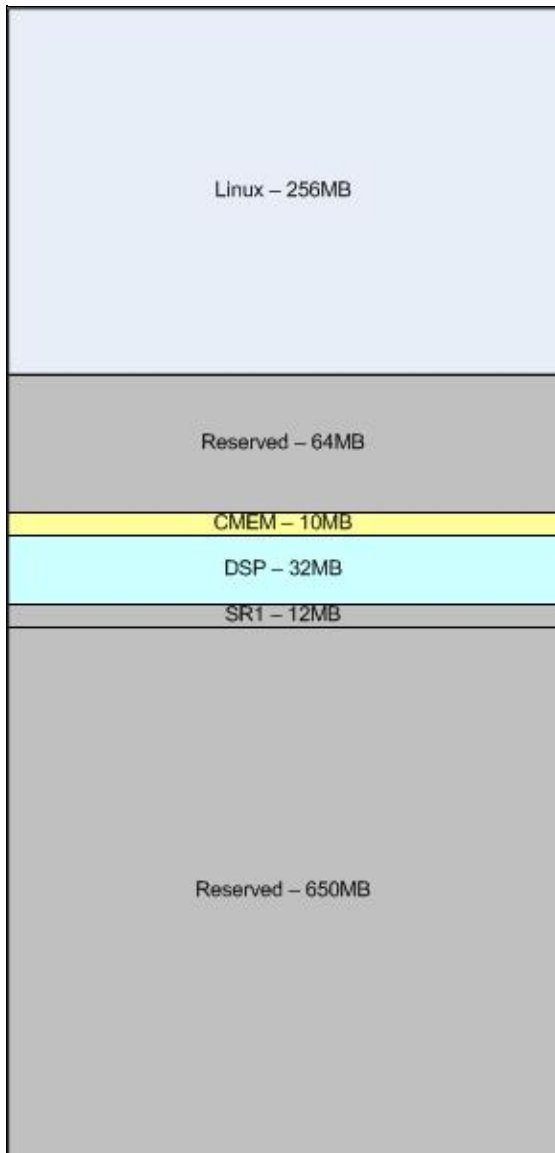
Expansion IO Card Requirement

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.

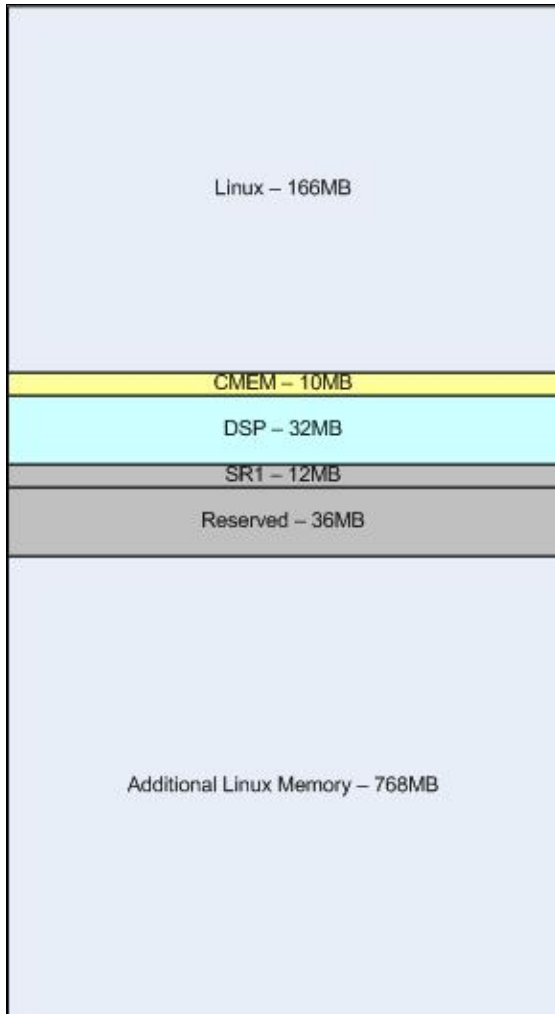
Memory Map Changes

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

EZSDK 5.01 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. SDOCM00080767 - Artifacts are seen with the 3D Graphics Demos. These will be addressed in a future release.
4. SDOCM00075315 - Blitrix samples do not run as touchscreen is not yet integrated. These will be addressed in a future release.

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. **OMX_Deinit() and OMX_FreeHandle() of components are not supported currently. Creating an OMX chain will result in the Media Controller firmware being locked for that usecase. Please reboot the board when you wish to run a different usecase. This will be addressed in future releases.**
3. **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 should not install the multimedia components.**
4. The memory map for the firmware and DSP are fixed as described above. This limitation will be removed in future releases by supporting dynamic relocation of firmware.
5. Make all from the EZSDK toplevel Makefile will not work if the EZSDK is installed without multimedia (i.e for Integra/Sitara users). Workaround - Components and demos need to be built by running individual make targets.
6. Building the Syslink samples by running make all is disabled. Workaround - To build the Syslink samples, please follow the Syslink documentation on how to build samples explicitly.

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 (MPEG2, MPEG4, VC-1).
4. Support Audio Codecs (MP3, AAC) on DSP.
5. Integrated GStreamer support and packaging in the EZSDK.
6. Support for OpenCV APIs.

Versioning

This is an early adopter release (EZSDK 5_01_00_77) 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 - http://e2e.ti.com/support/dsp/sitara_arm174_microprocessors/default.aspx