



**Windows Embedded CE 6.0 TI ARM-A8 BSP for
AM35xx/OMAP35xx/AM37xx/DM37xx**

Version 1.00.00

Release Notes

Table 1. Revision History

BSP Version	Date	Description
V 1.0.0	11/09/2010	Document creation

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1. Trademarks

Windows and Microsoft are registered trademarks of Microsoft Corporation. All other trademarks are property of their respective owners.

2. Introduction

This document provides information for TI ARM_A8 WINCE 6.0 BSP release.

TI ARM_A8 BSP is designed for TI AM35x processor family, OMAP35x processor family and AM/DM37x processor family.

It supports two platforms: the AM35x BSP, compatible with the LogicPD AM3517 eXperimenter Kit, and the OMAP35x BSP, compatible with OMAP 35x EVM Board(for both OMAP35x processor family and AM/DM37x processor family).

OMAP35x processors and AM/DM37x processors share the same BSP, hence the same image can run on both processor families.

The BSP release contains the following packages:

- ARM_A8 WINCE BSP for AM35x and OMAP35x EVM.
- DVSDK 1.10 release binaries
- PowerVR 3D Graphics 1.00.00 release binaries
- Prebuilt images , Tools and Documentation

For more information, please refer to the '*BSP_WINCE_ARM A8_User_Guide.pdf*' file included in this release.

3. Distribution Contents

The BSP release installation file - BSP_WINCE_ARM_A8_01_00_00_Source.exe contains the following files:

- Docs\BSP_WinCE_ARM_A8_Release_Notes.pdf
 - This Release Note
- Docs\BSP_WinCE_ARM_A8_User_Guide.pdf
 - User Guide for the BSP

- Docs\BSP_WinCE_ARM_A8_Quick_Start_Guide.pdf
 - Quick Start Guide for the BSP
- Docs\BSP_WINCE_ARM_A8_Demo_Manifest.pdf
 - BSP demo package Manifest
- Docs\BSP_WINCE_ARM_A8_Manifest.pdf
 - BSP Manifest
- Docs\BSP_WINCE_ARM_A8_Demo_Package_License_Agreement.pdf
 - Software License Agreement for the BSP demo package
- Docs\BSP_WinCE_ARM_A8_SLA.pdf
 - Software License Agreement for the BSP
- Sources*
 - BSP source files, OS Design , DVSDK and Graphics binaries
- Misc*
 - DVSDK and Graphics demo files
- Tools*
 - SD card and NAND flash utilities

4. Installation Instructions

The BSP release installation file will install the source code and release documents to directory C:\TI\BSP_WINCE_ARM_A8_01_00_00\ by default. If the “install to _WINCEROOT” option is selected during installation, then the Sources folder is installed under _WINCEROOT (ex: C:\WINCE600) and docs/misc/tools folder are installed under C:\TI\BSP_WINCE_ARM_A8_01_00_00.

The Quick Start Guide contains full details of how to install, build and run the BSP for the respective processor.

5. Requirements

5.1 Required QFE's and Updates

- Windows Embedded CE 6.0 Product Update Rollup, December 31, 2006
- Windows Embedded CE 6.0 Product Update Rollup, December 31, 2007
- Windows Embedded CE 6.0 Product Update Rollup, December 31, 2008
- Windows Embedded CE 6.0 R3
- Windows Embedded CE 6.0 Product Update Rollup, December 31, 2009
- Windows Embedded CE 6.0 Monthly Update January 2010
- Windows Embedded CE 6.0 Monthly Update February 2010
- Windows Embedded CE 6.0 Monthly Update March 2010
- Windows Embedded CE 6.0 Monthly Update April 2010
- Windows Embedded CE 6.0 Monthly Update May 2010
- Windows Embedded CE 6.0 Monthly Update June 2010
- Windows Embedded CE 6.0 Monthly Update July 2010
- Windows Embedded CE 6.0 Monthly Update August 2010

5.2 Hardware Requirement

- For AM35x processor family:
 - AM3517 SOM-M2 processor board
 - eXperimenter Baseboard from LogicPD(<http://www.logicpd.com/>)
 - Application board from LogicPD
- For OMAP35x processor family
 - OMAP3530 EVM (Rev G)^{Note} from Mistral(<http://www.mistralsolutions.com/>)
 - Power Module from Mistral
 - OMAP35x processor Card from Mistral

Note: OMAP3530 EVM1 is not tested and is not officially supported in the BSP.

