



Intel® Smart Sound Technology Driver

Release Notes: Raptor Lake Intel SST Release

March 2023

Revision 1.4

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Revision History

Revision Version	Revision History	Revision Date
0.1	• Intel® SST Raptor Lake Release 6218	October 2021
0.2	• Intel® SST Raptor Lake Release 6755	November 2021
0.3	• Intel® SST Raptor Lake Release 6886	January 2022
0.4	• Intel® SST Raptor Lake Release 7082	February 2022
0.5	• Intel® SST Raptor Lake Release 7541	April 2022
0.6	• Intel® SST Raptor Lake Release 7687	May 2022
0.7	• Intel® SST Raptor Lake Release 7767	June 2022
0.8	• Intel® SST Raptor Lake Release 7919	August 2022
0.9	• Intel® SST Raptor Lake Release 8050 HF	September 2022
1.0	• Intel® SST Alder Lake Release 8102	October 2022
1.1	• Intel® SST Alder Lake Release 8276 HF	November 2022
1.2	• Intel® SST Alder Lake Release 8365	December 2022
1.3	• Intel® SST Alder Lake Release 8467	February 2023
1.4	• Intel® SST Alder Lake Release 8582	March 2023

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 Raptor Lake (RPL) platforms with Intel Audio DSP integrated

1.2 System Requirements

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

- Raptor Lake Processors

Platform Support:

- Raptor 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
EA	Enrollment Application
FDK	Firmware Development Kit
FW	Firmware
HDA or HD-Audio	High Definition Audio
HFP	Hands-Free Profile

IHV	Independent Hardware Vendor
ISV	Independent Software Vendor
Intel® SST	Intel® Smart Sound Technology
IPR	Ingredient Planned Release
LP	Low power
MCP	Multi-Chip Package
MCPS	Million Clocks Per Second
MCS	Modern Connected Standby Platform
MR	Maintenance Release
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
RPL	Raptor Lake
RS	Redstone
RVP	Reference Validation Platform
SUT	System under test
TBD	To be determined
TH	Threshold
ULT	Ultra-Thin
WOV	Wake on Voice

2 *Release Kit Summary*

2.1 Release Kit

Kit Name: Intel® Smart Sound Technology Driver Raptor Lake Release

Supported OS: Windows* 10/11 64-bit

Version: 10.29.00.8582

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® USB Audio Driver
 - Intel® SST I2S Driver
 - Intel® Soundwire Bus Driver
 - Intel® Soundwire Driver
- Module Version
 - Intel WOV version 2.5.900.20_986
 - Intel Audio Service version 01.00.2726.00
- 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 Raptor 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**

Intel® SST Features		Highlights
Intel® Audio Service	Intel® Audio Service	Intel® Audio Service installer is provided for to support Intel WOV via Intel Speech Pin
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 CFL 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 the 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 CFL 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
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7 Closed Issues

Sighting	Title	Fixed version
22016591473	[SDW] Speaker balance button disappear and cannot adjust the L/R volume.	8582
22015841168	Error on USB Headset after updating Intel Graphics driver.	8582
22015146031	Movie & TV show can't play with usb headset after system into S4 then switch different usb port.	8582
22016165861	Occur BSOD 0x7e that points to intcDmic during preload image.	8467
22016321304	BT headset cannot record after removing and then re-adding.	8467
22016051237	The microphone and speaker functions abnormally after upgrading the ISST drivers from v7541 to v7767.	8467
22016176271	[SDW] LR S4 occur BSOD 0x9f DRIVER_POWER_STATE_FAILURE_IntcSdwBus.sys.	8467
22016173568	[SDW] BSOD pointed to DRIVER_POWER_STATE_FAILURE (9f)_portcls when doing Long Run Cold Boot.	8467
22016354503	[SDW] Speaker and headphone default volume is 100%.	8467
22016152554	Cortana validation "Echo" test fail with iSST v7919.	8365
22016176228	[SDW] BSOD 0x9f DRIVER_POWER_STATE_FAILURE_IntcSdwBus when doing Long Run Cold Boot with a dock.	8365
22016177033	Sound cannot input via video call/camera recording/voice recording during microphone form mute to unmute.	8365
22015961748	USB headset has a persistent sound after playing audio/video by Groove player/Movie and TV and pausing it.	8365
22015880157	Using the USB-C headset to play media player then enter/resume from S4, audio is not working on the USB-C headset in AC mode.	8365
22015947973	BSOD 0x9F occurs and points to IntcOED when 5 BTHP are connected at the same time.	8365
22015961748	USB speaker output a noise when pause music.	8365
22016118704	PA has low wake-up rate with 24bit NHLT.	8365
22015939818	Pause/Play button on USB headset cannot work when playing music via Media Player.	8365
22016123922	HWKWS and HW gain do not work when using 24bit DMIC format.	8365
22016091994	Mute the DMIC during recording and still be able to pick up sound.	8365
22015855611	The max sound of the USB speaker is reduced after insert/remove USB speaker in S4.	8365
22016168366	DMICs mute does not work on APO less systems.	8365
22016128990	[SDW] Speaker lost when resume from S0i3/S4.	8276
16018634475	[SDW] Plug in 3.5mm Jack, but sound still plays via internal speaker when playing local music or hit no sound issue when playing online video.	8276
22014823769	When using Edge browser to play online video, plug/un-plug 3.5mm jack, it may get "can't play" error prompt.	8276



