

i.MX31 PDK 1.4 Windows® CE 5.0

Release Notes

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

1 Release Contents

This release provides a documentation package and a software package.

Contents

1	Release Contents.....	1
1.1	SDK Documentation Package.....	2
1.2	SDK Software Package.....	2
1.3	SDK 3-Stack Hardware Kit.....	2
2	SDK System Requirements.....	3
2.1	Windows CE 5.0 Updates.....	3
2.2	Platform Builder 5.0 Updates.....	3
3	Supported Features.....	4
4	Known Issues.....	6
4.1	Known Defects.....	6
4.2	BSP Limitations and Issues.....	8
4.3	Platform Builder Limitations/Issues.....	8
4.4	Hardware Limitations and Issues.....	9



1.1 PDK Documentation Package

The documentation package provided with this release includes all of the documents in the documentation package, and is in a compressed file (.zip).

3-Stack Kit Component	Description
SDK1.4-WinCE500_DOCKIT.zip	Documentation set

The compressed file includes all of the documents in the document package.

3-Stack Kit Component	Description
pdk14_imx31_WinCE50_ReleaseNotes.pdf	Release Notes
pdk14_imx31_WinCE50_UsersGuide.pdf	User's Guide
pdk14_imx31_WinCE50_RefManual.pdf	Reference Manual

1.2 PDK Software Package

The Software Development Kit (SDK) source code and support files provided with this release are packaged in the following .msi file.

Software Package	Description
SDK1.4_WinCE500_BSP.msi	BSP source code and support files

For installation instructions, see the *i.MX31 PDK 1.4 Windows CE 5.0 User's Guide*.

1.3 SDK 3-Stack Hardware Kit

The next table lists the components of the 3-Stack hardware kit.

3-Stack Kit Component	Revision
3-Stack CPU board	Rev C
3-Stack Debug board	Rev C
3-Stack Personality board	Rev C
3-Stack power supply	5V
Ethernet cable	
NULL modem serial cable	

2 SDK System Requirements

Install the updates for Microsoft® Windows CE™ 5.0 and Platform Builder 5.0.

2.1 Windows CE 5.0 Updates

This package is intended for use with Microsoft Windows CE 5.0.

Review the following site for a complete list of updates:

<http://msdn2.microsoft.com/en-us/embedded/aa731256.aspx>

2.2 Platform Builder 5.0 Updates

Windows CE 5.0 Platform Builder Cumulative Product Update Rollup Package (through 12/31/07)

<http://www.microsoft.com/downloads/details.aspx?FamilyID=a54779d5-f4a5-49f0-9e36-979d461f536c&DisplayLang=en>

Windows CE 5.0 Platform Builder Monthly Update (January 2008)

<http://www.microsoft.com/downloads/details.aspx?FamilyId=98F0906A-45C6-4792-91FE-47A0E073A998&displaylang=en>

Windows CE 5.0 Platform Builder Monthly Update (February 2008)

<http://www.microsoft.com/downloads/details.aspx?FamilyID=9ac7441f-3adc-4e35-abd1-fa4fbb90a132&DisplayLang=en>

Windows CE 5.0 Platform Builder Monthly Update (March 2008)

<http://www.microsoft.com/downloads/details.aspx?FamilyID=aacea4ae-e8ce-40c3-941c-d2a549a55deb&DisplayLang=en>

Windows CE 5.0 Platform Builder Monthly Update (April 2008)

<http://www.microsoft.com/downloads/details.aspx?FamilyID=4a3d4537-ab1b-4e8f-b735-348a64a9d8d6&DisplayLang=en>

3 Supported Features

This Board Support Package (BSP) supports the features described in the following table.

