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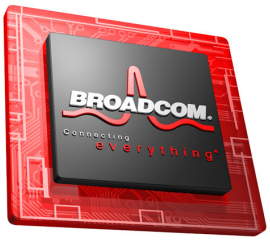
BCM1600-BTE AUDIO PRODUCT Brief



BTE-AUDIO SOFTWARE AND DEVELOPMENT ENVIRONMENT

FEATURES

- **Bluetooth® software stack**
  - Interoperable with the BTE-Mobile and BTW stack
  - Optimized for audio applications
  - Bluetooth 2.0 + EDR compliant—upgradable to future versions
- **BTE-Audio core stack**
  - HCI (Host Controller Interface)
  - L2CAP (Logical Link Control and Adaptation Protocol)
  - RFCOMM (RS-232 Serial Cable Emulation Profile
  - SDP (Service Discovery Protocol)
  - Bluetooth manager
  - GKI (Generic Kernel Interface)
  - SBC (Subband codec)
- **BTE-Audio profiles**
  - HSP (Headset Profile)
  - HFP/HFP1.5 (Hands-Free Profile)
  - AVDTP (A/V Distribution Transport Protocol)
  - AVCTP (A/V Control Transport Protocol)
  - GAVDP (Generic A/V Distribution Profile)
  - Upgradable to other profiles

FEATURES

- **BTE Insight development environment**
  - PC simulation environment
  - Bluetooth protocol trace and debug
  - Headset configuration graphical user interface
  - Compile and download to target BCM2047 and BCM2044 hardware

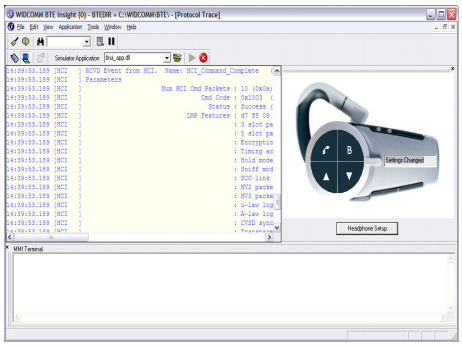
SUMMARY OF BENEFITS

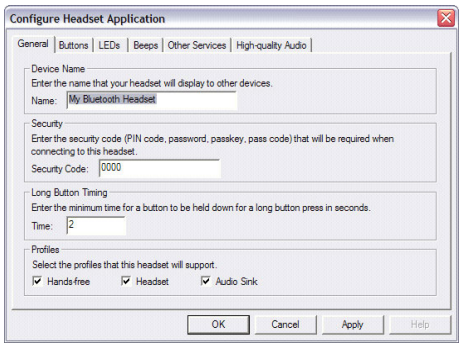
- **Based on field-tested and well-deployed BTE-Mobile stack**
- **Highly interoperable with BTE-Mobile and BTW on sources**
- **Easy-to-use development environment**

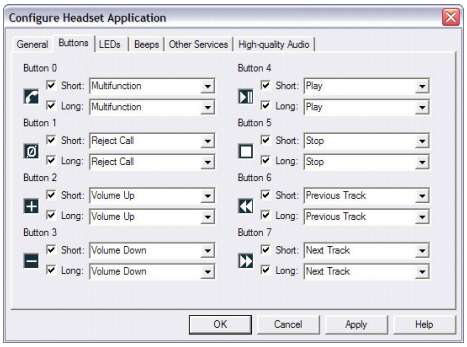
APPLICATIONS

- **Basic mono headset**
- **Midrange mono headset**
- **Quality mono headset**
- **Stereo headphones**
- **Stereo headset**
- **Clip headset with LCD**

BTE Insight Development Environment for Audio







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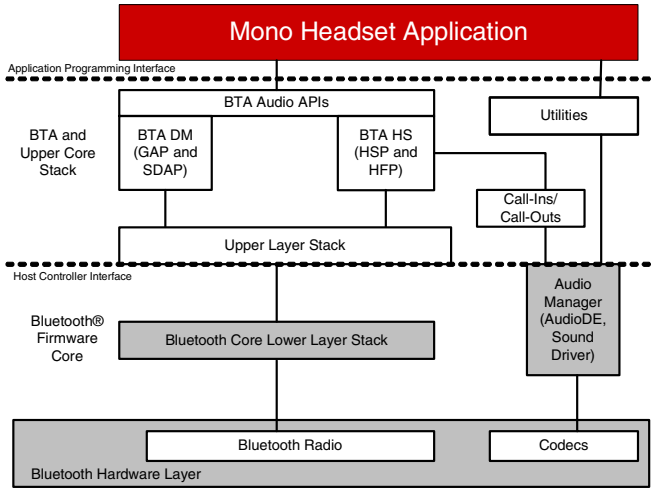

Figure 1: BTA System Architecture for a Mono Headset

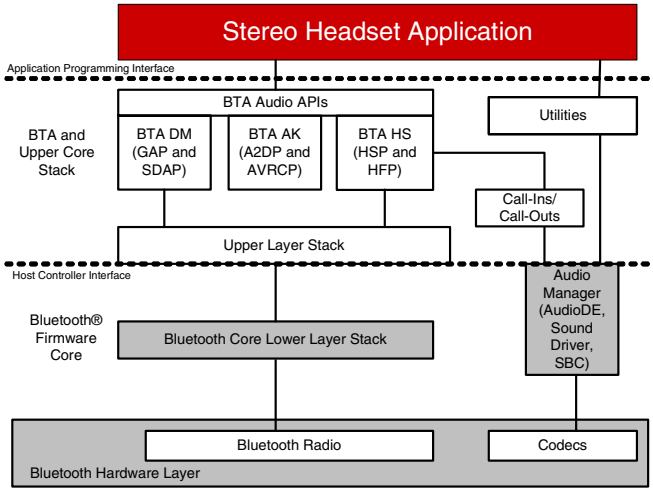

Figure 2: BTA System Architecture for a Stereo Headset

The Broadcom BTE-Audio stack simplifies the implementation of Bluetooth protocols and profiles by providing a high-level API (BTE-Audio API) to the audio application.

The BTE-Audio API is optimized to ease audio application development, accelerate customer time-to-market, and provide customers with the flexibility to implement value-added differentiation for their solutions.

The system architecture block diagrams (Figure 1 and Figure 2) show how BTE-Audio interfaces with typical mono and stereo headsets using the BCM2047 and BCM2044 platforms.

The headset application interfaces with the BTA API to perform functions such as:

- Enabling or disabling profiles
- Connecting to a peer device
- Performing call control, remote control commands, and so on

The data flow interface to connect the audio data to the codec is implemented through a set of functions called *call-ins* and *call-outs*.

Utility functions are provided for the application to control MMI operations involving LEDs, buttons, and beeps and also to access NVRAM.

Acronyms

AK	audio sink
BTA	Bluetooth application
BTE	Bluetooth for embedded modules
BTW	Bluetooth for Windows
DE	data engine
DM	device manager
EDR	extended data rate
GAP	Generic Access Profile
HS	headset
MMI	man-machine interface
SAP	SIM Access Profile
SDAP	Service Discovery Application Profile

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