

# Beatnik miniBAE™

## Enhanced Audio Solutions

### The miniBeatnik Audio Engine™

The miniBeatnik Audio Engine (miniBAE™) is a scalable software audio engine specifically optimized to run on digital devices where processing power, memory, and storage are at a premium. Like the BAE, the miniBAE offers a music synthesizer, sample player and sample rate converter. However, the miniBAE offers lower requirements on RAM and ROM usage with a mono 16 channel mixer, and reduced soundbank sizes.

The miniBAE 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 and for use in numerous games, other platforms and technologies.

### High Quality, Low Cost

The miniBAE offers high quality (typically 8-16 voice polyphony and 22KHz playback) with minimal memory usage, making it an extremely cost effective solution in a digital device marketplace where cost of goods is so important.

In addition, the miniBAE makes the need for costly hardware audio solutions obsolete while



Beatnik Mobile Applications built on the Beatnik Audio Engine.

removing the physical footprint required to house a chip.

### Applications

Flexibility is the name of the game... The miniBAE can provide the perfect solution for high quality polyphonic ringtones on a mobile phone, but can also scale to be used as the audio engine for gaming on a high-end PDA.

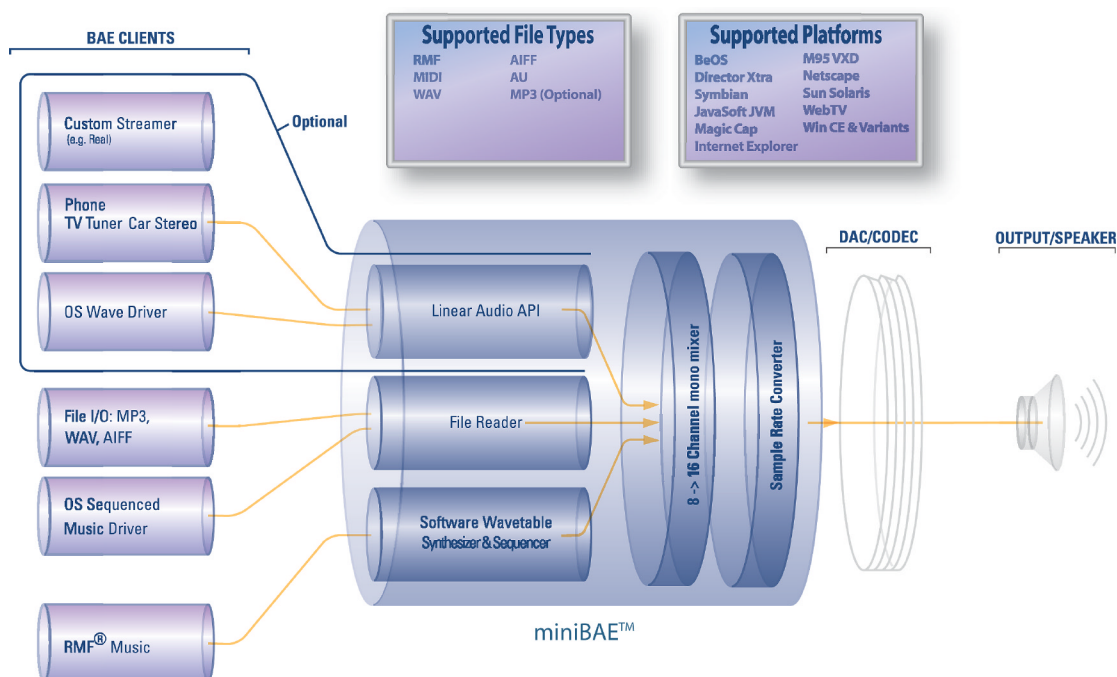
### APIs, Tools & Content

The miniBAE provides a robust C 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™).

