



# Release Note for SMDK6410 (Windows Embedded CE 6.0)

**S3C6410**

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## S3C6410 RISC Microprocessor Release Note

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Preliminary product information describe products that are in development, for which full characterization data and associated errata are not yet available. Specifications and information herein are subject to change without notice.

## Revision History

Revision No	Description of Change	Refer to	Author(s)	Date
0.1	Beta BSP Release	-	WinCE Team	2008-10-16
0.2	Beta RC1 BSP Release	-	WinCE Team	2009-01-02
0.3	Beta RC2 BSP Release	-	WinCE Team	2009-01-19
0.4	Beta RC3 BSP release	-	Jungchul Park	2009-03-31
0.5	Beta RC4 BSP release	-	WinCE Team	2009-04-16
0.6	Beta RC5 BSP release	-	D/D Team	2009-06-12
0.7	Beta RC6 BSP release	-	D/D Team	2009-07-28
0.8	SSS6410XBW_60PM_REL_2.01_090924	-	WM Team	2009-09-24
0.9	PocketMory is updated	-	D/D Group	2009-11-05
0.10	RC7 BSP for CE6.0R3 Release	-	D/D Group	2009-11-11
0.11	RC8 BSP for CE6.0R3 Release	-	D/D Group	2009-11-30
0.12	Display Driver is updated	-	D/D Group	2010-02-22
0.13	PocketMory is updated	-	CSE Team	2010-03-09
0.14	PocketMory is updated	-	CSE Team	2010-05-13
0.15	Sample Codes is added		CSE Team	2010-05-19
0.16	PMSMDMaker is updated.		CSE Team	2010-07-06

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# 1 SMDK6410\_CE60\_PM\_REL\_2.09\_100706

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Updated on July 6, 2010

## What's New?

- The PMSMDMaker is added.
  1. Version: v3.1
  2. The PMSMDMaker v3.1 can support listed 14 MLC NAND flash types.
    1. K9G4G08
    2. K9G8G08
    3. K9L8G08
    4. K9LAG08
    5. K9GAG08U0M(4BIT ECC)
    6. K9GAG08U0D(8BIT ECC)
    7. K9HAG08
    8. K9HBG08
    9. K9LBG08U0M(4BIT ECC)
    10. K9LBG08U0D(8BIT ECC)
    11. K9HCG08U0M(4BIT ECC)
    12. K9HCG08U0D(8BIT ECC)
  3. Refer to the PocketMory Pre-Programming Guide.
  4. Related files
    1. ETC\PMSMDMaker\PMSMDMaker: PMSMDMaker tool
    2. ETC\PMSMDMaker\DumpImage: Image dump tool
    3. ETC\PMSMDMaker\Page127: Image for page 127
    4. ETC\PMSMDMaker\ PocketMory Pre-Programming Guide.pdf

## Fixes made in this update

## Known Issues

## 2 SMDK6410\_CE60\_PM\_REL\_2.08\_100519

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Updated on May 19, 2010

### What's New?

#### Fixes made in this update

- For Silverlight Xaml Renderer OpenGL plug-in, Shaders.dll sample codes is added. If BSP\_XRPLUGIN\_OPENGL=1, Shaders.dll will be compiled. The default plug-in option is DDRAW plug-in. The user can change this option in smdk6410.bat.
- image\_cfg.h and config.bib has some different memory layout to increase framebuffer size.

