BSP Porting Guide for SMDK6410 (Windows Embedded CE 6.0)

S3C6410

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(Preliminary) REV 0.12

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S3C6410 RISC Microprocessor
BSP Porting Guide

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0.0	Preliminary draft	-	Woosuk Chung	2008-03-27
0.1	Revised for Pre-Beta Release	-	Woosuk Chung	2008-03-29
0.2	Revised for Beta Release		Jiwon Kim	2008-06-13
0.3	Add Audio Board Revision		Jin-goo Han	2008-07-21
0.4	Remove Board Selection		Jiwon Kim	2008-08-03
0.5	Changes from PQ-OAL		Jiwon Kim	2008-08-05
0.6	Add detailed description SOC Folder Layout		Jiwon Kim	2008-09-01
0.7	Modified for UART ActiveSync		Jin-goo Han	2008-09-29
0.8	Modified for SD/HSMMC		YongSeung Kim	2008-10-20
0.9	Modified for SD/MMC iROM		YongSeung Kim	2009-01-29
0.10	Modified for Folder Layout changes		Jiwon Kim	2009-02-13
0.11	Hive registry and Multiple XIP were added.		Jungchul Park	2009-03-16
0.12	MutipleXIP.bib was added		Jungchul Park	2009-04-07

NOTE: REVISED PARTS ARE WRITTEN IN BLUE.

Contents

Figures

1 Boot Media Configuration

It is available to boot through both NAND Flash and AMD Flash (NOR Flash) in the SMDK6410 Board.

This information is applied to SMDK6410 CPU Board revision(0.0, 0.1) and Base Board revision(0.0, 0.1, 0.2)

1.1 NOR Flash Boot

In CPU Board

Description	CFG3[6:1]				
	[6]	[5]	[4]	[3]	[2]
NOR Boot (8bit Data Width)	X	OFF	**ON**	OFF	OFF
NOR Boot (16bit Data Width)	X	OFF	**ON**	OFF	**ON**

In Base Board

Description	CFGB1[4:1]			
	[4]	[3]	[2]	[1]
Connected NorFlash to Xm0CSn0	X	OFF	OFF	**ON**
Connected SRAM to Xm0CSn0	X	OFF	**ON**	OFF

1.2 NAND Flash Boot

In CPU Board

Description	CFG3[6:1]				
	[6]	[5]	[4]	[3]	[2]
Normal NAND, 512-byte, 3 addr. Cycle	**ON**	OFF	OFF	OFF	OFF
Normal NAND, 512-byte, 4 addr. Cycle	**ON**	OFF	OFF	OFF	**ON**
Advanced NAND, 2K-byte, 4 addr. Cycle	**ON**	OFF	OFF	**ON**	OFF
Advanced NAND, 2K-byte, 5 addr. Cycle	**ON**	OFF	OFF	**ON**	**ON**

In Base Board

Description	CFGB3[4:1]			
	[4]	[3]	[2]	[1]
Connected NandFlash to Xm0CSn2	OFF	OFF	OFF	**ON**
Connected XD Picture Card to Xm0CSn2	OFF	OFF	**ON**	OFF

1.3 Internal ROM - NAND Flash Boot

In CPU Board

Description	CFG3[6:1]				
	[6]	[5]	[4]	[3]	[2]
Internal ROM	X	**ON**	**ON**	**ON**	**ON**

In Base Board

Description	CFGB3[4:1]			
	[4]	[3]	[2]	[1]
Connected NandFlash to Xm0CSn2	OFF	OFF	OFF	**ON**
Connected XD Picture Card to Xm0CSn2	OFF	OFF	**ON**	OFF

To make an image that can boot up using Internal ROM, you should do the followings:

```
In smdk6410\smdk6410.bat file
    set BSP_IROMBOOT=1
```

1.4 Internal ROM – SD/MMC Boot

In CPU Board

Description	CFG3[6:1]				
	[6]	[5]	[4]	[3]	[2]
Internal ROM	X	**ON**	**ON**	**ON**	**ON**

In Base Board

Description	J8	J7	J6
SDMMC channel 1 iROM boot	**2-3**	**2-3**	**2-3**
SDMMC channel 0 iROM boot	**1-2**	**1-2**	**1-2**

To make an image that can boot up using Internal ROM, you should do the followings:

SDMMC channel 0 :

```
In smdk6410\smdk6410.bat file
    set BSP_IROM_SDMMC_CH0_BOOT=1
```

SDMMC channel 1 :

```
In smdk6410\smdk6410.bat file
    set BSP_IROM_SDMMC_CH1_BOOT=1
```

2 BSP Directory Layout

Windows CE 6.0 BSP Directory Layout is as follows. This is changed from Beta Release BSP. The main change is OAL common parts. Please Refer to “Appendix I. Directory Layout Change list”. This Change list will be updated up to Final Release. If you have used old BSP, Appendix will help you to understand what is changed. and Release Notes also help you.

