i.MX53 SMD Windows Embedded Compact 7

Release Notes

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

Contents

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1 Release Contents

1.1 Documentation Package

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

```
WCE700_MX53_ER_1105_SMD_DOCKIT.zip
```

The following documents are included in this documentation package:

- i.MX53 SMD Windows Embedded Compact 7 Release Notes

- i.MX53 SMD Windows Embedded Compact 7 User's Guide

- i.MX53 SMD Windows Embedded Compact 7 Reference Manual

1.2 BSP Package

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

```
WCE700_11.05.02_ER.msi
```

Refer to installation instructions in the *i.MX53 SMD Windows Embedded Compact 7 User's Guide*.

2 System Requirements

2.1 Windows Embedded Compact 7

The following must be installed in order to create a Windows Embedded Compact 7 development environment for i.MX53 SMD Windows Embedded Compact 7 BSP:
- Visual Studio 2008 Professional Edition or 90-day Trial Version
- Microsoft Visual Studio 2008 Service Pack 1
- Windows Embedded Compact 7 RTM Drop

2.2 RealView Tools

- RealView ICE Kit

  The kit includes RVI unit, power supply, Ethernet cable, LVDS probe and cable.
- RealView ICE firmware. Download and install the following files from ARM web site:
  - o ARM-RVI-3.1.0-754-base.rvi
  - o ARM-RVI-3.1.3-776-patch.rvi
  - o ARM-RVI-3.2.0-850-base.rvi
  - o ARM-RVI-3.2.6-875-Engineer-patch.rvi
  - o RVI_3_3_1_C27.armpatch

- RealView Developer Suite v3.1 or later

2.3 Manufacture Tool
- Manufacture Tool Mfgtools-Rel-WCE700_11.05.02 is required.
- Refer to Manufacture Tool document to know how to use it.

2.4 i.MX53 SMD Kit Components

This kit contains the following items.

Hardware Modules	Revision	Comment
MCIMX53-TABLET board	Rev A, Rev B, Rev C	This board is also referred as i.MX53 TO2 SMD board. Please make sure all boards contain the following TDAs: TDA3738
MCIMX53-TABLET debug board	Rev X	

3 What's New

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

3.1 New Features

See `ResolvedEnhancements.html` for the list of new features, supports and enhancements since the last release.

A summary of the major new features is as follows:

- eCompass sensor support
- SATA CDROM support
- Accelerometer driver support
- Battery driver support
- Touch driver update
- Display driver update
- GPU driver optimization and update

3.2 Defect Fixes

See `ResolvedDefects.html` for the list of the defects fixed in this release.

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 (Ethernet)	Y	Support image download over Ethernet (FEC). The ethernet bootloader can run from NAND, SPI Flash, SD/MMC cards connected to SDHC Slot 1 as well as eMMC4.4 storage connected to SDHC Slot 3
Bootloader (USB)	Y	Support image download over USB RNDIS
Boot Partition on eSD v2.1 & eMMC v4.3	Y	Flashing to and booting from the boot partition of eSD v2.1 (from SanDisk) and eMMC v4.3 (from SanDisk)
Secure Boot	N	
EPIT1	Y	PQOAL system timer support
Kernel Profiler	Y	Supported using GPT
KITL (Ethernet)	Y	Kernel Independent Transport Layer (KITL) supported via Ethernet (FEC) between Platform Builder and the target.
KITL (USB)	Y	Kernel Independent Transport Layer (KITL) supported via USB RNDIS between Platform Builder and the target.
L2 Cache	Y	Default policy is write-back
PQOAL	Y	Conform to Production Quality OAL (PQOAL) coding standards
Serial Debug Port	Y	Debug message support provided via internal UART1
SRTC	Y	PQOAL time-of-day support with MX53 SRTC
TZIC	Y	PQOAL interrupt controller support
WDOG	Y	PQOAL watchdog supports system reset
Board ID	Y	Board ID detection
Drivers		
Audio (SGTL5000)	Y	Playback using SGTL5000 codec
Accelerometer	Y	
Backlight	Y	Support Backlight level adjustment through PWM2
Battery	Y	
Blue Tooth	Y	Support HID class via Blue Tooth USB dongle
Camera	Y	Support OV5642 sensor. Additional Information: • This release supports viewfinder. • This release supports still image capture. • This release supports Rotate / Resize / Flip / Mirror