Feature	Supported?	Comments
OEM Adaptation Layer (OAL)		
EPIT1	Y	PQOAL system timer support
KITL	Y	Kernel Independent Transport Layer (KITL) supported via Ethernet connection between Platform Builder and the target. KITL provides debug messages over Ethernet, kernel debugger connectivity, and Windows CE 5.0 Test Kit connectivity.
L2 Cache	Y	Option to use Write-back, Write-through or disable
MX31 RTC	Y	PQOAL time-of-day support with MX31 RTC
MC13783 RTC	Y	PQOAL time-of-day support with MC13783 RTC
NAND Boot	Y	Supports large block NAND device
PQOAL	Y	Conforms to Production Quality OAL (PQOAL) coding standards introduced with Windows CE 5.0
Serial Debug Port	Y	Debug message support provided via internal UART1
USB Boot/KITL	Y	
Drivers		
ATA	Y	ATA
Audio DAC	Y	Playback using MC13783 codec/DAC.
Backlight	Y	Supported via IPU PWM control
Battery Driver	Y	
Bluetooth	Y	CSR Bluetooth module in APM6628
Clock Control (CCM)	Y	Supported as component of CSPDDK (DDK_CLK)
CSPI 2	Y	Interface for MC13783 PMIC
EMI – NANDFC (File system)	Y	Support for NAND FMD
EPIT2	Y	Used for touch panel sampling
Ethernet	Y	Supports LAN9217 chip
FM driver	Y	
GPIO	Y	Supported as component of CSPDDK (DDK_GPIO)
GPS	Y	
GPT	Y	
Hantro codec	Y	Hantro MPEG4 Video VGA Encoder is an IP wrapper for the 5250 Hardware VGA MPEG4/H.263 Encoder. The Hantro MPEG4/H.263 Decoder is a software implementation with IPU post-processing hardware acceleration.

Feature	Supported?	Comments
I2C	Y	I2C
IPU Image Sensor (Camera)	Y	Supports OV2640. Support resolutions, selection, flipping, rotation. Does not support zoom function.
IPU SDC	Y	Epson L4F00242T03 640x480 support
IOMUX	Y	Supported as component of CSPDDK (DDK_IOMUX)
Keypad	Y	Conforms to MSFT keyboard layout manager interface Supports multiple simultaneous key pressing Supports power management mode full ON / full OFF
MBX Direct 3D Mobile/OpenGLES	Y	IP wrapper for 2D/3D hardware acceleration, support directdraw overlay
MC13783 Power Management IC (PMIC)	Y	Supports PMIC features, including regulators, ADC, and touch controller
SD/SDIO	Y	SD/SDIO
SDMA	Y	Supported as a component of CSPDDK (DDK_SDMA)
Serial	Y	Serial port
TV-Out	Y	Supports Chronitel CH7024B
Touch Screen (Stylus)	Y	Supported via MC13783 touch controller
USB OTG/HOST	Y	Supports USB OTG high-speed slave/host
Wi-Fi®	Y	Supports CSR Wi-Fi module in APM6628
Applications		
Camera Application	Y	Supports resolution change Supports image rotation, vertical, and horizontal flip Supports image capture, save as JPEG/BMP Shows real frame rate of camera
FM radio	Y	
IMGburnGUI	Y	
Rotate	Y	
TV-Out	Y	Application <i>tvout.exe</i> enables you to switch between LCD and TV-Out modes.
Power Management Services		
DVFS	Y	
DPTC	Y	
Power suspend mode	Y	Supports < 20 mW
Power audio playback mode	Y	Supports < 250 mW
Power video playback mode	Y	Supports < 1050 mW
File Systems and Data Store		
Hive-based Registry	Y	
Graphics and Multimedia Technologies		

Feature	Supported?	Comments
DirectDraw	Y	IPU hardware support for page flipping, overlays, color keying, color space conversion, rotation, and scaling.
Windows Media Player	Y	WMV playback
Shell and User Interface		
Soft Input Panel	Y	Soft Input Panel
VGA Resources – Portrait Mode	Y	

4 Known Issues

This chapter describes the known defects and workarounds, and the limitations or issues with the BPS release, Platform Builder, and the 3-Stack board.