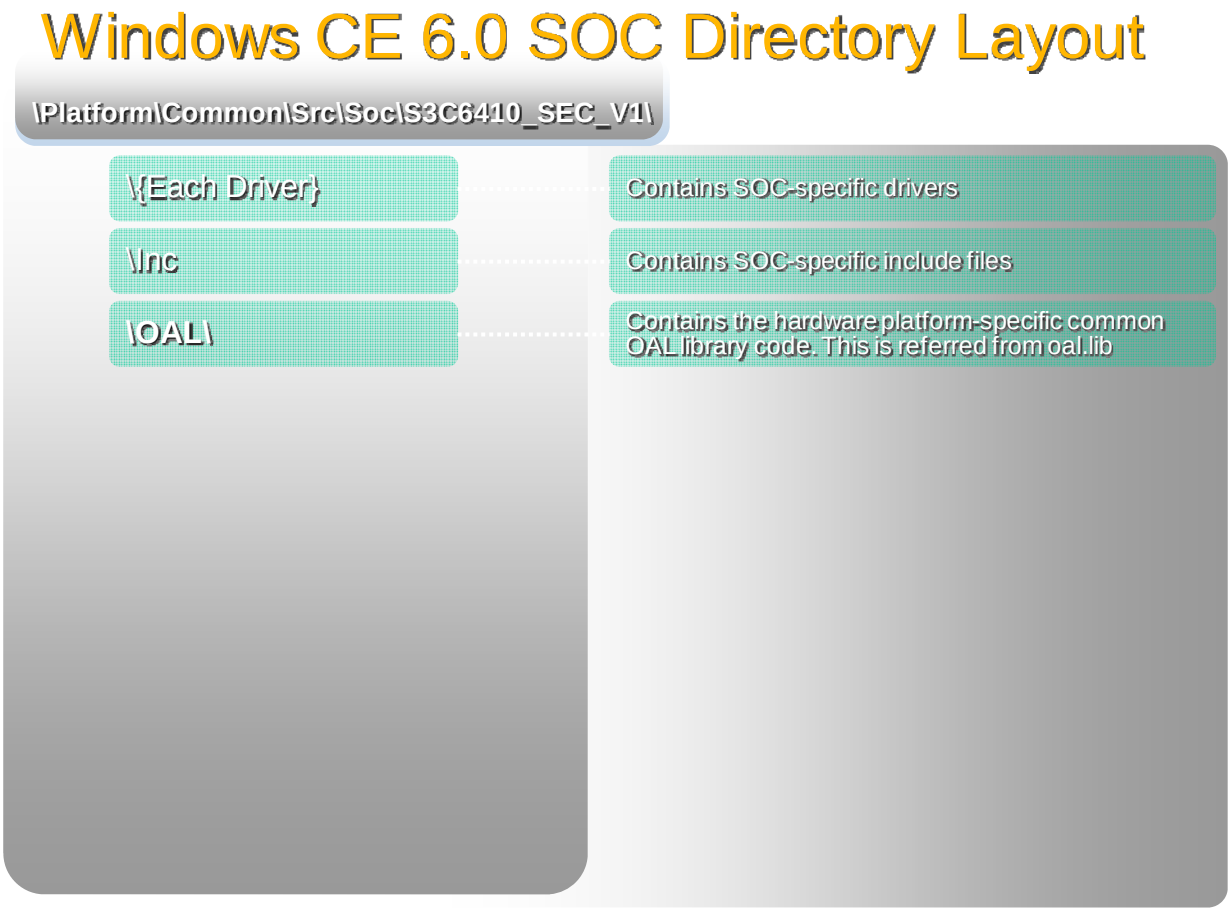


Figure 2-1 WinCE 6.0 SOC Directory Layout

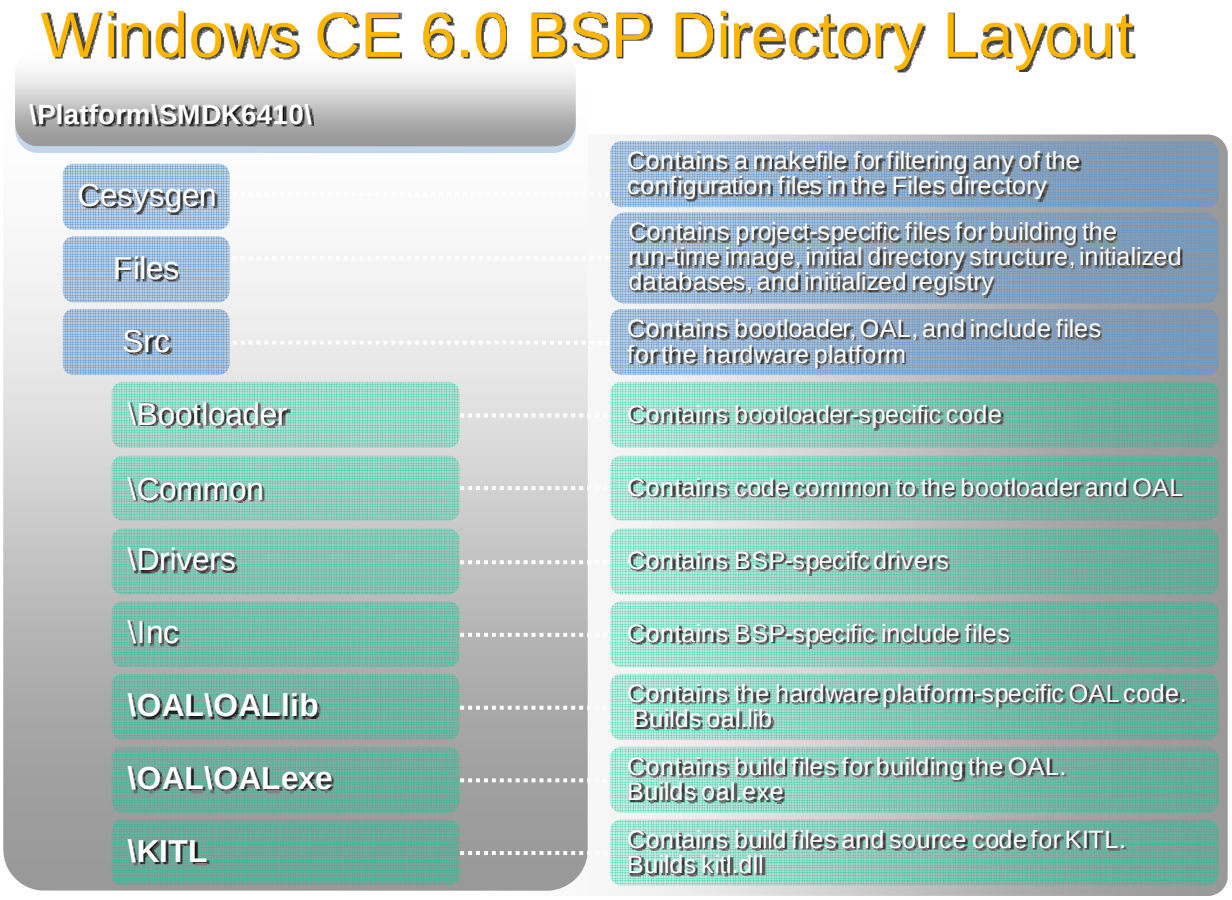


Figure 2-2 WinCE 6.0 BSP Directory Layout

3 OAL option configuration

3.1 CPU Selection

- This BSP supports SMDK6410 and SMDK6410 XD.

3.1.1 CPU Selection

- If you use S3C6410, please check the chip type.
  There is two kind of chip type. One is single type (S3C6410), another is POP type (SC36410 XD). POP type (S3C6410 XD) has MCP (Multi-Chip Package) memory which includes 2G bit NAND flash, 512M bit Mobile DDR and 512M bit OneDRAM. In that MCP, NAND flash is large block. So you should consider the boot configuration when booting with NAND flash.
  - To use SC36410 POP type (SC36410 XD), you should set **SMDK6410_X5D** as following code.
  - D3fault setting is disabled. It means that BSP support the single type (S3C6410).

In smdk6410\smdk6410.bat file

```
@REM support for SMDK6410X5D
@REM X5D MCP has 2Gb NAND + 512Mb M-DDR + 512Mb OneDRAM
set SMDK6410_X5D=1
```

- After changing, build all of the BSP and run makeimage.exe.

