

Sitara SDK 5.04.00 Release Notes

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Sitara SDK 05.04.00 Release Notes

Released March 30, 2012

Content Overview

This is version 05.04.00.00 of the Sitara Software Development Kit (SDK). The SDK provides a fundamental software platform for development, deployment and execution of Linux based applications and includes the following:

Kernel Versions	AM335x	BeagleBone	AM180x	AM35x	AM37x	Beagleboard-xM
3.2.0 Internal PSP version (04.06.00.06)	X	X				
3.0.8						X
2.6.37 Internal PSP version (03.21.00.04)			X			
2.6.37 Internal PSP version (04.02.00.07)				X	X	

- Bootloaders & Filesystems
- SDK Installer
- Setup Scripts
- Makefiles
- (Upgraded)Matrix Application Launcher
- Example Applications
- Code Composer Studio v5 (CCSv5)
- Host Tools
 - Flash Tool
 - Pin Mux Utility

Supported Devices

- AM335x
 - AM37x
 - AM35x
 - AM180x
 - BeagleBone
 - BeagleBoard-xM
-

What's New

We continue to enhance the features providing in the Sitara SDK. This version includes the following new features:

- Fully integrated toolchain, upgraded to gcc4.5.3.
 - This toolchain has been updated to provide dynamic versions of the libgcc and libstdc++ libraries as opposed to previous releases which only provided static versions of these libraries.
- Updated WiFi components for improved performance
- Addition of A2DP Sink demo for Bluetooth
- Additional Qt example applications
- Addition of create-sdcard.sh script to aid in making SD cards from the SDK or development images
- Matrix application launcher is now located at port 80 rather than port 8080 as in previous releases.
- Addition of Makefiles and top-level make targets for ti-ocf-crypto-module and WiFi components
- Support for new Beaglebone Vendor and Product IDs
- Additional benchmarks added such as NBench and trace-cmd support for ftrace functionality
- Updates to documentation
- Update of AM335x kernel to Linux v3.2

Note - Some applications are platform specific and highlighted in the Software Developer's Guide ^[1].

Installation and Usage

The Software Developer's Guide ^[2] provides instructions on how to setup up your Linux development environment, install the SDK and start your development. It also includes User's Guides for various Example Applications and Code Composer Studio.

Host Support

The Sitara SDK is developed, built and verified on Ubuntu 10.04 LTS. In addition to the Long Term Support provided by Ubuntu on this version, we also recommend use of Ubuntu 10.04 LTS to ensure efforts to resolve any issues are not host related. Details on how to create a virtual machine to load Ubuntu 10.04 LTS are described in the Software Developer's Guide ^[2].

Toolchain

Versions prior to 05.02 used the Codesourcery Lite 2009q1-203 toolchain. This required pre-installation of the cs-lite toolchain before the SDK could be installed. Versions after 05.02 utilize the open source gcc4.X toolchain and are fully integrated in the Sitara SDK (linux-devkit) no longer requiring a toolchain installation. SDK version 05.02 supplies gcc 4.3.3. SDK version 05.03 supplies 4.5.3. SDK version 05.04 supplied 4.5.3 with dynamic libgcc and libstdc++ libraries.

Technical Support and Product Updates

For further information or to report any problems, contact <http://e2e.ti.com> or <http://support.ti.com>.