### Known Issues

## 3 SMDK6410\_CE60\_PM\_REL\_2.07\_100513

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Updated on May 13, 2010

### What's New?

### Fixes made in this update

- PocketMory
  - I. FTL
    - 1. FTL library
      - 1. FTL version : FTL\_v1.10\_WCE6.0\_S3C6410\_20100513
      - 2. Calling the copyback function in merging is skipped in case that the number of valid pages of the log block is 0 because that block is not needed to be merged.
      - 3. Related files: SRC/WHIMORY/LIB/ARMV4I/retail/FTL\_MLC.lib
    - 2. PseudoFTL
      - 1. Some unused comments are removed.
      - 2. Related files: SRC/WHIMORY/PUBLIC/PSEUDOFTL/PseudoFTL.c
  - II. ONDisk core library
    - 1. ONDisk core version : ONDisk\_core\_v1.03\_WCE6.0\_S3C6410\_20100513
    - 2. "<log P1=W"100W" P2=W"FORMATW" />" debug message is removed, that message is used for MMT system test.
    - 3. Related files : SRC/WHIMORY/LIB/ARMV4I/retail/ONDisk\_core.lib
  - III. BootPart
    - 1. Code is cleaned up.
    - 2. Some debug messages are changed with carriage return.
    - 3. Related files:
      - 1. SRC/WHIMORY/BOOTPART/bootpart.cpp.c
      - 2. SRC/WHIMORY/BOOTPART/fmd\_stub.cpp
  - IV. WMR
    - 1. Code is cleaned up.
    - 2. Unused comments and code are removed.
    - 3. Related files:
      - 1. SRC/WHIMORY/CORE/WMRGlobal/MRGlobal.c
      - 2. SRC/WHIMORY/INC/WMRConfig.h
      - 3. SRC\WHIMORY\WPUBLIC\WMR\_UTIL\WMR\_Utils.c
  - V. OAM
    - 1. MMT\_Assert function is added for an internal MMT test.
    - 2. Related files:
      - 1. SRC/WHIMORY/OAM/EBOOT/EbootWMROAM.c

2. SRC/WHIMORY/OAM/EBOOT/EbootWMROAM.h
3. SRC/WHIMORY/OAM/OSLESS/OSLessWMROAM.c
4. SRC/WHIMORY/OAM/OSLESS/OSLessWMROAM.h
5. SRC/WHIMORY/OAM/WINCE/WinCEWMROAM.c
6. SRC/WHIMORY/OAM/WINCE/WinCEWMROAM.h

#### VI. BIBDrv

1. A check code for the return value of malloc is added.
2. Related files: SRC/WHIMORY/PUBLIC/BIBDRVIF/SYSTEM.c
3. Related function: ReauestReadSecToHAL()

## Known Issues



## 4 SMDK6410\_CE60\_PM\_REL\_2.06\_100309

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Updated on March 9, 2010

### What's New?

#### Fixes made in this update

- PocketMory
  - I. FTL library
    - 1. FTL version : FTL\_v1.09\_WCE6.0\_S3C6410\_20091214
    - 2. Some error handling code like ASSERT are changed with checking error condition and return FALSE with debug messages without making infinite loop.
    - 3. Related files : FTL\_MLC.lib
  - II. VFL library
    - 1. VFL version : VFL\_v1.03\_WCE6.0\_S3C6410\_20091214
    - 2. Some error handling code like ASSERT are changed with checking error condition and return FALSE with debug messages without making infinite loop.
    - 3. Related files : VFL\_MLC.lib
  - III. ONDisk core library
    - 1. ONDisk core version : ONDisk\_core\_v1.02\_WCE6.0\_S3C6410\_20091214
    - 2. Some error handling code like ASSERT are changed with checking error condition and return FALSE with debug messages without making infinite loop.
    - 3. Related files : ONDisk\_core.lib
  - IV. FIL
    - 1. The default value for remained ECC buffer is changed to 0xff from 0x00.
    - 2. Related files : S3C6410\_FIL.c

### Known Issues

## 5 SMDK6410\_CE60\_PM\_REL\_2.05\_100222

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Updated on February 22, 2010

### What's New?

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### Fixes made in this update

- EBOOT
  - I. Display codes are split to display.c from main.c
- Display Driver
  - I. OnScreen BitBlt codes are fixed with 2D HW
  - II. Window LocalPath Off codes are fixed for stability.
  - III. For YV12 and I420 format, DirectDraw Surface Creation codes are fixed. Now only 8 pixel-width aligned surfaces can be created with YV12 and I420. This is HW limitation.
- Some Hardtab character is replaced to 4 spaces in Serial Driver and USB driver.
- D3DM is disabled at default. D3DM is implemented using only SW. OpenGL will provide HW 3D Acceleration. If the user want to use D3DM, they can enabled "BSP\_NOD3DM=" environment in smdk6410.bat file.
- Some driver files is placed in XIP Kernel region in XIP image build.
- A critical section was added because RTC functions are reentrant

### Known Issues

## 6 SMDK6410\_CE60\_PM\_REL\_2.04\_091130

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Updated on November 30, 2009

### What's New?

- This BSP is tested with CE6.0 R3 with the Monthly Update R3 2009 Update Rollup.

