



# Intel® Smart Sound Technology Driver

Release Notes: Intel SST Meteor Lake Release

---

*February 2024*

*Revision 1.5*

**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. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

A "Mission Critical Application" is any application in which failure of the Intel Product could result, directly or indirectly, in personal injury or death. SHOULD YOU PURCHASE OR USE INTEL'S PRODUCTS FOR ANY SUCH MISSION CRITICAL APPLICATION, YOU SHALL INDEMNIFY AND HOLD INTEL AND ITS SUBSIDIARIES, SUBCONTRACTORS AND AFFILIATES, AND THE DIRECTORS, OFFICERS, AND EMPLOYEES OF EACH, HARMLESS AGAINST ALL CLAIMS COSTS, DAMAGES, AND EXPENSES AND REASONABLE ATTORNEYS' FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PRODUCT LIABILITY, PERSONAL INJURY, OR DEATH ARISING IN ANY WAY OUT OF SUCH MISSION CRITICAL APPLICATION, WHETHER OR NOT INTEL OR ITS SUBCONTRACTOR WAS NEGLIGENT IN THE DESIGN, MANUFACTURE, OR WARNING OF THE INTEL PRODUCT OR ANY OF ITS PARTS.

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.

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%20>

All products, computer systems, dates, and figures specified are preliminary based on current expectations, and are subject to change without notice.

This document contains information on products in the design phase of development. Do not finalize a design with this information. Revised information will be published when the product is available. Verify with your local sales office that you have the latest datasheet before finalizing a design.

Intel processor numbers are not a measure of performance. Processor numbers differentiate features within each processor family, not across different processor families. See [www.intel.com/products/processor\\_number](http://www.intel.com/products/processor_number) for details.

Code names featured are used internally within Intel to identify products that are in development and not yet publicly announced for release. Customers, licensees and other third parties are not authorized by Intel to use code names in advertising, promotion or marketing of any product or services and any such use of Intel's internal code names is at the sole risk of the user.

Intel, Core, and the Intel logo are trademarks of Intel Corporation in the U.S. and/or other countries.

Microsoft, Windows, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

Bluetooth is a trademark owned by its proprietor and used by Intel Corporation under license.

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

Copyright © 2021 – 2024, Intel Corporation. All rights reserved.

# Contents

1	Introduction .....	5
	1.1 Scope of Document .....	5
	1.2 System Requirements .....	5
	1.3 Acronyms and Terminology .....	5
2	Release Kit Summary .....	7
	2.1 Release Kit.....	7
	2.2 Kit Contents .....	7
3	Intel <sup>®</sup> SST Release Details .....	8
4	Intel <sup>®</sup> SST Release Highlights.....	9
5	Important Notes: .....	10
6	Known Issues .....	11
7	Closed Issues.....	12

## Revision History

Revision Version	Revision History	Revision Date
0.1	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9160.0</li> </ul>	June 2023
0.2	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9269.0</li> </ul>	June 2023
0.3	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9433.0</li> </ul>	July 2023
0.4	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9509.0</li> </ul>	August 2023
0.5	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9568.0</li> </ul>	August 2023
0.6	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9568.28 HF</li> </ul>	September 2023
0.7	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9658.3 HF</li> </ul>	October 2023
0.8	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.9870.21 HF</li> </ul>	November 2023
0.9	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10149.2</li> </ul>	December 2023
1.0	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10149.8 HF</li> </ul>	December 2023
1.1	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10149.10 HF</li> </ul>	December 2023
1.2	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10390.1 HF</li> </ul>	January 2024
1.3	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10390.2 HF</li> </ul>	January 2024
1.4	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10495.0</li> </ul>	February 2024
1.5	<ul style="list-style-type: none"> <li>Intel® SST Meteor Lake Release 20.40.10495.4 HF</li> </ul>	February 2024

# 1 Introduction

---

## 1.1 Scope of Document

This document provides release information about the Intel® Smart Sound Technology (Intel® SST) Driver. It covers Release Kit summary, Important Notes, Known and Closed Issues.

This document is intended for OEMs and ODMs that are validating the Intel® Smart Sound Technology Driver on Meteor Lake (MTL) platforms with Intel Audio DSP integrated.