Known Issues

BUG_ID	IMPACT	CLASS	RELEASE	Platform	SUMMARY	DETAILS
ARM_MPU.XLDR_UBOOT.21	Critical	Other	SDK 05.03.02+	AM335x / BeagleBone	u-boot environment not optimally protected in NAND on AM335x EVM	The NAND chips on the AM335x EVM require a minimum of 4 bits ECC. Linux and u-boot support 8 bit ECC which exceeds the NAND requirements. However the u-boot enviroment is currently stored with only 1 bit ECC which does not meet the minimum requirements of the NAND.
ARM_MPU.KERNEL.39	Critical	Other	SDK 05.03.02+	ALL	USB DMA disabled	Devices which use the Mentor MUSB core currently disable the DMA due to instability issues. This will cause degradation from the expected USB throughput performance. The DMA support can be enabled in the kernel depending on your use case. The most commonly affected use cases are when the USB core is being used in host mode and there is both DMA and PIO traffic occurring at the same time. This has been observed with many USB WiFi adapters as well as when doing I/O operations to one device which inserting or removing another device. If you choose to enable DMA you should extensively test your use case to verify that no lockup occurs.t
ARM_MPU.SDK.BTS_MATRIX.122	Critical	Other	SDK05.04.00+	AM37x, AM335x	PRCM Suspend/resume does not work completely with touchscreen as a wake-up source	This issue was previously noted under Suspend/resume power demo description in MatrixGUI.
ARM_MPU.SDK.BTS_MATRIX.121	Critical	Other	SDK05.04.00+	AM37x	AM37x - suspend resume does not work at 300MHz and 600MHz with 1.2 (revD) silicon	Summary is that SDKs 05.02.00.00, 05.02.00.01, 05.03.02.00, 05.04.00.00 all fail to resume on 1.2 silicon when the clock is set to 300MHz. All work on 1.1 silicon for all clocks.
ARM_MPU.SDK.BTS_KERNEL.44	Critical	Kernel	SDK 05.04.00+	AM37x	Some weak silicon does not run stably at 1GHz	During testing it was noticed that some weak silicon may throw a kernel panic during boot when booting at 1GHz with a rate of 7-13%. This was found with revision 1.2 silicon only. This silicon can boot at 800MHz with no issues.
ARM_MPU.SDK.BTS_WLAN.19	Critical	WiFi	SDK 05.04.00+	AM37x	Leaving WPA running for 50 minutes can cause sdio read error and kernel panic	<div>When leaving the WPA demo running for 50 minutes or longer it is possible to see errors like the following:</div> <div>wl1271: ERROR sdio read failed (-110)</div> <div>As well as a kernel panic like:</div>

						<pre>[1575.880737] wl1271: ERROR command complete timeout [1575.885742] -----[cut here]----- [1575.890625] WARNING: at /home/hudson/am37x-nightly-build/cortex-A8/arago-tmp/work/am37x-evm-arago-linux-gnueabi/ti-compat-wireless-wl12xx-0.20120206r412_02-r110c/compat-wireless/drivers/net/wireless/wl12xx/cmd.c:107 wl1271_cmd_send+0x334/0x368 [wl12xx] () [1575.914062] Modules linked in: bufferclass_ti omap1fb pvrsvrkm wl12xx_sdio wl12xx_mac80211 cfg80211 compat [1575.924224] [<c004b690>] (unwind_backtrace+0x0/0xe0) from [<c00731d0>] (warn_slowpath_common+0x4c/0x64) [1575.934020] [<c00731d0>] (warn_slowpath_common+0x4c/0x64) from [<c0073200>] (warn_slowpath_null+0x18/0x1c) [1575.944122] [<c0073200>] (warn_slowpath_null+0x18/0x1c) from [<bf1451e4>] (wl1271_cmd_send+0x334/0x368 [wl12xx]) [1575.954803] [<bf1451e4>] (wl1271_cmd_send+0x334/0x368 [wl12xx]) from [<bf147c04>] (wl1271_cmd_remove_peer+0xb8/0xf8 [wl12xx]) [1575.966674] [<bf147c04>] (wl1271_cmd_remove_peer+0xb8/0xf8 [wl12xx]) from [<bf144b8c>] (wl1271_op_sta_remove+0xa0/0xe0 [wl12xx]) [1575.978912] [<bf144b8c>] (wl1271_op_sta_remove+0xa0/0xe0 [wl12xx]) from [<bf047af0>] (__sta_info_destroy+0x264/0x3c4 [mac80211]) [1575.991088] [<bf047af0>] (__sta_info_destroy+0x264/0x3c4 [mac80211]) from [<bf04889c>] (sta_info_destroy_addr_bss+0x2c/0x44 [mac80211]) [1576.003967] [<bf04889c>] (sta_info_destroy_addr_bss+0x2c/0x44 [mac80211]) from [<bf012168>] (nl80211_del_station+0x5c/0x68 [cfg80211]) [1576.016601] [<bf012168>] (nl80211_del_station+0x5c/0x68 [cfg80211]) from [<c039773c>] (genl_rcv_msg+0x178/0x1b8) [1576.027221] [<c039773c>] (genl_rcv_msg+0x178/0x1b8) from [<c0396c8c>] (netlink_rcv_skb+0x50/0xac) [1576.036560] [<c0396c8c>] (netlink_rcv_skb+0x50/0xac) from [<c03975b8>] (genl_rcv+0x18/0x24) [1576.045257] [<c03975b8>] (genl_rcv+0x18/0x24) from [<c0396644>] (netlink_unicast+0x238/0x2d4) [1576.054168] [<c0396644>] (netlink_unicast+0x238/0x2d4) from [<c0396970>] (netlink_sendmsg+0x290/0x320) [1576.063873] [<c0396970>] (netlink_sendmsg+0x290/0x320) from [<c0370040>] (sock_sendmsg+0x90/0xac) [1576.073150] [<c0370040>] (sock_sendmsg+0x90/0xac) from [<c0371730>] (sys_sendmsg+0x1b0/0x214) [1576.082031] [<c0371730>] (sys_sendmsg+0x1b0/0x214) from [<c0045a80>] (ret_fast_syscall+0x0/0x3c) [1576.091186] ---[end trace c4b0aeb13fc96225]---</pre>
ARM_MPU_SDK.BTL_WLAN.20	Critical	WiFi	SDK 05.04.00+	All	Leaving Bluetooth demo running for an hour causes a stale list of devices and stale pairing information	Leaving the demo running can result in a stale scan list such that pressing the "start scan" button will fail to find new devices. Restarting the demo will allow finding the new devices, but devices that were previously paired need to be re-paired.
ARM_MPU_SDK.BTS_BENCHMARKS.5	Not Critical	Boot Time	SDK 05.02+	All	Boot stalls at gnome-vfs	During the first boot of a clean file system the boot will stall for a while at the "Configuring gnome-vfs" step. Depending on the SD card speed or network speed this could be a couple of seconds or could take a minute. During this time the gnome-vfs package is doing a large amount of read operations and not all SD cards are read optimized. On subsequent boots this is not required and should no longer cause a delay. Scenarios where this might be encountered are when making a new NFS or SD card file system from the SDK pre-built file system found in the filesystem directory.
ARM_MPU_SDK.BTS_MATRIX.131	Not Critical	WiFi	SDK 05.04.00+	AM37x	console message "NOHZ: local_softirq_pending 08" seen when running wifi	When running the soft AP WiFi example the message "NOHZ: local_softirq_pending 08" message may be seen on the console but does not affect functionality.

