

# VIVE 3DSP Unity Plugin Release notes

## VIVE 3DSP Unity Plugin v1.3.0

Release date: 2023.09.29

Based on native code version: 1.3.0

- New features
  - Added audio source near field effect feature.
  - Added audio source directivity effect feature.
  - Added audio watermark feature.
  - Audio optimization for VIVE XR Elite is now available.
- Change logs
  - Renamed the headset audio optimization feature from **Headset Model** to **Headset Config**.
  - You no longer need to specify the VIVE headset you're optimizing the audio experience for. The **Auto Detection** feature can automatically detect which VIVE headset is being used.

## VIVE 3DSP Unity Plugin v1.2.8

Release date: 2021.11.26

Based on native code version: 1.2.8

- Bug fixes
  - Fixed ambisonic decoder orientation issue.

## VIVE 3DSP Unity Plugin v1.2.6

Release date: 2021.09.17

Based on native code version: 1.2.6

- Bug fixes
  - Fixed minimum decay setting issue.

## VIVE 3DSP Unity Plugin v1.2.4

Release date: 2021.04.16

Based on native code version: 1.2.4

- Bug fixes
  - Fixed audio source auto enable issue.
  - Fixed a crash issue when the audio source is destroyed.

## VIVE 3DSP Unity Plugin v1.2.2

Release date: 2020.11.30

Based on native code version: 1.2.2

- Bug fixes
  - Fixed SDK version check error.
- Change logs
  - Improved the sound quality.
  - Improved FFT calculation performance.

## VIVE 3DSP Unity Plugin v1.2.0

Release date: 2020.08.10

Based on native code version: 1.2.0

- New features
  - Added a cylinder-type geometric occlusion engine.
  - Added “help” and “link to forum” features.
- Bug fixes
  - Fixed crash issue when attaching a different plugin source script.
  - Fixed sphere-type occlusion radius update issue.
  - Fixed memory leak issue when the audio source is destroyed.
  - Fine-tuned the sound optimization for the VIVE Pro headset model.
  - Fixed pop issue when listener gain is adjusted rapidly.
  - Reduce the output volume difference when "bypass small signal" is enabled.
  - Fixed the loading still exists even when the occlusion effect is disabled.
  - Fixed user defined room material is apply to wrong wall.
  - Fixed pop noise during occlusion effect on/off switch.
  - Fixed the switch problem of headset model.
  - Fixed pop noise during DRC on/off switch.
  - Fixed clipping issue in Big Room Background Audio.
  - Fixed abnormal loading in occlusion frequency free mode.
  - Fixed memory leak issue.

- Fixed the loading still exists when the occlusion material is set to "None".
- Change logs
  - Modified the SDK Guide document.
  - Spatial blend value is now set as 1.0 in VIVE 3DSP audio engine regardless of the Unity setting.
  - Improved the sound quality.
  - Fine-tuned the output gain of the spatializer.
  - VIVE 3DSP preserves Unity Volume Rolloff curve and bypass its effect when Overwrite Volume Rolloff option is enabled.

## VIVE 3DSP Unity Plugin v1.1.0

Release date: 2020.02.27

Based on native code version: 1.1.0

- New features
  - Add occlusion effect engine.
  - Add 24kHz sample rate support.
  - Add new version notification.
  - Add room and occlusion material presets.
- Bug fixes
  - Fix geometric occlusion corner case.
  - Fix sample rate stick to 48k issue.
  - Fix memory leak issue.
  - Fix crash issue when Unity default speaker mode is not set to Stereo.
  - Add support when buffer size under 256.
  - Fix ambisonic decoder incorrect parameter.
  - Fix clipping issue in occlusion process.
  - Fix crash issue in Win32 environment.
  - Fix room effect discontinuity issue.
  - Fix occlusion disable issue.
  - Fix low frequency ratio when not properly applied to occlude.
  - Fix incorrect channel decoding of ambisonic decoder.
  - Fix HRTF won't update when sample rate is changed.
  - Fine tune ambisonic decoder.
- Change logs
  - Rename occlusion engine to occlusion geometry.
  - Change sound decay minimum volume to -96dB.

- Improve geometric occlusion calculation performance.
- Change occlusion default geometry to box type.
- Improve multiple occluder efficiency.
- Fix some descriptions in the SDK document.
- Add support sample rates in ambisonic decoder.
- Improve sound quality.
- Improve listening experience of Headset Model - VIVE Pro.

## VIVE 3DSP Unity Plugin v1.0.0

Release date: 2019.03.08

Based on native code version: 1.0.0

- New feature
  - Add geometric occlusion mode feature.
  - Add bypass small signal feature.
  - Add mute far distance source feature.
- Bug fixes
  - Fixed geometric occlusion corner case.
  - Fine-tuned ambisonic decoder.
  - Fixed raycast occlusion issue where it keeps calculating even when the component is disabled.
  - Early reflection calculation results are now correct.
  - Fixed speed up mode binaural reverb gain issue.
  - Fixed reverb clipping issue when function is on or off.
  - Fixed sample rate error where it was not set correctly when setting the reverb parameter.
  - Fixed reverb preset effect.
- Change logs
  - Improved FFT calculation performance.
  - Fine-tuned sphere-type geometric occlusion performance.
  - Changed parameter creation method to improve performance.
  - Changed object creation method to improve performance.
  - Fine-tuned overall process when the signal is small.

