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ABOUT CYPRESS

Founded in 1982, Cypress is the leader in advanced embedded system solutions for the world’s most innovative automotive, industrial, home automation and appliances, consumer electronics and medical products. Cypress’s programmable systems-on-chip, general-purpose microcontrollers, analog ICs, wireless and USB-based connectivity solutions and reliable, high-performance memories help engineers design differentiated products and get them to market first.

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OVERVIEW

The Broadcom® BCM20734 is a Bluetooth 4.1-compliant, stand-alone baseband processor with an integrated 2.4 GHz transceiver. Manufactured using the industry’s most advanced 40 nm CMOS low-power process, the BCM20734 employs the highest level of integration to eliminate all critical external components, thereby minimizing the device’s footprint and the costs associated with implementing Bluetooth solutions.

The BCM20734 is the optimal solution for applications in wireless input devices including game controllers, remotes, keyboards, and joysticks. Built-in firmware adheres to the BLE profile and the BLE Human Interface Device (HID) profile.

The Bluetooth Baseband Core (BBC) implements all of the time-critical functions required for high-performance Bluetooth operation. The BBC manages the buffering, segmentation, and routing of data for all connections.

It also buffers data that passes through it, handles data flow control, schedules SCO/ACL and TX/RX transactions, monitors Bluetooth slot usage, optimally segments and packages data into baseband packets, manages connection status indicators, and composes and decodes HCI packets.

In addition to these functions, it independently handles HCI event types, and HCI command types.

BLUETOOTH 4.0 FEATURES

- Dual-mode operation: BLE and Bluetooth
- Extended inquiry response (EIR): Shortens the time to retrieve the device name, specific profile, and operating mode.
- Encryption pause resume (EPR): Enables the use of Bluetooth technology in a much more secure environment.
- Sniff subrating (SSR): Optimizes power consumption for low duty cycle asymmetric data flow, which subsequently extends battery life.
- Secure simple pairing (SSP): Reduces the number of steps for connecting two devices, with minimal or no user interaction required.

BLUETOOTH 4.1 FEATURES

- Secure connections (BR/EDR)
- Fast advertising interval
- Piconet clock adjust
- Connectionless broadcast
- LE privacy v1.1
- Low duty cycle directed advertising
- LE dual-mode topology

BENEFITS

- Quality of service (QoS) enhancements:
  - Changes to data traffic control, which results in better link performance.
  - Audio, human interface device (HID), bulk traffic, SCO, and enhanced SCO (eSCO) are improved with the erroneous data (ED) and packet boundary flag (PBF) enhancements.
- Link supervision time out (LSTO): Additional commands added to HCI and Link Management Protocol (LMP) for improved link time-out supervision.
- The following transmit and receive functions are also implemented in the BBC hardware to increase reliability and security of the TX/RX data before sending over the air:
  - Symbol timing recovery, data deframing, forward error correction (FEC), header error control (HEC), cyclic redundancy check (CRC), data decryption, and data dewhitenning in the receiver.
  - Data framing, FEC generation, HEC generation, CRC generation, key generation, data encryption, and data whitening in the transmitter.
- The BCM20734 reduces the cost of voice search capabilities on next-generation remote controls for OEMs and enables superior performance even in connected homes with heavy traffic between devices.
- The BCM20734 is housed in a 90-pin FBGA package.


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**BCM20734**

- **Mobile Computing**
- **Remote controls**
- **BLE devices**
ABOUT BROADCOM

Broadcom (NASDAQ: AVGO) is a diversified global semiconductor leader built on 50 years of innovation, collaboration and engineering excellence. Broadcom’s extensive product portfolio serves multiple applications within four primary end markets: wired infrastructure, wireless communications, enterprise storage and industrial & others. Broadcom is changing the world by Connecting everything®. For more information, go to www.broadcom.com.

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