



# Intel® Bluetooth (BT) Software

## Installation Guide

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## Revision History

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Revision	Description	Date
1.0	Initial release.	December 14, 2015

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# 1 Introduction

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The purpose of this document is to provide guidance to customers on installing/uninstalling/repairing the Intel® Bluetooth (BT) software drivers.

The Intel® Bluetooth installer is very simple. The MSFT MSI installer framework provides further flexibility via install command line options and properties.

This document applies to all recent Intel WLAN modules (Wilkins Peak, Stone Peak, and Snowfield Peak) and Windows 7, 8.1 and 10.

The target audience for this document are direct customers (OEM/ODM).

This document is relevant for command line installations (setup.exe, autorun.exe and msiexec) as this is understood to be the customer preference.





## 2 Installation Methods

There are four different methods to install (autorun, setup, .msi and .inf)

- **Autorun.exe**
  - Autorun will detect the OS\bitness version, and launch the appropriate setup.exe to begin the application installation. Since autorun.exe calls on the appropriate setup.exe to execute the actual install, this document mentions setup.exe with the assumption that the user understands that autorun.exe can also be used.
- **Setup.exe**
  - Setup.exe is a bootstrap application which sits in front of the .MSI. Setup.exe will read the configuration file and perform system checks. In general setup.exe takes the same arguments as msixec. Exceptions are pointed out below.
- **Microsoft Windows Installer\* Package (.MSI)**
  - The Intel Bluetooth installer resides in an OS and bitness specific Microsoft Windows installer package. Each package contains all of the necessary files and logic to provide a full installation of the application and driver.
- **.INF file extension**
  - Windows 10 installation includes an INF folder. Driver software can be installed this way but there are no command line options. The defaults are used.

### 2.1 Command line options

Use of command line options is accepted by both the setup.exe and the msi. Parameters for their use fall within three categories in the Intel Bluetooth Installer (items in bold are default).

1. Command line switches passed on by Setup.exe to Microsoft Windows Installer - Setup will pass most of the other command lines it receives directly to the Windows Installer (e.g. /x, /qn, /qb, /qf, /L\*v, etc.) see <https://msdn.microsoft.com/en-us/library/aa367988%28v=vs.85%29.aspx?f=255&MSPPError=-2147217396> for more detail.
2. Standard properties interpreted by Microsoft Windows Installer (msiexec.exe) (REBOOT, ADDLOCAL, and ARPNOREMOVE). [https://msdn.microsoft.com/en-us/library/aa370905\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/aa370905(v=vs.85).aspx)
3. Custom properties that have a custom meaning for the product can be found in Section 2.1.1.

#### 2.1.1 Custom command line install properties

Intel custom command line install properties detail.

**Table 2-1 Command line install properties**

Argument	Value
SUPPORTREMOTEWAKEUP	Default is FALSE
LPUSBHUBWA	Only relevant for Win7, default is TRUE
SSDISABLE	Default is FALSE
BATTERY_LEVEL	Default value is 25. Acceptable range is 0-100
IBTSIVA	Default is TRUE
FORCEDRIVERREMOVAL	Default is FALSE

Please note that the command line arguments are case sensitive.



## Installation Methods

### 1. SUPPORTREMOTEWAKEUP

- a. Remote Wakeup allows the BT HID to wake up a platform that is in a sleep state.

### 2. LPUSBHUBWA

- a. This enables a work around for a USB HUB issue seen on Windows 7/8.1 EHCI based platforms. If not enabled the BT controller can get "stuck" in selective suspend state. Please see <http://support.microsoft.com/kb/2484742> for details.

### 3. SSDISABLE

- a. If set to TRUE it will create SelectiveSuspendEnabled registry value. A reboot is required after installation for this to have effect.

### 4. BATTERY\_LEVEL

- a. Minimum battery remaining percentage level at which an install or uninstall is allowed.

### 5. IBTSIVA

- a. IBTSIVA is a service that detects Yellow Bangs (YB) and forces a reset. This is frequently effective in removing Yellow Bangs.

**Note:** From 18.14 and 17.22 (WW46 releases) IBTSIVA cannot be disabled, that is, it's always TRUE.

### 6. FORCEDRIVERREMOVAL

- a. If this value is set to TRUE, it will remove the ibtusb.sys file from Windows/System32/drivers folder on uninstall. Please note that this directory is controlled by Microsoft and Intel cannot guarantee that the cleanup will always work flawlessly.

## 2.1.2 Command line examples for installation (msiexec and setup)

**Note:** Autorun, setup or msiexec can be used for all examples

**/qn** indicates quiet install – no popups

- Take all the defaults and use USB interface
  - `msiexec /i "Intel Bluetooth.msi" /qn`
  - `setup /qn` (**Note:** /i does not apply to setup.exe or autorun)
  - `autorun /qn`
- Override defaults
  - `msiexec /i "Intel Bluetooth.msi" /qn SUPPORTREMOTEWAKEUP=TRUE LPUSBHUBWA=FALSE`
  - `setup /qn SUPPORTREMOTEWAKEUP=TRUE LPUSBHUBWA=FALSE`
- Set only SUPPORTREMOTEWAKEUP
  - `msiexec /i "Intel Bluetooth.msi" /qn SUPPORTREMOTEWAKEUP=TRUE`
  - `setup /qn SUPPORTREMOTEWAKEUP=TRUE`

## 2.2 Installing Specialized BT Packages

In addition to the main BT package there are three specialized BT packages that are available with the BT release.