3.2 System Clock Configuration

- You can change System Clock Speed (including CPU Clock)
- There are three pre-defined values for control system clock speed in two files (PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\soc_**cfg.h** and PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC**s3c6410.inc**)
- Default setting is 532Mhz/133Mhz/33.25Mhz. (ARM/HCLK/PCLK)

In \PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\soc_cfg.h file

```
// Change This Definition to change SOC Clock !!! (and "s3c6410.inc")
//#define S3C6410_FCLK        FCLK_400MHz
#define S3C6410_FCLK        FCLK_532MHz
//#define S3C6410_FCLK        FCLK_634MHz
```

In PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410.inc file

```
;-------------------------------------------------
; Change S3C6410_FCLK definition for StartUp code
;-------------------------------------------------
;S3C6410_FCLK SETA    FCLK_400MHZ
S3C6410_FCLK SETA    FCLK_532MHZ
;S3C6410_FCLK SETA    FCLK_634MHZ
FIN          EQU     12000000
;-------------------------------------------------;
```

- SDRAM parameter and System Timer parameter will be recalculated properly as clock speed
- If you want use any other value than pre-defined clock speed, you should define several definitions related to clock speed configuration as sample code in **soc_cfg.h** and **s3c6410.inc** file

3.3 LCD Display Module Configuration

- You can change LCD module type for SMDK6410 board
- There are four pre-defined LCD module configuration in BSP

  LTS222 : Portrait 2.2” QVGA

  LTV350 : Landscape 3.5” QVGA (SMDK6410 Base Board Rev0.0)

  LTE480 : Landscape 4.8” WVGA (SMDK6410 Base Board Rev0.1)

  EMUL48_D1 : Landscape 4.8” WVGA works as D1 (720x480)

  EMUL48_QV : Landscape 4.8” WVGA works as QVGA (320x240)

  EMUL48_PQV : Landscape 4.8” WVGA works as PQVGA (240x320) Rev0.1)

  LTP700 : Landscape 7” WVGA

  LTM030DK : Portrait 3” WVGA (Backlight driver is not implemented)

In smdk6410\SRC\Inc\bsp_cfg.h

```
//------------------------------------------------------------------------------
// SMDK6410 Display Dimension
//------------------------------------------------------------------------------
#define LCD_MODULE_LTS222       (0)    // Portrait 2.2" QVGA RGB16
#define LCD_MODULE_LTV350       (1)    // Landscape 3.5" QVGA RGB16
#define LCD_MODULE_LTE480       (2)    // Landscape 4.8" WVGA RGB16
#define LCD_MODULE_EMUL48_D1    (3)    // Landscape 4.8" WVGA RGB16 as D1 (720x480)
#define LCD_MODULE_EMUL48_QV    (4)    // Landscape 4.8" WVGA RGB16 as QVGA (320x240)
#define LCD_MODULE_EMUL48_PQV   (5)    // Landscape 4.8" WVGA RGB16 as PQVGA (240x320)
#define LCD_MODULE_EMUL48_ML    (6)    // Landscape 4.8" WVGA RGB16 as 480x320
#define LCD_MODULE_EMUL48_MP    (7)    // Landscape 4.8" WVGA RGB16 as 320x480
#define LCD_MODULE_LTP700       (8)    // Landscape 7" WVGA RGB24
#define LCD_MODULE_LTM030DK     (9)    // Portrait 3.5" WVGA RGB16
#define SMDK6410_LCD_MODULE (LCD_MODULE_LTE480)
```

- If you want use any other module than pre-defined in BSP, you should define several definitions related to LCD module dimensions as sample code in **bsp_cfg.h,** and implement

LDI_fill_output_device_information() function and module control functions (LDI_XXX()) in **\PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\LDI_LIB\s3c6410_disp_ldi.c** file

3.4 UART Debug Port Configuration

- There are two UART port available for debug. You can use one port at a time.
- If you set BSP_DEBUGPORT as following code, Debug port will use UART0
- Default setting is UART0

In smdk6410\smdk6410.bat file

```
set BSP_DEBUGPORT=SERIAL_UART0
@REM set BSP_DEBUGPORT=SERIAL_UART1
@REM set BSP_DEBUGPORT=SERIAL_UART2
@REM set BSP_DEBUGPORT=SERIAL_UART3
```

- You can change Baudrate for debug port also
- Default setting is 115200 bps

In smdk6410\SRC\Inc\bsp_cfg.h

```
//------------------------------------------------------------------------------
// SMDK6410 UART Debug Port Baudrate
//------------------------------------------------------------------------------
#define DEBUG_UART0         (0)
#define DEBUG_UART1         (1)
#define DEBUG_UART2         (2)
#define DEBUG_UART3         (3)
#define DEBUG_BAUDRATE      (115200)
```

- **You should configure the baudrate of terminal program in your host PC same as SMDK6410 board**

3.5 NAND Flash

- For using NAND Flash, timing parameter should be set appropriately
- The default setting leaves a margin. (TACLS: 7, TWRPH0: 7, TWRPH1: 7)
- **Please set optimal timing parameter for NAND Flash your platform uses**

In smdk6410\SRC\Inc\bsp_cfg.h file

```
//------------------------------------------------------------------------------
// SMDK6410 NAND Flash Timing Parameter
//------------------------------------------------------------------------------
#if     (S3C6410_HCLK == FCLK_100MHz)
#define NAND_TACLS          (7)
#define NAND_TWRPH0         (7)
#define NAND_TWRPH1         (7)
#elif   (S3C6410_HCLK == FCLK_133MHz)
#define NAND_TACLS          (7)
#define NAND_TWRPH0         (7)
#define NAND_TWRPH1         (7)
#endif
```

4 Display Driver Configuration

- Display device can be disabled. **(set BSP_NODISPLAY=1)**
- If you clear BSP_NODISPLAY as following code, Display driver will be included in OS image
- Default setting is enabled.

In smdk6410\smdk6410.bat file

```
set BSP_NODISPLAY=
```

- Setting **BSP_NODISPLAY=1** means that display driver is removed from OS image.
- If you want to enable or disable 2D Hardware accelerator, you may modify this.

In smdk6410\src\drivers\display\s3c6410_disp_drv\precomp.h file

```
#define G2D_ACCELERATE    (TRUE)          //< If you want to use 2D HW for GDI, set this to "TRUE", if not, set to "FALSE"
/// if USE_G2D_ACCELERATE is TRUE then these condition will work
/// Try to bitblt from cached source surface to non cached destinatino surface, this do cache flush
#define G2D_TRY_CBLT    (TRUE)
/// if use 2DHW CETK GDI Test case 218(StretchBlt),219(TransparentBlt) will fail.
/// This is why 2DHW's stretching algorithm differ from SW stretching algorithm.

/ /// For using Physically Linear Surface on System Memory to wide 2D HW usage.
/// 2D HW need physically contiguous memory, and its address.
/// This will consume System Memory and allocate Physically and Virtually contiguous memory.
/// So if system has small memory, allocation may fail.
/// Then 2D HW will not work for that memory.
#define USE_PACSURF       (TRUE)
///  if USE_PACSURF is TRUE then these condition will work
#define G2D_BLT_OPTIMIZE    (TRUE)          //< This option will enable above two optimization method. This can increase 2D processing overhead.
#define PAC_ALLOCATION_BOUNDARY    (160*120*2)    //(320*240*2)       //<  PACSurf creation request is processed only for the surface has over QVGA 16bpp size
#define G2D_COMPROMISE_LIMIT    (28800)       //< Transferring below this size(byte) using HW will be poor than using SW. so we will use software 2D flow under this size transfer request.
```

