



**Windows Embedded CE 6.0 BSP for the  
OMAP-L13x/AM17x/AM18x**

**Version 1.10.00**

**Release Notes**

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## 1. Introduction

This document contains the Release Notes for the Windows Embedded CE 6.0 BSP for the Texas Instruments OMAP-L138, AM18x, OMAP-L137 and AM17X processors. This is the version 1.10.00 release of the BSP.

## 2. What's New

### Release 01.10.00:

- Added support of Soft-UART on AM1707 and AM1808
- Resolved Issues:
  - SDOCM00080025
  - SDOCM00079993
  - SDOCM00077969
  - SDOCM00077967
  - SDOCM00072423

### Release 01.00.02:

- Updated OMAP-L13X/AM1707/AM1808 ubl to armubl-03.20.00.14
- Updated OMAP-L138/AM1808 serial flasher utility to v2.30, OMAP-L138\_FlashAndBootUtils\_2\_30
- Updated OMAP-L137/AM1707 serial flasher utility to v2.20, OMAP-L137\_FlashAndBootUtils\_2\_20
- Known Issues:
  - SDOCM00077967
  - SDOCM00077969
- Resolved Issues:
  - SDOCM00073692
  - SDOCM00076130
  - SDOCM00077269
  - SDOCM00077270

### Release 01.00.01:

- Added support of Boot from SD card for OMAP-L138 EVM (section Feature Summary).
- Added diskman utility for creating bootable SD card to support booting from SD card.
- Added test platform information Zoom OMAP-L138 EVM baseboard (1016660 Rev A) and SOM (1015517 Rev B) (section Testing Summary)
- Known Issues: added
  - SDOCM00070756
  - SDOCM00073692
- Resolved Issues: added
  - SDOCM00073707
  - SDOCM00076103
  - SDOCM00076104
  - SDOCM00076128

See corresponding sections for more details.

### 3. Distribution Contents

The BSP release installation file,

**OMAPL13x\_AM1x\_BSP\_WINCE\_ARM9\_Release\_v1.10.00.exe**, contains the following files:

- Doc\ AM1x\_OMAPL13x\_WinCE\_6.0\_BSP\_Release\_Notes.pdf
  - These release notes
- Doc\  
AM1x\_OMAPL13x\_Board\_Support\_Package\_WinCE\_Software\_License\_Agreement.pdf
  - Software License Agreement for the BSP
- Doc\ AM1x\_OMAPL13x\_WinCE\_6.0\_BSP\_Software\_Manifest.pdf
  - List of components used in the BSP
- Doc\ AM1x\_OMAPL13x\_WinCE\_6.0\_BSP\_User\_Guide.pdf
  - User Guide containing BSP feature descriptions and technical information
- Doc\ AM18x\_OMAPL138\_WinCE\_6.0\_BSP\_Quick\_Start\_Guide.doc.pdf

- Quick Start Guide containing installation and build instructions for OMAP-L138 AM18x
- Doc\ AM17x\_OMAPL137\_WinCE\_6.0\_BSP\_Quick\_Start\_Guide.pdf
  - Quick Start Guide containing installation and build instructions for OMAP-L137 AM17x
- Platform\\*, OSDesigns\\* - BSP and OS Design source files for OMAP-L13x, AM17x and AM18x
- Demo TI\_DEFAULT\\* - pre-built binaries for OMAP-L13x, AM17x and AM18x
- TEST\\* - Test Plans and Test Results.

## 4. Requirements

Hardware required:

- For OMAP-L137 or AM1707 EVM, a suitable OMAP-L137 or AM1707 EVM, available from Spectrum Digital Inc.  
(<http://www.spectrumdigital.com/>):
  - OMAP-L137/TMS320C6747 Floating Point Starter Kit
  - AM1707 EVM
- For OMAP-L138 or AM1808, a suitable OMAP-L138 or AM1808 Zoom development kit, available from Logic PD (<http://www.logicpd.com/>):
  - Zoom OMAP-L138/AM1808 EVM Development Kit
  - Zoom OMAP-L138/AM1808 eXperimenter Kit
- For Soft-UART support on AM1707 and AM1808, Mistral UART Expansion Board RevB.
- Development PC.

See the corresponding Quick Start Guide for full details of hardware and software required.

## 5. Installation Instructions

The BSP release installation file will install the source code and release documents to directory C:\TI\BSP\_WINCE\_ARM9\_01.10.00\ by default.

The Quick Start Guides contain full details of how to install, build and run the BSP

for the respective processor..

