AR6002 Technology Overview

The Atheros AR6002 features breakthrough power efficiency for mobile WLAN solutions, enabling high performance Wi-Fi to be integrated into mobile devices with efficiency and ease. The AR6002's extremely low power consumption overcomes the key obstacle to designers looking to add Wi-Fi capability in mobile and handheld products.

The game-changing power efficiency delivered by the AR6002 significantly extends battery life. In fact, the AR6002 consumes 70% less power in active mode than competitive solutions and near-zero power in standby. The AR6002 further extends battery-life with its industry-leading throughput which allows the chip to remain in low power states longer.

The exceptionally high level of integration achieved in the AR6002 eliminates the need for most external components typically associated with mobile WLAN solutions. This allows for a very small solution footprint and the lowest bill-of-materials (BOM) on the market. Building on the success of the first-generation Atheros ROCm™ mobile WLAN products, the AR6002 offers mature, feature-rich software that has been market-proven by industry-leading customers and partners. This turnkey design platform allows for easy integration of WLAN into a wide range of mobile devices.

The Atheros AR6002 family serves a growing number of mobile devices that benefit from pervasive, high-speed connectivity offered by a growing number of Wi-Fi hotspots. These include mobile phones, portable media players, digital cameras and portable gaming devices.

Atheros ROCm Platform

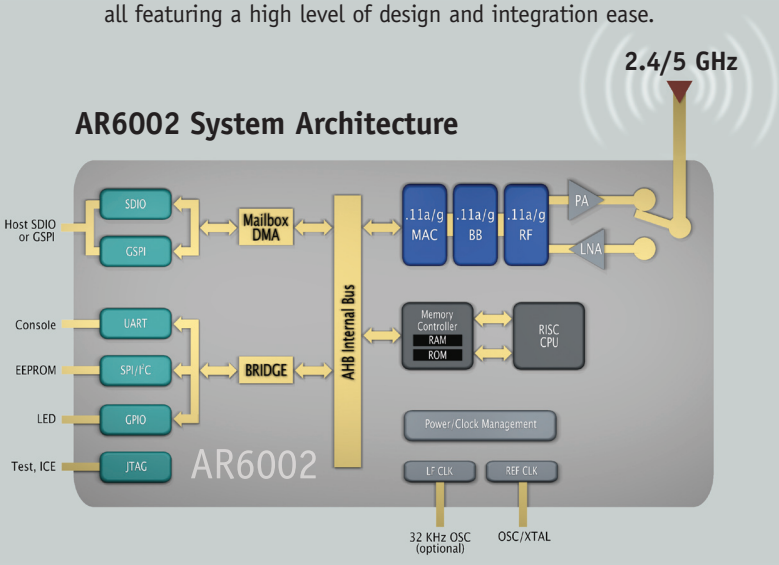
Radio-On-Chip for Mobile (ROCm) Products

The combination of ROCm wireless solutions for mobile WLAN, Bluetooth® and GPS, with Atheros' dominant position in the home, office and Metro Wi-Fi networking markets enables a worldwide wireless ecosystem based on the company's technologies. Atheros-engineered ROCm technologies provide the most reliable wireless performance and connectivity anywhere you go.

The Atheros ROCm technologies give customers the unsurpassed ability to:

- Build the most power-efficient devices
- Design for the smallest form factor applications
- Achieve the most cost-effective designs
- Deliver Atheros-class performance in a wide array of mobile devices, all featuring a high level of design and integration ease.

AR6002 System Architecture



ROCm™ ATHEROS

RADIO ON CHIP mobile

AR6002

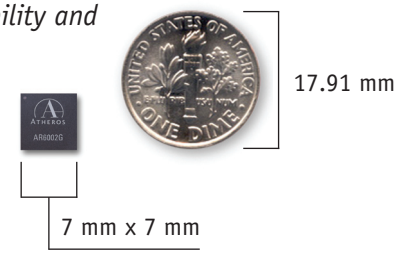
Breaking the Power Barrier in Mobile Wi-Fi

AR6002 Solution Highlights

- Most power-efficient mobile WLAN implementation
- Optimized for maximum throughput
- Highest level of on-chip integration:
  - MAC/BB
  - All digital RF
  - PA/LNA
  - Switch
- Leading RBOM integration
- Smallest WLAN solution footprint for design flexibility
- Advanced algorithms for Bluetooth® coexistence
  - Support for 2-, 3-, and 4-wire handshaking protocols
- Wi-Fi Protected Setup™ (WPS) support
- Host Wakeup for system-level power savings
- Mature, feature-rich, industry-tested software
- Full software compatibility with Atheros first-generation AR6001
- Advanced roaming algorithms for fast hand-over

AR6002 Solution Footprint

Smallest footprint enables design flexibility and lowest cost



AR6002 Radio

- 2.4 GHz and 2.4/5 GHz
- Integrated PA, LNA, RF Switch
- Adaptive radio biasing for low-power or high-performance modes
- Industry-leading receive sensitivity

AR6002 MAC/Baseband/Processor

- IEEE 802.11a/b/g
- Integrated RISC processor
- 802.11e, Wi-Fi Multimedia QoS
- AES, WEP, TKIP, WPA, WPA2 and 802.11i security
- Minimal host loading
- Supports fast antenna diversity for all CCK and OFDM rates

AR6002 Specifications

On-chip functionality	Single-chip MAC/BB/RF/PA/LNA/Switch
Frequency Band	2.4 GHz, 5 GHz
Network Standard	802.11a, 802.11b, 802.11g, 802.11e
Modulation Modes	CCK and OFDM with BPSK, QPSK, 16 QAM, 64 QAM
Hardware Encryption	AES, TKIP, WEP, WPA, WPA2, WAPI, 802.11i
Quality of Service	Wi-Fi Multimedia, 802.11e
Communications Interface	SDIO and SPI
Peripheral Interface	UART, SPI, I^2C, 18 GPIO pins
Supported Data Rates	
IEEE 802.11a	6 - 54 Mbps
IEEE 802.11b	1 - 11 Mbps
IEEE 802.11g	6 - 54 Mbps
Physical Specifications	7 mm x 7 mm BGA with 0.5 mm pitch; CSP with 0.4 mm pitch
Related ICs	AR6002GZ – 802.11g in CSP AR6002G – 802.11g in BGA AR6002XZ – 802.11a/g in CSP AR6002X – 802.11a/g in BGA
Bluetooth Coexistence	Supports 2-, 3-, and 4- wire handshaking protocols

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.

For more information on the AR6002 or other solutions from Atheros contact your local representative:

Atheros Communications, Inc.
t +1 408.773.5200
f +1 408.773.9940

Atheros Communications KK-Japan
t +81 3.5501.4100
f +81 3.5501.4129

Atheros Communications Intl, LLC-Taiwan
t +886 2.8751.6385
f +886 2.8751.6397

Atheros Hong Kong Limited
t +852 8206.1131
f +852 8206.1301

Atheros (Shanghai) Co., Ltd.
t +86 21.5108.3626
f +86 21.5027.0100

Atheros Korea
t +82 31.786.0428

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