Intel® Bluetooth (BT) Software

Installation Guide

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Revision History

Revision	Description	Date
1.0	Initial release	December 2015
1.1	More detail added	Feburary 2016
1.2	Minor updates	December 2017
1.3	Added manual installation procedure; other minor updates	April 2019

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1 Introduction

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, Windstorm Peak, Thunder Peak, Jefferson Peak, Harrison Peak and Cyclone Peak) and to Microsoft*Windows* 7, 8.1, and 10.

The target audience for this document are direct customers (OEMs/ODMs).

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

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2 Installation Methods

There are different methods for installing (setup, .msi, and .inf):

- **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 msiexec. Exceptions are pointed out below.

- **Microsoft Windows* installer package (.MSI)**

  The Intel Bluetooth installer resides in an OS and is 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 extension file**

  The Windows 10 installation package includes an INF folder. The driver for the specific hardware can be installed from the package, with default options 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).

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.

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*

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 and their default values are listed in Table 2-1. A description of each follows.

Table 2-1 Command line install properties

Argument	Value
SUPPORTREMOTEWAKEUP	Default is FALSE
LPUSBHUBWA	Only relevant for Windows 7, 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.

- **SUPPORTREMOTEWAKEUP**

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

- **LPUSBHUBWA**

  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.

- **SSDISABLE**

  If set to TRUE, creates a SelectiveSuspendEnabled registry value. A reboot is required after installation for this to take effect.

- **BATTERY_LEVEL**

  The minimum battery remaining percentage level at which an install or uninstall is allowed.

- **IBTSIVA**

  IBTSIVA is a service that detects Yellow Bangs (YB) and forces a reset. This is frequently effective in removing Yellow Bangs. This service will be installed by default for Non-DCH compliant BT driver package.

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

- **FORCEDRIVERREMOVAL**

  If this value is set to TRUE, it will remove the ibtusb.sys file from the folder Windows/System32/drivers on uninstall. Please note that this directory is controlled by Microsoft and Intel cannot guarantee that the cleanup will always work flawlessly. For DCH compliant drivers, the driver package will be stored in to System32\Driverstore.

2.1.2 Command line examples for installation (msiexec and setup)

Note: 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)
- 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 Bluetooth* packages

In addition to the main Bluetooth package, there is another, specialized Bluetooth package that is available with the Bluetooth release. This is the “Intel Bluetooth OEM Tools.msi” package.

Intel Bluetooth* OEM Tools.msi

Installs the Intel Bluetooth OEM Tools.msi. This package will install Bluetooth Test mode driver and other components for testing purpose.

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

2.3 Upgrading driver packages

The common procedure for updating Bluetooth 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 third 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 the normal method is used to upgrade.

If the installation was done using the following command line:

```
msiexec /I “Intel Bluetooth.msi” /qn ADDLOCAL=USB SUPPORTREMOTEWAKEUP=TRUE
```

then run the following 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, run the following command:

```
msiexec /fpecms <PackageName>
```

To repair a regular driver package via command line, run the following command:

```
msiexec /fpecms "Intel Bluetooth.msi"
```

To repair the Bluetooth OEM Tools.msi package via command line, run the following command:

```
msiexec /fpecms "Intel Bluetooth OEM Tools.msi"
```

2.5 Installing / Uninstalling driver packages via INF

The recommended approach for installing driver packages for both DCH and Non-DCH compliant drivers is by INF installation.

To install via INF, use pnputil.exe as follows:

```
Pnputil /add-driver ibusb.inf /install
```

The installation will generate an oemxx.inf file identifier. This can be seen in Device Manager -> Bluetooth -> Intel ® Wireless Bluetooth ® -> Properties -> Details tab under the property Inf name.

To uninstall via pnputil.exe, use the Inf name generated by the installation method above and run the following command”

```
Pnputil /delete-driver oemXX.inf /uninstall
```

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3 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 alread 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.

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4 MsiExe.exe Return Codes

Please refer to the following Microsoft* web page:

https://msdn.microsoft.com/en-us/library/aa376931(v=vs.85).aspx

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