22015702615	Mute button for mic does not work for some specific type-C headset.	8102
22015740850	Some Type-C headphone Mic cannot record with 7919.	8102
22015477120	Audio icon show "x" after fast close/open lid with Cortana and Alexa enabled.	8102
22015688717	[SDW] HLK failed: Modern Standby Voice Activation Power Test on AC/DC-power.	8102
15012082984	No SW Drips when ACA is running.	8102
22015939833	System show up "Your microphone is not working" after resume from S4 during Teams call.	8102
22015642363	Speaker no sound after playing the video for a while on the USB-Codec device.	8102
22015172239	Audio from USB device cut during VoIP call.	8102
22015510184	Speaker error after resuming from S4 and plug out the USB headset.	8102
22015585034	ISST OED YB after resuming system from MS while playing online video and enabling WoV in the background.	8102
22015841168	USB audio device cannot work after updating Intel Graphics driver	8102
22015570204	[SDW] DUT will show BSOD(error code: 0xdeadbeef) during the audio driver uninstall and install process.	8050
22015750110	ISV module may not work properly with v7919.	8050
22015468262	ACA module init fail when load with 3 rd party's module.	8050
22015514494	Music player freeze and USB headset hang after wake from S4.	8050
15011627170	WoV don't have gain if DUT not record before.	8050
22015550870	[SDW] HLK: System - PNP (disable and enable) with IO Before and After (Reliability) test failed due to unexpected reboot.	8050
22015138970	Recorded video via camera app then click camera roll will show fail message.	7919
22015102787	Media player show error code after adjusting volume from task bar.	7919
22015099238	Music still outputs from speaker after plug in type-c earphone.	7919
22015046864	BT device can't remove successfully when the Bluetooth headset is connected	7919
22014104819	The advance page and spatial page will disappear after unchecking the HW acceleration of the USB headset in the sound control panel.	7919
22014861643	The Sound icon show X in system tray with PA enabled and doing WU.	7919
22015267012	BSOD 0x9F while running restart stress test with AC/DC cycle.	7919
18021993032	Windows Media Player pops up error message "An audio device was disconnected or reconfigured" when insert 3.5mm Jack device for the first time.	7767
15010805358	Some USB headsets cannot work when connect to the USB hub.	7767
18020606784	Create one build for ADL and RPL	7687
14016116673	[HLK] Audio Codec - KS Topology Test fail	7541
18020354732	BSOD caused by IntcOED.sys BugCheck = C4 when uninstalling the driver	7541
18019823520	[UAOL]Voice Recorder playback only on first channel - Voice Recorder Compatibility	7082
18019047535	[IAS] Add RPL-P HWID	6886
18018875109	Add RPL-P HWID	6755
18018702891	Bsod IntcOED.sys (IntcOED!OELogListener::FreeBuffer+cc), BugCheck C4,	6755



	FAILURE_BUCKET_ID: 0xc4_b9_VRF_IntcOED!OELogListener::FreeBuffer	
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