Feature	Supported?	Comments
		• This release supports Video Capture
CAN	N	No CAN connection available on the board
Clock Control (CCM)	Y	Supported as component of CSPDDK (DDK_CLK)
CSPI	N	No CSPI connection available on the board
DVFS	Y	
eCSPI	N	
eCompass	Y	
EMI – NANDFC	N	
ESAI	N	No ESAI connection available on the board
FEC	Y	
GPIO	Y	Supported as component of CSPDDK (DDK_GPIO)
GPU	Y	IP wrapper for Z160 2D / Z430 3D hardware acceleration with software release version: June 1, 2010 and microcode version: May 13, 2011
GPS	Beta	Basic function is ready now. But not be fully tested.
GPT	N	
HSI2C	N	
I2C	Y	Support Master mode.
IOMUX	Y	Supported as component of CSPDDK (DDK_IOMUX)
IPU Display - Synchronous	Y	Support LVDS panel / WVGA /DVI display/ HDMI display. Displays UI
IPU Display - Asynchronous	N	
DA9053 Power Management IC (DA9052 family PMIC)	Y	Support PMIC features, including regulators, ADC, and touch controller
MLB	N	
MMC/SD/SDIO	Y	Support the following memory cards: SD, SDHC, MMC and MMCPlus
NLED	Y	
One-Wire	N	
Post-Processor	Y	
SATA	Y	
SIM	N	
SPDIF	Y	
SDMA	Y	Supported as component of CSPDDK (DDK_SDMA)
Serial	Y	
TPS	Y	
TV OUT	N	
USB	Y	Support HS OTG Host / Device / XVC and USB HS HOST1

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Feature	Supported?	Comments
Video De-Interlacer (VDI)	Y	
Video Processing Unit (VPU)	Y	VPU decoder (up to 1080P) and encoder (up to 720P) with firmware version 1.4.28
WiFi	Y	Support AR6102 SDIO WIFI
Applications – End User		
WordPad	Y	
Etcha	Y	Free drawing on touch screen
Core OS Services		
Power Manager	Y	
Graphics and Multimedia Technologies		
PlayWnd	Y	WMA/WMV playback with Microsoft CODEC
DirectDraw	Y	IPU hardware support for page flipping
Dual Display	Y	Only support case: WVGA(Display Port 0) + LVDS panel(Display Port 1)
Shell and User Interface		
Soft Input Panel	Y	
Touch Screen (Stylus)	Y	Support DA9053 touch controller for WVGA panel
Touch Screen (multi-finger)	Y	Support HSD100 multi-finger touch controller for LVDS panel
Keypad	N	

5 Known Problems

This chapter describes the known defects and workarounds, and the limitations or issues with the BPS 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.MX53 SMD BSP
- SMD – Defects related to the i.MX53 SMD hardware
- PB/CTK – Defects related to Windows Embedded Compact 7 Platform Builder or the Microsoft Windows Embedded Compact Test Kit (CTK)
- APP – Defects related to an application in device side (WinCE) or host side (PC)

Identifier	Category	Description	Workaround
ENGR131461	BSP	USBHost: function failed after suspend/resume when USB client mass storage (SanDisk 2GB U-Disk only) connected.	This issue only occurs with Sandisk Cruzer micro U-disk. Please try other U-Disk.
ENGR131976	BSP	Failed to format/mount some SD/MMC cards by Storage Manager or App calling File System API "FormatStore".	The SD card can be formatted by following procedure: • Launch the storage properties dialog • In "store info" select the SD memory device. • Press the properties button which will pop up the "partition properties" dialog box • Press the "Dismount" button • Press the "format" button
ENGR131963	APP	MFG: "Configuration->Clean Registry..." is not work	N/A
ENGR139636	BSP	MMC: MMC write performance dropped significantly from Block Driver level to File System Level.	N/A
ENGR139640	BSP	I2C: Inter-Integrated Circuit (I2C) CTK Test failed.	I2C API provided by BSP is not compatible with CTK required API. The failure is expected. The I2C feature can be verified through other driver, like eCompass driver.
ENGR141089	PB	USB device MSC: Suspend, connect cable to board, could not mount right SD as MSC on PC.	The issue is caused by SD profile name changing after system resume back. That's a CE7 limitation.
ENGR140552	APP	The PlayWnd.exe cannot correctly play video when the drag the PlayWnd up and down alone the	This should be an application level issue. Playwnd is a demo quality application provided by Microsoft.

