

# Beatnik mobileBAE™

## Audio for a Mobile World

### mobileBAE Software Synthesizer

Beatnik's mobileBAE software provides manufacturers with a scalable audio solution for mobile phones that require music play back, game sound tracks, and system audio controls. mobileBAE supports MIDI Manufacturers Association and 3GPP open standard formats with wavetable synthesis technology. The mobileBAE software provides a complete audio engine that can be configured for high-end smart phones, mid-range feature phones, and low-cost products. Beatnik's audio software is available and shipping today in hundreds of millions of phones.

### mobileBAE Applications

#### Ringtones

mobileBAE plays industry-standard MIDI, SP-MIDI, Mobile XMF, MP3, AMR-WB and aacPlus ring tone formats, as well as the important legacy formats such as iMelody, RTX, and SMS ringtones.

#### Mobile Game Sound Tracks

mobileBAE provides interactive audio controls for mobile games, including J2ME and native games on Symbian and Microsoft platforms. In addition, mobileBAE provides 3D audio controls.

#### System Sound Control

Use mobileBAE to control all of the required audio controls on the phone including system alerts, key pad tones, and alarms.

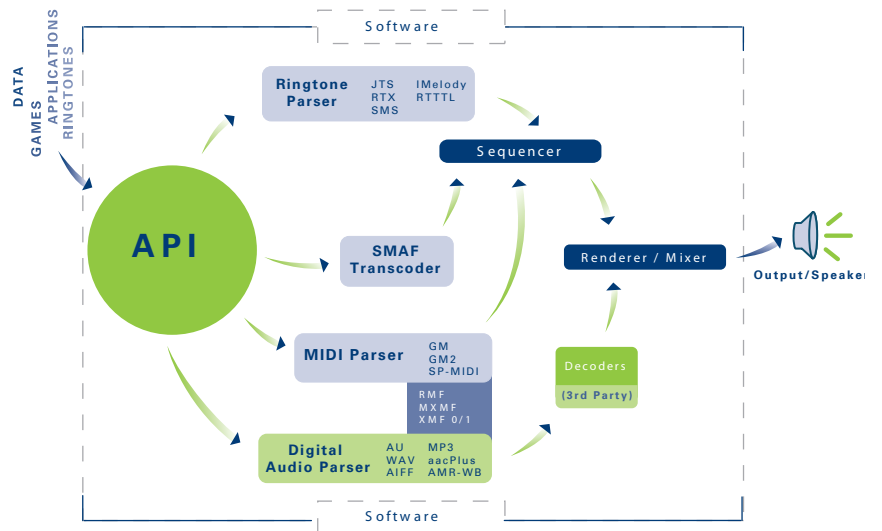
#### Product Differentiation

mobileBAE provides manufacturers with the ability to differentiate products through custom instrument wavetables, digital samples and other sonic branding techniques.



### Beatnik Content Creation Tools

The Beatnik Mobile Sound Builder is used by thousands of content creators to quickly and easily support Beatnik-enabled phones with exciting ring tones and game tracks.



mobileBAE Dataflow Model

### mobileBAE Functionality

#### DLS wavetable synthesizer

- » Configurable wavetables to 300 Kbytes
- » Unlimited number of polyphonic voices
- » 8KHz – 48 KHz sampling rates
- » Complete audio solution providing multi-channel mixer and sample rate converter.

#### Global Audio File Format Support

- » Standard MIDI (SMF): GM1 and GM2
- » Scalable Polyphony MIDI (SP-MIDI)
- » Mobile XMF & Mobile DLS
- » Rich Music Format (Beatnik RMF)
- » Legacy ringtone formats:
  - SMAF MA1, MA2, MA3 content
  - RTX, SMS, iMelody
- » WAV, AIFF, AU, PCM linear formats
- » MP3, AMR-WB, aacPlus

#### Interactive Audio APIs

- » Java J2ME MIDP2.0 compatible for all Java games and applications requiring audio
- » C and C++ APIs also available

### mobileBAE Data

#### Program Code Size

Configurable from a minimum of 160Kbytes to a maximum of 400Kbytes

#### Peak CPU Usage

Less than one MHz per polyphonic voice

#### Music & other Audio Codec Support

Optional MP3, aacPlus, AMR-WB. Support for integration of additional codecs.

## SYSTEM INTEGRATION AND SUPPORT

### Hardware and Software Platform Support

The mobileBAE software is written in standard ANSI C code and is easily ported to a variety of processors. In addition, Beatnik supplies versions of mobileBAE optimized for ARM CPUs, as well as the Symbian, Microsoft, Linux and Nucleus operating systems.

Beatnik supplies complete mobileBAE source code, assembly optimizations for ARMv4, reference Platform Abstraction Layer (PAL) implementations, sample code and content and ready-to-use benchmarking project files and scripts.

### mobileBAE Standard Packages for Popular Operating Systems

#### mobileBAE Integration Kit

A tool kit for porting & integrating the mobileBAE into any platform of choice.

#### mobileBAE for Symbian

Completely pre-integrated plugin software supporting Symbian 6.1, 7.0, 7.0s, 8.0a, 8.1b, and 9.1.

#### mobileBAE for Windows Mobile

Completely pre-integrated plugin for EventSound interface. Includes DRM-integrated DShow and Eventsound components for using Beatnik-supplied files as ringtones and alerts, listening to DRM-protected audio in Windows Media Player and other standard Microsoft-supplied applications. Supports Windows Mobile 2003 (Ozone) and Windows Mobile 5.0 (Magneto), both Smartphone & PocketPC configurations.

#### mobileBAE for Nucleus/ARM-Integrator

Ported solution, ready to be integrated into any Nucleus-based framework.

### mobileBAE Support for Popular Chipsets

**Cores:** ARM7, ARM9, ARM11, 64x DSP, x86, SH, M\*Core

**Processors / Chipsets:** TI OMAP710, TI OMAP730, TI OMAP1510, TI OMAP1610, TI OMAP1710, TI OMAP2420, TI OMAP2430, TI TCS 2/2.5G wireless chipsets, Intel PXA800F, Intel DBPXA250, Intel PXA270 (Bulverde) ARM 920T-Integrator, Renesas SH-Mobile, Freescale i.MX

## BEATNIK POWERED DEVICES



Sony Ericsson  
P910



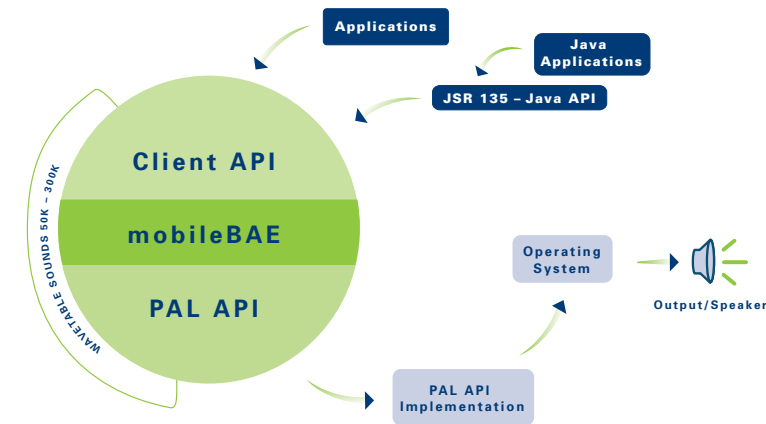
Nokia  
6630



Panasonic  
X700



Motorola  
MPx220



mobileBAE Example Integration



### Licensing & Contact Information

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