



# **BSP for Microsoft Windows\* 8 (Win8, WES8) 32-bit & 64-bit Maintenance Release 1 for**

**Intel<sup>®</sup> Atom<sup>™</sup> Processor E3800  
Product Family**

**Intel<sup>®</sup> Celeron<sup>®</sup> Processor N2807  
Intel<sup>®</sup> Celeron<sup>®</sup> Processor J1900**

**Release Notes**

---

*November 2014*

*Revision 1.1*

**Intel Confidential**



By using this document, in addition to any agreements you have with Intel, you accept the terms set forth below.

You may not use or facilitate the use of this document in connection with any infringement or other legal analysis concerning Intel products described herein. You agree to grant Intel a non-exclusive, royalty-free license to any patent claim thereafter drafted which includes subject matter disclosed herein.

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Code Names are only for use by Intel to identify products, platforms, programs, services, etc. ("products") in development by Intel that have not been made commercially available to the public, i.e., announced, launched or shipped. They are never to be used as "commercial" names for products. Also, they are not intended to function as trademarks.

Contact your local Intel sales office or your distributor to obtain the latest specifications and before placing your product order.

Copies of documents which have an order number and are referenced in this document, or other Intel literature, may be obtained by calling 1-800-548-4725, or go to: <http://www.intel.com/design/literature.htm>

Basis, Basis Peak, BlueMoon, BunnyPeople, Celeron, Centrino, Cilk, Flexpipe, Intel, the Intel logo, the Intel Anti-Theft technology logo, Intel AppUp, the Intel AppUp logo, Intel Atom, Intel CoFluent, Intel Core, Intel Inside, the Intel Inside logo, Intel Insider, Intel RealSense, Intel SingleDriver, Intel SpeedStep, Intel vPro, Intel Xeon Phi, Intel XScale, InTru, the InTru logo, the InTru Inside logo, InTru soundmark, Iris, Itanium, Kno, Look Inside., the Look Inside. logo, Mashery, MCS, MMX, Pentium, picoArray, Picochip, picoXcell, Puma, Quark, SMARTi, smartSignaling, Sound Mark, Stay With It, the Engineering Stay With It logo, The Creators Project, The Journey Inside, Thunderbolt, the Thunderbolt logo, Transcede, Transrf, Ultrabook, VTune, Xeon, X-GOLD, XMM, X-PMU and XPOSYS are trademarks of Intel Corporation in the U.S. and/or other countries.

\*Other names and brands may be claimed as the property of others.

Copyright © 2014, Intel Corporation. All rights reserved.



# Contents

---

<b>1</b>	<b>Introduction .....</b>	<b>5</b>
1.1	Scope of document .....	5
1.2	System Requirements .....	5
1.3	Acronyms and Terminology.....	5
<b>2</b>	<b>Release Summary .....</b>	<b>6</b>
2.1	Release Contents.....	6
2.2	External Dependencies.....	7
<b>3</b>	<b>New In This Release .....</b>	<b>8</b>
3.1	Changes to Existing Features .....	8
3.2	New Features.....	8
3.3	Unsupported Features .....	8
3.4	Discontinued Features.....	8
<b>4</b>	<b>Fixed Issues, Errata, and Known Issues .....</b>	<b>9</b>
4.1	Fixed Issues .....	9
4.2	Errata and Known Issues.....	9
4.3	Non-Intel Issues.....	10
<b>5</b>	<b>How to Install This Release .....</b>	<b>11</b>
5.1	Recommended OS Update .....	11
5.2	Recommended BIOS Configuration .....	11
5.2.1	Driver Installation .....	11
5.2.2	Driver Update .....	12
5.2.3	Driver Uninstallation .....	12
<b>6</b>	<b>Best Known Configuration .....</b>	<b>13</b>
6.1	BKC .....	13



## *Revision History*

---

Revision Number	Description	Revision Date
1.1	Maintenance Release 1	November 2014
1.0	Gold Release	April 2014



# 1 Introduction

---

## 1.1 Scope of document

This document presents system requirements, installation instructions, issues and limitations for the Intel BSP for Microsoft Windows\* 8 (Win8, WES8) 32-bit & 64-bit Maintenance Release 1 for the Intel® Atom™ Processor E3800 Product Family, Intel® Celeron® Processor N2XXX, and Intel® Celeron® Processor J1XXX.

Additional information can be found in the related software developer's manual.

## 1.2 System Requirements

The following operating systems are supported:

- Windows 8 Operating System (32- and 64-bit versions)
- Windows Embedded 8 Standard Operating System (32- and 64-bit versions)

## 1.3 Acronyms and Terminology

Term	Description
BKC	Best Known Configuration
CRB	Customer Reference Board
GPIO	General Purpose Input/Output
HSIC	High-Speed Inter-Chip
HS-UART	High Speed Universal Asynchronous Receiver/Transmitter
I <sup>2</sup> C	Inter-Integrated Circuit
IOTG	Internet of Things Group (an Intel business group)
ISP	Image Signal Processor
KSC	Keyboard and System Controller
POR	Plan Of Record
SoC	System on Chip
SPI	Serial Peripheral Interface
SUT	System Under Test
WHCK	Microsoft Windows Hardware Certification Kit



## 2 Release Summary

---

### 2.1 Release Contents

The following table lists the contents of the release package.