4.1 Known Defects

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

- BSP – Defects related to the BSP
- HW – Defects related to the hardware
- PB/CETK – Defects related to Windows CE Platform Builder or the Microsoft Windows CE Test Kit (CETK)

Identifier	Category	Description	Workaround
TLSbo79387	CETK	The following CETK DirectDraw test fails: Overlay Blt: 210, 1240, 1340	For cases 1240 and 1340, no workaround is available. Microsoft acknowledges that that this is a CETK issue. For Case 210, minimized CETK ClientSide.exe to avoid interfering.
DSPH127228	CETK	The CETK GDI tests fail with some seed values in the StressShapeTest subtest.	No workaround is available. Microsoft acknowledges that that this is a CETK issue. See http://msdn.microsoft.com/newsgroups/default.aspx?dg=microsoft.public.windowsce.testtools&mid=55498abf-3e5c-4263-85e1-92efda9985b9
TLSbo86098	BSP	The CETK GDI test SetRop2 fails with random seed 359.	No workaround is available.
ENGR45868	BSP	[WPKD_BSP] NAND: The CETK - NANDFLASH Flash Memory	No workaround is available.

Identifier	Category	Description	Workaround
		Read/Write and Performance Test 1002 hangs up	
ENGR43620	BSP	[WKPD_BSP]_OTG:3 file system CETK case failed with USBOTG storage	Run 3 cases separately, will pass.
ENGR46961	CETK	NAND:CETK Partition Driver Test 5103 "RW and bounds check disk partition data" failed	Known issue for CETK.
ENGR46968	BSP	USB_MSC: Stress test, Fail to update the Hard Disk symbol on PC side when unplugging the U-Disk connected to the USB host port in some boards	No workaround is available.
ENGR48033	BSP	[WPKD_BSP]USBOTG: cold boot ActiveSync with hard drive or Udisk attached will cause warning info on some PC side. Probability 90%	Use other PC to try.
ENGR48124	BSP	Media Player on PC will stop with error message when seeking an audio/video file on board >20 times. Possibility 100%	No workaround is available.
ENGR48349	BSP	USB Host and OTG ports data exchange failed when transferring files with transfer tool. Possibility 60%	No workaround is available.
ENGR72479	BSP	Display: Some CETK GDI test cases will fail sometimes when run the all test cases together. 50%	No workaround is available.
ENGR72482	BSP	USB: Could not dismount the local disk on PC , 100%	No workaround is available.
ENGR73015	BSP	Wi-Fi: Suspend/Resume in ping continuously will cause Wi-Fi power off and will not load	No workaround is available.
ENGR72395	BSP	Wi-Fi: BSS with WEP security failed to set up. Possibility 100%	No workaround is available.
ENGR82104	BSP	MBX: Cannot resume the system by keypad sometimes if suspends the system when the D3DM or OpenGL ES application is running. 60%	Click the LCD panel to resume
ENGR86471	BSP	TVOUT APP: Cannot switch the signal from PAL mode to NTSC mode via "TVOUT.exe" application in the windows directory. 100%	Switch to LCD mode first and then switch to NTSC mode
ENGR86751	BSP	Camera App: preview on TV is slower than LCD.100%	No workaround is available.
ENGR86784	BSP	SDHC:Cannot mount one PNY SD card, Possibility 100%.	No workaround is available.
ENGR87124	BSP	SYS: Could not run the CETK stress test. 100%	No workaround is available.
ENGR88160	BSP	Camera has conflict with MBX	No workaround is available.
ENGR88171	BSP	TVOUT: The image displayed on SDTV doesn't match the SDTV screen	No workaround is available.

4.2 BSP Limitations and Issues

The following table describes the known issues/limitations and available workarounds for the BSP.

Limitation/Issue	Workaround
Existing MX31 BSP files in the Windows CE tree may interfere with the installation and builds of this BSP release.	Follow the steps in the SDK User's Guide for Windows CE 5.0 to remove all residual BSP files.
MBX may conflict with TV-Out.	Use IPU to play TV-Out, do not use the Enable MBX module.
Camera application has a conflict with ceplayer.	Do not run the camera application and ceplayer at the same time.

4.3 Platform Builder Limitations/Issues

The following table describes the known issues/limitations and workarounds for the Platform Builder tool.