- For AM/DM processor family
 - Mistral OMAP3530 EVM (Rev G) from Mistral (same as above)
 - Power Module from Mistral (same as above)
 - AM/DM37x processor Card (Rev C) from Mistral

6. Feature Summary

The User Guide contains full details of the BSP functionality.

A summary of the features supported in this BSP release is available from http://processors.wiki.ti.com/index.php/WinCE-TIBSP_Feature_List

7. Test Summary

The BSP has been tested using a combination of Microsoft CETK, functional test and custom test utilities.

The BSP has been through the full system test and validation process to validate all the BSP functionality. Details of the Known Issues are available in Section 9 below.

The BSP has been tested with the following software and hardware revisions:

- Zoom AM3517(PG1.0) EVM kit (1013686 Rev 5)
 - Processor card : 1013636 Rev 7
 - eXperimenter Baseboard: 1013702 Rev 4
 - Application Board: 1013690 Rev 4
 - 4.3" WQVGA LCD: 1012041 Rev C

- Zoom AM3517(PG1.0) EVM kit (1014470 Rev D)
 - Processor card : 1014471 Rev D
 - eXperimenter Baseboard: 1014472 Rev B
 - Application Board: 1014473 Rev C
 - 4.3" WQVGA LCD: 1012041 Rev C

- Mistral OMAP35x EVM kit
 - Main board: Rev G
 - Power Module: Rev D
 - OMAP35xx processor card: Rev C
 - OMAP37xx(ES1.1) processor card: Rev C

- Windows CE 6.0 R3 with monthly updates to August 2010

In addition to functionality, performance was also measured, you can find out the performance data from the following link:

http://processors.wiki.ti.com/index.php/WinCE_Comparative_Benchmarks

8. Limitations

Due to hardware and software limitations, some of the features may not work properly. Here is the list:

- NLED driver for AM/DM37x is disabled
 - PROC_ACT LED(GPIO8) used by NLED driver is pin-muxed with DSS_data23 on DM3730.

- SD/MMC slot 2 can not be recognized on some AM3517 EVM
 - Signals of MMC2 are conflicting with wireless module.

- SD/MMC slot 2 Write Protection is disabled
 - GPIO 176 is used for SD/MMC slot 2 write protection. This pin is also used by LCD module for PANEL_POWER and is configured as output. To enable the write protection, PAD

configuration(bsp_padcfg.h) for MCSPI_CS2 needs to be added in MMC2_PADS and "CardWPGPIO" for slot 2 needs to be set in sdhc.reg

- VDD2 Voltage value shows higher than 1.15V on some Mistral Power Module
- Warm reboot triggered by watchdog timer may not work on some OMAP3530 processor cards
- In DVI mode, when desktop is rotated by 90 degrees, multimedia playout cause corrupted video and audio playout
- VRFB (Virtual Rotated Frame Buffer) is not compatible with the some video codecs provided by Microsoft
- Video capture preview does not work when VRFB is enabled
- Capture driver supports only interlaced video input

9. Known Issues

Latest issues list can be tracked in the TI bug database

<https://cqweb.ext.ti.com/cqweb/main?command=GenerateMainFrame&service=CQ&schema=SDo-Web&contextid=SDOWP&entityDefName=IncidentReport&username=readonly&password=readonly&queryID=34403363>

Here is a brief note on what various states in this database mean:

- Open: Problem has been submitted recently but has not been looked at by Eng (may or may not be real issue)
- Accepted: Engineering has accepted the problem as an issue to look into
- Planned: Fix has been implemented but has not been released or verified by QA
- Fixed: Resolution implemented and fix verified independently by QA

