

Small Cell Multicore Software Development Kit

Release Notes

Applies to Product Release: 02.02.00.02
Publication Date: September 25, 2013

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SC-MCSDK Release 2.2.0

1 Overview

This document is the Release Notes for **Release 2.2.0** of the Small Cell Multicore Software Development Kit (SC-MCSDK) for Linux and BIOS operating systems. This software release gives developers the ability to develop software for the TMS320TCI6614 device.

2 Licensing

Please refer to the software manifest which outlines the licensing status for all packages included in this release.

3 Documentation

- **SC-MCSDK 2.x Users Guide:** Provides information on features, functions, delivery package and, compile tools for the SC-MCSDK release. This also provides detailed information regarding software elements and software infrastructure to allow developers to start creating applications.
- **SC MCSDK 2.x Getting Started Guide:** Provides information on executing the SC-MCSDK Software on the supported platforms.

4 Platform and Device Support

The device and platforms supported with this release include:

- **TCI6614 EVM:** This release supports TCI6614 EVM platform
- **TCI6614 Simulator:** This release supports TCI6614 Simulator

5 Technical Support and Product Updates

For technical discussions, issues, and product updates, please contact TI Applications Support. The SC-MCSDK release download will also have pointers to applicable CCS and compiler release versions as well. Please review the software manifest before downloading and/or installing the software.

6 IS NOT

- Support for BIOS5 or older releases
- Support for CCS 4.x or older releases
- Support for platforms not listed in Section 4
- DSP image format other than ELF (e.g., COFF)

7 Installation

Please refer to the *Getting Started Guide* on how to install the SC-MCSDK packages.

8 Release

8.1 Build 02.02.00.02

This is the **Production** release of the SC-MCSDK 2.2.0 release.

| Component | Description | Version | Installer |
|---------------------------------|---|-------------------|-----------------|
| ARM Target Software | | | |
| Linux Kernel | ARM high-level operating system, network stack | 3.4.40 | SC-MCSDK |
| U-boot | ARM boot loader | 2011_06 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (ARM portion) | 1.0.3.1 | SC-MCSDK |
| DSP Target Software | | | |
| SYS/BIOS | DSP real-time operating system | 6.34.04.22 | SC-MCSDK |
| NDK | DSP network stack | 2.21.02.43 | SC-MCSDK |
| IPC | DSP inter-process communication | 1.25.03.15 | SC-MCSDK |
| cToolsLib | Trace debug library | 1.0.0.3 | SC-MCSDK |
| UIA | Unified instrumentation architecture | 1.1.3.25 | SC-MCSDK |
| CUIA LIB | C-UIA library | 1.0.0.12 | SC-MCSDK |
| DSP Optimized Libraries | | | |
| DSPLIB | Generic DSP functions | 3.1.1.1 | SC-MCSDK |
| MATHLIB | Math functions | 3.0.2.0 | SC-MCSDK |
| IMGLIB | Image functions | 3.1.1.0 | SC-MCSDK |
| SYSLIB | Small cell functions | 2.0.8.0 | SC-MCSDK |
| Platform Development Kit | | | |
| CSL | Chip support library | 1.0.0.7 | SC-MCSDK |
| AIF2 LLD | Antenna Interface LLD | 1.0.0.17 | SC-MCSDK |
| BCP LLD | Bit Rate Coprocessor LLD | 1.0.1.0 | SC-MCSDK |
| CPPI LLD | Packet DMA LLD | 1.0.2.5 | SC-MCSDK |

