

QUALCOMM®

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# AR3002

All-CMOS, low-power, cost-effective  
Bluetooth® 4.0 + HS HCI ROM solution

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## Qualcomm® Bluetooth

Delivering best-in-class Bluetooth solutions with superior wireless coexistence.



### Qualcomm AR3002

The AR3002 family consists of Bluetooth solutions based on the Qualcomm radio-on-chip platform for high-performance mobile and embedded wireless products. This platform gives customers unsurpassed ability to:

- Build the most power-efficient devices
- Design for the smallest form factor applications
- Achieve the most cost-effective designs
  - Greater integration of functionality
  - Low-cost chip solution
- Deliver Qualcomm-class performance in a wide array of mobile devices

### Solution Highlights

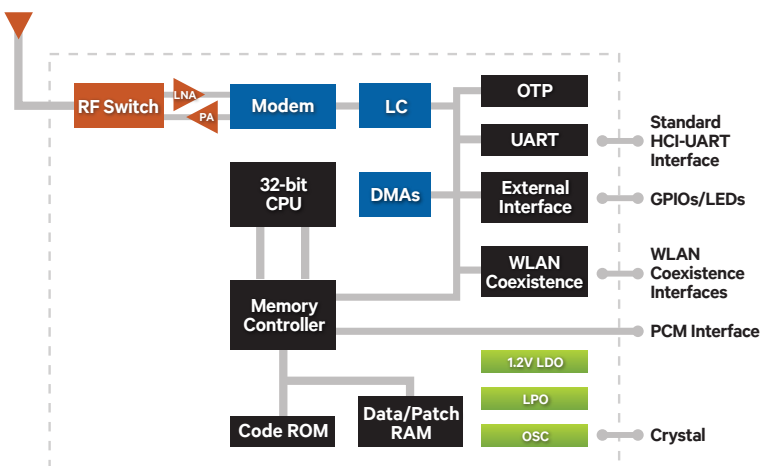
- High speed UART; up to 4 Mbps
- Full-speed Bluetooth operation with piconet and scatternet support
- Simultaneous active links; 7ACL, 2SCO/eSCO and multiple LE connections
- Fully hardware supported low power scan mode and wide band speech
- Fully hardware supported dual-mode Low Energy device
  - White list support to reduce spurious traffic to the host.
- On chip low power oscillator eliminates need for sleep crystal

### AR3002 Product Overview

The Qualcomm AR3002 is a highly integrated, all-CMOS, single chip Bluetooth 4.0+HS Solution for mobile handset and portable electronics applications. The compact size and low power consumption of this AR3002 design makes it an ideal vehicle for adding Bluetooth to hand-held and other battery-powered consumer electronic devices, sports/fitness, health and other sensor applications.

The AR3002 supports the standard UART HCI interface and is therefore compatible with any upper layer Bluetooth stack. It is also designed to require few passive components, thus providing the lowest system BOM cost for mobile phone or portable consumer electronics applications.

### AR3002 System Architecture



The AR3002 supports advanced architecture and protocol techniques to save power during sleep, stand-by and active states.

The AR3002 family supports standard and proprietary WLAN/ BT coexistence protocols with advanced algorithms for predicting channel usage by the co-located WLAN transceiver in the same system

## AR3002 Additional Information

- Transmit output power of +10 dBm (Maximum)
- Receiver sensitivity of -91 dBm
- Common Tx/Rx integrated switch terminal that eliminates external antenna switch
- Bluetooth 4.0+HS specification compliant

## AR3002 MAC/Baseband Processor

- OS Support – All linux flavors including Android with BlueZ stack support
- Low Power Architecture – Data Pipe Concept – DMAs to off-load the processor. Multiple clock domains and clock gating to save power.
- Page/Inquiry Scan without CPU involvement
- High Flexibility – Schedule slot by slot
- Wideband speech codec
- Low Energy with white list support

## AR3002 Specifications

Frequency Band	24000 - 24835 GHz
Bluetooth Standard	Bluetooth 4.0 + HS
Modulation Technology	G-FSK, $\pi/4$ -DQPSK, 8-DPSK
Audio Interface	PCM to external Codec
Communications Interface	UART Host Controller Interface
Physical Dimensions	5 mm x 5 mm QFN
Profiles Supported	All BlueZ Stack profiles supported
Power Supply	1.8V or 3.3V (as available on the platform)

Qualcomm Atheros is a wholly owned subsidiary of Qualcomm Technologies, Inc. and a leading provider of wireless and wired technologies for the mobile, networking, computing and consumer electronics markets. We're focused on inventing technologies that connect and empower people in ways that are elegant and accessible to all.

Our broad connectivity portfolio allows us to offer our global customer base high-performance, end-to-end solutions, featuring Wi-Fi®, GPS, Bluetooth®, FM, Ethernet, HomePlug™ Powerline and PON technologies. By leveraging substantial expertise in RF, signal processing, software and networking we can deliver highly-integrated, low-power, system-level solutions that enable developers to create high-performance, differentiated products.

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