- There are some optimization options provided for 2D Hardware

In smdk6410\src\drivers\display\s3c6410_disp_drv\precomp.h file

```
/// if use 2DHW CETK GDI Test case 218(StretchBlt),219(TransparentBlt) will fail.
/// This is why 2DHW's stretching algorithm differ from SW stretching algorithm.
#define G2D_BYPASS_HW_STRETCHBLT    (FALSE)
/// If use 2DHW Alphablended Bitblt, CETK GDI test case 200, 218, 219, 231 and DDraw test case 102 can fail.
/// Due to SW conformance issue
#define G2D_BYPASS_HW_ALPHABLEND    (FALSE)
   /// Below is suboption
   /// In our HW PPA feature has different bleding equation to SW.
   #define G2D_BYPASS_PERPIXEL_ALPHABLEND         (FALSE)
   /// In our HW SCA feature does not change alphavalue, so this can lead to test fail when repetive alphablending.
   #define G2D_BYPASS_SOURCECONSTANT_ALPHABLEND    (FALSE)
   /// This will run HW Bitblt twice, one for SCA and other for PPA
   #define G2D_BYPASS_2STEP_PROCESS_PPA_AFTER_SCA  (FALSE)
/// whether use HW fill or not
#define G2D_BYPASS_HW_FILLRECT      (TRUE)
/// whether override SW Emulattion
/// SW Emulation Code Selection is prior to HW Accelration Code Selection
#define G2D_OVERRIDE_EMULSEL        (FALSE)


/**
*    Define G2D StretchBlt SW Workaround
*    2D HW's Stretch Algorithm is Nearest Stretch and it calculate reference source pixel with round off(+0.5)
**/
#define G2D_ROUNDOFF_REFERENCE      (1)     //< HW Stretchblt algorithm differs from MS'SW Stretching BLT algorithms,  So, CETK 218, 219 can fails.
#define G2D_QUARTERED_ADJUSTING     (2)     //< This will decrease fail case. but still fail is occured
                                            //< This is just experimental adjusting and slower than the deafult G2D_ROUNDOFF_REFERENCE
#define G2D_STRETCH_ALGORITHM       (G2D_ROUNDOFF_REFERENCE)


#define USE_SECEMUL_LIBRARY    (TRUE)
```

5 Touch Screen Driver Configuration

- Touch screen device can be disabled. **(set BSP_NOTOUCH=1)**
- If you clear BSP_NOTOUCH as following code, Touch screen driver will be included in OS image
- Default setting is enabled.

In smdk6410\smdk6410.bat file

```
set BSP_NOTOUCH=
```

- Setting **BSP_NOTOUCH=1** means that touch screen driver is removed from OS image.
- After Changing, Build display driver and make image.

- Default calibration data is defined in registry. Set proper value for the touch panel you have.

  (In SMDK6410 board 4.8" LCD, there are two type touch panel. So if touch point is incorrect, change the CalibrationData value to "for S3C6410 SMRP 12bit" in platform.reg file.)

In smdk6410\files\platform.reg file

```
;------------ Touch Driver ----------------------------------------------------
; @CESYSGEN IF CE_MODULES_POINTER
IF BSP_NOTOUCH !
[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\TOUCH]
    "DriverName"="s3c6410_touch.dll"
    "MaxCalError"=dword:7
[HKEY_LOCAL_MACHINE\HARDWARE\DEVICEMAP\TOUCH]
    "DriverName"="s3c6410_touch.dll"
    "MaxCalError"=dword:7
; 3.5" QVGA Landscape
;   "CalibrationData"="504,508 233,236 231,788 785,792 790,227"
; 4.8" WVGA Landscape
    ; for S3C6410 SMRP 12bit, X_Y inversion
    "CalibrationData"="2107,2038 2826,3092 1380,3099 1392,1001 2821,1004"
    ; for S3C6410 SMRP 12bit
;   "CalibrationData"="2108,1981 1131,2643 1133,1343 3079,1339 3078,2616"
    ; for S3C6410 12bit
;   "CalibrationData"="2098,1998 1013,2663 997,1339 3187,1312 3195,2665"
```

```
        ; for S3C6410 10bit
    ;   "CalibrationData"="519,501 253,671 246,335 794,331 794,663"
        ; for S3C6400
    ;   "CalibrationData"="508,490 200,735 204,246 820,240 823,731"
    ; 4.8" WVGA Landscape as D1 (720x480)
    ;   "CalibrationData"="473,492 189,747 188,244 751,238 748,748"
    ; 4.8" WVGA Landscape as QVGA Landscape
    ;   "CalibrationData"="278,642 158,766 159,517 404,520 405,757"
    ; 4.8" WVGA Landscape as QVGA Portrait
    ;   "CalibrationData"="244,586 152,754 152,426 332,425 334,747"
    ; 4.8" WVGA Landscape as 480x320
    ;   "CalibrationData"="362,592 171,761 173,431 547,427 543,755"
    ; 4.8" WVGA Landscape as 320x480
    ;   "CalibrationData"="276,489 156,740 156,240 402,238 396,732"ENDIF BSP_NOTOUCH !
    ; @CESYSGEN ENDIF CE_MODULES_POINTER
    ;------------------------------------------------------------------------
```

6 Keypad Driver Configuration

- Keypad/Keyboard device can be disabled. **(set BSP_NOKEYBD=1)**
- If you clear BSP_NOKEYBD as following code, Keypad/Keyboard driver will be included in OS image
- Default setting is enabled.

In smdk6410\smdk6410.bat file

set BSP_ NOKEYBD=

- Setting **BSP_NOKEYBD=1** means that keypad/keyboard driver is removed from OS image.
- After Changing, Build keypad/keyboard driver and make image.
- If you want to use Keypad on SMDK6410 Board, set CFG to the following **CFG4 (all OFF)**
- To use the Keypad, Set the CFG4 in the base board as below.

1 2 3 4

CFG4 : OFF OFF OFF OFF

7 Power Button Driver Configuration

- You can enter sleep mode and trigger S/W reset with power button driver
- Power Button is switch 68 (SW68 in bottom of base board)
- Reset Button is switch 66 (SW66 in bottom of base board)
- Power Button driver can be disabled. **(set BSP_NOPWRBTN=1)**
- If you clear BSP_NOPWRBTN as following code, Power Button driver will be included in OS image
- Default setting is enabled.

In smdk6410\smdk6410.bat file

set BSP_NOPWRBTN=

- Setting **BSP_NOPWRBTN=1** means that Power Button driver is removed from OS image.
- After Changing, Build Power driver and make image

8 Audio Driver Configuration

SMDK6410 supports two audio interfaces AC97 and IIS.

- Audio driver can be disabled **(set BSP_NOAUDIO=1)**
- Default setting is enabled and AC97 interface

8.1 AC97 interface

- For including AC97 driver in OS image , change as follow

In smdk6410\smdk6410.bat file

```
set BSP_NOAUDIO=
set BSP_AUDIO_AC97=1
```

- Rebuild audio driver and make image
- To use the AC97 interface as audio device Set the CFG1 and CFG2 in the base board as below.

	1	2	3	4
CFG1 :	ON	ON	ON	ON
CFG2 :	OFF	OFF	OFF	OFF

- If you want to change the Key layout, set like the following.

In smdk6410\SRC\Inc\bsp_cfg.h file

```
//------------------------------------------------------------------------
// SMDK6410 Keypad Layout
//------------------------------------------------------------------------
#define LAYOUT0                 (0)         // 8*8 Keypad board
#define LAYOUT1                 (1)         // On-Board Key
#define LAYOUT2                 (2)         // Qwerty Key board
#define MATRIX_LAYOUT           (LAYOUT1)
```

8.2 IIS interface

- For including IIS driver in OS image , change as follow

```
In smdk6410\smdk6410.bat file
    set BSP_NOAUDIO=
    set BSP_AUDIO_AC97=
    set BSP_NOI2C=
```

- Rebuild audio driver and make image
- **Because IIS driver use I2C interface to control external audio codec chip. You have to include I2C driver in the OS image**

- To use the IIS interface as audio device Set the CFG1 and CFG2 in the base board as below.