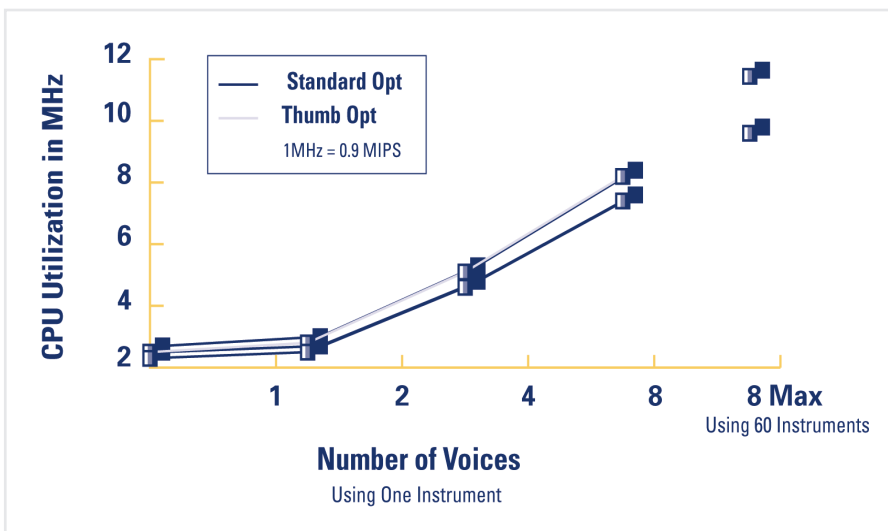
The miniBAE supports the playback of RMF and standard MIDI files as well as most major linear formats including WAV, AIFF, AU, and MP3.

### Soundbanks

Through Beatnik's use of instrument aliasing, Beatnik soundbanks can be built with any number of instruments with a range of sample qualities. This allows for reduced soundbank size, and more flexibility when prioritizing instrument choice, music quality and storage capability.



## PROCESSOR UTILIZATION



## STANDARD miniBAE OPTIMIZED

FOOTPRINT	147KB
RAM UTILIZATION (MAX)	27KB - 69KB*
STACK SIZE	<2KB
SOUND BANK FOOTPRINT	41KB - 58KB**

## THUMB miniBAE OPTIMIZED

ROM FOOTPRINT	113KB
RAM UTILIZATION (MAX)	27KB - 69KB*
STACK SIZE	<2KB
SOUND BANK FOOTPRINT	41KB - 58KB**

### NOTES

OPTIMIZATIONS BASED ON miniBAE FOR ARM PROCESSORS

\* 1ST FIGURE: 8 VOICES AND 8 INSTRUMENTS, 2ND FIGURE: 16 VOICES AND 60 INSTRUMENTS.

\*\* BASED ON 60 INSTRUMENTS. RANGE IS BASED ON SOUND QUALITY REQUIRED - HIGH FIGURE USES MULTIPLE SAMPLES PER INSTRUMENT

FEATURES	BENEFITS
<b>Hardware Independent</b> Entirely software-based, configurable for CPU usage and audio quality.	Requires minimal hardware support. Available on multiple hardware platforms. Dedicated hardware not required.
<b>Flexible</b> WAV, AIFF, AU, MIDI, RMF playback and music synthesis.	Only need ONE audio solution to support and use all of the current common audio formats.
<b>High Quality</b> Fully configurable sound quality can be scaled to CD quality.	High quality audio with extremely small files is ideally suited to narrow bandwidth environments.
<b>Scalable and Extensible</b> Engine and soundbanks can range from 550Kbytes to 50Kbytes, dependent on quality and device capabilities.	Allows implementation in a variety of devices from PCs to PDAs to mobile phones.
<b>Efficient</b> Despite all this power, each voice uses very little processor bandwidth.	High quality audio is available to low power, low cost processors.
<b>Tiny Footprint</b> Engine footprint as small as 115k. Typical soundbank size is less than 50k.	Footprint size is scalable according to device requirements.
<b>System-Level Mixer</b> 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.
<b>Robust APIs – simple and comprehensive</b> C API's, providing both simplicity and a full featured interface.	Robust APIs allow for straight forward customization.
<b>Platform for Portable Content</b> miniBAE supports playback of secure RMF files.	RMF security helps protect content copyrights through encryption.

## Licensing & Contact Information

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