

ReadSpeaker® speechEngine SDK Embedded

ReadSpeaker speechEngine SDK Embedded provides the tools to create a complete on-device text-to-speech (TTS) solution for integrating natural, high-quality synthetic voices into small-footprint devices and embedded applications. Built for reliability and performance in constrained environments, the SDK enables OEMs and developers to deliver consistent, network-independent speech output across mobile devices, medical and industrial systems, transportation hardware, defense equipment, and other mission-critical embedded platforms.

Product Description

ReadSpeaker speechEngine SDK Embedded is engineered to help application developers integrate ReadSpeaker's high-quality synthetic voices quickly and seamlessly into mobile and embedded applications. The engine runs entirely on-device and is optimized for deployment on small-footprint systems, ensuring consistent and reliable performance even in constrained environments.

The SDK supports multiple operating systems, including iOS, Android, and Embedded Linux, with additional embedded platforms available upon request. Each delivery includes the speech engine libraries, voice-specific files, and comprehensive documentation for the licensed platform.

Use of ReadSpeaker speechEngine SDK Embedded is governed by a separate License Agreement, which defines the licensed platform, voices, and permitted use context.

Features

Leading synthetic speech for superior customer experience

ReadSpeaker's text-to-speech voices are engineered for clarity, accuracy, and naturalness. They deliver consistently high audio quality and performance and are continually optimized to meet the demands of embedded environments.

150+ voices in 50+ languages available

speechEngine SDK Embedded supports ReadSpeaker's catalog of more than 150 synthetic voices across over 50 languages. New voices and languages are added regularly. A complete list is available on the [ReadSpeaker website](#).

Modifiable speaking rate, pitch, and volume (DSP)

The speaking rate, pitch, and volume can be configured as required, allowing developers to adjust the audio output to match the needs of the application and target device.

Use SSML to tweak the audio output

SSML provides fine-grained control over how text is rendered as speech. It can be used to modify prosody, insert pauses or breaks of specific durations, add phonetic transcriptions, and switch voices or languages within the same text.

User Dictionary and IPA Support

Each licensed language includes a user dictionary where customers can define custom pronunciations for words or patterns. This improves the reading accuracy for domain-specific vocabulary. Multiple user dictionaries per language and IPA transcription input are supported.

Voice and Language Switch

speechEngine SDK Embedded supports switching to another language or to another voice in the same language during text-to-speech conversion, based on SSML instructions in the input.

Technical Specifications

Supported Operating Systems

- Android
- Embedded Linux
- iOS
- Other embedded operating systems can be supported on request

CPU

ARM 32/64 bit architectures

- Neural Standard: 1 GHz or higher (64-bit only)
- Neural Lite: 800 MHz or higher

Note: If the NEON instruction set is not supported, please consult with ReadSpeaker.

RAM

6 – 30 MB

Voice footprint

- 9 MB – 35 MB per voice (Neural Standard, Deep Neural Networks technology)
- 6 – 32 MB per voice (Neural Lite, Deep Neural Networks technology)

Runtime memory

- 20 – 30 MB (Neural Lite, Neural Standard)

Development languages

- C / C++ (WinCE/Embedded Linux)
- Objective-C (iOS)
- Java (Android)

Supported text input formats

- Plain text
- SSML

Supported character encoding for text input

- Plain text supports Multibyte
- SSML supports UTF-8 encoding

Supported audio formats

- 16-bit linear PCM
- 16-bit linear PCM Wave
- 8-bit A-law PCM
- 8-bit A-law PCM Wave
- 8-bit μ -law PCM
- 8-bit μ -law PCM Wave
- 8-bit unsigned linear PCM Wave
- 4-bit Dialogic ADPCM

Voice and Language Switch

Switching to another language or another voice in the same language can also be performed using SSML as the input text.

Simple implementation

ReadSpeaker speechEngine SDK Embedded is designed for straightforward integration. The SDK package includes clear documentation and sample code to assist developers throughout the implementation process.

Implementation support

ReadSpeaker speechEngine SDK Embedded includes implementation support from the ReadSpeaker Support Team. The team assists customers in understanding and carrying out the integration according to the provided instructions.

Licensing

ReadSpeaker speechEngine SDK Embedded is governed by a license agreement. See the Licensing section under Requirements and Limitations for more information. The license agreement is technically enforced by a license file that specifies and enforces:

- The text-to-speech voices included in the license
- The license term (duration of permitted use of speechEngine SDK Embedded)

The use of ReadSpeaker speechEngine SDK Embedded is governed by a required separate license agreement. This license agreement determines which voices are licensed and the context within which the product may be used, usually the name and a description of the application/device that will be speech-enabled. It also specifies technical restrictions to the text-to-speech conversion, such as the synthesis speed rate. A license file is a part of the product and technically enforces elements of the license agreement. The agreement is based on trust that the customer will not exceed the specified use.

Product Components

ReadSpeaker TTS Engine

The ReadSpeaker TTS Engine converts text into synthetic speech. The ReadSpeaker TTS Engine includes a pronunciation dictionary for the licensed language.

User documentation

The SDK package includes the necessary APIs and integration documentation.

Requirements and Limitations

Licensing

A license agreement governs and restricts the use of ReadSpeaker speechEngine SDK Embedded. It defines:

- The permitted usage context for speechEngine SDK Embedded, typically identified by the name and description of the application or device to be speech-enabled
- The text-to-speech voices included in the license
- The license term (duration of permitted use of the SDK)

Intended Use

Customers may use ReadSpeaker speechEngine SDK Embedded only in accordance with this product specification and the required license agreement. Any use outside the scope defined in this specification and the license agreement is not considered intended use.

Disclaimer

The features listed in this document are guaranteed only when ReadSpeaker speechEngine SDK Embedded is implemented according to the provided instructions.

Specifications and features may be modified by ReadSpeaker at any time without prior notice.