### Fixes made in this update

- PocketMory library
  - I. A problem on all fail or all skip for CETK test(Storage test) is fixed.
    1. In the registry, AutoLoad setting is removed to indicating DSK number for CETK.
    2. Related files : platform.reg
  - II. FTL library is changed.
    1. An internal function on managing the FS is changed for the Flash Memory Read Write and Performance Test of CETK.
    2. Related files :FTL\_MLC.lib
  - III. ONDisk core library is changed.
    1. An internal function on IOCTL is changed for the Storage Device Block Driver API Test of CETK.
    2. Related files :ONDisk\_core.lib

### Known Issues

- 2D HW feature is enabled in Display Driver for Acceleration of silverlight at default. This can cause CETK fails in GDI(200 BitBlit, 218 StretchBlit, 219 TransparentBlit, 231 AlphaBlend)  
This was described in the Release Version SMDK6410\_CE60\_PM\_REL\_0.05\_090331\_Beta RC3  
If you do not want to make the CETK test fail, you can disable 2D HW features.  
The method how to change these setting is described in the porting guide, and the precomp.h in the display driver.

## 7 SMDK6410\_CE60\_PM\_REL\_2.03\_091111

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Updated on November 11, 2009

### What's New?

- This BSP is tested with CE6.0 R3 with the Monthly Update R3 2009 Update Rollup.
  - I. Some Environment variable is added to SMDK6410.bat, See the details on CE6 R3 Release Notes
    - 1. Added SYSGEN\_SAMPLEXAMLPERF
    - 2. Added BSP\_XRPLUGIN\_DDRAW and BSP\_XRPLUGIN\_OPENGL
- This version has changes from MS WEBAP project feedback
  - I. CETK Tux Test modules were fixed.
    - 1. MFC
    - 2. SPI
    - 3. I2C
    - 4. JPEG
  - II. The default setting for Image Compression option in config.bib is changed to 'OFF' to prohibit System hang with Single NK.bin image when sleep/wakeup.
  - III. USB RNDIS KITL codes is updated.
  - IV. SPI driver is updated
  - V. MFC Reserved Memory is shrinked for 3D.
- OpenGL driver is updated
  - I. Initial Memory Allocation setting is changed from 5Block\*2MB to 4Block\*4MB in the registry.

### Fixes made in this update

- For MultipleXIP image, gwes.dll and softkb.dll now has no 'M' attribute(non-pagable). with 'M' attribute, display driver does not come up correctly before explorer.exe is loaded.
  - 1. See FILES\MultipleXIP.bib
- KeyBD driver's laymgr.reg is modified

### Known Issues

None

## 7.1 SMDK6410\_CE60\_PM\_INT\_2.02\_091105

Updated on November 05, 2009

### What's New?

### Fixes made in this update

- VFL library is changed.
  - I. A function on printing the further debug message is added.
  - II. Related files : VFL\_MLC.lib
- FTL library is changed.
  - I. A function on printing the further debug message is added.
  - II. Related files :FTL\_MLC.lib

- FIL code is changed.
  - I. A function on printing the further debug message is added.
  - II. Related files :S3C6410\_FIL.c
- ONDisk misc code is changed.
  - I. Running condition(CPU idle ratio) for Scan and reclaim function is changed.
  - II. Related files :ONDisk\_misc.c

## Known Issues

None

## 8 SMDK6410\_CE60\_PM\_REL\_2.01\_090924 BSP Release

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Updated on Sept 24, 2009

### What's New?

- This version has new version number. According to new Versioning Rule, the BSP's Label version has 2.01. The major number means system test certified count and minor number is updates count from previous system test request. Because this BSP is sharing almost codes from FMD BSP. This BSP also has same major number. For MLC PocketMory test, there is only additional storage test.
- This version has changes from MS WEBAP project feedback
  - I. CETK Tux Test modules were added.
    1. AUDIO
    2. CMM
    3. I2C
    4. JPEG
    5. MFC
    6. PM
    7. SPI
  - II. Artheros AR6K WLAN module driver was added.
  - III. New Blitting codes using 2DHW is adopted for DirectDraw interface.
  - IV. MS license statement was changed.
  - V. Two NAND library is built for EBOOT that should not depend on CEDDK and OS FMD driver that depends on CEDDK.
  - VI. Ethernet download and KITL connection is available, using CS8900A(Lan 10Mbps)
  - VII. More secure codes were applied for all driver's iocontrol and interchanging buffer between drivers and applications

