

Atheros AR3000 – ROCm™ Solutions for Bluetooth® Radio-On-Chip for Mobile (ROCM) Products

The AR3000 family consists of Bluetooth solutions based on the Atheros ROCm platform for high-performance mobile and embedded wireless products. The Atheros ROCm platform gives customers unsurpassed ability to:

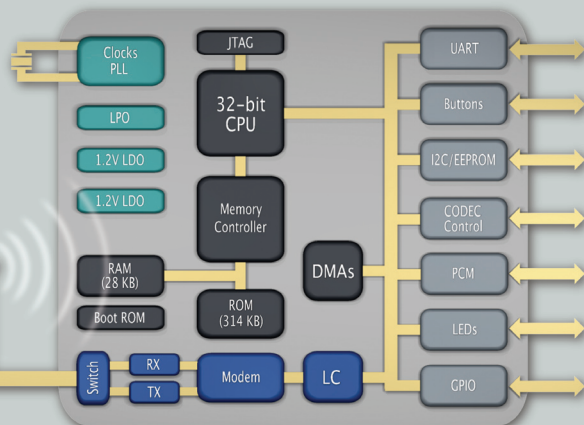
- Build the most power-efficient devices
- Design for the smallest form factor applications
- Achieve the most cost-effective designs
- Enhance ease of design
- Deliver Atheros-class performance in a wide array of mobile devices

AR3031 Technology Overview

The Atheros AR3031 SoC offers unmatched low-power in a highly flexible, single-chip Bluetooth v2.1 + EDR solution for mono headset applications. The SoC includes an Atheros radio for Bluetooth, a 32-bit CPU, dual 1.2v voltage regulators, I²C interface to an external EEPROM, internal LPO, on chip PLL, and 314 KB of ROM with 28 KB of RAM. It also has a PCM interface that supports an external audio CODEC.

The AR3031 features unmatched low-power achieved through an array of Atheros design protocols and techniques to deliver extended usage between charges. With fully embedded Headset Profile v1.1 and Handsfree Profile v1.5, the AR3031 delivers optimal design ease and flexibility, resulting in time-to-market advantage. Atheros' Headset Studio enables product designers to easily customize features such as switches and LED indicators to drive product differentiation. The AR3031 5mm x 5mm QFN package provides a low-cost, small footprint solution to allow customers to build highly competitive headset designs.

AR3031 System Architecture



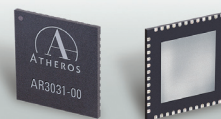
AR3031



R A D I O O N C H I P **mobile**

AR3031

*Low-power, Low-cost Bluetooth
Voice Headset Solution*



AR3031 Solution Highlights

- Single-chip Bluetooth v2.1 + EDR solution
- Unmatched low-power with Atheros power-savings protocols and techniques
- Embedded Headset Profile v1.1 and Handsfree Profile v1.5
- UART interface supports engineering development and production test
- Eliminates need for external Balun and RF switch
- I²C interface supports external EEPROM
- Dual 1.2v integrated voltage regulators
- PCM interface to external audio codec
- Integrated 32-bit CPU
- Integrated 28 KB Data RAM, 314 KB ROM
- Supports eSCO links and Sniff mode
- On chip PLL
- Internal LPO, eliminates need for external sleep crystal
- 5 mm x 5 mm QFN package
- Configurable GPIOs for LED and buttons

AR3031 mono headset reference design elements

- AR3031 Headset ROM Device Bluetooth® v2.1 + EDR
- High efficiency switching power supply
- Li Ion battery charger
- 8 KHz audio codec
- LED driver

AR3031 single-chip Bluetooth v2.1 + EDR

- Integrated Radio and Baseband on a single-chip
- 2.4 GHz Class2 Bluetooth Radio
- Supports both EDR of 2 Mbps ($\pi/4$ -DQPSK) and 3 Mbps (8-DPSK)
- -87 dBm radio sensitivity and +4 dBm maximum output power
- No need for external balun and RF Switch
- Low power 32-bit RISC CPU
- Full Bluetooth v2.1 + EDR baseband support
- Dual Integrated 1.2v Voltage Regulators

Atheros Communications is a leading developer of semiconductor system solutions for wireless and other network communications products. Atheros combines its wireless and networking systems expertise with high-performance radio frequency (RF), mixed signal and digital semiconductor design skills to provide highly integrated chipsets that are manufactured on low-cost, standard complementary metal-oxide semiconductor (CMOS) processes. Atheros technology is used by a broad base of leading customers, including personal computer, networking equipment and consumer device manufacturers.

**ATHEROS®**WIRELESS FUTURE. **UNLEASHED NOW.**[™]**AR3031 Specifications**

Frequency Band	2.402 - 2.4835 GHz
Bluetooth Standard	Bluetooth v2.1 + EDR
Modulation Technology	G-FSK, $\pi/4$ -DQPSK, 8-DPSK
Audio Interface	PCM to external Codec
Peripheral Interface	GPIOs support external buttons and LEDs
Memory Interface	I ² C for external EEPROM
Physical Specifications	
Package Dimensions	5 mm x 5 mm QFN
Power Supply	Integrated dual 1.2v regulators

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