| | | | |
|-------------------------------|---|---|---|
| EDMA3 LLD | Enhanced Direct Memory LLD | 2.11.05.02 | SC-MCSDK |
| FFTC LLD | FFT Accelerator Coprocessor LLD | 1.0.0.17 | SC-MCSDK |
| HYPLNK LLD | HyperLink LLD | 1.0.1.5 | SC-MCSDK |
| PA LLD | Packet Accelerator LLD. | 1.3.0.9 | SC-MCSDK |
| PCIe LLD | Peripheral Component Interconnect Express | 1.0.0.3 | SC-MCSDK |
| QMSS LLD | Queue Manager LLD | 1.0.3.21 | SC-MCSDK |
| RM LLD | Resource Manager LLD | 1.0.0.17 | SC-MCSDK |
| SA LLD | Security Accelerator LLD | 1.0.5.4 | http://software-dl.ti.com/sdoemb/sdoemb_public_sw/salld/atest/index_FDS.html |
| SRIO LLD | Serial Rapid IO LLD | 1.0.1.11 | SC-MCSDK |
| TCP3D LLD | Turbo Coprocessor Decoder LLD | 1.0.0.18 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (DSP portion) | 1.0.3.1 | SC-MCSDK |
| NIMU Transport | NDK interface module | 1.0.0.10 | SC-MCSDK |
| BMET_Eth | Bare-metal Ethernet transport used by Trace Framework | 1.0.0.2 | SC-MCSDK |
| Host Development Tools | | | |
| Yocto-Arago | ARM software distribution | 1.3 | Link |
| Linux devkit | Development kit that is independent of Arago | N/A | SC-MCSDK |
| CCS | Code Composer Studio integrated development environment | 5.4 | Link |
| Linaro Toolchain | ARM toolchain | 2013.03 | Link |
| CodeGen | DSP compiler | 7.3.1 | CCS |
| CG_XML | Package of Perl scripts used to process the XML files that come from the TI code generation tools. Use it to do things like build a spreadsheet that details the size of all the sections, or figure out how much of the memory map is taken up by specific libraries | 2.30 | SC-MCSDK |
| XDCTools | DSP RTSC packaging and build tools | 3.24.05.48 | CCS |
| Simulator | Simulator for TCI6614 | 0.9.1 | CCS |
| MCSDK Apps | MCSDK applications (Trace framework, udma, DSP core parser, etc.) | 2.1.0.1 | MCSDK |
| Emupack | Emulation Software Package contains TI XDS class debug drivers for TI devices and other host tools including "ctprof" | Unavailable at the time of release | Link |

New Features

| |
|---|
| Changed ARM software from Arago to Linaro based filesystem |
| CCS updated to version 5.4 |
| Fault management update to halt IP blocks at the time a crash is detected |
| SYS/BIOS update to support DSP run-time security on secure device |
| ARM ability to force an exception across all DSP cores |
| sysapps prints are syslogged instead of stdout/stderr |
| Trace framework generic producer (non-UIA) example |
| ARM Embedded Trace Buffer (ETB) support: ctoolsprof extraction of ETB (ctoolsprof) ¹ |
| File system partition resizing to increase filesystem space |

1: Please see <http://processors.wiki.ti.com/index.php/Ctprof#Installation> for information on installing dependent packages.

Bug Fixes

| id | Headline |
|---------------|--|
| SDOCM00103488 | Directed host route handling wrong in Proxy |
| SDOCM00103732 | Core dumped, /usr/libexec/ipsec/scepclient: double free or corruption |
| SDOCM00098271 | MCSDK instrumentation: CPT examples not working without using EVM GEL files |
| SDOCM00103773 | Deadlock condition found for Traceframework consumers |
| SDOCM00103404 | Generating the key in openssl securestorage causes the softhsm-daemon to crash |
| SDOCM00103398 | For secure storage securedb is missing from FS. |
| SDOCM00103473 | Error encountered while using kexec utility to load evm recovery dtb file for use on panic |
| SDOCM00103181 | Netfp: Remove interface statistics |
| SDOCM00102916 | Netfp_encodeSrb1 and Netfp_decodeSrb1: Missing PKTLIB writeback in NULL and SNOW3G |
| SDOCM00103179 | Sysapps: Add logging capability in Msgcom module. |
| SDOCM00103306 | Unable to view registers of DSP core crash dump using CCS |
| SDOCM00100714 | Trace Framework Producer Destroy API does not free up non General Producer types |
| SDOCM00102113 | TraceFramework: Need flag to determine if the logging information starts with the first buffer or with the next buffer |
| SDOCM00103323 | dspcoreparse only supports linux build |
| SDOCM00102774 | arago-2013.04-armv7a-linux-gnueabi-sc-mcsdk-sdk-i686.sh does not have execute rights after 2.2.0.0 installation. |
| SDOCM00102772 | devkit lib points to TI specific locations /home/gtbladm/mynightly/work/linux/oe-layersetup-mcsdk |
| SDOCM00102975 | Warning message: INIT: Id "1" respawning too fast: disabled for 5 minutes keeps popping up |
| SDOCM00103286 | FAPI: Update to FAPI tracing library to version 1.6 |
| SDOCM00103180 | Sysapps: Remove debug prints from sysapps modules |
| SDOCM00097109 | Provide OSAL callout for getting the producer handle instead of deriving it via DNUM in TraceFramework |
| SDOCM00099679 | trace framework producer test apps clean up |