### Fixes made in this update

- MFC API is modified
  - I. MFC APIs is united without reference to OS.
  - II. Test application is modified as changed API.
- USB(device) driver is updated
  - I. Previous BSP USB driver makes UCBCV1.3 Chapter9 test. It is fixed.
- For 2D HW's Alphablend, SW AlphaBit workaround codes is added. It's in blt\_alpha.cpp in the display driver. The user can enable this workaround using '#define ALPHABIT\_WORKAROUND2 (TRUE)'
- Now SW9(EINT11) is soft reset button, and SW7(EINT9) is suspend/resume button

### Known Issues

None

## 9 SMDK6410\_CE60\_PM\_REL\_0.08\_090728\_Beta RC6 BSP Release

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Updated on July 28, 2009

### What's New?

#### Fixes made in this update

- UART serial driver is updated
  - I. TX DMA is implemented
    - 1. To use TX DMA, enable USE\_DMA definition in sources file and add "TXDMAEnable" value in registry file.
  - II. Bug fix when sleep, wakeup : restore sequence of Special Function Register is changed fit for device specification.
- MFC Driver is updated
  - I. MFC Driver can encode and decode together.
  - II. Update options in API, SsbSipMPEG4EncodeSetConfig()
- VFL library is changed.
  - I. The previous version have bug during the initial bad block is checked when the 8bit ECC device is used.
  - II. READ\_ERR\_FLAG change bug by CRITICAL\_READ\_CNT is fixed.
  - III. Related files : VFL\_MLC.lib
- FTL library is changed.
  - I. FTL\_Delete function is changed. The previous version has some problem when format the device. There were many erase operation during format device. This bug was fixed.
  - II. Related files : FTL\_MLC.lib
- Mass product solution is updated to support 8bit ECC device (K9GAG08U0D)
  - I. Related files : DumpImage.c, PMSMDMaker.exe, msvcr80d.dll
- NAND\_GetPlatformInfo function is added to FIL code.
  - I. This function has to be added to S3C6410\_FIL.c file. This function check the NAND device is SAMSUNG MLC NAND or Not. If this function is not implemented on FIL code, the VFL library will not work anymore.
  - II. Related files : S3C6410\_FIL.c, S3C6410\_FIL.h, FIL.c
- The CRITICAL\_READ\_CNT value can be set to 0.
  - I. If you do not want to use Read Reclaim function by read count, set this CRITICAL\_READ\_CNT value 0. If your device has periodic scan function by OnDISK or other application, please set this CRITICAL\_READ\_CNT value to 0.
  - II. Related files : S3C6410\_FIL.c
- FTL\_ReadReclaim function call is removed in DSK\_Open.
  - I. If you implement FTL\_Scan and FTL\_ReadReclaim function in some application level, this function is not need anymore. So this FTL\_ReadReclaim function is removed in DSK\_Open

by default setting.