Release Collaterals	Version
Intel Processor Windows 8 IO drivers - Release Notes (this document)	Maintenance Release 1
Intel Processor Windows 8 IO drivers – Programming Guide	Maintenance Release 1
Intel Processor Windows 8 IO drivers 32-bit installer	Maintenance Release 1
Intel Processor Windows 8 IO drivers 64-bit installer	Maintenance Release 1

Both the 32-bit and 64-bit installer packages contain the drivers shown in the following table.

Software driver installed on target system	Version	Release Date
<b>GPIO Controller</b> <ul style="list-style-type: none"><li>• iaiogpio.sys</li><li>• iaiogpioe.inf</li><li>• iaiogpioe.sys</li></ul>	603.9600.1948.30590	11/22/2013
<b>SPI Controller</b> <ul style="list-style-type: none"><li>• iaiospi.sys</li><li>• iaiospie.inf</li><li>• iaiospie.sys</li></ul>	603.9600.1948.28229	10/31/2013
<b>I<sup>2</sup>C Controller</b> <ul style="list-style-type: none"><li>• iaioi2c.sys</li><li>• iaioi2ce.inf</li><li>• iaioi2ce.sys</li></ul>	603.9600.1948.29470	11/13/2013
<b>HS-UART Host Controller</b> <ul style="list-style-type: none"><li>• iaLPSS_UART.sys</li></ul>	1.1.5.1006	8/28/2014



## **2.2 External Dependencies**

An Intel slave device test driver is used for the HS-UART controller. Customers can use their own slave device drivers for other interfaces.



## **3**     ***New In This Release***

---

### **3.1**     **Changes to Existing Features**

The HS-UART driver is now supported on Intel® Atom™ E3800 Product Family D0 stepping silicon.

### **3.2**     **New Features**

None

### **3.3**     **Unsupported Features**

- GPIO driver
  - Multiplexing
  - Pin query
- HS-UART
  - Software Flow Control
- Legacy graphic card not supported in Win8 64 bit / WES8 64 bit in 64-bit IOTG BIOS
- SD OS Boot is not supported in Win8/WES8 32 and 64 bit
- DMA feature is not supported in Win8/WES8 64 bit

### **3.4**     **Discontinued Features**

None



## 4 Fixed Issues, Errata, and Known Issues

### 4.1 Fixed Issues

Issue #	Description of Issue	Implication (Impact)	Resolution
4994622	IO Driver not supported on D0 Silicon <b>Symptom:</b> Yellow bang at HS-UART drivers in Device Manager after installation <b>Affected OS:</b> WIN8 / WES8	All IO Feature	Fixed in MR1 Release
4634827	Safely remove icon did not appear on taskbar notification area when a USB pen drive is attached <b>Symptom:</b> Safely Remove Hardware and Eject Media is not available <b>Affected OS:</b> WIN8, WES8	USB	Fixed in IOTG BIOS v92_21
4634881	Can't find UART test device ACPI\BCM4752 or ACPI\BCM2E1A using 72.11 BIOS after "unhide Unsupported LPSS Device" <b>Symptom:</b> Test device ACPI\BCM2E1A and ACPI\BCM4752 is not showing in Device Manager. User can't test UART by using PuTTY or any test tools <b>Affected OS:</b> WIN8, WES8	LPSS Device	Fixed in IOTG BIOS v80_21
4634927	Disable the ISP camera device (VIDEO\INTOF38) in BIOS for Win8 to remove the yellow bang in windows device manager. <b>Symptom:</b> ISP camera device showing yellow bang in device manager. <b>Affected OS:</b> WIN8, WES8	ISP Camera	Not supported. Disable the ISP camera from BIOS setting in IOTG v80_21

### 4.2 Errata and Known Issues

Issue #	Description of Issue	Implication (Impact)	Resolution
4634818	System re-enumeration and disconnect on HSIC device	File transfer fail on HSIC device when any plug/unplug on USB2.0 bottom port	Errata: Silicon Bug. Do not plug/unplug on USB2.0 bottom port during file transfer on HSIC device.



Issue #	Description of Issue	Implication (Impact)	Resolution
4634569	Kingston DataTraveler Elite* 3.0 Not Working on USB2	Failed to detect USB thumb drive	Errata: Test Tools compatible. Avoid using Kingston DataTraveler Elite 3.0 on USB2 (lower-right USB2.0 port) on Bayley Bay and Bakersport platform
4634845	System unable to wake up from S3 when CPU core = 1	System failed to wake up after S3 when change CPU core to 1	Errata: Silicon logic limitation. Do not set CPU core =1
4634792	One bit is occasionally wrong in SPI	1 bit out of 1000 bits is corrupted on Bayley Bay platform.	Errata: Platform issue. Use Bakersport or Bayley bay Fab 3 light green boards.
4634826	Keyboard or mouse is unable to wake the system from sleep and hibernate	System failed to wake up with mouse or keyboard attached to the top USB2.0 port on Bayley Bay and Bakersport.	Errata: Hardware limitation. Wake the system with the power switch.
4634816	Bayley Bay system shutdown after BIOS stage when booting up with SD card plug in.	System failed to boot up if SD card is connected	Errata: Platform Issue. Suggested to use Bakersport.

