Freescale Semiconductor
Release Notes

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i. MX25 PDK 1.0 Windows Embedded CE 6.0 Release Notes

This document contains important information about the package contents, supported features, and known issues/limitations for this release.

Contents

1. Release Contents

1.1. Documentation Package

The documentation provided with this release is packaged in the following ZIP file:

```
WCE600_MX25_SDK_0912_DOCKIT.zip
```

The following documents are included within this documentation package:

- *Windows Embedded CE 6.0 i.MX25 3-Stack BSP Release Notes*
- *Windows Embedded CE 6.0 BSP for i.MX25 3-Stack User's Guide*
- *Windows Embedded CE 6.0 BSP for i.MX25 3-Stack Reference Manual*
- *Windows Embedded CE 6.0 Fundamentals*

1.2. BSP Package

The BSP source code and support files provided with this release are packaged in the following Microsoft installer file:

```
WCE600_09.12.00_SDK.msi
```

Refer to installation instructions in the *Windows Embedded CE 6.0 for i.MX25 3-Stack User's Guide*.

2. System Requirements

2.1. Windows Embedded CE 6.0

The following must be installed in order to create a Windows Embedded CE 6.0 development environment for i.MX25 3-Stack WinCE 6.0 BSP:

- Visual Studio 2005
- Visual Studio 2005 SP1
- Visual Studio 2005 SP1 Update for Vista (if applicable)
- Windows Embedded CE 6.0 Platform Builder
- Windows Embedded CE 6.0 SP1 (required if PB 6.0 Tools have been installed)
- Windows Embedded CE 6.0 R2
- Windows Embedded CE 6.0 R3

NOTE

Windows Embedded CE 6.0 R3 installs all updates released up through August 31st, 2009. Do not install updates currently available for Windows Embedded CE 6.0 R2. Once Windows Embedded CE 6.0 R3 release is installed, please install Windows Embedded CE 6.0 R3 Update Rollup.

2.2. RealView Tools

- RealView ICE Kit
  The kit includes RVI unit, power supply, Ethernet cable, LVDS probe and cable.
- RealView ICE firmware v3.1 or later
- RealView Developer Suite v3.1 or later

2.3. ATK Tool

- ATK Tool v1.70 or later is required.

2.4. i.MX25 3-Stack Kit

Hardware Modules	Revision
i.MX25 3-Stack CPU board	V 1.1 (Blue) and A1 (Green)
i.MX25 3-Stack personality board	V 1.1 (Blue) and A1 (Green)
i.MX25 3-Stack debug board	V 1.0
i.MX25 3-Stack power supply	
CHUNGHWA VGA panel	
Audio daughter card (ESAI)	
Smartcard adapter	
Ethernet cable	
NULL modem serial cable	
USB OTG cable	

3. What's New

The section describes the new changes in this release, including new features and defect fixes.

3.1. New Features

The following table describes the new features, supports and enhancements since the last release.

Identifier	Description
ENGR117403	USB Device: Improve USB device performance
ENGR118064	System: Add WinCE 6.0 R3 support
ENGR118272	ESAI: Support full-duplex mode for ESAI
ENGR118696	NAND: Support K9LBG08U0D NAND Flash

3.2. Defect Fixes

The following table describes the defect and issue fixes available in the release.

Identifier	Description
ENGR117435	CAMAPP: Preview of camera distorts with high resolution and high frame rate.
ENGR118102	FEC: It can not set up FEC link after running audio power management CETK.
ENGR118536	System: The program memory setting is too low to run application.

4. BSP Supported Features

The following table describes the features that are supported in this BSP.

Feature	Supported?	Comments
Tools		
-W4 Compiler Setting	Y	All BSP code compiles cleanly with –W4 compiler warning level. –W4 is default warning level.
Prefast	Y	Prefast for drivers, version 8. Freescale defined filter.
OEM Adaptation Layer (OAL)		
Bootloader (CSPI)	Y	Bootloader resident in CSPI Flash.
Bootloader (Ethernet)	Y	Using LAN9217 on debug board.
Bootloader (FEC)	Y	Using on-chip FEC controller.
Bootloader (SD)	Y	Bootloader resident in SD Card.
Bootloader (USB)	Y	Using on-chip OTG device.
Interrupt Controller	Y	PQOAL interrupt controller support.
Kernel Profiler	Y	Supported using GPT.
KITL (Ethernet)	Y	Kernel Independent Transport Layer (KITL) supported via Ethernet.
KITL (FEC)	Y	Using on-chip FEC controller.
KITL (USB)	Y	Using on-chip OTG device.
PQOAL (Production Quality OAL)	Y	Conforms to Production Quality OAL coding Standards.
RNG	Y	Random number generator.
Serial Debug Port	Y	Using on-chip UART1 on debug board.
SRTC	Y	PQOAL time-of-day support.
WDOG	Y	PQOAL watchdog supports system reset.
Drivers		
Display	Y	CHUNGHWA CLAA057VA01CT VGA panel.
Audio	Y	Supports SGTL5000 playback and record through SSI.
Backlight	Y	LCDC backlight.
Camera	Y	Supports Omnivision OV2640 CMOS sensor.
CAN	Y	Supports CAN protocol.
Clock Control	Y	Supported as component of CSPDDK (DDK_CLK).
CSPI	Y	Supports SPI bus driver.
DVFS	Y	Supports DVFS using MC34704
ESAI	Y	Supports up to 6 channels audio playback and 4 channels record through ESAI.
Fast Ethernet (FEC NDIS)	Y	Support on-chip FEC NDIS.
GPIO	Y	Supported as component of CSPDDK (DDK_GPIO).
GPT	Y	Supports GPT driver.
I2C	Y	Supports bus driver for I2C bus.
IOMUX	Y	Supported as component of CSPDDK (DDK_IOMUX).
Power Management IC	Y	Supports MC34704.
PWM	Y	Supports all PWM drivers.
NANDFC	Y	Supports SLC and MLC for boot from NAND and NAND file system.
SD/MMC/SDIO	Y	Support SDIO and memory cards.
SDMA	Y	Supported as component of CSPDDK (DDK_SDMA).
SIM	Y	Supports phone SIM cards on both SIM1 and SIM2.
Serial	Y	Supports multiple internal UARTs.
USB	Y	Supports HS OTG Host / Device and HS HOST.
Applications – End User		
Etcha	Y	Free drawing on touch screen.
Core OS Services		
Battery Driver	Y	Supports fake battery driver.
Power Manager	Y	Supports suspend/resume via Power Button.
Graphics and Multimedia Technologies		