II. Related files : ONDisk\_core.lib

## Known Issues

None





# 10 SMDK6410\_CE60\_PM\_REL\_0.07\_090612\_Beta RC5 BSP Release

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Updated on June 12, 2009

## What's New?

- 8bit ECC MLC NAND Support. We test this algorithm with K9GAG08U0D device.
- The 4K page device, for example K9GAG08U0M, spare area layout is changed like as below.
  - 0 ~ 3 : B.I + C.M + Reserve 2Byte ( It is same with previous version )
  - 4 ~ 23 : SCTX Data ( Meta data for page information )
  - 24 ~ 31 : MECC 0
  - 32 ~ 39 : MECC 1
  - 40 ~ 47 : MECC 2
  - 48 ~ 55 : MECC 3
  - 56 ~ 64 : MECC 4
  - 64 ~ 71 : MECC 5
  - 72 ~ 80 : MECC 6
  - 80 ~ 87 : MECC 7
  - 88 ~ 103 : 8bit SECC for Spare area from 4 to 23 (SCTX Data)
  - 104 ~ 119 : 8bit SECC for Spare area from 24 to 87 (MECC0~MECC7)
- NAND\_Read\_Retry function is supported.
  - .1. This function try to read again after change the NAND timing value to maximum delay, when the uncorrectable ECC error is happened.
  - .2. To use this function, please set the stLowFuncTbl.Read value to NAND\_Read\_Retry in FIL.c file.
- ECC algorithm verify function is implemented.
  - .1. To disable this function, set the PROVE\_ECC\_ALGORITHM value to 0 in S3C6410\_FIL.c file.
  - .2. This function verify the ECC algorithm again after modify bit error.
- New MLC device K9LBG08U0D which use 8bit ECC is updated.
  - .1. Related files : S3C6410\_FIL.c
- NAND\_GetPlatformInfo function is added in S3C6410\_FIL.c file. This function have to return valid address of NFCON. This function is used to check NAND flash ID. Only Samsung MLC NAND is available in our solution.
  - .1. Related files : S3C6410\_FIL.c
- Whimory : FTL\_Delete function is supported. This function can increase write performance.
  - .1. Related files : FTL\_MLC.lib, HALWrapper.c, HALWrapper.h, ONDisk.c, PseudoFTL.c
- OS Area and File System Area scan code is implemented on FIL code. This function is useful to prevent read disturbance problem. To use this function, the FTL\_SCAN\_RATIO and OS\_SCAN\_RATIO value have to be determined by FIL code. To disable scan function, just set this values to 0.
  - .1. FTL\_Scan(SCAN\_OS); FTL\_Scan(SCAN\_FS); FTL\_Scan(SCAN\_OS|SCAN\_FS);

- .2. Related files :WMRTypes.h, FTL\_MLC.lib

## Fixes made in this update

- FTL\_ReadReclaim function is changed. User can change reclaim count value in WMRConfig.h file. The defined value name is DEF\_WMR\_MAX\_RECLAM.
  - I. Related files : WMRConfig.h, WMRTypes.h, FTL\_MLC.lib, WMRGlobal.c
- NF\_WAIT\_ECC\_DEC\_DONE function is changed. Because some specific pattern can not be finished by 4bit ECC decoding algorithm. But the probability of this problem is very low and this pattern has over 5bit error. To resolve this problem, the NF\_WAIT\_ECC\_DEC\_DONE function have time out operation. And it needs reset CPU.
  - I. Related files : S3C6410\_FIL.c
- MFC Driver is updated
  - I. A bug that can't run HybridDivX in MFC driver is fixed.
- CMM Driver is updated
  - I. CMM Driver is updated to succeed in stress test.
- UART serial driver is updated
  - I. UART1 is dedicated to use Hardware AFC(Auto flow control)

## Known Issues

None





# 11 SMDK6410\_CE60\_PM\_REL\_0.06\_090416\_Beta RC4 BSP Release

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Updated on April 16, 2009

## What's New?

### Fixes made in this update

- A fix of the high performance timer
  - I. The high performance timer was updated for "High Perf Timer Backwards Check" test of CETK.
- A fix of the RTC
  - I. A leap year rollover bug has been fixed.
- The kernel profiler(Monte Carlo) is supported now.
  - I. A bug on the code to start a timer for the kernel profiler was fixed.

### Known Issues

None



# 12 SMDK6410\_CE60\_PM\_REL\_0.05\_090331\_Beta RC3 BSP Release

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Updated at Mar 31, 2009

## What's New?

- OS area (WMR\_SPECIAL\_AREA\_SIZE) was changed to 100MB.
- Bitblt with Alphablending from 32bpp to 32bpp surfaces was enabled. DirectDraw Bitblt with Alphablending is also supported.
- Touch Calibration application is added due to different LCD module between SMDK6410 board. This application will be launched automatically each boot time. So if you want to skip this calibration application launching. Comment out the line related with TouchCalibration.exe in platform.dat, platform.bib
- USB management part in Main.c of Eboot was updated.
- I2C driver updated
- MFC Ring buf mode was deleted
- MFC Encoder test code was added
- USB OTG device driver was updated to support USB test mode for USB HS Electrical compliance test.

