

Intel® USB 3.0 eXtensible Host Controller Driver

Release Notes (5.0.3.42)

April 2017

Revision 1.31

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Contents

1	Introduction	5
1.1	Scope of Document	5
1.2	System Requirements	5
1.3	Acronyms and Terminology	7
2	Release Kit Summary	8
2.1	Release Kit Details	8
2.2	Kit Contents	8
3	Important Notes	9
3.1	USB 3.0 Collaterals	9
3.2	Platform Best Known Configuration	9
3.3	New Root Certificate Signing	9
3.4	EHCI controller removal from 6 th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family	9
3.5	Upgrading/downgrading with a Non-PV (WHQL) Driver.	10
4	Closed Issues	11
5	Known Issues	13

Figures

FIGURE 1. WINDOWS SECURITY	10
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Revision History

Revision Number	Description	Revision Date
0.7	Initial Release.	December 2015
0.71	WW02 BKC Release.	January 2016
0.72	WW16 BKC Release.	April 2016
1.0	PV Release for Alpine Ridge	September 2016
1.01	PV Release for Intel® 200 Series Chipset Family	November 2016
1.1	MR1 Release	November 2016
1.2	MR2 Release	March 2017
1.3	MR3 Release	April 2017

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1 Introduction

1.1 Scope of Document

This document provides release information about the Intel® USB 3.0 eXtensible Host Controller Driver. It covers Release Kit summary, Important Notes, Resolved Issues and Known Issues. This document is intended for OEMs and ODMs that are validating the Intel® USB 3.0 eXtensible Host Controller Driver on their platform.

1.2 System Requirements

The Intel® USB 3.0 eXtensible Host Controller Driver contains support for the following Intel Chipsets:

- Intel® 8 Series/C220 Chipset Family
- 4th Generation Intel® Core™ Processors
- Intel® C610 series Chipset Family
- Intel® 9 Series Chipset Family
- Intel® Pentium® Processor or Intel® Celeron® Processor N- & J- Series
- 5th Generation Intel® Core™ Processors
- Intel® Core™ M Processor
- 6th Generation Intel® Core™ Processors
- Intel® 100 Series Chipset Family
- Alpine Ridge USB3.1 Host Controller
- Alpine Ridge LP USB3.1 Host Controller
- Intel® 200 Series Chipset Family + Skylake CPU platforms

The following Operating Systems are supported based on chipset:

Intel® 8 Series Chipset Family
4th Generation Intel® Core™ Processors
Intel® 9 Series Chipset Family
Intel® Pentium® Processor or Intel® Celeron® Processor N- & J- Series
5th Generation Intel® Core™ Processors
Intel® Core™ M Processor
6th Generation Intel® Core™ Processors
Intel® 100 Series Chipset Family
Alpine Ridge USB3.1 Host Controller
Alpine Ridge LP USB3.1 Host Controller
Intel® 200 Series Chipset Family + Skylake CPU platforms:

- Windows* 7 Operating System (both 32-bit and 64-bit versions).

Intel® C220 series chipset family
Intel® C230 series chipset family
Intel® C610 series Chipset Family
Purley Platform (Lewisburg PCH):



- Windows* 7 Operating System (both 32-bit and 64-bit versions).
- Windows* Server 2008 R2 Operating System.
- Windows* Small Business Server 2008 Operating System.

Note: The Intel® USB 3.0 eXtensible Host Controller Driver is not supported on Windows* XP and Windows Vista*. For these operating systems, ensure your BIOS settings have the xHCI Mode set to "Auto" or "Smart Auto". This will reconfigure the USB 3.0 ports to function as USB 2.0 ports using the native Windows* EHCI driver. For more information, see the Wildcat Point-LP Platform Controller Hub (PCH) BIOS Specification document.

