AR3002 Solution Highlights

- High speed UART; up to 4 Mbps
- Full-speed Bluetooth operation with piconet and scatternet support
- Simultaneous active links; 7ACL, 2SCO/eSCO and multiple LE connections
- Fully hardware supported low power scan mode and wide band speech
- Fully hardware supported dual-mode Low Energy device
  - White list support to reduce spurious traffic to the host.
- On chip low power oscillator eliminates need for sleep crystal

AR3002 Architecture

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 advanced 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 Atheros-class performance in a wide array of mobile devices
- Advanced LE application support

The Atheros AR3002 is a highly integrated, all-CMOS, single chip Bluetooth 4.0+HS Solution for mobile handset and portable electronics applications. The compact size and low power consumption of this AR3002 design makes it an ideal vehicle for adding Bluetooth to hand-held and other battery-powered consumer electronic devices, sport & fitness, health and other sensor applications.

The AR3002 supports the standard UART HCI interface and is therefore compatible with any upper layer Bluetooth stack. It is also designed to require few passive components, thus providing the lowest system BOM cost for mobile phone or portable consumer electronics applications.

The AR3002 supports advanced architecture and protocol techniques to save power during sleep, stand-by and active states.

The AR3002 family supports standard and proprietary WLAN/BT coexistence protocols with advanced algorithms for predicting channel usage by the co-located WLAN transceiver in the same system.
AR3002
All-CMOS, low-power, cost-effective Bluetooth 4.0 + HS HCI ROM solution

AR3002 Additional Information
- Transmit output power of +10 dBm (Maximum)
- Receiver sensitivity of -91 dBm
- Common Tx/Rx integrated switch terminal that eliminates external antenna switch
- Bluetooth 4.0+HS specification compliant

AR3002 MAC/Baseband Processor
- OS Support – All linux flavors including Android with BlueZ stack support
- 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
- Wideband speech codec
- Low Energy with white list support

AR3002 Specifications

<table>
<thead>
<tr>
<th>Frequency Band</th>
<th>2.4000 - 2.4835 GHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bluetooth Standard</td>
<td>Bluetooth 4.0+HS</td>
</tr>
<tr>
<td>Modulation Technology</td>
<td>G-FSK, π/4-DQPSK, 8-DPSK</td>
</tr>
<tr>
<td>Audio Interface</td>
<td>PCM to external Codec</td>
</tr>
<tr>
<td>Communications Interface</td>
<td>UART Host Controller Interface</td>
</tr>
<tr>
<td>Physical Dimensions</td>
<td>5 mm x 5 mm QFN</td>
</tr>
<tr>
<td>Profiles Supported</td>
<td>All profiles supported by BlueZ</td>
</tr>
<tr>
<td>Linux/BlueZ</td>
<td></td>
</tr>
<tr>
<td>Power Supply</td>
<td>1.8V or 3.3V (as available on the platform)</td>
</tr>
</tbody>
</table>

Atheros Communications is a global leader in innovative technologies for wireless and wired communications. 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.

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For more information on Atheros and Atheros wireless technology please visit www.atheros.com
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