## VIVE 3DSP Unity Plugin v0.10.0

Release date: 2018.12.07

Based on native code version: 0.10.0

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- New feature
  - Parametric equalizer (UI included).
  - Export audio file.
  - Record audio file.
- Bug fixes
  - Fixed CPU burst problem when the set sample rate is not 48Hz.
  - Fixed quaternion value error when Y rotation is 180 degrees.
  - Fixed issue where changes/edits are not applied to all selected objects.
  - Fixed issue where changes/edits are not applied to the background audio and volume.

## VIVE 3DSP Unity Plugin v0.9.2.12

Release date: 2018.08.24

Based on native code version: 0.9.2.12

- New feature
  - Customizable linear decay feature for sound decay mode.
- Bug fixes
  - VIVE 3DSP no longer crashes when room size is huge.
  - Fixed sound clipping issue.
  - Prevent CPU burst when one audio source is released and other sources are still being processed.
- Change logs
  - Renamed Quadratic Decay to Point Source Decay.
  - Renamed Linear Decay to Line Source Decay.

## VIVE 3DSP Unity Plugin v0.9.1.8

Release date: 2018.07.20

Based on native code version: 0.9.1.8

- Bug fixes
  - Fixed noise issue when phi is set to 90 or -90 on the ambisonic decoder.
  - Fixed geometric occlusion issue when the listener, occlusion object, and source are lined up in a straight line.

## VIVE 3DSP Unity Plugin v0.9.1.6

Release date: 2018.07.06

Based on native code version: 0.9.1.6

- New feature
  - Graphic Equalizer.
  - Ambisonic channel (Unity version 2017.1 or later).
  - Binaural reverb.
- Bug fixes
  - Fixed geometric occlusion corner case.
  - Minimum decay now works when distance is over 500 meters.
  - Raycast occlusion now works in x64 platform.
  - Fixed Quasi Doppler free crash issue.
  - Changed ambisonic initial distance.
- Change logs
  - Fixed missing audio when the application comes back to the foreground.
  - Fine tune Ambisonic performance.
  - Real world decay rate.
  - Support 32-bit and 64-bit libraries.
  - Changed 3DSP component path.

## VIVE 3DSP Unity Plugin v0.9.0.2

Release date: 2018.04.20

Based on native code version: 0.9.0.1

- Bug fixes
  - Background audio volume slider bar not work.
  - Minimum decay volume not work.
  - Minimum decay volume sound smooth issue.
- Change logs
  - Changed default raycast number from 1 to 12.
  - Changed example scene music files.

## VIVE 3DSP Unity Plugin v0.9.0.0

Release date: 2018.04.10

Based on native code version: 0.9.0.0

- Bug fixes
  - Fixed sound distortions with reverb effect at the beginning.
  - Fixed Memory leak in Ambisonic.
  - Fixed null reference when audio listener is not attached.
- Change logs
  - When object is covered by multiple rooms, set the smallest room as default.
  - Split occlusion effect into Geometric Occlusion and Raycast Occlusion.
  - Moved most of occlusion calculations into the native library.

## VIVE 3DSP Unity Plugin v0.8.6.0

Release date: 2018.02.27

Based on native code version: 0.8.6.0

- New feature
  - Basic 3D sound effect without effector.
  - Raycast quality settings.
  - Room preset.
- Bug fixes
  - Fixed reverb effect smooth issue.
  - Fixed Raycast occlusion ratio smooth issue.
- Change logs
  - Occlusion engine settings move to occlusion script.
  - Removed basic occlusion size settings.
  - Gizmo display only when occlusion engine set to basic occlusion.

## VIVE 3DSP Unity Plugin v0.8.5.0

Release date: 2018.02.09

Based on native code version: 0.8.5.0

- New feature
  - Add 2 Occlusion Engines: Advanced and Raycast.

## VIVE 3DSP Unity Plugin v0.8.4.2

Release date: 2018.02.01

Based on native code version: 0.8.4.2

- New feature
  - Add audio source spatializer 3D switch.
  - Add audio source room switch.
  - Add audio source occlusion switch.
  - Add audio room component.
  - Add room background audio effect.
  - Add headset model option for optimization.
- Bug fixes
  - Fixed sound distortion.
  - Fixed sound source sometimes get cut.
- Change logs
  - Changed to Audio source effect mode.
  - Computing performance enhancement.
  - Occlusion ratio UI string changed to Occlusion Intensity (Range: 1~2).
  - Occlusion calculation method enhancement.

## VIVE 3DSP Unity Plugin v0.8.1.0

Release date: 2017.12.22

Based on native code version: 0.8.1.0

- New feature
  - Version information.
- Bug fixes
  - Fixed crash issue when using an audio source without attaching the VIVE 3DSP script.
  - Fixed CPU loading issue when using audio source without attaching the VIVE 3DSP script.
  - Fixed crash issue when audio source is frequently opened and closed.
  - Fixed create audio source CPU burst issue.
  - Audio source smooth mode update.



## VIVE 3DSP Unity Plugin v0.8.0.2

Release date: 2017.12.08

- New feature
  - Add Listener reflection gain.
  - Add Listener reverb gain.
  - Add Occlusion material preset.
  - Add Reverb material preset.
  - Add Spatial blend setting.
  - Add Audio mixer.
- Bug fixes
  - Fixed null exception issue.
  - Fixed CPU computing issue.
  - Fixed occlusion issue when using multiple sources.
  - Fixed update function issue.
  - Fixed sound distortion issue.

## VIVE 3DSP Unity Plugin v0.2.0.0

Release date: 2017.11.24

- New feature
  - Add source distance mode.
  - Add custom settings for occlusion material.
  - Add custom settings for listener material.
- Change logs
  - Updated occlusion description.

## VIVE 3DSP Unity Plugin v0.1.0.0

Release date: 2017.11.08

- First version release.