Feature	Supported?	Comments
DirectDraw	Y	Hardware support for overlays, color keying, and alpha blending.
Windows Media Player	Y	WMV playback with Microsoft CODEC.
Shell and User Interface		
Keypad	Y	Keypad lies on the back of personality board.
Touch Screen	Y	On-chip touch controller.

5. Known Problems

This section will cover known problems with this release.

5.1. Known Defects

The following table describes the known defects for this release and available workarounds. The defects are categorized as follows:

- *BSP – Defects related to the i.MX25 3-Stack BSP.*
- *3DS – Defects related to the i.MX25 3-Stack development system hardware.*
- *PB/CETK – Defects related to Windows CE Platform Builder or CETK.*

Identifier	Category	Description	Workaround
ENGR119411	BSP	USB Device: PC can not recognize the USB device after suspend/resume.	Re-plug the USB cable can get it back to work.
ENGR119428	BSP	USB Host: Host port stops working sometimes after suspend/resume.	Do another suspend/resume may work around the issue.

5.2. BSP Limitations/Issues

The following table describes the known issues/limitations of the BSP and available workarounds:

Limitation/Issue	Workaround
If NAND Flash was programmed by other OS or program, EBOOT may have problem to obtain the correct Bad Block information. Hence EBOOT can not read/write NAND as normal.	Use ATK tool to erase the whole NAND Flash and then program boot images over again.

5.3. Platform Builder Limitations/Issues

The following table describes the known issues/limitations of the Platform Builder tool and available workarounds:

Limitation/Issue	Workaround
Windows CE 6.0 Test Kit server occasionally drops KITL connection. This appears to occur more frequently with long CETK tests such as the Display Driver Test.	Refer to the *Microsoft Windows CE 6.0 Release Notes* for information on how to configure the CETK disconnect timeout using a registry setting.
Connection to Platform Builder Remote Tools may fail.	Network configuration for PC workstation may have MTU (Maximum Transmit Size) size set to less than 1500, which is not compatible with the KITL MTU size. There is also a known issue regarding the use of more than one of the Remote Tools using the current version of the Windows CE 6.0 shell. Please refer to the Windows Embedded CE 6.0 Release Notes under the heading “Known issues with the new shell” for

Limitation/Issue	Workaround
	more information.
The KITL thread priority may need to be raised if connection to development platform is dropped excessively.	Ethernet KITL support is not tolerant of dropped packets and retransmissions. Raising the KITL thread priority can improve the reliability of the KITL interface. In the source file `\WINCE600\PLATFORM\iMX25-3DS\SRC\KITL\kitl.c`, change the existing KITL_THREAD_HIGH_PRIORITY macro definition from the default value of 131 to 97.

5.4. i.MX25 3-Stack Hardware Limitations/Issues

The following table describes the known issues/limitations of the i.MX25 3-Stack hardware and available workarounds:

Limitation/Issue	Workaround
The drop-down menu of Media Player is invisible when video is being playing, because LCDC does not support destination color key in DirectDraw driver.	No workaround is available.
The video playback involving resize may have poor performance, as there is no hardware acceleration for resize operation.	No workaround is available.
Pressing Power Button too long may cause system shutdown.	Press Power Button no longer than 2 seconds.
NK image can not be programmed onto SPI Flash due to its limited capacity.	Boot from SPI Flash and launch NK on NAND or SD.
The headphone output is reversed between left and right channels.	No workaround is available.
There is noise in ESAI playback when sample rate of the stream is multiple of 44.1K.	The rework on audio daughter card getting PVDD changed to 5V from 3.3V can remove the issue.

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Home Page:
www.freescale.com

Web Support:
http://www.freescale.com/support

USA/Europe or Locations Not Listed:
Freescale Semiconductor
Technical Information Center, EL516
2100 East Elliot Road
Tempe, Arizona 85284
+1-800-521-6274 or +1-480-768-2130
www.freescale.com/support

Europe, Middle East, and Africa:
Freescale Halbleiter Deutschland GmbH
Technical Information Center
Schatzbogen 7
81829 Muenchen, Germany
+44 1296 380 456 (English)
+46 8 52200080 (English)
+49 89 92103 559 (German)
+33 1 69 35 48 48 (French)
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Japan:
Freescale Semiconductor Japan Ltd.
Headquarters
ARCO Tower 15F
1-8-1, Shimo-Meguro, Meguro-ku,
Tokyo 153-0064, Japan
0120 191014 or +81 3 5437 9125
support.japan@freescale.com

Asia/Pacific:
Freescale Semiconductor China Ltd.
Exchange Building 23F
No. 118 Jianguo Road
Chaoyang District
Beijing 100022
China
+86 010 5879 8000
support.asia@freescale.com

For Literature Requests Only:
Freescale Semiconductor Literature Distribution Center
P.O. Box 5405
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Fax: 303-675-2150
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