## 6. Feature Summary

The User Guide contains full details of the functionality supported by the BSP. A summary of the features supported in this BSP release is as follows:

- Bootloaders:
  - Boot from SD card, with EBOOT and CE image saved on SD card. In previous releases, EBOOT needs to be saved in flash. (**OMAP-L138 only**)
  - Diskman.exe utility to create bootable SD card to support booting from SD card on OMAP-L138 EVM.
  - OMAP-L138 UBL with 300MHz ARM and DSP configuration
  - AM1808 UBL with 456MHz ARM configuration
  - OMAP-L137 UBL with 300MHz ARM and DSP configuration
  - AM1707 UBL with 300MHz ARM configuration
  - AM1707 UBL with 456MHz ARM configuration (requires rev H EVM)
  - Boot from SPI Serial Flash
  - Boot from NAND Flash
  - Boot from NOR Flash (**OMAP-L138/AM1808 only**)
  - Ethernet download of CE image
  - Load of CE image from NAND Flash
  - Load of CE image from SD card
  - Load of CE image from NOR Flash (**OMAP-L138/AM1808 only**)
  - Persistent storage of EBOOT configuration in flash
  - Splash screen support
- CE 6.0 OAL supporting:
  - KITL over Ethernet
  - VMINI Ethernet support
  - Kernel debugger

- Performance Profiler
- Real Time Clock
- Watchdog Timer
- Drivers and libraries:
  - EDMA driver
  - I2C driver
  - SPI driver
  - LIDD support library
  - Character LCD driver
  - Raster LCD driver
  - EMAC NDIS Ethernet driver
  - McASP support library
  - UART Serial driver
  - USB 1.1 OHCI driver
  - USB 2.0 Host driver
  - USB 2.0 Function driver
  - USB 2.0 OTG driver
  - NAND flash driver
  - AIC3106 Audio driver
  - SD/MMC card driver
  - PWM driver
  - Notification LED driver
  - Power Management Suspend/Resume support
  - Soft UART driver
  - For **OMAP-L138/AM1808 only**:
    - UPP driver
    - VPIF driver
    - McBSP driver
    - TPS65070 Touch Screen driver

- For **OMAP-L137/AM1707 only**:
  - TSC2004 Touch Screen driver

## 7. Testing Summary

The BSP has been tested using a combination of Microsoft CETK, functional test procedures and custom test utilities. The test procedure is designed to validate all of the BSP functionality detailed in the User Guide.

The BSP has been through the full system test and validation process. Details of known issues can be found in section 7 below.

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

**Software:** Windows CE 6.0 R3 with monthly updates to April 2010

**Hardware:**

Setup A:

- Zoom OMAP-L138 EVM baseboard (1016660 Rev A)
- Zoom OMAP-L138 SOM (1016841 Rev B)
- Zoom OMAP-L138 UI board (1015503 Rev B)
- Logic PD 4.3" WQVGA Display Kit (1012041 revisions C)

Setup B:

- Zoom OMAP-L138 EVM baseboard (1016660 Rev A)
- Zoom OMAP-L138 SOM (1015517 Rev B)
- Zoom OMAP-L138 UI board (1015503 Rev B)
- Logic PD 4.3" WQVGA Display Kit (1012041 revisions C)

Setup C:

- Zoom OMAP-L138 EVM base board (1013527 Rev 4)
- Zoom OMAP-L138 SOM (1013523 Rev 4)
- Zoom OMAP-L138 EVM UI board (1013528 Rev 7)
- Logic PD 4.3" WQVGA Display Kit (1012041 revisions C)

Setup D:

- Zoom OMAP-L138 EVM base board (1013527 Rev 4)
- Zoom OMAP-L138 64 MB DDR2 SOM (1013525 Rev 5)



- Logic PD 4.3" WQVGA Display Kit (1012041 revisions C)

#### Setup E:

- Zoom OMAP-L138 EVM base board (1013527 Rev 4)
- Zoom AM1808 SOM (1015127 Rev A)
- Zoom OMAP-L138 EVM UI board (1013528 Rev 7)
- Logic PD 4.3" WQVGA Display Kit (1012041 revisions C)

#### Setup E:

- OMAP-L137 EVM (ASSY 511340 revision E)
- DA830 User Interface Board (AASY 511240 revision C)
- Mistral UART Expansion Board RevB

#### Setup F:

- AM1707 EVM (ASSY 513380 revision H)
- AM1707/OMAP-L137 User Interface Board (ASSY 513400 revision C)
- Mistral UART Expansion Board RevB