	1	2	3	4
CFG1 :	**OFF**	**OFF**	**OFF**	**OFF**

8.3 Board Revision

- In SMDK6410 Base Board Rev 0.0, AC97 does not work properly, so, you should remove the register, R48. IIS 5.1 channel path is able to use. But, IIS 2 channel does not work properly.
- In the SMDK6410 Base Board Rev 0.1, AC97, IIS 5.1 channel path and IIS 2 channel path work properly. If the resister R48 is connected, you should remove the R48.
- In AC97, delay value is configurable. Sometimes you need to adjust the delay value.

9 Camera Driver Configuration

- Camera driver can be disabled. **(set BSP_NOCAMERA=1)**
- Default setting is disabled.
- If you clear BSP_NOCAMERA as following code, Camera driver will be included in OS image

In smdk6410\smdk6410.bat file

```
set BSP_NOCAMERA=
set BSP_NOI2C=
```

- Setting **BSP_NOCAMERAI=1** means that Camera driver is removed from OS image.
- After Changing, Build Camera driver and make image
- **Because Camera driver use I2C interface to control external camera module. You have to include I2C driver in OS image**

10 I2C Driver Configuration

- I2C driver can be disabled. **(set BSP_NOI2C=1)**
- Default setting is disabled.
- If you clear BSP_NOI2C as following code, I2C driver will be included in OS image

In smdk6410\smdk6410.bat file

set BSP_NOI2C=

- Setting **BSP_NOI2C=1** means that I2C driver is removed from OS image.
- After Changing, Build I2C driver and make image
- **IIS Audio Driver and Camera Driver use I2C driver to control external device. You should include I2C driver for that kind of drivers**

11 SPI Driver Configuration

- SPI driver can be disabled. **(set BSP_NOSPI=1)**
- Default setting is disabled.
- If you clear BSP_NOSPI as following code, SPI driver will be included in OS image

In smdk6410\smdk6410.bat file

set BSP_NOSPI=

- Setting **BSP_NOSPI=1** means that SPI driver is removed from OS image.
- After Changing, Build SPI driver and make image

12 USB Driver Configuration

12.1 USB Device

- USB device can be disabled. **(set BSP_NOUSBFN=1)**
- Default setting is enabled and Serial function.
- If you clear BSP_NOUSBFN as following code, USB device driver will be included in OS image

```
In smdk6410\smdk6410.bat file
    set BSP_NOUSBFN=
```

- Setting **BSP_NOUSBFN=1** means that USB device driver is removed from OS image.
- After Changing, Build display driver and make image.
- **You can not use USB function device and USB KITL at a time.**

12.1.1 Serial Function Driver

- You can use USB Serial Function driver by setting as follows.
- Default setting is serial function driver

```
In smdk6410\smdk6410.bat file
    set BSP_NOUSBFN=
    set BSP_USBFNCLASS=SERIAL
    @REM set BSP_USBFNCLASS=MASS_STORAGE
```

- After changing, Build USB function driver and make image.

12.1.2 Mass Storage Function Driver

- You can use USB Mass Storage Function driver by setting as follows.

```
In smdk6410\smdk6410.bat file
    set BSP_NOUSBFN=
    @REM set BSP_USBFNCLASS=SERIAL
    set BSP_USBFNCLASS=MASS_STORAGE
```

- After changing, Build USB function driver and make image.

12.2 Host

- USB device can be disabled. **(set BSP_NOUSBHCD=1)**
- Default setting is enabled.
- If you clear BSP_NOUSBHCD as following code, USB Host driver will be included in OS image

```
In smdk6410\smdk6410.bat file
    set BSP_NOUSBHCD=
```

- Setting **BSP_NOUSBHCD=1** means that USB Host driver is removed from OS image.
- After Changing, Build USB Host driver and make image.

13 Serial Driver Configuration

- All serial drivers can be disabled. **(set BSP_NOSERIAL=1)**
- Default setting is disabled.
- So if you want to enable serial driver, clear BSP_NOSERIAL

```
In smdk6410\smdk6410.bat file
    set BSP_NOSERIAL=
```

- Setting **BSP_ NOSERIAL =1** means that Serial driver is removed from OS image.

13.1 UART

- UART0, UART1, UART2 and UART3 can be disabled by each setting in BSP.
- Default BSP setting is disabled.
- The following codes means enable UART1

```
In smdk6410\smdk6410.bat file
    set BSP_NOUART0=1
    set BSP_NOUART1=
    set BSP_NOUART2=1
    set BSP_NOUART3=1
```

- After Changing, Build driver and make image.

- The following codes means enable UART0

```
In smdk6410\smdk6410.bat file
    set BSP_NOUART0=
    set BSP_NOUART1=1
    set BSP_NOUART2=1
    set BSP_NOUART3=1
```

- **Be careful when using UART0 as general purpose COM port. UART0 is default debug port. You must change debug port to UART1.**
- You can change debug port to UART1 like the following. Then you can use UART0 as COM port without conflict

```
In smdk6410\smdk6410.bat file
    set BSP_NOUART0=
```

```
set BSP_DEBUGPORT=SERIAL_UART1
```

- After Changing, Build driver and make image.

- In SMDK6410 board, UART1, UART2 and UART3 share same COM2 port.
- If you want to use UART1 on COM2 port, set CFG3 in the base board to the following.

1 2 3 4

CFG3 : OFF DC DC DC ***DC means don't care**

- If you want to use UART2 on COM2 port, set CFG3 in the base board to the following.

1 2 3 4

CFG3 : ON OFF OFF OFF

- If you want to use UART3 on COM2 port, set CFG3 in the base board to the following.

1 2 3 4

CFG3 : ON ON ON OFF

13.1.1 UART TX DMA

- To enable UART TX DMA, add registry value "TXDMAEnable"=1 in registry file.

```
In SMDK6410\files\platform.reg file
"TXDMAEnable"=dword:1
```

13.2 IrDA

- IrDA uses UART2, UART3
- Default BSP setting is disabled.

- If you want to use IrDA on UART channel2, set like the following.
- **Be careful When using UART Channel 2 as IrDA, you cannot use UART channel 2 as UART. So, Do not Enable IrDA2 and UART2 at the same time.**
- If you clear BSP_NOIRDA2 like following code, you can use IrDA device.

In smdk6410\smdk6410.bat file

set BSP_NOIRDA2

- After Changing, Build driver and make image.
- And you need SMDK base board setting.
- Set CFG3 to the following for IrDA2 test.

	1	2	3	4	
CFG3 :	**DC**	**DC**	**ON**	**OFF**	***DC means don't care**

- If you want to use IrDA on UART channel3, set like the following.
- **Be careful When using UART Channel 3 as IrDA, you cannot use UART channel 3 as UART. So, Do not Enable IrDA3 and UART3 at the same time.**
- If you clear BSP_NOIRDA3 like following code, you can use IrDA device.

