



BLUETOOTH® V2.1 COMMUNICATIONS SOFTWARE FOR MOBILE PHONES

FEATURES AND BENEFITS

- **Portability**—BCM1200-BTEM code is portable and scalable over a wide array of phone design and platform architectures. BCM1200-BTEM can be adapted to all Bluetooth® phone applications, ranging from a headset or hands-free Audio Gateway (AG) to a more advanced dial-up networking, data communication, and cordless phone connectivity.
- **Optimized for Phone Operating Systems (OS)**—The BCM1200-BTEM has been developed and validated with GSM and CDMA platforms. Source code is provided for software ports to RTOS platforms, such as ARM® Nucleus, pSOS, uTron, VxWorks®, and many others. A detailed porting guide explains how to connect to common phone interfaces, including AT Command processing, NV and flash file system, data path, and audio control.
- **Insight Application Development and Scripting Tool**—BCM1200-BTEM Insight is a PC-based Bluetooth development environment for mobile phone applications. BCM1200-BTEM provides Bluetooth emulation that allows execution of applications without the need for target hardware, and uses USB, H4 UART connected, or simulated radios. The scripting engine provides an extensive test environment and test scripts for standard HCI commands, upper-layer stack, and many of the Bluetooth profiles. The simulated Mobile Phone User Interface greatly simplifies application development and validation.

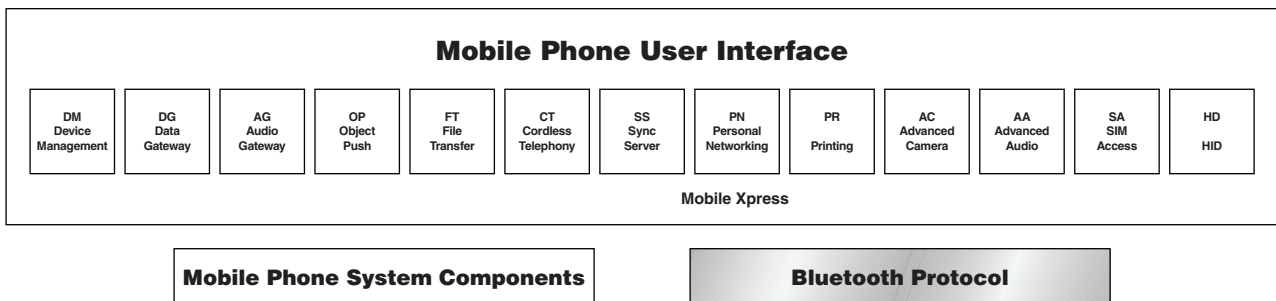
FEATURES AND BENEFITS

- **Advanced Protocol Stack**—The Bluetooth v2.1 upper protocol stack is composed of the:
 - Logical Link Control and Adaptation Protocol (L2CAP)
 - Serial Port Emulation (RFCOMM)
 - Telephony Control Specification (TCS)
 - Service Discovery Protocol (SDP)
 - Object Exchange (OBEX) Profile
 - Broadcom's Bluetooth Manager

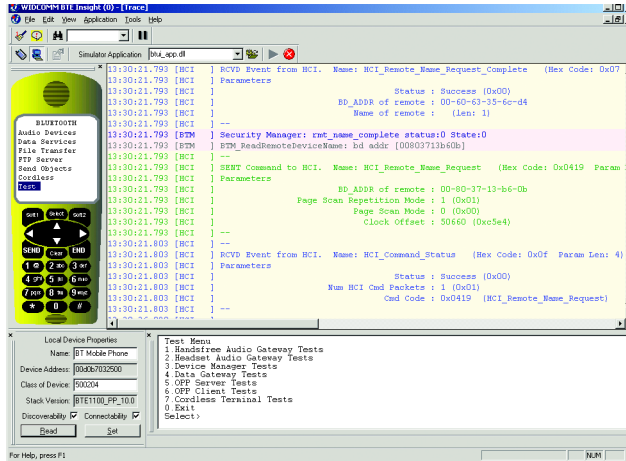
Advanced layers including Bluetooth Network Encapsulation Protocol (BNEP), Audio/Video Distribution Transport Protocol (AVDTP), and Audio/Video Control Transport Protocol (AVCTP) are also available as optional features. ANSI C source code is available for easy customization.