The Intel® USB 3.0 eXtensible Host Controller Driver Installer and Intel® USB 3.0 Monitor support the following languages:

- Arabic (International)
- Chinese (Simplified)
- Chinese (Traditional)
- Czech
- Danish
- German
- Greek
- English (United States)
- Spanish
- Finnish
- French (International)
- Hebrew
- Hungarian
- Italian
- Japanese
- Korean
- Dutch
- Norwegian
- Polish
- Portuguese (Brazil)
- Portuguese (Portugal)
- Russian
- Slovak
- Slovenian
- Swedish
- Thai
- Turkish



1.3 Acronyms and Terminology

Term	Description
BSOD	Blue Screen of Death (Stop Error)
CRB	Customer Reference Board
EHCI	Enhanced Host Controller Interface
FS	Full-Speed
HID	Human Interface Device (ex: keyboard or mouse)
HS	High-Speed
IBP	Intel Business Portal (https://businessportal.intel.com)
LS	Low-Speed
PCH	Platform Control Hub
PV	Production Version
RMH	Rate Matching Hub
SS	Super-Speed
USB	Universal Serial Bus
xHCI	eXtensible Host Controller Interface
WPP	Windows* software trace Pre-Processor



2 Release Kit Summary

2.1 Release Kit Details

Kit Name: Intel(R) USB 3.0 eXtensible Host Controller Driver

Version: 5.0.3.42

2.2 Kit Contents

The contents of this release kit include:

- Intel® USB 3.0 eXtensible Host Controller Driver Installer

The Intel® USB 3.0 eXtensible Host Controller Driver Installer "Setup.exe" will install the following drivers and application on the system:

- Intel® USB 3.0 eXtensible Host Controller Driver
- Intel® USB 3.0 Root Hub Driver
- Intel® USB 3.0 Host Controller Switch Driver
- Intel® USB 3.0 Monitor

Note: For 6th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family platform and newer, the Intel® USB 3.0 Host Controller Switch driver will not be installed.

- Intel® USB 3.0 eXtensible Host Controller Driver – Release Notes
- Intel® USB 3.0 eXtensible Host Controller Driver – Bring Up Guide
- Intel Software License Agreement

Note: It's recommended that USB3.0 driver should only be installed using the setup.exe. Proper device functionality cannot be ensured if INF installation is used.



3 *Important Notes*

3.1 USB 3.0 Collaterals

Please see the document "Intel(R) USB 3.0 eXtensible Host Controller Driver – Bring Up Guide" for information on driver installation and usage. This document can be found in the Intel® USB 3.0 eXtensible Host Controller Driver release kit.

Another useful document to reference is the "Intel(R) USB 3.0 eXtensible Host Controller Driver – Customer Validation and Debug Guide". This document is available on CDI. Please contact your Intel FAE for access.

3.2 Platform Best Known Configuration

Please refer to "Client Base Platform Best Known Configuration" from Intel Business Portal (IBP) for platform configuration setup that aligns to this milestone releases.

3.3 New Root Certificate Signing

The current driver is signed with 2048 Bit Root certificate. Some Windows* 7 OS image might not contain the correct root certificate to authenticate it. If this is the case, it's required to install Microsoft* KB [931125](#).

For more detail of 2048 Bit root certificate, see Root Certification Guidance – customer communication #549032

3.4 EHCI controller removal from 6th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family.

For the 6th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family generation, the EHCI controllers along with their integrated rate matching hubs (RMH) have been removed from the PCH. Intel continue to provide USB functionality through the xHCI controller for USB 2.0 and USB 3.0 connectivity. The implication of this change is USB functionality will not work on the Windows* 7 based image, since it doesn't support native xHCI controller. To enable USB functionality in the Windows* 7 OS, it's required to manually install the USB3.0 (xHCI) driver.

For more detail of this implication and instruction how to manually add USB3.0 driver to Windows* 7 based image, see EHCI Removal from 6th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family Platform Controller Hub (PCH) – Technical White Paper document # 541711.



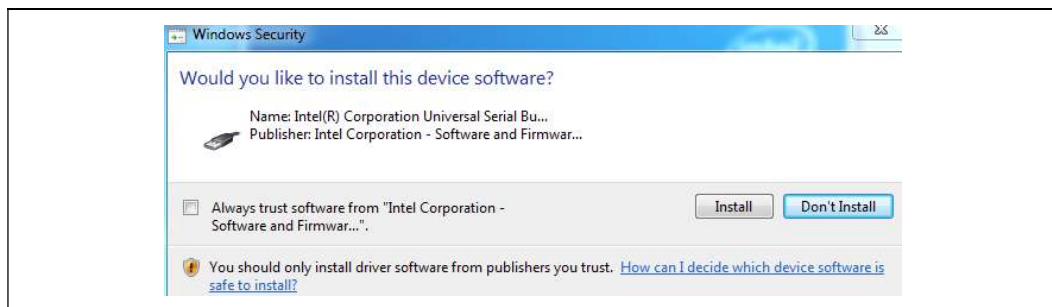
3.5 Upgrading/downgrading with a Non-PV (WHQL) Driver.