## Fixes made in this update

- The multiple XIP is supported now. (by default)
- Display driver was updated
  - l. Data abort issue was fixed when using StretchBlit H/W acceleration.
- Workaround was applied for Alphablend doing Source Constant and Per-Pixel with HW. Now, the HW alpha-blending result has similar RGB value to MS SW alpha-blending result, but still the alpha-bit is source's one.
- The PowerButton driver has been reverted to the version 0.69.
  - On the version 0.70, SMDK didn't go into the suspend mode.
- On Screen Rotation, HW BitBlit with SRCCOPY will run
- Improved Drivers security. The following is list of drivers applied with TMD feedback.
  - CF\_ATAPI
  - Display partial
  - Video Driver
  - Power Button
  - Power Controller
  - MFC
  - HSMMC
  - IIC
  - SPI
  - Backlight



- Fixed data abort from 2D Software Optimization Library
- Stabilized USB connection on Download and Transport
  - Tested with all download method, and KITL connection.
- Improved Drivers security. The following is list of drivers applied with TMD feedback.
  - Audio AC97 and IIS
  - Camera
  - Backlight
  - Display partial
  - CMM
  - JPEG
- Removed all Hard TAB in the source code
- Removed printf function in the source code.
- EBOOT USB Initialization Code is moved for USB-Serial and USB-RNDIS connection with Platform builder
- STEPLDR.bin is added into SRC\BOOTLOADER\STEPLDR\BIN, This can be used for PlatformBuilder Download. To minimize code size of steploader, all UART function references are commented out.
- Display Driver's Directory Layout is changed to removing chip prefix
- 2D Control code is updated for supporting Per-Pixel Alphablend with Source Constant Alpha Blend(Pre-multiplied SCA) through GDI AlphaBlend functoin, but it's result still has some differences from SW result.
- OpenGL ES Library
  - OpenGL ES Library follows the Khronos naming rule.
  - FIMG Driver source code for supporting OpenGL ES is added.
- MFC driver
  - When dynamic parameter change for encoder, MFC clk is enabled.
- Bug fixes to 2D SW optimized library
- WriteRawImageToBootMedia function in EBOOT will not check badblock for Block 0 that's used for Steploader.
- Serial driver is modified. The interrupt value to notify MDD is fixed.
- OpenGL ES Library naming is changed to libGLESv1\_CM.dll and libGLESv2.dll
- OpenGL ES1.1/2.0 and EGL is more optimized.
- Changed the SoC library names to be consistent with the SoC naming convention.
- USBHost registry keys modified
- RTC initialize code added in bootloader and OAL
- Fixed the SoC dirs file
- Fixed the incorrect reporting of alpha blending capabilities
- HalGetDriverInfo() function is modified
- OTG device driver has bug in previous version BSP. It is fixed.  
(If you repeat Sleep/Wakeup quickly connecting USB cable, system will be hanged.)
- In SMDK6410 board latest 4.8" LCD, since touch panel is changed, touch calibration default value is changed in platform.reg file. (If you use old version 4.8" LCD on SMDK6410 board, calibration value should be changed. Refer to the porting guide)

- USB connection for download image was updated for fluent connection.
- I2C clock divide value modified.
- In case of VC1, the function for width/height information was updated.
- Bug fixes to DVFS(Dynamic Voltage and Frequency Scaling).
  - DVFS system supports 532, 666 and 800 MHz ARM clock with Sync mode.
  - Porting guide on DVFS was added on chapter 3.2 of the porting guide.
  - Clock setting process on booting time was added on chapter 3.6 of the porting guide

## Known Issues

- USB Connection can be unstable for specific Evaluation Board.
- 2D HW has conformance issue
  - CETK GDI test 218 StretchBlt can fail even when disabling 2D Optimization codes.
  - CETK GDI test 231 Alphablend can fail when enabling 2D HW.
  - CETK DDraw Test 202 can fail when enabling 2D HW.
- For backward compatibility, the IOCTLs of MFC, JPEG drivers about In/Out mixed parameter structure is not modified.
- Currently, Alphablend doing Source Constant and Per-Pixel with HW does not work correctly. This is occurred by HW limitation that does not blend AlphaBit of destination surface. HW just forward Source AlphaBit to Destination.



# 13 SMDK6410\_CE60\_PM\_REL\_0.04\_090119\_Beta RC2 BSP Release

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Updated at Jan 19, 2009

## What's New?

### Fixes made in this update

- Bug fixes to DVFS(Dynamic Voltage and Frequency Scaling).
  - DVFS system supports 532, 666 and 800 MHz ARM clock with Sync mode.
  - Porting guide on DVFS was added on chapter 3.2 of the porting guide.
  - Clock setting process on booting time was added on chapter 3.6 of the porting guide

### Known Issues

- 2D HW has conformance issue
  - CETK GDI test 218 StretchBlt can fail even when disabling 2D Optimization codes.
  - CETK GDI test 231 Alphablend can fail when enabling 2D HW.
  - CETK DDraw Test 202 can fail when enabling 2D HW.



