

Beatnik Audio Engine™

Enhanced Audio Solutions

The Beatnik Audio Engine™

The Beatnik Audio Engine (BAE™) is a scalable software audio engine for PCs, PDAs, mobile phones and other digital devices. It includes a music synthesizer, sample player, effects processor, sample rate converter and a stereo 64 channel mixer. It provides music synthesis and digital audio playback services for entertainment, media production, and mobile audio applications – with rich interactive features.

The BAE is one of the most mature and reliable solutions available for high quality sound, voice and music playback on a wide range of devices. Beatnik's interactive audio platform has been licensed by leading companies including Microsoft, Sun Microsystems, Intel, Netscape and Liberate Technologies. The BAE has been used as the audio engine for dozens of PC and console games and is also the standard audio solution for Sun Microsystem's J2SE platform. Most recently the BAE has been optimized for the Intel StrongARM platform running in a Pocket PC operating system environment.



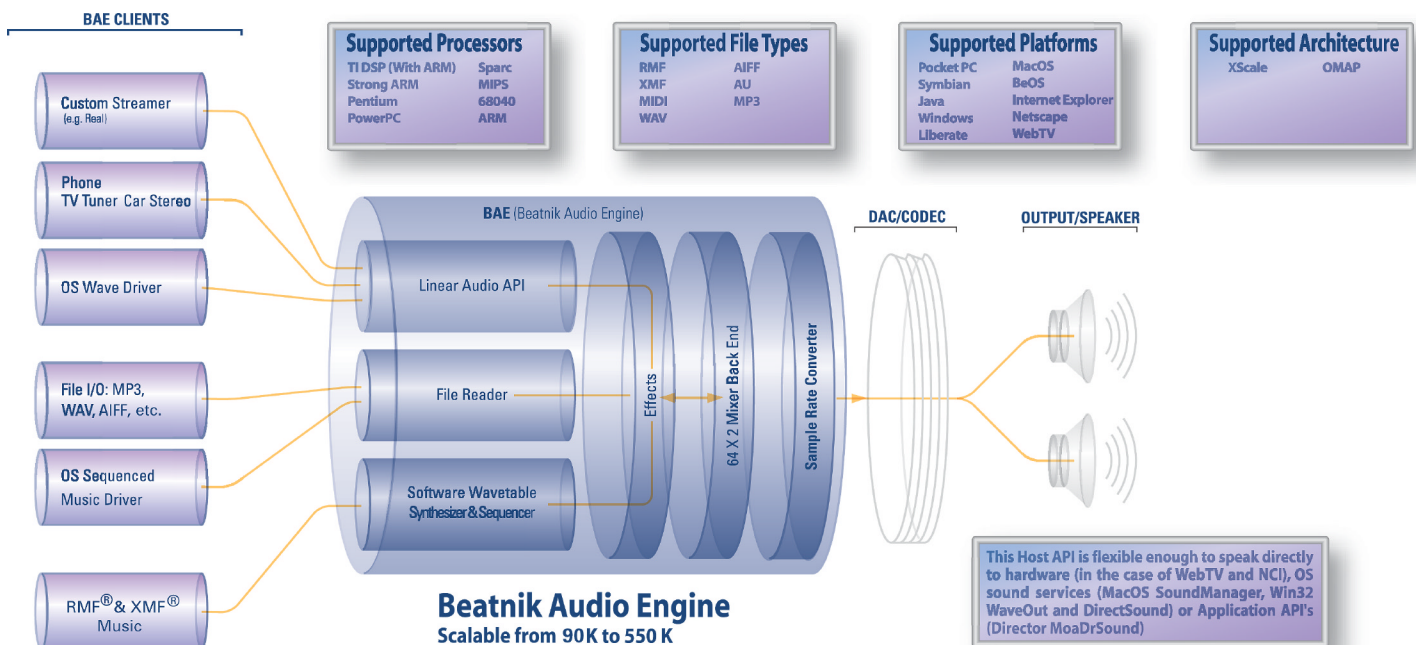
Beatnik Player for Pocket PC, one of many applications built on the Beatnik Audio Engine

Applications

The BAE can be used to develop a variety of multimedia applications. On a computer the BAE can be used to add music and sound to a web page or built into a game. A PDA can use the BAE for games or as an MP3 player. On a mobile phone the BAE can dramatically enhance ringtones and notification sounds.