### 4.3 Non-Intel Issues

Issue #	Description of Issue	Implication (Impact)	Resolution
4634526	Recorded sound is low and not clear	Voices recording sound is low and not clear	User can adjust the Microphone Boost Setting in Windows to increase the recording volume.
4634926	Win8 HS-UART with DMA gets unexpected failed test cases when running Microsoft WHCK Test suite	Microsoft WHCK Test suite test cases fails	No resolution from Intel as DMA driver is from Microsoft Inbox driver.



# 5 How to Install This Release

## 5.1 Recommended OS Update

The following operating system update is recommended to be installed:

- Microsoft Update KB2756872 for Win8 and WES8 is required to enable DMA features in 32 bit and remove yellow bangs in Windows Device Manager.

<http://www.microsoft.com/en-us/download/details.aspx?id=34879>

## 5.2 Recommended BIOS Configuration

BIOS Selection	Configuration
OS Selection	Device Manager -> System Setup > Boot > OS Selection > Windows8.X
Secure Boot	To disable UEFI Secure Boot Device Manager -> System Setup > Boot > UEFI Security Boot > Select "Disable"
LPSS & SCC Configuration	To Enable ACPI Mode: Device Manager > System Setup > South Cluster Configuration > LPSS & SCC Configuration > LPSS & SCC Devices Mode > Select "ACPI Mode"  To enable SD card for Windows: Device Manager > System Setup > South Cluster Configuration > LPSS & SCC Configuration > SCC SD Card for Windows > Select "Enable"
Intel HD Audio Configuration	To enable HD Audio: Device Manager > System Setup > South Cluster Configuration > Audio Controller > Select "Enable"

### 5.2.1 Driver Installation

Intel recommends that the following steps to be run as administrator.

1. Execute Intel Atom E3800 Win8 IO Drivers 32bit.exe (or 64bit)
2. Check the "I accept the terms in the license agreement" and click "Next".
3. Choose the directory for the installation and click "Next".
4. Choose the "Complete" option for the installation of all drivers and click "Next". Alternatively, choose "Custom" to choose specific IO drivers to be installed.
5. Click "Install" and wait for the installation to complete.



6. Click "Finish" to exit the installer.
7. Reboot the system for changes to take effect.

### 5.2.2 Driver Update

1. Open "Device Manager"
2. Identify existing drivers in your system with the following strings for the driver that you want to update, namely:
  - "System Devices\ GPIO Controller"
  - "System Devices\ I2C Controller"
  - "System Devices\ SPI Controller"
  - "System Devices\ HS-UART Controller"
3. Choose "Update Driver Software" – "Browse my computer for driver software" – "Let me pick from a list of device drivers" – "Have Disk" then go to the specific IO driver folder to install the driver.

**Note:** If possible, check the time stamp of the driver in the target to make sure the right binaries are used.

### 5.2.3 Driver Uninstallation

Uninstall the IO driver from Control Panel\All Control Panel Items\Programs and Features.



## 6 Best Known Configuration

### 6.1 BKC

Hardware Category	Description	Rev/Type/Source
CRB	Bayley Bay Bakersport	FAB3 REV03 FABB
SoC	Intel® Atom™ Processor E3800 Family Intel® Celeron® Processor N2XXX Intel® Celeron® Processor J1XXX	Up to D0 – I Up to C0 – D Up to C0 - M
Display	VGA	
Memory	Bayley Bay: 4 GB DDR3 (2x2GB) Bakersport: 2 GB DDR3 (1x2GB with ECC)	
CRB BIOS	Win8 / WES8 32 Bit: BYTICRB_IA32_R_SPI_0092_32_SeC_Enable Win8 / WES8 64 Bit: BYTICRB_X64_R_SPI_0092_32_SeC_Enable	Intel (CDI#: 554033)
KSC	v03.14	Intel (CDI#: 554033)
Operating System	Windows 8 Enterprise Build 9200 Windows Embedded Standard 8 Build 9200	MSDN
Graphics Driver	15.33.30.64.3958 (64 bit) 15.33.30.3958 (32 bit)	VIP Kit#: 103445 VIP Kit#: 103444
GPIO Driver	603.9600.1948.30590	Intel
I <sup>2</sup> C Driver	603.9600.1948.29470	
SPI Driver	603.9600.1948.28229	
HS-UART Driver	1.1.5.1006	
Chipset INF	10.0.13.0	Intel