# 14 SMDK6410\_CE60\_PM\_REL\_0.03\_090102\_Beta RC1 BSP Release

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Updated at Jan 1, 2009

## What's New?

- This BSP is based on [SMDK6410 Windows Embedded CE60 R2 FMD RC6](#) BSP.
- Bitblt with Alphablending from 32bpp to 32bpp surfaces is enabled. DirectDraw Bitblt with Alphablending also supported.
- Touch Calibration application is added due to different LCD module between SMDK6410 board. This application will be launched automatically each boot time. So if you want to skip this calibration application launching. Comment out the line related with TouchCalibration.exe in platform.dat, platform.bib
- I2C driver updated
- MFC Ring buf mode is deleted
- MFC Encoder test code is added
- USB OTG device driver is updated to support USB test mode for USB HS Electrical compliance test.
- CF/ATAPI Driver is cleaned up.
- Keyboard Driver is cleaned up.
- Serial Driver is cleaned up.
- USB OTG Device Driver is cleaned up.
- New KITL driver is added to support USB\_RNDIS, USB\_Serial, Ethernet
  - So, Bootloader's menu changes largely, 'U' Menu command to download using DNW is integrated to 'D' command, the original download command. '6' command to determine after downloading image is changed to 'T'
- USB will connect after 'D' command.
- OAL code was cleaned up.
- 2D Software Acceleration Library is updated for RGB565 to RGB555 BitBlit
- HSMMC driver code was cleaned up.
  - Some comments and dummy code were cleaned up.
  - Some functions like SDMMCMicroTest for MMC were updated.
- SPI Driver is cleaned up. A commented & dead code is removed. A validation of arguments is added. A function is added to free memory allocated.
- USB Host Driver is cleaned up. RETAILMSG is modified with DEBUGMSG. Hard-coding is fixed. A validation of arguments is added.
- USB OTG Device Driver is cleaned up. A short function header comment is added. Hard-coding is fixed. A validation of arguments is added. SD card detection mechanism solution is removed. UfnPdd\_IsEndpointHalted() is modified.

## Fixes made in this update

- Bug fixes to 2D SW optimized library
- WriteRawImageToBootMedia function in EBOOT will not check badblock for Block 0 that's used for Steploader.
- Serial driver is modified. The interrupt value to notify MDD is fixed.
- OpenGL ES Library naming is changed to libGLESv1\_CM.dll and libGLESv2.dll
- OpenGL ES1.1/2.0 and EGL is more optimized.
- Changed the SoC library names to be consistent with the SoC naming convention.
- USBHost registry keys modified
- RTC initialize code added in bootloader and OAL
- Fixed the SoC dirs file
- Fixed the incorrect reporting of alpha blending capabilities
- HalGetDriverInfo() function is modified
- OTG device driver has bug in previous version BSP. It is fixed.  
(If you repeat Sleep/Wakeup quickly connecting USB cable, system will be hanged.)
- In SMDK6410 board latest 4.8" LCD, since touch panel is changed, touch calibration default value is changed in platform.reg file. (If you use old version 4.8" LCD on SMDK6410 board, calibration value should be changed. Refer to the porting guide)
- USB connection for download image was updated for fluent connection.
- I2C clock divide value modified.
- In case of VC1, the function for width/height information was updated.

## Known Issues

- 2D HW has conformance issue
  - CETK GDI test 218 StretchBlt can fail even when disabling 2D Optimization codes.
  - CETK GDI test 231 Alphablend can fail when enabling 2D HW.
  - CETK DDraw Test 202 can fail when enabling 2D HW.





## **15 SMDK6410\_CE60\_PM\_REL\_0.02\_081016\_Beta BSP Release**

Updated at Oct 16, 2008

### **What's New?**

- Windows Embedded CE 6.0 R2 PocketMory Beta Release for SMDK6410.
- This BSP is based on SMDK6410 Windows Embedded CE60 R2 FMD RC4 BSP.
- This BSP was tested on Windows Embedded CE 6.0 R2 and SMDK6410 board Rev1.0.
- All of the devices listed on porting guide are available.

### **Fixes made in this update**

None

### **Known Issues**

None