When doing an upgrade/downgrade of the USB3.0 driver to a Non-PV version of the USB3.0 driver, you may encounter a "Windows Security" pop up message (Figure 1) requesting approval to trust and allow the installation of the driver. During that moment of the install process, the previous driver is already uninstalled and all the USB ports in the platform will not function. This may cause the installation process to get stuck and cause the installation the USB3.0 driver to fail.

To avoid running into this situation, follow the steps below:

1. When installing the USB3.0 for the first time using setup.exe, select (check) the option "Always trust software from Intel Corporation Software and Firmware..." on the "Windows Security" pop up message (Figure 1) for all three USB3.0 driver components. The next time when doing an upgrade/downgrade of the Non-PV USB3.0 driver, the "Windows Security" message will not pop up requesting for approval.
2. **Pre 6th Generation Intel® Core™ Processors / Intel® 100 Series Chipset Family platforms only:** If you have already done installation for the first time using setup.exe and did not check the option "Always trust software from Intel Corporation Software and Firmware..." on the "Windows Security" pop up message, go to control panel to uninstall the driver and reboot the system. Install the driver again but this time check the option "Always trust software from Intel Corporation Software and Firmware..." on the "Windows Security" pop up message.

Figure 1. Windows Security



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4 Closed Issues

Issue #	Description	Resolution
4774180	BSOD 0xE6 may occurs during WHCK test with specific Bluetooth module.	Resolved in Release Rev: 5.0.3.42
N/A	ATI VISION calibration and data acquisition tool may not work.	Resolved in Release Rev: 5.0.3.42
4774113	Some Bluetooth module may lose function after re-enable by hot key.	Resolved in Release Rev: 5.0.2.40
4778935	Increase intel Bluetooth device firmware loading performance.	Resolved in Release Rev: 5.0.1.38
4774040	BSOD 0xE6 may occurs during WHCK test.	Resolved in Release Rev: 5.0.1.38
4774120	BSOD 0xC1 may occurs during WHCK test.	Resolved in Release Rev: 5.0.1.38
4773767	xHCI controller driver may incorrectly suspend the wrong interface on a USB device.	Resolved in Release Rev: 5.0.0.32
4802815	Dropped of frames may occurs on a specific USB3.0 camera when using larger buffer size for data transfer.	Resolved in Release Rev: 5.0.0.32
4802814	A USB device connected behind a hub may take long time to get removed from the OS if the hub is unplugged from the USB port.	Resolved in Release Rev: 5.0.0.32
4802817	USB headset may freeze when using a Voice over IP application	Resolved in Release Rev: 5.0.0.32
4773893	BOSD 0x9F may occurs during warm boot stress test	Resolved in Release Rev: 5.0.0.32
4773498	BSOD 0xC2 may occur during long S4 streets test.	Resolved in Release Rev: 5.0.0.26
4773504	Billboard device notification message is missing after S3.	Resolved in Release Rev: 5.0.0.26
4773117	Alpine Ridge xHCI controller will cause SPT-H xHCI controller reported invalid number of USB ports.	Resolved in Release Rev: 5.0.0.26
4773142	Device name in device manager for xHCI controller on Alpine Ridge will display as Intel® USB 3.0 eXtensible Host Controller.	Resolved in Release Rev: 5.0.0.26

**Closed Issues**

Issue #	Description	Resolution
N/A	USB headset/Speaker connected to Alpine Ridge xHCI controller may had no output or audio distortion.	Resolved in Release Rev: 5.0.0.26
4773419	OS may fail to automatically install RNDIS driver when Virtual NIC USB Device is connected.	Resolved in Release Rev: 5.0.0.26
4773430	USB network device with non-continuous interface numbering may fails to connect to internet after idle for few minutes.	Resolved in Release Rev: 5.0.0.26
4773525	Workaround for the device driver which will send abnormal POWER IRP to bus driver when system prepare to enter S3.	Resolved in Release Rev: 5.0.0.26

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5 Known Issues

Issue #	Description
	N/A

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