| | |
|---------------|--|
| SDOCM00102192 | Trace Framework: producer enhancement to have least buffer drops before consumer is created |
| SDOCM00095655 | Traceframework: DSP: General Producer example needs to be enhanced to put UIA header/Footer on top of the raw msgs |

Additional Notes

- The following table shows the status of patches for past releases at the time of this release:

| Release | Last Patch | Release Date |
|------------------------------|------------|--------------|
| 2.0.1.15 (Production) | P9 | 10-Jun-2013 |
| 2.0.2.16 (Production) | P2 | 27-Aug-2013 |
| 2.1.0.1 (Production) | P4 | 05-Sep-2013 |

- For development on secure devices, use **MCSDK-SECDEV 1.0.6**.

9 Previous Releases

9.1 Build 02.02.00.01

This is the **Alpha-2** release of the SC-MCSDK 2.2.0 release.

| Component | Description | Version | Installer |
|--------------------------------|--|----------------|-----------------|
| ARM Target Software | | | |
| Linux Kernel | ARM high-level operating system, network stack | 3.4.40 | SC-MCSDK |
| U-boot | ARM boot loader | 2011_06 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (ARM portion) | 1.0.2.0 | SC-MCSDK |
| DSP Target Software | | | |
| SYS/BIOS | DSP real-time operating system | 6.33.05.46 | CCS |
| NDK | DSP network stack | 2.21.01.38 | SC-MCSDK |
| IPC | DSP inter-process communication | 1.24.03.32 | CCS |
| cToolsLib | Trace debug library | 1.0.0.3 | SC-MCSDK |
| UIA | Unified instrumentation architecture | 1.1.3.25 | SC-MCSDK |
| CUIA LIB | C-UIA library | 1.0.0.12 | SC-MCSDK |
| DSP Optimized Libraries | | | |

| | | | |
|---------------------------------|---|------------|---|
| DSPLIB | Generic DSP functions | 3.1.1.1 | SC-MCSDK |
| MATHLIB | Math functions | 3.0.2.0 | SC-MCSDK |
| IMGLIB | Image functions | 3.1.1.0 | SC-MCSDK |
| SYSLIB | Small cell functions | 2.0.7.3 | SC-MCSDK |
| Platform Development Kit | | | |
| CSL | Chip support library | 1.0.0.7 | SC-MCSDK |
| AIF2 LLD | Antenna Interface LLD | 1.0.0.8 | SC-MCSDK |
| BCP LLD | Bit Rate Coprocessor LLD | 1.0.1.0 | SC-MCSDK |
| CPPI LLD | Packet DMA LLD | 1.0.2.4 | SC-MCSDK |
| EDMA3 LLD | Enhanced Direct Memory LLD | 2.11.05.02 | SC-MCSDK |
| FFTC LLD | FFT Accelerator Coprocessor LLD | 1.0.0.17 | SC-MCSDK |
| HYPLNK LLD | HyperLink LLD | 1.0.1.5 | SC-MCSDK |
| PA LLD | Packet Accelerator LLD. | 1.3.0.9 | SC-MCSDK |
| PCIe LLD | Peripheral Component Interconnect Express | 1.0.0.3 | SC-MCSDK |
| QMSS LLD | Queue Manager LLD | 1.0.3.20 | SC-MCSDK |
| RM LLD | Resource Manager LLD | 1.0.0.15 | SC-MCSDK |
| SA LLD | Security Accelerator LLD | 1.0.5.4 | http://software-dl.ti.com/sdoemb/sdoemb_public_sw/salld/latest/index_FDS.html |
| SRIO LLD | Serial Rapid IO LLD | 1.0.1.11 | SC-MCSDK |
| TCP3D LLD | Turbo Coprocessor Decoder LLD | 1.0.0.18 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (DSP portion) | 1.0.2.0 | SC-MCSDK |
| NIMU Transport | NDK interface module | 1.0.0.10 | SC-MCSDK |
| BMET_Eth | Bare-metal Ethernet transport used by Trace Framework | 1.0.0.2 | SC-MCSDK |
| Host Development Tools | | | |
| Yocto-Arago | ARM software distribution | 1.3 | Link |
| Linux devkit | Development kit that is independent of Arago | N/A | SC-MCSDK |
| CCS | Code Composer Studio integrated development environment | 5.1.1 | Link |
| Linaro Toolchain | ARM toolchain | 2013.03 | Link |
| CodeGen | DSP compiler | 7.3.1 | CCS |
| CG_XML | Package of Perl scripts used to process the XML files that come from the TI code generation tools. Use it to do things like build a spreadsheet that details the size of all the sections, or figure out how much of the memory map is taken up by specific | 2.30 | SC-MCSDK |