APIs & Tools

The BAE provides a robust C, C++ or Java API to speed the development of multimedia applications. The API can be used in popular development tools from Microsoft, Metrowerks and others. Beatnik also provides authoring tools to create content in RMF® (Rich Music Format™) as well as XMF™ (eXtensible Music Format™) an open file format standard ratified by the MMA (MIDI Manufacturers Association) and the AMEI (Association of Musical Electronics Industry) in 2001.



FEATURES	BENEFITS
Hardware Independent Entirely software-based. Fully configurable for best balance of CPU usage, memory usage and audio quality.	Requires minimal hardware support. Available on multiple hardware platforms. Dedicated hardware not required.
Flexible MP3, WAV, AIFF, AU, MIDI, RMF & XMF playback and music synthesis.	Only need ONE audio solution to support all current common audio formats. Support for new formats can easily be added.
High Quality Fully configurable sound quality is comparable to CD quality and high-end PC wavetable sound cards.	High quality audio with extremely small files is ideally suited to narrow bandwidth environments.
Powerful <ul style="list-style-type: none"> • Multi-timbral MIDI wavetable synthesizer • Digital sample playback engine • 64 channel mixer • Multiple effects, compression options 	The BAE is a Complete Audio Solution: <ul style="list-style-type: none"> • Synthesizer • Mixer & Effects Processor • MP3 player
Scalable Supports polyphony ranging from 4-64 voices and playback rates from 8 kHz to 48 kHz	Allows implementation in a variety of devices from PCs to PDAs to mobile phones.
Efficient Despite all this power, each voice uses very little processor bandwidth.	High quality audio is available to low power, low cost processors.
Small Footprint Engine footprint ranges from 350Kb to 115Kb, dependent on quality and device capabilities. Soundbank sizes as small as 40Kb.	Footprint size is scalable according to device requirements.
System-Level Mixer Supports simultaneous playback of multiple digital audio files. Max number of files played simultaneously is fully configurable.	Basic mixer engine component provides system-wide mixing of all audio playback.
Robust APIs – simple and comprehensive C, C++ and Java API's, providing both simplicity and a full featured interface.	Industry standard APIs allow for straight forward customization.
Standards Support BAE supports use of DLS soundbanks in creation and playback of XMF files.	Consistently great-sounding music is much easier to achieve than with hardware based systems which vary across machines.
Consistent Music Playback Platform agnostic engine produces uniform playback across various devices.	Open standards support makes content creation and playback straight-forward and consistent.

Content Support

The BAE was originally designed to support Beatnik's proprietary format, RMF, which allows for structured (MIDI) audio to be mixed with linear (WAV, MP3, etc.) audio to produce an entirely new interactive file format. RMF files playback instantly when triggered, generating real time interaction with CD-quality sound. In addition, the RMF compression scheme offers 2:1 to 5:1 compression on standard MIDI-only files with the added benefit of encrypted file information such as copyright, composer, publisher, and other unique identifiers.

eXtensible Music Format (XMF) is an MMA and AMEI ratified standard format based in large part on Beatnik's RMF. The BAE fully supports XMF which uses standard DLS 2 soundbanks to allow for more flexibility to use custom designed instruments in a universally standardized fashion. As a completely scalable container file format, XMF is the premier solution for device audio ranging from ringtones on cellular phones to high-end games on powerful PDAs.

Both RMF & XMF support a number of linear compression options including MP3, IMA 4:1, ulaw and alaw.

Licensing & Contact Information

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