

# AR6103

1-stream 11n for Mobile



## Solution Highlights

The AR6103 incorporates all the features and performance of the award winning ROCm AR6003 solution, including:

- Single-stream 802.11n for faster downloads, longer range, and lower power consumption
- The highest actual end-user throughput-over-range utilizing advanced 802.11n features including: full & half guard interval, hardware accelerated frame aggregation, space time block coding (STBC), and low density parity check (LDPC) encoding
- Highest level of on-chip integration using CMOS technology
  - Radio/MAC/Baseband
  - Patented Atheros Efficient Power Amplifier (EPA™) for high transmitter output power
  - Integrated power management unit
- Direct Connect™ AP Mode technology
- Atheros Universal Wireless Cooperation for enhanced Wi-Fi/Bluetooth Cooperation

## Atheros Align® Technology

Atheros Align technology leverages the 802.11n 1-stream specification to provide the optimal upgrade path from legacy 802.11 solutions. The single-stream solution enables a new class of Wi-Fi devices that deliver performance enhancements over the existing 802.11g technology, at comparable price points. Align® solutions are forward compatible to higher-performance, multi-stream, MIMO-based 802.11n, and are available in reference designs to serve the networking, PC and consumer electronics markets. The enhanced throughput of Align 1-stream solutions improves network efficiency by occupying the wireless channel for shorter periods than slower 11g devices – reducing congestion and increasing capacity for additional wireless devices. Align employs all the mandatory and select optional features of the 11n specification, and Atheros' advanced radio design techniques, to effectively double the wireless coverage over legacy WLAN.



## Atheros ROCm® Technology

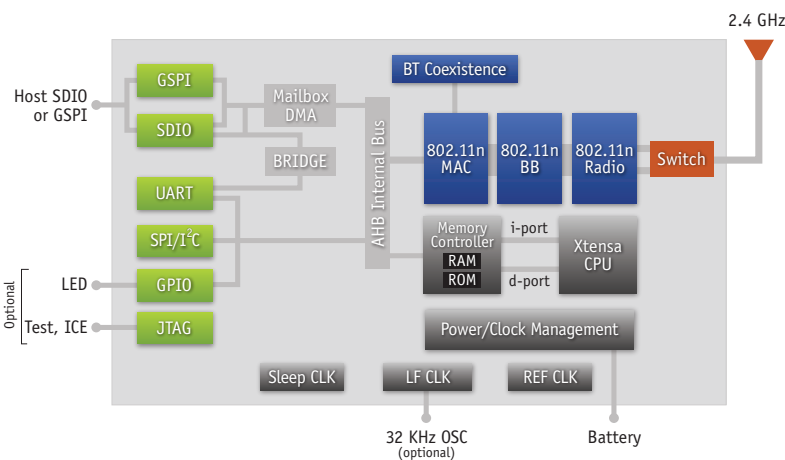
*Radio-On-Chip for Mobile (ROCm) Products*

The combination of wireless solutions for mobile WLAN, with our 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. 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.



## AR6103 Architecture



## Product Overview

The AR6103 is Atheros' third-generation Wi-Fi solution, featuring 802.11n for portable consumer electronics devices. Based on the game-changing AR6003 Wi-Fi chip, the AR6103 brings 802.11n throughput, range and power efficiency to portable CE devices, such as eBook, smartbooks and tablet PCs, Internet radios, printers, remote controls, and smart grid devices. The AR6103 connects directly to an antenna, eliminating the need for complicated RF tuning and calibration. It is fully shielded, includes an integrated high-frequency reference clock, and connects directly to the battery, making it one of the smallest and lowest cost, complete 802.11n solution in the market.

There is Here.™

# AR6103

1-stream 11n for Mobile

*Smallest footprint and high RBOM integration enables design flexibility and lowest cost*



8.3 mm x 9.2 mm

## AR6103 Radio

- 2.4 GHz
- Integrated CMOS Efficient Power Amplifier (EPA™), LNA
- Adaptive radio biasing for low-power or high-performance modes
- Industry-leading receive sensitivity
- No external EEPROM required for RF calibration

## AR6103 MAC/Baseband/Processor

- IEEE 802.11b/g/n
- Integrated RISC processor
- Support for industry standard QoS schemes (802.11e, WMM, WMM-PS)
- Hardware accelerated security, including WAPI (China)

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 networking equipment, computing and consumer device manufacturers.

## AR6103 Specifications

On-chip functionality	Single-chip MAC/BB/RF/PA/LNA
Frequency Band	2.4 GHz
Network Standard	802.11b, 802.11g, 802.11n (1-stream)
Modulation Modes	CCK and OFDM with BPSK, QPSK, 16 QAM, 64 QAM
Hardware Encryption	WEP, WPA/WPA2 (AES and TKIP), WAPI
Quality of Service (QoS)	WMM, WMM-PS, 802.11e
Communications Interface	SDIO 2.0 and GSPI HCI UART over SDIO
Peripheral Interface	UART, SPI, I <sup>2</sup> C, 26 GPIO pins
Supported Data Rates	
IEEE 802.11b	1 – 11 Mbps
IEEE 802.11g	6 – 54 Mbps
IEEE 802.11n	7.2 – 72.2 Mbps
Physical Specifications	8.3 mm x 9.2 mm LGA Package
Bluetooth Coexistence	Supports 2-, 3-, and 4-wire handshaking protocols Bluetooth™ 3.0 + HS ready

For more information on the AR6103 or other solutions from Atheros contact your local representative:

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