In smdk6410\smdk6410.bat file

set BSP_NOIRDA3

- After Changing, Build driver and make image.
- And you need SMDK base board setting.
- Set CFG3 to the following for IrDA3 test.

	1	2	3	4	
CFG3 :	**DC**	**DC**	**OFF**	**OFF**	***DC means don't care**

13.3 Active Sync

- If you want to use Active Sync with UART Serial, You should use UART0 in SMDK6410
- The following codes means enable UART0
- You cannot use same UART and serial KITL at once.

In smdk6410\smdk6410.bat file

set BSP_NOUART0=

set BSP_NOUART1=1

set BSP_NOUART2=1

set BSP_NOUART3=1

- **Be careful when using UART0 as general purpose COM port. UART0 is default debug port. You must change debug port to UART1.**

- In SMDK6410 Base Board, DTR and DSR is not connected as follow Figure. So, you should connect R198 and R199.

- Short jumper J2 on SMDK base board.

 **J2**

- And configure WinCE and ActiveSync to use COM port.

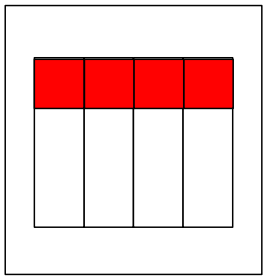
14 SD / HSMMC Driver Configuration

14.1 Channel Configuration

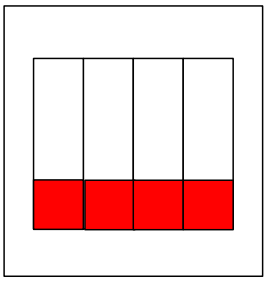
- The driver supporting 4 bit DAT bus width on SD/HSMMC Channel 0 can be disable, Default setting is disabled.
  - **set BSP_NOHSMMC_CH0=1**
- The drivers supporting 4 bit DAT bus width on SD/HSMMC Channel 1 can be disabled, Default setting is enabled.
  - **set BSP_NOHSMMC_CH1=1**
- Driver Supporting 8 bit DAT bus width on Channel 1 can be enabled, Default setting is disabled.
  - **set BSP_HSMMC_CH1_8BIT=**
- If you clear BSP_NOHSMMC_CHx as following code, SD/HSMMC drivers will be included in OS image. (Channel 0 is 4 bit, Channel 1 is 8 bit.)

```
In smdk6410\smdk6410.bat file
    set BSP_NOHSMMC_CH0=
    set BSP_NOHSMMC_CH1=
    set BSP_HSMMC_CH1_8BIT=1
```

- According to setting the DAT bus width of Channel 1, CFG6 on CPU board should be set as following, except SMDK REV 0.0:

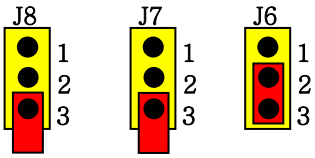


< 8 bit DAT bus >

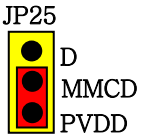


< 4 bit DAT bus >

- **In this time, SD/HSMMC Drivers are under developing. Some kind of HS-MMC does not work with Driver.**
- Open jumper J7 and J8, and Short pin 2 and 3 of jumper J6 on SMDK base board.



- Short pin MMCD and PVDD of jumper JP25 on SMDK CPU board.



14.2 Fast-Path

"*Fast-Path operations improve transfer performance on high speed SDIO and SD cards by utilizing polling in the host controller driver.*" In MSDN. And Fast-Path is enabled basically. But CPU utilization can be increased as result of Fast-Path. So, you can disable Fast-Path with comment out _FASTPATH_ENABLE_ on CDEFINES in sources file. **But, you are responsible for the result on Fast-Path disability**.

In SMDK6410\Src\Drivers\HSMMC\SDBus\sources file

CDEFINES=$(CDEFINES) ... ... # -D_FASTPATH_ENABLE_

14.3 Using the Channel 0

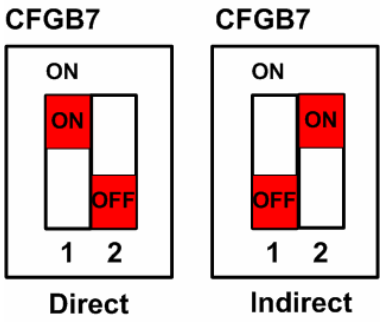
- Board modification is needed for using HSMMC channel 0 to work correctly according to the SMDK board revision number Except for REV 0.0. If you have the later board than REV 0.0, it is needed to modify the CPU Board in the board level.
- Remove R156 and connect R158 with a resistor less than 100K Ohm for using external interrupt as card detection signal.

15 CF Driver Configuration

- **TRUE-IDE mode on S3C6410 CF Controller does not support HOT-PLUG. CF device must be in the slot before booting OS up.**
- CF ATAPI driver can be disabled. **(set BSP_NOCFATAPI=1)**
- Default setting is disabled.
- **Default value in registry is Direct Mode.**
- If you clear BSP_NOCFATAPI as following code, CF ATAPI driver will be included in OS image

In smdk6410\smdk6410.bat file
set BSP_NOCFATAPI=

- Setting **BSP_NOCFATAPI=1** means that CF ATAPI driver is removed from OS image.
- After Changing, Build CF ATAPI driver and make image
- To set the operating mode, direct mode or indirect mode, set the CFGB7 as below.

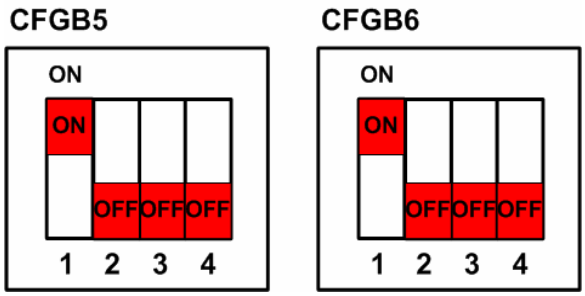


- To use Ultra-DMA mode of ATA-Device, You should set it as Direct mode.

Ultra-DMA mode is only supported on Direct mode

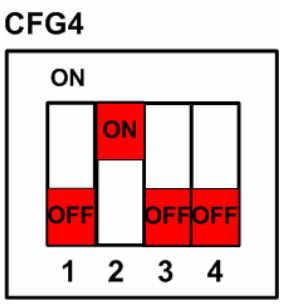
- To use the CF ATAPI, Set the CFGB5 and CFGB6 as below.