Revision A:

| | | | |
|------------|---|------------|-------|
| | libraries. | | |
| XDCTools | DSP RTSC packaging and build tools | 3.23.03.53 | CCS |
| Simulator | Simulator for TCI6614 | 0.9.1 | CCS |
| MCSDK Apps | MCSDK applications (Trace framework, udma, DSP core parser, etc.) | 2.1.0.1 | MCSDK |

New Features

| |
|---|
| System should have ability to force an exception across all DSP cores |
|---|

Bug Fixes

| id | Headline |
|--------------|--|
| SDOC00102650 | Migration Guide is pointing to older release |
| SDOC00102734 | CCS does not detect PDK component |
| SDOC00102695 | Version of cToolsLib does not match the latest on SC 2.0.x/2.1.x |
| SDOC00102799 | LogSnapshot and LoggerStreamer libs from linux devkit |
| SDOC00102797 | dat_verbosity_levels.h missing from devkit |
| SDOC00098729 | Linux kernel exported header files missing from Linux devkit |

Additional Notes

- The following table shows the status of patches for past releases at the time of this release:

| Release | Last Patch | Release Date |
|-----------------------|------------|--------------|
| 2.0.0.5 | P3 | 06-Mar-2012 |
| 2.0.0.6 | None | 16-Mar-2012 |
| 2.0.0.7 | P3 | 07-Sep-2012 |
| 2.0.0.8 | P6 | 17-Aug-2012 |
| 2.0.0.9 | P7 | 19-Nov-2012 |
| 2.0.0.10 | P7 | 18-Jan-2013 |
| 2.0.0.11 | P4 | 21-Dec-2012 |
| 2.0.0.12 (Beta) | P3 | 24-Jan-2013 |
| 2.0.0.13 (Production) | None | 21-Dec-2012 |
| 2.0.1.14 | None | 09-Jan-2013 |
| 2.0.1.15 (Production) | P9 | 10-Jun-2013 |
| 2.0.2.16 (Production) | P1 | 20-Jun-2013 |
| 2.1.0.1 (Production) | P3 | 12-Jul-2013 |

- For development on secure devices, use **MCSDK-SECDEV 1.0.6**.

9.2 Build 02.02.00.00

This is the **Alpha** release of the SC-MCSDK 2.2.0 release. This release is baselined from **SC-MCSDK 02.01.00.01 Patch 3**.