Limitation/Issue	Workaround
Windows CE 5.0 Test Kit server occasionally drops the KITL connection. This appears to occur more frequently with long CETK tests such as the Display Driver Test.	Refer to the Microsoft Windows CE 5.0 Release Notes for information about how to configure the CETK disconnect timeout using a registry setting.
You may experience issues with Windows CE 5.0 Platform Manager and target device connectivity after installing Windows Mobile 5.0.	If you encounter target device connectivity issues, close Platform Builder to unload the Platform Manager connectivity services, and then restart Platform Builder.
Connection to Platform Builder Remote Tools may fail.	The network configuration for the PC workstation may have the MTU (Maximum Transmit Size) size set to less than 1500, which is not compatible with the KITL MTU size. Refer to http://logicpd.com/support/faq/faq.php?faq_id=104 for more details.
The KITL thread priority may need to be raised if the connection to the development platform is dropped excessively.	The KITL support for the lan9217 is not tolerant of dropped packets and retransmissions. Raising the KITL thread priority can improve the reliability of the KITL interface. Make the following changes in <code>\WINCE500\PLATFORM\MX31\SRC\KERNEL\OAL\kitl.c</code> to raise the KITL thread priority: Add the following global declaration to the top of the file: <code>extern DWORD g_dwKITLThreadPriority;</code> Set the to the desired priority level within the <code>OALKitlStart</code> function prior to calling <code>OALKitlInit</code> : <code>g_dwKITLThreadPriority = 97;</code>

4.4 Hardware Limitations and Issues

The following table describes the known issues/limitations and workarounds.

Limitation/Issue	Workaround
3-Stack board power-on reset can cause HyperTerminal or other terminal emulation applications to stop.	Close and restart the terminal emulation application after power-on reset.
The navigation stick or the keypad on some 3-Stack boards does not work well.	No workaround is available.
The SDHC does not have a write protect pin connection.	No workaround is available.
USB host cannot drive mini HDD over USBV if the peak current > 800 mA	Replace the chip RT9702 with RT9702A to support 1.1 A and 1.5A peak current.
When debugging with KITL, trying to view any of the contents of the IPU registers between ADC_DISP0_RDM and DI_DISP_LLA_CONF results in the system crashing.	Some IPU registers are time critical so that no breakpoint can be set. Suggest using debug messages to print register values.
[ENGR46575] USB_OTG: Pin detection failed between two 3stack boards with Host mode and MSC mode.	The problem was caused by the large tolerance of the R65 on the CPU board. It should be changed to a 12K ohm resistor with 1% precision.

How to Reach Us:

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)
www.freescale.com/support

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
Denver, Colorado 80217
1-800-441-2447 or 303-675-2140
Fax: 303-675-2150
LDCForFreescaleSemiconductor@hibbertgroup.com

Information in this document is provided solely to enable system and software implementers to use Freescale Semiconductor products. There are no express or implied copyright licenses granted hereunder to design or fabricate any integrated circuits or integrated circuits based on the information in this document.

Freescale Semiconductor reserves the right to make changes without further notice to any products herein. Freescale Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does Freescale Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation consequential or incidental damages. "Typical" parameters that may be provided in Freescale Semiconductor data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals", must be validated for each customer application by customer's technical experts. Freescale Semiconductor does not convey any license under its patent rights nor the rights of others. Freescale Semiconductor products are not designed, intended, or authorized for use as components in systems intended for surgical implant into the body, or other applications intended to support or sustain life, or for any other application in which the failure of the Freescale Semiconductor product could create a situation where personal injury or death may occur. Should Buyer purchase or use Freescale Semiconductor products for any such unintended or unauthorized application, Buyer shall indemnify and hold Freescale Semiconductor and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that Freescale Semiconductor was negligent regarding the design or manufacture of the part.

Freescale and the Freescale logo are trademarks or registered trademarks of Freescale Semiconductor, Inc. in the U.S. and other countries. All other product or service names are the property of their respective owners. Microsoft and Windows are registered trademarks of Microsoft Corporation. Wi-Fi is a registered trademark of the Wi-Fi Alliance.

© Freescale Semiconductor, Inc. 2007-2008. All rights reserved.