## 1.2 System Requirements

**Intel® Smart Sound Technology Driver supports the following Intel CPU/Chipset:**

- Meteor Lake Processors

**Platform Support:**

- Meteor Lake processor-based platforms with Intel Audio DSP integrated

**Operating Systems support:**

- Microsoft Windows\* 10/11 64-bit

## 1.3 Acronyms and Terminology

Term	Description
ACPI	Advanced Configuration and Power Interface
BIOS	Basis Input/output System
BT	Bluetooth
DMIC	Digital Microphone
DSP	Digital Signal Processor
FW	Firmware
HDA or HD-Audio	High Definition Audio
IADK	Intel Audio DSP Firmware Development Kit (old name: FDK)
IHV	Independent Hardware Vendor
ISV	Independent Software Vendor

Intel® SST	Intel® Smart Sound Technology
LP	Low power
MCPS	Million Clocks Per Second
MCS	Modern Connected Standby Platform
MR	Maintenance Release
MTL	Meteor Lake
Non-MCS	Non-Modern Connected Standby Platform
OED	Offload Engine Driver
OS	Operating System
PC	Production Candidate
PCH	Platforms Controller Hub
PR	Planned Release
PV	Production Version
RS	Redstone
RVP	Reference Validation Platform
SDW	SoundWire
TBD	To be determined
WoV	Wake on Voice

## 2 *Release Kit Summary*

---

### 2.1 Release Kit

**Kit Name:** Intel® Smart Sound Technology Driver Meteor Lake Release

**Supported OS:** Windows\* 10/11 64-bit

**Version:** 20.40.10495.4

### 2.2 Kit Contents

The contents of this release kit include:

- Drivers
  - DSP Firmware
  - Topology
  - WoV Artifacts
  - IntcAudiobus – Intel SST Audio Bus Driver for HD-A I/F
  - IntcOED – Intel SST Offload Engine Driver
  - Detection Verification Driver
  - Intel® DMIC driver
  - Intel® Bluetooth Audio Driver
  - Intel® Bluetooth LE Audio Driver
  - Intel® USB Audio Driver
  - Intel® SST I2S Driver
  - Intel® SoundWire Bus Driver
  - Intel® SoundWire Driver
- Module Version
  - Intel WoV version 3.0.147.0\_1364
  - Intel Audio Service version 01.00.3337.00
- Apps
  - Intel® Audio Service: Part of Intel SST OED Installation.
- Intel® Smart Sound Technology Driver – Release Notes



## 3 *Intel® SST Release Details*

---

### 3.1 Intel® Smart Sound Technology Collaterals

Please refer to following Intel® SST collaterals for Intel® SST bring-up, validation and debug guidance.

Doc Number & Location	Doc Number & Location
Intel® Smart Sound Technology Driver - Bring-Up Guide	Included in every SST release package Intel CDI Doc #613171
Intel® Smart Sound Technology Customer - Validation and Debug Guide	Intel CDI Doc #613651

### 3.2 Platform Best Known Configuration

Please refer to Meteor Lake BKC Release.

### 3.3 Focused Testing Area

Please refer to the Intel® Smart Sound Technology Validation and Debug Guide on Intel® CDI (Document # 613651) for the test cases to test the following Intel® SST features.

**For Desktop Processors:**

- HD-Audio Playback
- HD-Audio Capture
- Digital Microphone Capture

**For Mobile Processors:**

- HD-Audio Playback
- HD-Audio Capture
- Digital Microphone Capture
- Intel® Wake on Voice - Contact Intel FAE or Intel® SST AE for more details.
- Post-processing - Contact Intel FAE or Intel® SST AE for more details.
- Pre-processing - Contact Intel FAE or Intel® SST AE for more details.