ARM_MPU_SDK.BTS_MATRIX.135	Not Critical	Other	SDK 05.04.00+	All	When booting from NFS the /etc/resolv.conf file is not populated	When booting from NFS the user space udhcp command is not run since the root file system is using the network. This prevents the /etc/resolv.conf file from being populated by the DHCP server which can lead to not being able to browse to web sites such as ti.com. Updating the contents of /etc/resolv.conf and rebooting will configure the network to allow the DNS lookup to occur.
ARM_MPU_SDK.BTS_Make.18	Not Critical	Makefiles	SDK 05.04.00+	All	top-level SDK Makefile matrix-gui target fails install	The top-level Makefile in the SDK directory will fail the "make matrix-gui_install" target since the Makefile.build file no longer exists.
ARM_MPU_SDK.BTS_CCSv5.16	Not Critical	Other	SDK 05.04.00+	All	QT projects report error during build	When building projects like qt-tstat in CCSv5 an error is reported while processing the .pro file. The project builds successfully and this error can be ignored.
ARM_MPU_SDK.ExApps.22	Not Critical	ARM	SDK 05.03.02+	AM335x	Power Management Applications Under Development	Power management applications are under development. They are scheduled for release in April 2012.
ARM_MPU_SDK.BENCHMARKS.7	Not Critical	ARM	SDK 05.03.02+	ALL	Dhrystone results may vary	Dhystone may vary from the expected 1.8 DMIPS/MHz. Increasing the number of iterations that dhrystone runs will decrease the variability of the results.
ARM_MPU_SDK.FLASH_TOOL.7	Not Critical	Other	SDK 05.03.02+	BeagleBone, AM335x	no flash tool support	Flashing may be done using u-boot: AM335 Flash Programming Guide
ARM_MPU_KERNEL.35	Not Critical	Other	SDK 05.03.02+	AM35x	Warning message during boot	<p>The following message may be ignored. It does not apply to AM35x:</p> <pre>[0.000000] WARNING: at arch/arm/mach-omap2/pm.c:94 _init_omap_device+0x7c/0 [0.000000] _init_omap_device: could not find omap_hwmod for iva [0.000000] Modules linked in: [0.000000] [c0049690] (unwind_backtrace+0x0/0xe0) from [c006f58c] (warn [0.000000] [c006f58c] (warn_slowpath_common+0x4c/0x64) from [c006f624] } [0.000000] [c006f624] (warn_slowpath_fmt+0x2c/0x3c) from [c0050c80] (_i [0.000000] [c0050c80] (_init_omap_device+0x7c/0x9c) from [c000ff5c] (om [0.000000] [c000ff5c] (omap2_common_pm_init+0x30/0x104) from [c003a470]> [0.000000] [c003a470] (do_one_initcall+0xb0/0x188) from [c0008c2c] (ker [0.000000] [c0008c2c] (kernel_init+0x98/0x14c) from [c0044ad4] (kernel_ [0.000000] ---[end trace 1b75b31a2719ed1c]---</pre>
ARM_MPU_SDK.KERNEL.27	Not Critical	Cryptos/Security	SDK 05.03.02+	BeagleBone	no crypto driver support in the Linux kernel	Crypto acceleration driver support is under development and will be available in 2Q 2012.
ARM_MPU_SDK.INSTALLER_SCRIPTS.50	Not Critical	Other	SDK 05.03.02+	ALL	uboot-env-setup.sh script cannot save oldbootcmd from default u-boot params because of string length.	After running setup.sh to create a minicom script, when you run the minicom script, you may see a "setenv usage" message. The oldbootcmd will not be saved. The result of this is that you may lose your initial bootcmd after you run the script. (NOTE) you can get back to default u-boot environment by doing a nand erase of the u-boot parameters partition in NAND.
ARM_MPU_SDK.INSTALLER_SCRIPTS.25	Not Critical	Other	SDK 05.03.02+	ALL	setup.sh script may display two IP addresses as default option.	Type the IP address of the Linux host instead of taking the default.
ARM_MPU_SDK.INSTALLER_SCRIPTS.31	Not Critical	Other	SDK 05.03.02+	BBxM	Minicom script generated by uboot-env-setup.sh script is not effective on BBxM because BBxM has no NAND flash.	Need to modify the uEnv.txt on the boot partition of SD Card to change u-boot parameters.
ARM_MPU_SDK.FLASH_TOOL.8	Not Critical	Other	SDK 05.03.02+	AM180x	Need to get FlashAndBootUtils v2.35 to be able to rebuild CCS/JTAG-based flash writers with CCSv5.1	Go to this location [3] and download FlashAndBootUtils_v2.35.

