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 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.

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.
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)

AR6103 Specifications

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

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.

For more information on the AR6103 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

For more information on Atheros and Atheros wireless technology please visit www.atheros.com
Specification subject to change © 2010 Atheros Communications, all rights reserved
Atheros, the Atheros logo, ROCm and the ROCm logo are registered trademarks of Atheros Communications, Inc. There is Here is a trademark of Atheros Communications, Inc. All other trademarks mentioned in this document are the property of their respective owners.