-



- **CF ATAPI Interface is conflict with Keypad H/W in SMDK6410 board. Do not Enable CF ATAPI Driver and Keypad Driver at the same time**

- **In some version of SMDK board, you will be able to be faced with some trouble. If encounters a trouble in the direct mode, it is recommended to set the CFG4 in the base board as below.**



-

- If you want to change PIO ,PDMA ,UDMA and In/Direct Mode, change registry as follows,

```
[HKEY_LOCAL_MACHINE\Drivers\BuiltIn\6410_CF\Device0]
"Prefix"="DSK"
"Dll"="S3C6410_CF_atapi.dll"
"Order"=dword:31
"IClass"=multi_sz:"{A4E7EDDA-E575-4252-9D6B-4195D48BB865}",
        "{8DD679CE-8AB4-43c8-A14A-EA4963FAA715}"
"InterruptDriven"=dword:00          ; en(1) dis(0)able interrupt driven I/O
"DMA"=dword:01                      ; Enable DMA. PDMA and UDMA is supported
"DoubleBufferSize"=dword:10000      ; 128 sector (65536 byte) double buffer
"DrqDataBlockSize"=dword:200        ; 1 sector (512 byte) DRQ data block
"WriteCache"=dword:01               ; enable on-disk write cache
"LookAhead"=dword:01                ; enable on-disk look-ahead
"DeviceId"=dword:00                 ; device 0, i.e., primary master
"TransferMode"=dword:ff             ; use mode 0;
"EnablePDMA"=dword:1                ; 0 = PIO, 1 = PDMA. We recommend PDMA mode.
"EnableUDMA"=dword:1                ; 0 = PIO, 1 = UDMA. We recommend UDMA mode.
"IndirectMode"=dword:0              ; 0 = Direct, 1 = Indirect.
                                    ; To use UDMA, It should be '0'
                                    ; UDMA is only working on DIRECT MODE.
```

16 Hive-Based Registry

You can implement that hive files are stored to NandFlash. By default, RAM-based registry is used in the BSP. For implementing hive-based registry, set it as follows.

- Add the Hive-based Registry Catalog item to your OS design.
- And then set configuration like following code

In smdk6410\smdk6410.bat file

```
set IMGHIVEREG=1
```

- After changing, rebuild solution for clean build. Without clean build, Hive-registry properties may be not included in OS image.

17 Multiple XIP

Our BSP support Multiple XIP on NAND flash media by BinFS. The Hive-Based registry is required when using BINFS(demand-paged, pseudo-multi-XIP) because all of the file system waiting/blocking is implemented in the hive-based registry init code, and not in the RAM-Based registry init code.

- Single .bin: Nk.bin file
  The run time image is single image and is loaded to RAM in booting time.
- Multiple .bin(for demand paging): xipkernel.bin, nk.bin and chain.bin
  The XIPKERNEL region is where files that must be loaded prior to BinFs are stored. The NK region is the location for files not stored in the XIPKERNEL region. The CHAIN region is used by the bootloader to access information on where each region is located.
- **By default, Multiple-XIP images are used.**
- Hive-registry must be used for multiple-XIP images.

In smdk6410\smdk6410.bat file

```
set IMGHIVEREG=1
set IMGMULTIXIP=1
```

- The XIPKERNEL region files must include nk.exe, nandflash.dll, kitl.dll, kernel.dll, kd.dll, hd.dll, osaxst0.dll, osaxst1.dll, coredll.dll, oalioctl.dll, k.coredll.dll, fpcrt.dll, k.fpcrt.dll, filesys.dll, romfsd.dll, device.dll, udevice.dll, devmgr.dll, regenum.dll, busenum.dll, pm.dll, servicesEnum.dll, servicesd.exe, services.exe, serviceStar.exe, zlib.dll, softkb.dll, binfs.dll, fsdmgr.dll, mspart.dll, ceddk.dll, wince.nls and boot.hv.
- To make the XIPKERNEL as small as possible, XIPKERNEL should have above files only – as a minimum set of files which are required to boot and initialize the BINFS.
- The MultipleXIP.bib file is included in the config.bib to apply the above list into ce.bib on "makeimg" process. The including code is like as follows:

In SMDK6410\FILES\config.bib file

```
IF IMGMULTIXIP
... ...
#include "$(_TARGETPLATROOT)\FILES\MultipleXIP.bib"
ENDIF IMGMULTIXIP
```

- All driver which has Powerdown/PowerUp function must be made in non-pageable for power handler scheme in WinCE6.0. You can find all drivers that need to be non-pageable with below command.

  flatreleasedir> `findstr /m "PowerDown" *.map`

  After searching such as those drivers with above command, you must make them be non-pageable with adding 'M'flag in the .bib file.

```
nandflash.dll          $(_FLATRELEASEDIR)\nandflash.dll     XIPKERNEL SHMK

s3c6410_iic.dll        $(_FLATRELEASEDIR)\s3c6410_iic.dll          NK  SHMK
smdk6410_serial.dll    $(_FLATRELEASEDIR)\smdk410_serial.dll       NK  SHMK
irsir.dll              $(_FLATRELEASEDIR)\irsir.dll                NK  SHMK
s3c6410_mfc.dll        $(_FLATRELEASEDIR)\s3c6410_mfc.dll          NK  SHMK
s3c6410_jpeg.dll       $(_FLATRELEASEDIR)\s3c6410_jpeg.dll         NK  SHMK
s3c6410_cmm.dll        $(_FLATRELEASEDIR)\s3c6410_cmm.dll          NK  SHMK
s3c6410_uao.dll        $(_FLATRELEASEDIR)\s3c6410_uao.dll          NK  SHMK
s3c6410_PwrBtn.dll     $(_FLATRELEASEDIR)\s3c6410_PwrBtn.dll       NK  SHMK
s3c6410_fimg.dll       $(_FLATRELEASEDIR)\s3c6410_fimg.dll         NK  SHMK
s3c6410_wavedev.dll    $(_FLATRELEASEDIR)\s3c6410_wavedev.dll      NK  SHMK
s3c6410_ohci2.dll      $(_FLATRELEASEDIR)\s3c6410_ohci2.dll        NK  SHMK
s3c6410_usbfn.dll      $(_FLATRELEASEDIR)\s3c6410_usbfn            NK  SHMK
s3c6410_hsmmc0.dll     $(_FLATRELEASEDIR)\s3c6410_hsmmc0.dll       NK  SHMK
s3c6410_hsmmc1.dll     $(_FLATRELEASEDIR)\s3c6410_hsmmc1.dll       NK  SHMK
s3c6410_camera.dll     $(_FLATRELEASEDIR)\s3c6410_camera.dll       NK  SHMK
s3c6410_touch.dll      $(_FLATRELEASEDIR)\s3c6410_touch.dll        NK  SHQM
s3c6410_keypad.dll     $(_FLATRELEASEDIR)\s3c6410_keypad.dll       NK  SHMK
backlight.dll          $(_FLATRELEASEDIR)\backlight.dll            NK  SHMK

btsvc.dll              $(_FLATRELEASEDIR)\btsvc.dll                NK  SHM
btagsvc.dll            $(_FLATRELEASEDIR)\btagsvc.dll              NK  SHM
credsvc.dll            $(_FLATRELEASEDIR)\credsvc.dll              NK  SHM
serial.dll             $(_FLATRELEASEDIR)\com_card.dll             NK  SHMK
netbios.dll            $(_FLATRELEASEDIR)\netbios.dll              NK  SHMK
gwes.dll               $(_FLATRELEASEDIR)\gwes.dll                 NK  SHMK
ndis.dll               $(_FLATRELEASEDIR)\ndis.dll                 NK  SHMK
nleddrvr.dll           $(_FLATRELEASEDIR)\nleddrvr.dll             NK  SHMK
sdbus.dll              $(_FLATRELEASEDIR)\sdbus.dll                NK  SHMK
sdmemory.dll           $(_FLATRELEASEDIR)\sdmemory.dll             NK  SHMK
serialusbfn.dll        $(_FLATRELEASEDIR)\serialusbfn.dll          NK  SHMK
sio950.dll             $(_FLATRELEASEDIR)\sio950.dll               NK  SHMK
softkb.dll             $(_FLATRELEASEDIR)\softkb.dll               NK  SHM
timesvc.dll            $(_FLATRELEASEDIR)\timesvc.dll              NK  SHM
uiproxy.dll            $(_FLATRELEASEDIR)\uiproxy.dll              NK  SHM
usbdisk6.dll           $(_FLATRELEASEDIR)\usbdisk6.dll             NK  SHMK
wcestreambt.dll        $(_FLATRELEASEDIR)\wcestreambt.dll          NK  SHMK
wendyser.dll           $(_FLATRELEASEDIR)\wendyser.dll             NK  SHMK
```