## 4 **Intel® SST Release Highlights**

<b>Intel® SST Features</b>		<b>Highlights</b>
<b>Intel® Audio Service</b>	Intel® Audio Service	Intel® Audio Service installer is provided for to support Intel WoV.
<b>Intel® SST Post-Processing</b>		Post processing IP ISVs will integrate their audio IP FW modules using the Intel audio FDK tool and provide their FW to the IHV's for final audio driver and FW integration for OEM customer platforms.
<b>Intel® SST Pre-Processing</b>	Intel Preprocessing IP	Intel Preprocessing FW is included.  <b>Note:</b> Pre-processing IP ISVs will integrate their audio IP FW modules using the Intel audio FDK tool and provide their FW to the IHV's for final audio driver and FW integration for OEM customer platforms.
<b>HD Audio Interface</b>	NA	HD Audio interface support has been implemented and included in Intel® SST Release.  <b>Disclaimer:</b> To test HD-A interface, a codec driver from audio codec vendor is required. Please contact your codec vendor to obtain the driver supporting this feature.
<b>I2S Interface</b>	NA	I2S Interface support has been implemented and included in Intel® SST Release.  <b>Disclaimer:</b> To test I2S interface, a codec driver from audio codec vendor is required. Please contact your codec vendor to obtain the driver supporting this feature.
<b>SoundWire Interface</b>	NA	SoundWire interface support has been implemented and included in Intel® SST Release.  <b>Disclaimer:</b> To test SoundWire interface, a sound wire driver from SoundWire device vendor is required. Please contact your sound wire device vendor to obtain the driver supporting this feature.



## **5      *Important Notes:***

## 6 *Known Issues*

---

Issue #	Description
---------	-------------

## 7 Closed Issues

Sighting	Title	Fixed version
14021601689	System Audio - KS Topology Test is failing with the Error "Pin[04] : KSPROPERTY_AUDIOSIGNALPROCESSING_MODES is required but not supported".	20.40.10495.4
18033514657	Audio Codec- KS Position Test fail.	
14021290842	BSOD 0x9f occurs pointing to IntcAudioBus during BtFilter driver upgrade process.	20.40.10495.0
14020818860	"XiaoAiTongXue" can't wakeup.	
18034720238	The Youtube stream sound cuts out (suspend for a while) right after connecting the BT headset.	
14021122367	The music will interrupt and change sound quality after pressing BT headset "connect" button under System>Bluetooth & devices> Devices.	
14020522100	Random BSOD (0x139, 0x48, 0xFC, 0x0a) pointing to IntcBTAu when removing BT speaker while playing online video or local music for a while when connecting more than one BT headset.	
14021293646	Play videos using Movies&TV and play music with Media Player at the same time, after re-connecting Bluetooth earphones, no sound from BT headphone.	
14020656467	System Audio - KS Topology Test failed with a specific configuration.	20.40.10390.2
14020474958	All ISST devices lost during reboot stress test when enabling Ultrasound DSP module.	
14021255643	Audio icon will show X when SUT is idle or chatting in teams.	20.40.10390.1
15014832415	No SW-DRIPS in sleep-study report when ultrasound enabled with SST 20.40.10076.0.	
22019231361	iSST lost while running s0i3/s4/restart stress tests.	
14021148736	Connect TBT3/TBT4, BT LE show YB (Code 10) in Device Manager.	
14020700378	Error 7024 pointing to Intel Audio Service is found in System Events while installing ISST driver.	
14020334337	USB headset WH5024/WH3024 don't have audio prompt while clicking "+" button in max volume.	
18035691958	HDC rejects OEM DUA customization of Extension INF Template.	20.40.10149.10
14020325247	[SDW] BSOD 0x9F pointing to "IntcSdwBus" during running Prime95 test.	
14020838224	OED YB & Firmware crash during S4 stress running.	
14020970781	There's noise in the recording playback via Voice Recorder.	
22018807117	Abnormal Recording after adjusting microphone volume in OS setting.	20.40.10149.8
18035212542	FW crash after switching from recording tab in Sounds	
14020805335	[SDW] BSOD 0xC4: HLK System-PNP (disable and enable) with IO Before and After with jack headset plug-in.	20.40.10149.2
14020971166	[SDW] BSOD 0xC4: HLK System-PNP (disable and enable) with IO Before and After.	