These three packages are:





- Intel Bluetooth Library.msi
- Intel Bluetooth Audio.msi
- Intel Bluetooth OEM Tools.msi

### 2.2.1 Intel Bluetooth Library.msi

Installs the intel Bluetooth firmware update driver. This feature installs a standalone driver which provides Intel Bluetooth firmware update ability to 3<sup>rd</sup> party Bluetooth stacks. Below is the command line usage. Most OEMs can ignore this

- To install the package:  
`msiexec /i "Intel Bluetooth Library.msi" /qn`
- To uninstall the existing installation (this will uninstall all features):  
`msiexec /x "Intel Bluetooth Library.msi" /qn`

### 2.2.2 Intel Bluetooth Audio.msi

Installs the intel Bluetooth audio drivers and audio server. This installer does not have any optional features and it by default installs both the drivers and the audio server (service). Below is the command line usage

This installation is designed to be done after installing the main BT driver package.

- To install the audio package:  
`msiexec /i "Intel Bluetooth Audio.msi" /qn`
- To uninstall the existing installation (this will uninstall all features):  
`msiexec /x "Intel Bluetooth Audio.msi" /qn`

### 2.2.3 Intel Bluetooth OEM Tools.msi

Installs the intel Bluetooth OEM Tools.msi. These tools can be used for debugging and testing

- To install the package  
`msiexec /i "Intel Bluetooth OEM Tools.msi" /qn`
- To un-install the existing installation, this will un-install all features.  
`msiexec /x "Intel Bluetooth OEM Tools.msi" /qn`

## 2.3 Upgrading Driver Packages

The common procedure for updating BT drivers is to uninstall an older release and then install the newer release. However, in some cases an older release can be upgraded.

For the upgrade procedure to work, the driver being upgraded must be a major driver version change. This is a Microsoft restriction. Please see <https://msdn.microsoft.com/en-us/library/aa370859%28v=vs.85%29.aspx?f=255&MSPPError=-2147217396>

A major driver package version change means that at least the 3<sup>rd</sup> number must be different. Here is an example

- Driver xx.x.xxxx.xxxx to xx.x.yyyy.xxxx will upgrade
- Driver xx.x.xxxx.xxxx to xx.x.xxxx.yyyy will *not* upgrade

If the above major version requirement is met, then to upgrade the normal method is used.

- If the installation was done using the below command line  
`msiexec /i "Intel Bluetooth.msi" /qn ADDLOCAL=USB SUPPORTREMOTEWAKEUP=TRUE`



## Installation Methods

- Run the below command to upgrade to a newer version  
`msiexec /i "Intel Bluetooth.msi" /qn ADDLOCAL=USB SUPPORTREMOTEWAKEUP=TRUE`

## 2.4 Repairing Driver Packages

Repairing a driver means that the driver is re-installed.

- To repair the existing package, please run the following command line:  
`msiexec /fpecms <PackageName>`
- To repair regular driver package via command line, run:  
`msiexec /fpecms "Intel Bluetooth.msi"`
- To repair the Bluetooth Library.msi package via command line, run:  
`msiexec /fpecms "Intel Bluetooth Library.msi"`
- To repair the Bluetooth Audio package via command line, run:  
`msiexec /fpecms "Intel Bluetooth Audio.msi"`





### 3

## Appendix A: Setup.exe Return codes

**Table 3-1 Setup.exe return codes**

Value	Description
0	Installation is successful
0x65 (101)	Error: Newer product found already installed. This message indicates there is already a greater version installed on the system.
0x66 (102)	Error: Unsupported product upgrade found. This message indicates there is a version on the system that is not supported to be upgraded from.
0x67 (103)	Error: Unsupported Operating System.
0x69 (105)	Error: Low battery level. This message indicates the system was running on battery power and it is not at least at the minimum level (indicated in the setup.xml) to safely proceed with the installation.
0x15E	Error: System has pending reboot. This message indicates the system needs a reboot before installing this package.
0x661 (1633)	Error: Bitness mismatch. This message indicates that the 32-bit install package is being run on a 64-bit system or the 64-bit install package is being run on a 32-bit system.
0xbc2 (3010)	A restart is required to complete the install. This message indicates success. This does not include installs where the ForceReboot action is run.





## 4 Appendix B: MsiExe.exe Return Codes

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Please refer to the MSFT link below: [https://msdn.microsoft.com/en-us/library/aa376931\(v=vs.85\).aspx](https://msdn.microsoft.com/en-us/library/aa376931(v=vs.85).aspx)