## 8. Known Issues

Latest issues list can be tracked in the TI bug database at the link below (when ask for password, close the browser and click the link again)

<https://cqweb.ext.ti.com/cqweb/main?command=GenerateMainFrame&service=CQ&schema=SDO-Web&contextid=SDOWP&queryID=34371716&username=readonly&password=readonly>

Known issues for both **OMAP-L138/AM1808** and **OMAP-L137/AM1707** in this release:

- SDOCM00070756 – USB OTG Function - CETK irregular endpoint packet size test failures
- SDOCM00070924 – Transcend MMC 2G card could not be detected
- SDOCM00070932 – USB OHCI - CETK irregular endpoint packet size test failures
- SDOCM00073257 – Silverlight bubble demo screen display shifts down by half screen

Known issues for **OMAP-L138/AM1808**:

- SDCM00073370 - USB-Forum OPT Tests: AM1808 Fails a a number of HS-

A, HS-B, FS-A and FS-B tests.

- SDOCM00070925 – McBSP - Throughput rates higher than expected
- SDOCM00070928 – NOR filesystem not currently configured
- SDOCM00070930 – Networking - Pass IP settings from EBOOT to CE
- SDOCM00070934 – SDHC - CRC errors seen with MMCmobile card at 52MHz (bus currently limited to 26MHz)
- SDOCM00070935 – EBOOTNOR - Does not boot with SD card in slot
- SDOCM00071083 – UPP test app - number of sample points too low

Known issues for **OMAP-L137/AM1707**:

- SDOCM00070888 – GPIO test to get line status fails with Rev H AM1707 board while it works fine with Rev G board
- SDOCM00070931 – USB OHCI - On L137 configure GPIO2\_4 to control USB OVC line
- SDOCM00070932 – USB OHCI - CETK irregular endpoint packet size test failures

## 9. Resolved Issues

Issues resolved in release **01.10.00**:

- **SDOCM00080025** - omapl138/am1808 bsp should allow nand and sdhc to be enabled at the same time. (OMAP-L138/AM1808)
- **SDOCM00079993** - Add PRU support over Mistral UART Expansion Module (AM1707/AM1808)
- **SDOCM00077969** - BSP and SOC versions need to reflect the BSP release version (OMAP-L138/AM1808/AM1707/OMAP-L137)
- **SDOCM00077967** - Sample XAML app does not get terminated properly on timeout (OMAP-L138/AM1808/AM1707/OMAP-L137)
- **SDOCM00072423** - Documentation of serial flashing of AM1707 - targetType to be added in procedure for erasing flash. (AM1707)

Issues for both **OMAP-L138/AM1808** resolved in release **01.00.02**:

- **SDOCM00073692** - Current BSP supports 128MB DDR only. It needs to also support 64MB DDR found by default in LogicPD eXperimenter Kit

- **SDOCM00076130** - eboot takes about 3 min to load and start NK from Class 2 SDHC SD cards
- **SDOCM00077269** - L138 Rev 3 EVM has GP0[11] pulled low by default, SD0 won't work without SW config, but NOR will work.

Issues for **OMAP-L137/AM1707** resolved in release **01.00.02**:

- **SDOCM00077270** – OMAP-L137/AM1707 eboot should read manufacturer provided MAC addr from EEPROM

Issues resolved in release 01.00.01:

- SDOCM00076103 – spi eboot's default boot device should be SD card device
- SDOCM00076104 – OMAP-L138 BSP hard coded to pull PMIC\_PWR\_ON high that causes boot up problem in 1015517 REV-B SOM cards
- SDOCM00076128 – Manufacturer provided MAC address is not used to automatically configure emac device during bootup
- SDOCM00067023 – MMCcard is not shown up in My Device after unplug and replug in.
- SDOCM00070759 – NAND - DMA support in FMD is not working
- SDOCM00070760 – NAND - DMA support in bootloader is not working
- SDOCM00070509 – EBOOT sometimes fails to read CE image from SDHC card
- SDOCM00070757 – USB OTG Function - ActiveSync connection not re-established after suspend / resume
- SDOCM00071318 – EBOOT DSP boot menu option not working

## 10. Support

For technical support,

1. Please post to the 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 at the link below (when ask for password, close the browser and click the link again)

<https://cqweb.ext.ti.com/cqweb/main?command=GenerateMainFrame&service=CQ&schema=SDO-Web&contextid=SDOWP&queryID=34371716&username=readonly&password=readonly>