ID	Headline	Targets
SDOCM00071258	CETK Touch Panel test 8007(Driver does not support TouchPanellInitializeCursor) fail	All Platforms
SDOCM00071359	CETK - NAND - File System Driver	All Platforms
SDOCM00072532	Nand WriteFile and ReadFile performance number is lower than requirment	All Platforms
SDOCM00072746	CETK: Storage Device Block Driver API - NANDFlash	All Platforms
SDOCM00072747	Storage Block Driver Read/Write Test - Buffer Sizes: (8X) test fails - NANDFlash	All Platforms
SDOCM00073169	NLED driver - sample application to demo driver usage with user LEDs on the board	All Platforms
SDOCM00073567	Nand ECC test application is needed	All Platforms
SDOCM00074296	Capture driver supports only interlaced video input	All Platforms

SDOCM00074297	IAMDroppedFrames interface of camera driver returns 0 values for all statistics	All Platforms
SDOCM00074298	Video capture preview does not work when VRFB is enabled	All Platforms
SDOCM00074300	CaptureTest application: High ARM utilization seen when preview is enabled and preview window is minimized	All Platforms
SDOCM00074380	System hangs when not exiting an OpenGL application gracefully	All Platforms
SDOCM00074513	Load NK.bin to NAND through SD boot	All Platforms
SDOCM00074635	When running imaging codec CETK tests, certain exceptions in coredll.dll are printed on console	All Platforms
SDOCM00074643	Camera CETK failures	All Platforms
SDOCM00075370	With 1280x720 DVI resolution, output is disturbed on omap3530 and red on am3517, during image download	All Platforms
SDOCM00075480	Need PM related utilities apps to be included in BSP build.	All Platforms
SDOCM00075671	Green band at bottom and blue line on rightmost end of capture window	All Platforms
SDOCM00075673	CaptureTest app - raw capture - desirable to be able to store output in file	All Platforms
SDOCM00075736	Desirable feature to change the OPM state through telnet.	All Platforms
SDOCM00075870	Enabling WaitforVsync in Display driver causes performance degradation	All Platforms
SDOCM00075876	Rotation support and multimedia playback while VRFB is disabled	All Platforms
SDOCM00075971	Demo App (Olivia) tablet improvements	All Platforms
SDOCM00076435	VRFB (Virtual Rotated Frame Buffer) is not compatible with the some video codecs provided by Microsoft.	All Platforms
SDOCM00074333	EVM becomes unresponsive with a white screen after running CaptureTest repeatedly	AM/DM3730
SDOCM00075349	CEStress fails on DM3730 after about 30 minutes - device is inactive (applies to PG1.0 silicon only)	AM/DM3730
SDOCM00075809	Random Data Abort on GPTimer1 register access	AM/DM3730
SDOCM00075958	Verify Get NLED Count fail on dm3730	AM/DM3730
SDOCM00076102	USB - CETK Storage Device Block Driver Benchmark Test Failure	AM/DM3730
SDOCM00068741	OAL Cache CETK test - OAL Data Cache Size Calculation test fails (test case ID 1008)	AM3517
SDOCM00068743	Partition Driver Test - CETK - fails for test ID 5103 - R/W and bounds check disk partition data	AM3517
SDOCM00068811	ILTiming does not run properly.	AM3517
SDOCM00069778	VMINI is not implemented (CETK Graphical Tool doesn't work)	AM3517
SDOCM00069780	KITL only works in polling mode	AM3517
SDOCM00070145	CETK Waveform Audio Loopback fails	AM3517
SDOCM00070568	NOR XLDR doesn't boot	AM3517
SDOCM00071296	CAN - loopback feature in WinCE driver will enable testing low bit rates like 10K	AM3517
SDOCM00071352	CETK - DirectShow Playback and Latency	AM3517
SDOCM00071356	CETK - Image Codec	AM3517