Identifier	Category	Description	Workaround
		screen right border.	
ENGR143722	BSP	HDMI changes to black after two more times suspend/resume with 1080p panel and 1080p video playback	If the player (like Playwnd) can receive suspend / resume event, and can pause the video playback automatically, this issue would not happen.
ENGR143723	APP	PlayWnd.exe existed with "Data Abort" exception after hdmi resolution change with video playback.	This should be an application level issue. Playwnd is a demo quality application provided by Microsoft.
N/A	PB	Display performance may be impacted if SYSGEN_COMPOSITION is set in the catalog.	Try to deselect SYSGEN_COMPOSITION and sysgen again (note that Windows Video Player and Windows Photo Viewer will set this component automatically). In this case you can use PlayWnd.exe for video playback.
ENGR143505	BSP	MiniPCIe_Wifi: USB MSC could not be recognized on PC correctly after 2 times of suspend&resume. And system hang if suspend again.	N/A
ENGR151182	BSP	Sometimes 3Dmark app hangs and cannot suspend/resume system.	N/A
ENGR151194	BSP	GPU application may hang in certain case after long time test	N/A
ENGR144151	BSP	Exception shows up when exit the EGL_DISPLAY cube "es11ex_driverTest.exe".	N/A

5.2 BSP Limitations/Issues

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

Limitation/Issue	Workaround
DVFC driver can't co-work with USB host, SATA and TPS driver.	Remove USB host, SATA and TPS driver before adding DVFC driver.
There's a "FSL Pre-release" watermark on the windows embedded compact 7 desktop by default.	Remove windowsce.png from FILES folder under BSP directory.

5.3 Platform Builder Limitations/Issues

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

Limitation/Issue	Workaround
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.

5.4 i.MX53 SMD Hardware Limitations/Issues

Make sure you've applied all necessary hardware rework on the SMD board.

The following table describes the known issues/limitations of the i.MX53 SMD hardware and available workarounds.

Limitation/Issue	Workaround
Sometimes system can't boot up can LVDS panel is white.	Try to reconnect the LVDS cable.
Sometimes the multi-touch controller can't work.	Try to reconnect the LVDS cable.
Sometimes the LVDS panel has some weird color at object edge.	Try to reconnect the LVDS cable.
HDMI monitor can't turn on or there is some noise color after turn on.	Try different HDMI cable. Also try different HDMI device.
Loud noise during boot if reset during audio playback.	N/A
Active sync hot boot failed at 20% on Rev A board. (ENGR00139435)	Do the hardware following rework: Remove the ESD (D25).
USBOTG&DVFC: VCC will remain at HIGH2 set point after connect/disconnect USB OTG port with PC.(ENGR00139739)	Do the hardware following rework: Remove the ESD (D25).
ENGcm11856: IPU and VPU may present some artifacts when running at 200MHz	This issue only happens on MX53 TO2 silicon. A possible development workaround is to increase the VCC voltage to 1.35V: Update the definition of BSP_PMIC_VCC_NORMAL_VOLT from 1300 to 1350 in SRC\INC\bsp_cfg.h under BSP directory, and then rebuild the eboot and NK image.
Battery charger time is too long.	The FCC board rework for rev-B board is as follows: 1. Added 100-ohm 0402 parallel termination resistors to the LVDS display lines. Footprints for these resistors are already on PCB. Populate R105, R109, R124, R125, R153-R155 (8 resistors) 2. Replace the Tantalum Capacitor (C466, C481, C482) to Ceramic capacitor 3. HDMI can't I2C issue, need add a capacitor to reset pin according to CHIP'S specification need > 100us reset time.
The RTC backup battery can't maintain the system timer. (ENGR00143979)	N/A

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