Intel® Smart Sound Technology Driver

Release Notes: Intel SST Meteor Lake Release

March 2024

Revision 1.7

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Revision History

Revision Version	Revision History	Revision Date
0.1	• Intel® SST Meteor Lake Release 20.40.9160.0	June 2023
0.2	• Intel® SST Meteor Lake Release 20.40.9269.0	June 2023
0.3	• Intel® SST Meteor Lake Release 20.40.9433.0	July 2023
0.4	• Intel® SST Meteor Lake Release 20.40.9509.0	August 2023
0.5	• Intel® SST Meteor Lake Release 20.40.9568.0	August 2023
0.6	• Intel® SST Meteor Lake Release 20.40.9568.28 HF	September 2023
0.7	• Intel® SST Meteor Lake Release 20.40.9658.3 HF	October 2023
0.8	• Intel® SST Meteor Lake Release 20.40.9870.21 HF	November 2023
0.9	• Intel® SST Meteor Lake Release 20.40.10149.2	December 2023
1.0	• Intel® SST Meteor Lake Release 20.40.10149.8 HF	December 2023
1.1	• Intel® SST Meteor Lake Release 20.40.10149.10 HF	December 2023
1.2	• Intel® SST Meteor Lake Release 20.40.10390.1 HF	January 2024
1.3	• Intel® SST Meteor Lake Release 20.40.10390.2 HF	January 2024
1.4	• Intel® SST Meteor Lake Release 20.40.10495.0	February 2024
1.5	• Intel® SST Meteor Lake Release 20.40.10495.4 HF	February 2024
1.6	• Intel® SST Meteor Lake Release 20.40.10536.4 HF	March 2024
1.7	• Intel® SST Meteor Lake Release 20.40.10682.11 HF	March 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: 20.40.10682.11

2.2 Kit Contents

The contents of this release kit include:

- o 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
- o Module Version
  - Intel WoV version 3.0.147.0_1364
  - Intel Audio Service version 01.00.3379.00
- o Apps
  - Intel® Audio Service: Part of Intel SST OED Installation.
- o 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:

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

For Mobile Processors:

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

4 Intel® SST Release Highlights

Intel® SST Features		Highlights
Intel® Audio Service	Intel® Audio Service	Intel® Audio Service installer is provided for to support Intel WoV.
Intel® SST Post-Processing		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.
Intel® SST Pre-Processing	Intel Preprocessing IP	Intel Preprocessing FW is included. **Note**: 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.
HD Audio Interface	NA	HD Audio interface support has been implemented and included in Intel® SST Release. **Disclaimer**: 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.
I2S Interface	NA	I2S Interface support has been implemented and included in Intel® SST Release. **Disclaimer**: 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.
SoundWire Interface	NA	SoundWire interface support has been implemented and included in Intel® SST Release. **Disclaimer**: 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
22018537125	No sound output when re-connect/remove BT.	20.40.10682.11
14021713107	Unable to create capture endpoint without RAW signal processing mode.	
14021037984	OED YB in device manager after rotating unit from Clamshell mode to Stand mode.	
14021678655	Unable to get the audio via VLC when doing multi stream audio playback with Groove and VLC.	20.40.10536.4
14021025729	OED YB in device manager after rotating unit or restarting unit with PA log-in in zh-CN image.	
18029899440	Introduce probable fix for playback / capture for VC Stream Synchronization feature.	
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.	
14020474958	All ISST devices lost during reboot stress test when enabling Ultrasound DSP module.	20.40.10390.2
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.	

14020325247	[SDW] BSOD 0x9F pointing to "IntcSdwBus" during running Prime95 test.	20.40.10149.10
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.	
18035212542	FW crash after switching from recording tab in Sounds	20.40.10149.8
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.	20.40.10076.0
14020794677	[SDW] Audio jack endpoint will show up and being set as default even though there's no audio jack device connected.	
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!IIntelOffloadEngine::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.	
22018584322	"Intel High Definition Audio" show YB in DM when plug 3.5mm headphones during audio playing.	20.40.9568.28
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	