

# **i.MX53 ARD Windows Embedded Compact 7**

## **Release Notes**

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

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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\_ARD\_DOCKIT.zip

The following documents are included in this documentation package:

- i.MX53 ARD Windows Embedded Compact 7 Release Notes
- i.MX53 ARD Windows Embedded Compact 7 User's Guide
- i.MX53 ARD 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 ARD 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 ARD 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:
  - ARM-RVI-3.1.0-754-base.rvi
  - ARM-RVI-3.1.3-776-patch.rvi
  - ARM-RVI-3.2.0-850-base.rvi
  - ARM-RVI-3.2.6-875-Engineer-patch.rvi
  - 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 ARD Kit Components

This kit contains the following items.

Hardware Modules	Revision	Comment
MCIMX53-AI board	Rev A or Rev B	This board is also referred as i.MX53 TO2 ARD board  Please make sure all boards contain the following TDAs: TDA3577, TDA3597, TDA3621
i.MX53 ARD LVDS Panel	Toshiba LT084AC37300 or HannStar HSD100PXN1	Toshiba Panel is for ARD Rev A board and HannStar Panel is for ARD Rev B board

## 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:

- Support HannStar display / touch on ARD Rev B board
- SATA CDROM support
- YV12 and NV12 output support for TVin
- 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
<b>Tools</b>		
-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
<b>OEM Adaptation Layer (OAL)</b>		
Bootloader (Ethernet )	Y	Support image download over Ethernet (LAN9220). The ethernet bootloader can run from NAND, SATA as well as SD/MMC cards connected to SDHC Slot 1
Bootloader (USB)	Y	Support image download over USB RNDIS
Boot Partition on eSD v2.1 & eMMC v4.3/4.4	N	
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 (LAN9220) 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
<b>Drivers</b>		
ASRC	Y	
Backlight	Y	Support Backlight level adjustment through PWM
Battery	N	
Blue Tooth	N	
Camera	N	
CAN	Y	Low level driver of CAN controller
Clock Control (CCM)	Y	Supported as component of CSPDDK (DDK_CLK)
DVFS	Y	

Feature	Supported?	Comments
eCSPI	N	
EMI – NANDFC	Y	Support NAND FMD driver
ESAI	Y	7.1 channel audio playback and 4 channel record support
Ethernet	N	
GPIO	Y	Supported as component of CSPDDK (DDK_GPIO)
GPU	Y	IP wrapper for Z160 2D / Z430 3D hardware acceleration with software release version: Jun 1, 2011 and microcode version: May 13, 2011
GPT	N	
HSI2C	N	
I2C	Y	Support Master mode. I2C2 is a bus driver for PMIC and Touch
IOMUX	Y	Supported as component of CSPDDK (DDK_IOMUX)
IPU Display - Synchronous	Y	Support LVDS panel display. Displays UI
IPU Display - Asynchronous	N	
LTC3589 Power Management IC (PMIC)	Y	Support PMIC regulators
MLB	N	
MMC/SD/SDIO	Y	Support the following memory cards: SD, SDHC, MMC and MMCPlus
NLED	N	
One-Wire	N	
Post-Processor	Y	
SATA	Y	Support SATA HDD drive
SIM	N	
SPDIF	Y	Support SPDIF in
SDMA	Y	Supported as component of CSPDDK (DDK_SDMA)
Serial	N	
TV IN	Y	Support TVIN via IPU CSI
TV OUT	Y	
USB	Y	Support HS OTG Host / Device / XVC and USB HS HOST1/2
Video De-Interlacer (VDI)	N	
VGA	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 Atheros SDIO WiFi card with demo quality
<b>Applications – End User</b>		
WordPad	Y	

Feature	Supported?	Comments
Etcha	Y	Free drawing on touch screen
<b>Core OS Services</b>		
Power Manager	Y	
<b>Graphics and Multimedia Technologies</b>		
Windows Media Player	Y	WMA/WMV playback with Microsoft CODEC
DirectDraw	Y	IPU hardware support for page flipping
<b>Shell and User Interface</b>		
Soft Input Panel	Y	
Touch Screen (Stylus)	Y	Support MAX11801 touch controller
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 ARD BSP
- ARD – Defects related to the i.MX53 ARD 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
ENGR131976	BSP	Failed to format/mount some SD/MMC cards by Storage Manager or App calling File System API "FormatStore".	MSFT has confirmed this issue and provided a workaround. The SD card can be formatted by following procedure: <ul style="list-style-type: none"><li>• Launch the storage properties dialog</li><li>• In "store info" select the sd memory device.</li><li>• Press the properties button which will pop up the "partition properties" dialog box</li><li>• Press the "Dismount" button</li><li>• Press the "format" button</li></ul>
ENGR144015	BSP	MFG tool cannot download image to cleaned Samsung Nand	N/A
ENGR151194	BSP	GPU application may hang in certain case after long time test	N/A
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.

## 5.2 BSP Limitations/Issues

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

Limitation/Issue	Workaround
ENGR125404: SDIO_WIFI: Exception shows up when Atheros AR6102 SDIO WiFi card is unplugged from board.	This is a known limitation in Atheros SDIO WiFi driver. Make sure you'll not unplug the card from the board.
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 ARD Hardware Limitations/Issues

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

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

Limitation/Issue	Workaround
LAN9220 Ethernet controller may not be initialized properly or get IP from DHCP server in Eboot sometimes	Connect the LVDS backlight to J39 on ARD main board and try again.
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.
ENGR144284: MFG tool is hard to use since device may not be recognized after power on	Press the CPU RST button on the CPU board when you see such issue.

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