- **Mobile Xpress™, the Bluetooth Application (BTA) for mobile phones**—BCM1200-BTEM Mobile Xpress offers a re-entrant layer that groups profile functionality into simple application blocks (e.g. headset profiles [HSP] and hands-free profiles [HFP] are consolidated into an AG application block). The Printing (PR) functionality from Object Push (OP), Basic Printing Profile (BPP), and Basic Imaging Profile (BIP) are consolidated into a PR block. Each of the application blocks offers the full functionality of the independent profiles, but with a simpler application interface. Mobile Xpress is scalable and can be implemented to meet the specific phone's feature requirements.

BCM1200-BTEM Block Diagram



OVERVIEW



BTE Insight, Bluetooth Development Environment

The innovative BCM1200-BTEM Bluetooth communications software for mobile phones is a complete Bluetooth protocol stack, profile application, and development solution. The BCM1200-BTEM enables mobile phone OEMs and semiconductor companies to quickly and easily port BTAs onto their mobile phone platform.

The BCM1200-BTEM is modular, robust, and maintainable across any embedded phone platform or OS. The BCM1200-BTEM includes either an RTOS abstraction layer or a Generic Kernel Interface (GKI), and a variety of interfaces for any common platform and OS. GKI can be configured to run as a simple OS or used as a software abstraction layer that resides between the Bluetooth protocol stack and platform OS. GKI reduces time-to-market by enabling easy porting to any OS without requiring modifications to the stack.

Product Deliverables

The ANSI C source code is fully compliant with the Bluetooth Core Protocol Specification v2.1, including:

- L2CAP
- RFCOMM
- TCS
- SDP
- OBEX
- BNEP
- AVDTP
- AVCTP

The ANSI C source code is fully compliant with the Bluetooth Specification v2.1 and is integrated in the Xpress application blocks, including:

- Device Manager (DM)
 - Discover Bluetooth devices
 - Discover Bluetooth services—Manage security
 - Configure local device settings
- Data Gateway (DG)
 - Multiple instances of Serial Port Profile (SPP) servers
 - SPP client
 - Dial-Up Networking (DUN) server
 - FAX server
- AG

- HSP AG
- Hands-free Profile (HFP) AG
- OP
 - Personal Information Manager (PIM) OP- object pull
 - Business card exchange
- File Transfer (FT)
 - FT Profile (FTP) server
 - FTP client put and pull-OPP client file put
- Cordless Telephony (CT)
 - CT Profile (CTP) terminal
 - InterCom Profile (ICP) terminal
 - Wireless Users Group (WUG) + Fast Inter Memory Access (FIMA)
- Synchronization Server (SS)—Synchronization Profile/IrMC Server (SYNC)
- Personal Networking (PN)
 - PAN user- PAN Gateway Node (GN)
 - PAN Network Access Point (NAP)
- PR
 - OPP client—OP
 - BIP sender—Simple push
 - BPP sender—Job based printing
 - BIP initiator—Image push
- Advanced Printing (AC)
 - BIP archiving
 - BIP remote display
 - BIP remote camera
- Audio and Video (AV)
 - Advanced Audio Distribution Profile (A2DP)
 - Audio/Video Remote Control Profile (AVRCP)
 - Video Distribution Profile (VDP)
- SIM Access (SA)—SA profile
- HID (HD)—HD profile
- PBAP Profile
- A porting guide for embedded systems and documentation that exposes and details Bluetooth wireless technology application program interfaces (API) for protocols and profiles
- User Manual, Release Notes, and Bluetooth conformance documentation
- API and design documents for all software components
- BCM1200-BTEM Insight Development and Scripting tool

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1200-BTEM-PB04-R01/31/07

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