ARM_MPU.XLDRBOOT.19	Not Critical	Other	SDK 05.03.02+	AM37x	when booting from SD card, you may see "timedout" messages	When loading uImage from SD card, you may get some warning messages: <code>mmc_send_cmd: timedout waiting for stat!</code>
ARM_MPU.ExApps.25	Not Critical	Other	SDK 05.03.02+	AM335x	Oprofile -when running a session you can see quite a few 'rm' errors	When running an NFS mounted file system, and running the Oprofile Applications, "Run Signal Parent" and "Run Signal Parent Optimized" you see many can not "rm" errors. This is just an annoyance the rm is successful. This issue will be resolved in the next release.
ARM_MPU.GFX.1	Not Critical	Other	SDK 05.03.02+	AM35x, AM37x	Graphics driver initialization causes a stack dump on the 2.6.37 kernel.	At boot up, during initialization of the Graphics driver you will see: <code>[INFO: possible recursive locking detected]</code> followed by a stack trace dump. This message can be ignored, there is further information here: [5] [4]
ARM_MPU.GFX.4	Not Critical	Other	SDK 05.03.02	AM35x, AM37x+	OGLESShadowTechniques can lockup and hang the system.	OGLESShadowTechniques application can lock up and only reboot will bring the system back up and running. It is recommended not to run this application.
ARM_MPU.KERNEL.18	Not Critical	Other	SDK 05.03.02+	AM180x	SDK missing Source code for UBL.	Currently the UBL source code is missing from this release.
ARM_MPU.SDK.BTS_MATRIX.136	Not Critical	Other	SDK05.03+	All	3D demos could not run when running NFS	When rebuilding the kernel and installing the kernel modules, the existing modules are removed by the modules_install step of the kernel build. For out-of-tree driver modules such as the SGX modules this requires that those modules be re-built against the re-built kernel. Not rebuilding and re-installing these modules to the target file system will result in the applications that use those drivers, such as the 3D demos to fail to run.

References

- [1] http://processors.wiki.ti.com/index.php/Sitara_Linux_Software_Developer's_Guide
- [2] http://processors.wiki.ti.com/index.php/Sitara_Linux_Software_Developer%E2%80%99s_Guide
- [3] <http://sourceforge.net/projects/dvflashutils/files/OMAP-L138/>
- [4] http://processors.wiki.ti.com/index.php/SGXDbg#Lock_related_warnings_seen_on_OMAP35x.2FAM35x.2F37xx_with_2.6.37_kernel
- [5] <http://processors.wiki.ti.com/index.php/SGXDbg>

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