| Component | Description | Version | Installer |
|----------------------------|--|---------|-----------|
| ARM Target Software | | | |
| Linux Kernel | ARM high-level operating system, network stack | 3.4.40 | SC-MCSDK |

| | | | |
|---------------------------------|--|-------------------------|---|
| U-boot | ARM boot loader | 2011_06 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (ARM portion) | 1.0.2.0 | SC-MCSDK |
| DSP Target Software | | | |
| SYS/BIOS | DSP real-time operating system | 6.33.05.46 | CCS |
| NDK | DSP network stack | 2.21.01.38 | SC-MCSDK |
| IPC | DSP inter-process communication | 1.24.03.32 | CCS |
| cToolsLib | Trace debug library | 1.0.0.2 | SC-MCSDK |
| UIA | Unified instrumentation architecture | 1.1.2.23 | SC-MCSDK |
| CUIA LIB | C-UIA library | 1.0.0.12 | SC-MCSDK |
| DSP Optimized Libraries | | | |
| DSPLIB | Generic DSP functions | 3.1.1.1 | SC-MCSDK |
| MATHLIB | Math functions | 3.0.2.0 (fixed typo) | SC-MCSDK |
| IMGLIB | Image functions | 3.1.1.0 | SC-MCSDK |
| SYSLIB | Small cell functions | 2.0.7.3 (fixed typo) | SC-MCSDK |
| Platform Development Kit | | | |
| CSL | Chip support library | 1.0.0.7 | SC-MCSDK |
| AIF2 LLD | Antenna Interface LLD | 1.0.0.8 | SC-MCSDK |
| BCP LLD | Bit Rate Coprocessor LLD | 1.0.1.0 | SC-MCSDK |
| CPPI LLD | Packet DMA LLD | 1.0.2.4 | SC-MCSDK |
| EDMA3 LLD | Enhanced Direct Memory LLD | 2.11.05.02 | SC-MCSDK |
| FFTC LLD | FFT Accelerator Coprocessor LLD | 1.0.0.17 | SC-MCSDK |
| HYPLNK LLD | HyperLink LLD | 1.0.1.5 | SC-MCSDK |
| PA LLD | Packet Accelerator LLD. | 1.3.0.9 | SC-MCSDK |
| PCIe LLD | Peripheral Component Interconnect Express | 1.0.0.3 | SC-MCSDK |
| QMSS LLD | Queue Manager LLD | 1.0.3.20 | SC-MCSDK |
| RM LLD | Resource Manager LLD | 1.0.0.15 | SC-MCSDK |
| SA LLD | Security Accelerator LLD | 1.0.5.4 | http://software-dl.ti.com/sdoemb/sdoemb_public_sw/salld/latest/index_FDS.html |
| SRIO LLD | Serial Rapid IO LLD | 1.0.1.11 | SC-MCSDK |
| TCP3D LLD | Turbo Coprocessor Decoder LLD | 1.0.0.18 | SC-MCSDK |
| Trace Framework | Trace framework for collecting and distributing log/event messages (DSP portion) | 1.0.2.0 | SC-MCSDK |
| NIMU Transport | NDK interface module | 1.0.0.10 | SC-MCSDK |
| BMET_Eth | Bare-metal Ethernet transport used by Trace Framework | 1.0.0.2 | SC-MCSDK |

| Host Development Tools | | | |
|------------------------|--|------------|----------------------|
| Yocto-Arago | ARM software distribution | 1.3 | Link |
| Linux devkit | Development kit that is independent of Arago | N/A | SC-MCSDK |
| CCS | Code Composer Studio integrated development environment | 5.1.1 | Link |
| Linaro Toolchain | ARM toolchain | 2013.03 | Link |
| CodeGen | DSP compiler | 7.3.1 | CCS |
| CG_XML | Package of Perl scripts used to process the XML files that come from the TI code generation tools. Use it to do things like build a spreadsheet that details the size of all the sections, or figure out how much of the memory map is taken up by specific libraries. | 2.30 | SC-MCSDK |
| XDCTools | DSP RTSC packaging and build tools | 3.23.03.53 | CCS |
| Simulator | Simulator for TCI6614 | 0.9.1 | CCS |
| MCSDK Apps | MCSDK applications (Trace framework, udma, DSP core parser, etc.) | 2.1.0.1 | MCSDK |

New Features

| |
|--|
| ARM build with Yocto environment |
| ARM toolchain is updated to linaro-arm-linux-gnueabi |

Bug Fixes

| id | Headline |
|---------------|--|
| SDOCM00102611 | Update sc-mcsdk builds to use yocto infrastructure |
| SDOCM00102081 | sc-mcsdk: eclipse plugins are to be fixed for CCS 5.4 on Linux |