



# AR3001

Low-power Bluetooth® 2.1  
and 3.0 + HS HCI ROM solution

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## Qualcomm® Bluetooth

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



### Qualcomm AR3001

The AR3001 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

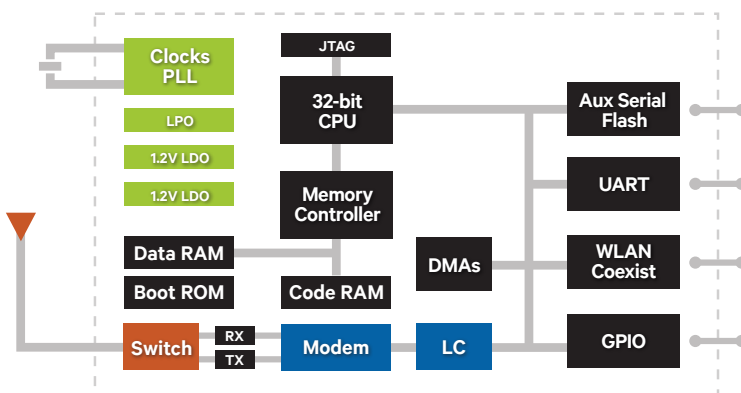
### Solution Highlights

- High speed UART; up to 3 Mbps
- Full-speed Bluetooth operation with piconet and scatternet support
- Simultaneous active links; 7 ACL, 2SCO/eSCO
- Fully hardware supported low power scan mode
- On chip low power oscillator eliminates need for sleep crystal

### AR3001 Product Overview

The Qualcomm AR3001 is a highly integrated, all-CMOS, single-chip Bluetooth 2.1 and 3.0 + HS solution for mobile handset and portable electronics applications. The compact size and low power consumption of this AR3001 design make it an ideal vehicle for adding Bluetooth to hand-held and other battery-powered consumer electronic devices.

### AR3001 System Architecture



The AR3001 supports the standard UART HCI interface and is therefore compatible with any upper layer Bluetooth stack. It is also designed to require less than 12 passive components, thus providing the lowest system BOM cost for mobile phone or portable consumer electronics applications. The AR3001 supports advanced architecture and protocol techniques to save power during sleep, stand-by and active states. The AR3001 family supports 2-, 3- and 4-wire Bluetooth coexistence protocols with advanced algorithms for predicting channel usage by the co-located WLAN transceiver in the same system.

## AR3001 Additional Information

- Transmit output power of +4 dBm (Maximum)
- Receiver sensitivity of -90 dBm
- Common Tx/Rx integrated switch terminal that eliminates external antenna switch
- Bluetooth v2.1 + EDR specification compliant

## AR3001 MAC/Baseband Processor

- OS Support – OS/stack support – Android OS and Chrome OS/ BlueZ Stack
- 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

## AR3001 Specifications

Frequency Band	24000 - 24835 GHz
Bluetooth Standard	Bluetooth 2.1 + EDR and 3.0 + HS
Modulation Technology	G-FSK, $\pi/4$ -DQPSK, 8-DPSK
Audio Interface	PCM to external Codec
Communications Interface	UART Host Controller Interface
Memory Interface	I <sup>2</sup> C for external EEPROM
Physical Dimensions	5 mm x 5 mm QFN
Profiles Supported	All BlueZ Stack profiles supported A2DP, AVRCP, HSP, HFP, OPP, FTP, DUNP, HID, PBAP, GAP, SDAP, GOEP, PAN, GAVDP
Power Supply	Integrated dual 1.2 v regulators

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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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