18 APPENDIX I. DIRECTORY LAYOUT CHANGE LIST

Changes of file & folder will be listed up here for each file & folder, only for rename, move, delete case, not including add. You can use diff tool to find the changes in file content. Content changes are not listed here. Moving file can cause changing including path, so you must diff each 'sources', 'dir' files

From BSP 0.28 version to BSP 0.29 version

From 0.28 Non-SOC folder Layout	To 0.29 SOC Folder Layout	Type	Operation
PLATFORM\SMDK6410\SRC\COMMON\Cache	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\CACHE	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Intr	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INTR	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Ioctl	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\IOCTL	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Misc	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\MISC	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Power	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\POWER	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Profiler	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\PROFILER	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Rtc	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\RTC	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\System	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\SYSTEM	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Timer	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\TIMER	Folder	Moved
PLATFORM\SMDK6410\SRC\INC\BASE_TYPE.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_args.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_blmeny.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_cache.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_cache.inc		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_ethdrv.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_flash.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_ilt.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_intr.h		File	Deleted

PLATFORM\SMDK6410\SRC\INC\oal_io.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_ioctl.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_ioctl_tab.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_keyvalue.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_kitl.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_log.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_memory.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_memory.inc		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_misc.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_pci.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_pcmcia.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_perreg.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_power.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_rtc.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\oal_timer.h		File	Deleted
PLATFORM\SMDK6410\SRC\INC\s3c6410.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410.inc	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410.inc	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_ac97.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_ac97.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_adc.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_adc.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_base_regs.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_base_regs.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_base_regs.inc	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_base_regs.inc	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_camif.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_camif.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_cfcon.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_cfcon.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_display.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_display.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_dma.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_dma.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_dramcon.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_dramcon.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_gpio.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_gpio.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_	PLATFORM\COMMON\SRC\SOC\S3C6410_	File	Move

hsmmc.h	SEC_V1\OAL\INC\hsmmc.h		d
PLATFORM\SMDK6410\SRC\INC\s3c6410_iic.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_iic.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_iis.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_iis.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_intr.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_intr.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_keypad.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_keypad.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_msmif.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_msmif.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_nand.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_nand.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_post.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_post.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_pwm.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_pwm.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_rotator.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_rotator.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_rtc.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_rtc.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_spi.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_spi.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_sromcon.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_sromcon.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_syscon.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_syscon.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_tvenc.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_tvenc.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_tvsc.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_tvsc.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_uart.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_uart.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_usbotg.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_usbotg.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_wdog.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_wdog.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\s3c6410_intr.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\intr.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\oal_system.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_system.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\pmplatform.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\pmplatform.h	File	Moved
PLATFORM\SMDK6410\SRC\INC\oal_intr.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\s3c6410_vintr.h	File	Split
PLATFORM\SMDK6410\SRC\INC\bsp_cfg.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\soc_cfg.h	File	Split
PLATFORM\SMDK6410\SRC\Drivers\Drvlib\s3c6410_stall.s		File	Deleted

Affected sources&dir file

file PATH	Reason
PLATFORM\SMDK6410\SRC\BOOTLOADER\EBOOT\sources	Cache & System Library
PLATFORM\SMDK6410\SRC\COMMON\dirs	OAL module code is moved
PLATFORM\SMDK6410\SRC\DRIVERS\DRVLIB\sources	s3c6410_stall.s is deleted

PLATFORM\SMDK6410\SRC\OAL\OALEXE\sources	OAL module path is changed
PLATFORM\SMDK6410\sources.cmn	OAL module path is changed

From BSP 0.30 version to BSP 0.31 version

From 0.30	To 0.31	Type	Operation
PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\TIMER\dvs.c	PLATFORM\COMMON\PM\dvs.c	File	Moved
PLATFORM\SMDK6410\SRC\COMMON\NANDFLASH\DLL	PLATFORM\COMMON\SRC\DRIVERS\NANDFLASH	Folder	Moved
PLATFORM\SMDK6410\SRC\COMMON\Ioctl	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\IOCTL	Folder	Moved

Affected sources&dir file

file PATH	Reason
PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\TIMER\sources	DVS module is moved
PLATFORM\SMDK6410\SRC\COMMON\dirs	PM(DVS) Module is added
PLATFORM\SMDK6410\SRC\DRIVERS\dirs	NANDFLASH driver is moved

From BSP 0.31 version upto BSP 0.67 version

From 0.31	To 0.67	Type	Operation
PLATFORM\SMDK6410\SRC\INC\g2d_reg.h	PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\OAL\INC\g2d_reg.h	File	Moved
PLATFORM\SMDK6410\FILES\gles.dll	PLATFORM\SMDK6410\FILES\libGLESv2.dll	File	Renamed
PLATFORM\SMDK6410\FILES\gles11.dll	PLATFORM\SMDK6410\FILES\libGLESv1_CM.dll	File	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DrvLib		Folder	Deleted
PLATFORM\SMDK6410\SRC\DRIVERS\Camera\MDD	PLATFORM\SMDK6410\SRC\DRIVERS\CAMERA\CAMERA_MDD_PM	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_disp_drv	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\DISPLAY_DRV	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_disp_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\DISPCON_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_g2d_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\G2D_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_ldi_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\LDI_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_post_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\POST_PROCESSOR_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_rotator_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\IMAGE_ROTATOR_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_tv_encoder_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\TV_ENCODER_LIB	Folder	Renamed
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_tv_scaler_lib	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\TV_SCALER_LIB	Folder	Renamed

PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\s3c6410_video_drv	PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\VIDEO_DRV	Folder	Renamed

Affected sources&dir file

file PATH	Reason
PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\POWER\sources	watchdog reset instead of SW reset is added.
PLATFORM\COMMON\SRC\SOC\S3C6410_SEC_V1\SYSTEM\sources	Some utility functions are added
PLATFORM\SMDK6410\SRC\DRIVERS\CAMERA\dirs	Some common header is moved into camera\inc folder
under PLATFORM\SMDK6410\SRC\DRIVERS\CAMERA, all sources	
PLATFORM\SMDK6410\SRC\DRIVERS\DISPLAY\dirs	Sub folder's name is changed