SDOCM00071357	CETK - Winsock Performance	AM3517
SDOCM00071358	CETK - Serial Communications	AM3517
SDOCM00071488	CETK:Storage Device Block Driver API Test - 4024 fail and Storage Block Driver Read/Write Test - Buffer Sizes: (8X) test fail	AM3517
SDOCM00071904	There is error messages when running CETK OAL interrupt IOCTL kernel tests	AM3517
SDOCM00071905	audio requirement - McBSP in master mode - currently, there is no way to verify its functionality	AM3517
SDOCM00072121	Provide way to stop refreshing WDT and way to set WDT timeout value instead of modifying source code	AM3517
SDOCM00072426	AIC23 in master mode is required to verify McBSP in slave mode functionality	AM3517
SDOCM00072812	Waveform Audio Driver - 5000-5004 - powerup/powerdown tests - AM3517 board does not resume	AM3517
SDOCM00073010	GPIO driver requirement - reservation mechanism currently not implemented in GPIO driver	AM3517
SDOCM00073104	do command utility on AM3517 - cpuidle value is not correct	AM3517
SDOCM00073138	Board Hangs when running GDI cetk Test on DVI build	AM3517
SDOCM00073165	CAN driver requirement - powerup and powerdown APIs are currently stubs - need to be implemented	AM3517
SDOCM00073296	DirectDraw CETK video test cases (ID 400 to 420) are skipping	AM3517
SDOCM00073446	USB-Forum Tests - When USB test mode environmental variable is enable, the build fails with an error.	AM3517
SDOCM00073452	Canbenchrx app - need clarifications and batch files to use this app	AM3517
SDOCM00073453	BUS_OFF error seen after dynamic baud rate change to 50000	AM3517
SDOCM00073454	Serial port communication tests - failures are seen B2B and many tests fail when run board to PC	AM3517
SDOCM00073493	USB-Audio Streaming - Streaming to/from USB speakers/microphone does not work.	AM3517
SDOCM00073563	Write protection is not working on SD slot 2	AM3517
SDOCM00074219	BSP_NOVRFB variable needs to be removed from AM35x batch file	AM3517
SDOCM00074220	Cannot change the default USB function client via do.exe command usbFnSet	AM3517
SDOCM00074514	Ethernet coming up is slow on am3517	AM3517
SDOCM00074631	Imaging codec CETK tests on AM3517 - one test fails	AM3517
SDOCM00074632	Battery API test - one test fails on AM3517	AM3517
SDOCM00074846	warm reboot doesnt work when booting from SD card on AM3517	AM3517
SDOCM00074849	IMGNOCLAIBRATION flag doesnt exist for AM35XX BSP	AM3517
SDOCM00074949	Camera Driver SelectXXX function not implemented properly	AM3517
SDOCM00075108	OAL CETK Test fails - Compare All Three Timers- Busy Sleep	AM3517
SDOCM00075290	USB Mass Storage takes a long time to mount on Windows Vista/7	AM3517
SDOCM00075672	Default capture capability of capturetest app does not match the capability supported by video driver on AM35x BSP	AM3517
SDOCM00075941	Touchscreen becomes no response intermittently after suspend and resume	AM3517
SDOCM00076056	Suspend/resume with tvout on does not behave correctly - leading to LCD display flickering and no display on tvout	AM3517
SDOCM00076059	GDI tests on AM3517 - DVI mode leads to display toggling between on and off and test not completing	AM3517