22018766873	[SDW] SoundWire Codec gets YB during S4 Long run testing.	
14020744693	[SDW] BSOD 0xCA PNP_DETECTED_FATAL_ERROR after install /uninstall audio driver.	20.40.10149.0
14020732996	USB headset mic sometimes is not working.	
14020652168	Ultrasound pin cannot be enabled in Rx path.	
14020794677	[SDW] Audio jack endpoint will show up and being set as default even though there's no audio jack device connected.	20.40.10076.0
14020474958	All ISST devices lost during reboot stress test when Ultrasound DSP module is enabled.	
14020619527	[SDW] SoundWire Codec show YB during stress test.	
14020567901	The sound output is also muted after muting manually on the BT headset Jabra Evolve 75.	
14020782805	BT LE Audio device is not enumerated after Windows Platform Binary Table feature enabled.	
14020434928	System error with Event ID 1 from IntcOED found in Event Viewer after OS/F11 Refresh/Reset or uninstalled/reinstalled iSST driver.	
14020725500	[SDW] Soundwire audio multifunction device YB during stress test.	
14020392201	System only connect to HFP ("connected to Microphone") but can't connect to A2DP after pairing a BT headset.	
14020791966	System connected one BT headset and one BT mouse, BSOD (7e, 0a, 48, 139) occur when removing the BT headset.	
14020325247	[SDW] BSOD 0x9F pointing to "IntcSdwBus" during running Prime95 test.	20.40.9870.21
14020434536	BSOD 0x3B pointing to IntcAudioBus when running Ultrasound MFG tool.	
15014217525	BSOD 0x9F Crash while using Ultrasound and notification playing at the same time.	
22018757389	Video recording via Camera app has no sound when connect USB headset with Ultra Low Latency (ULL) module.	
22018762312	BSOD 0x7E (AV_IntcOED!!IntelOffloadEngine::InterfaceDereference) in CPU stress test.	
22018801835	Application error with Event ID 1000 "Intel Audio Service", found in Event Viewer after F11/OS Reset.	
22018807117	Abnormal Recording after adjusting microphone volume in OS setting.	20.40.9658.3
15013919985	DMIC can't work with 4 DMIC (24.576M clock source) NHLT configuration.	
22018766073	[SDW] Play video will lag via Media player or Movies & TV.	
22018700505	Personal assistant wake up rate is low.	20.40.9658.2
22018574717	USB-A headset no sound or error message when playing music or video.	
18028093665	Support for NLD reports in IPF via IAS.	
16018753679	HiRes Audio support(96KHz) in headphone playback path with SoundWire/HD-A.	20.40.9568.28
22018584322	"Intel High Definition Audio" show YB in DM when plug 3.5mm headphones during audio playing.	
16021407749	WHQL-Bluetooth - AudioA2dpOffload test fail with ISST V9433.	20.40.9568.0
22018599151	"POPO" noise output from 3.5mm headset when adjust volume in action center.	
22018589669	Audio playback has frequent pop noise.	
22018515858	Video show lag and has no sound output when system resume from S4 with BT speaker connected.	

16021511112	Unmute not happen via BT Headset by pressing vol+ Button in BT HS after muting	
22018692004	Cortana not working in SST v9433.	
22018692029	Background noise is heard during mic recording using SST v9433	
22018428490	Device hung during Warm Reset/S4/FS/CS/S5 cycling.	20.40.9509.0
22018468235	"Intel Smart Sound Technology for Bluetooth LE Audio" shows yellow bang in Device Manager after installed iSST driver.	20.40.9433.0
18030116102	WoV supports more voice assistances.	20.40.9269.0
22016702219	Mic Recording length is shorter than expected.	20.40.9160.0
22017176708	Intel SST OED YB during S4/Auto-Resume Test.	
22016726993	OED YB when say Cortana with iSST 8346/8635.	
14018631112	Unmute not happen via BT Headset by pressing vol+ Button in BT HS after muting.	
22018051582	System Audio - KS Topology Test FAIL on Pin[05].	
22018205837	BSOD 0XC4 during with System - PNP (disable and enable) with IO Before and After (Reliability) item.	
22018094798	Zi-zi noise happen during playback from internal speaker.	
22018170569	There is "zizi" noise when click "Test " button in speaker properties advanced tab if choose format to 24bit,44100Hz.	
22018296023	[SDW] Default volume cannot be customized	