SDOCM00076110	OAL Timer Tests - GetVerifyIdle Time - Idle Time While Sleeping fails on AM3517	AM3517
SDOCM00076132	Mismatch information between bsp_opp_map.h and opm command output , CPU load policy registry	AM3517
SDOCM00072600	Dragging a selection causes video playback to stop	OMAP3530
SDOCM00072602	DO.EXE Shell Extension failure	OMAP3530
SDOCM00072603	When BSP_XRPLUGIN_DDRAW is turned on, XAML perf apps doesn't work	OMAP3530
SDOCM00072605	When the device hangs, USB RNDIS KITL will not work until PC is re-booted	OMAP3530
SDOCM00072687	OAL Interrupt loctl user mode test Mult IRQ Force-Static Alloc can't force static on some irq set	OMAP3530
SDOCM00072718	MMC Boot doesn't work with 8 bit data bus MMC cards on OMAP3530 EVM	OMAP3530
SDOCM00072736	OAL Cache CETK test - OAL Data Cache Size Calculation test fails (test case ID 1008)	OMAP3530
SDOCM00072740	Partition Driver Test - CETK - fails for test ID 5103 - R/W and bounds check disk partition data	OMAP3530
SDOCM00072744	CETK - Winsock Performance	OMAP3530
SDOCM00072745	CETK Serial Port Communication test - synchronization between two sides is not successful	OMAP3530
SDOCM00072748	CETK: Flash Memory Read-write and performance - SD Card	OMAP3530
SDOCM00072810	Waveform Audio Driver - mixerOpen function fails on omap3530	OMAP3530
SDOCM00073009	Waveform Audio Loopback Test - OMAP3530 - cracks in output	OMAP3530
SDOCM00073294	USB(OTG) power state is not Being changed eventhough, System power state chaged to SystemIdle.	OMAP3530
SDOCM00073298	When OTG state is changed from D4 to D0, the system state changed from UserIdle/SystemIdle to ON.	OMAP3530
SDOCM00073300	When the system is put to ON State from the command line, the power consumption in the system is still very low.	OMAP3530
SDOCM00073308	SD/UART drivers power managment is not working.	OMAP3530
SDOCM00073366	USB-Forum OPT Tests: OMAP3530 Fails a significant number of tests	OMAP3530
SDOCM00074218	CE stress errors when running tests with omap3530	OMAP3530
SDOCM00074376	Implementation for Advisory 3.1.1.176 Accesses to DDR Stall in SDRG After a Warm-reset	OMAP3530
SDOCM00074515	OAL retail msgs to be enabled and network settings->kitl to be disabled by default in SD eboot	OMAP3530
SDOCM00074538	Touch screen is acting slow and inaccurate after running long time Bounce demo	OMAP3530
SDOCM00074639	Data abort seen when going into suspend state while WMP is playing video file from SD card (which uses DSP codec)	OMAP3530
SDOCM00075373	s2_ddraw error shows up on console with cestress on omap3530 - needs to be rootcaused	OMAP3530
SDOCM00075381	Prefetch abort error (or application hangs otherwise) on omap35xx after watchdog timer times out and app is coming up	OMAP3530
SDOCM00075592	Problem when Playing Audio/Video Playback (H.264, AAC) video files from SD card using Windows Media Player.	OMAP3530
SDOCM00075868	DVI mode - rotation and then, multimedia playout cause corrupted video and audio playout	OMAP3530
SDOCM00075872	With tvout and DVI enabled, starting media playback results in DVI screen blanking out for a second.	OMAP3530

SDOCM00075874	VBus Error seen occasionally causing OTG port not to function	OMAP3530
SDOCM00075879	OMAP3530 ISP suspend/wake-up problem	OMAP3530
SDOCM00075881	EHCI inconsistencies - summary	OMAP3530
SDOCM00075986	Some Nand test like "Create a 100 byte file with 1 cluster free" fail in build 14.	OMAP3530
SDOCM00076080	ARM utilization remains at above 30% even after one or two minutes after the target comes up	OMAP3530
SDOCM00076086	Suspend-resum manually on OMAP3530 for many times(more than10) kills the platform or doesn't respond anymore.	OMAP3530
SDOCM00076091	Voltage drop on VDD2 for most of OPPs is not correct. The reading is much higher than expected.	OMAP3530
SDOCM00076379	Tvout (S-Video/Composite output) stops functioning after a suspend/resume cycle	OMAP3530
SDOCM00076382	Switching TVout (composite/S-Video) on/off doesn't work always while DVI is on	OMAP3530
SDOCM00076433	When tvout is enabled, GFX demos on DVI/LCD slow down significantly	OMAP3530
SDOCM00076438	Active Sync connection can't be established after reset through WARM_RST button when plugged into USB OTG port.	OMAP3530
SDOCM00076449	When in OFF mode, hfclkout should be turned off (currently it is still active)	OMAP3530

10.Support

For technical support, please post to the TI e2e WinCE community forum

<http://e2e.ti.com/support/embedded/f/353.aspx>

Forum reported issues that are reproducible on the EVM will be entered into TI bug database and can be tracked here

<https://cqweb.ext.ti.com/cqweb/main?command=GenerateMainFrame&service=CQ&schema=SDo-Web&contextid=SDOWP&entityDefName=IncidentReport&username=readonly&password=readonly&queryID=34403363>

Note: If prompted for login/password, please close the browser and click on the link again.

For latest information on the BSP, please TI WINCE BSP wiki:

http://processors.wiki.ti.com/index.php/WinCE-TIBSP_Handbook

Users new to Windows Embedded CE6 can start from the following link:

<http://www.microsoft.com/windowseembedded/en-us/products/windowsce/default.mspx>