AR5002X

ATHEROS® COMMUNICATIONS

802.11a/b/g Universal WLAN Solution

Multi-standard 802.11a/b/g support for universal wireless connectivity to any 802.11 network.

AR5112
2.4/5 GHz dual band
Radio-on-a-Chip

AR5212
Multiprotocol
MAC/baseband processor
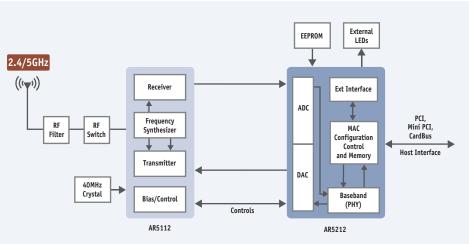
AR5002X Solution Highlights

- Support for IEEE 802.11a, 802.11b, 802.11g
- Universal wireless connectivity for seamless roaming between any 802.11-based network
- Uses digital CMOS technology exclusively, minimizing power consumption and cost while maximizing reliability
- Highly integrated 2-chip set
- 2.4/5 GHz dual band Radio-on-a-Chip (RoC)
- Multiprotocol MAC/baseband processor that supports the RoC
- Wireless Multimedia Enhancements Quality of Service support (QoS)
- Super A/G™ mode delivers 108 Mbps raw data rate and 90 Mbps TCP/IP throughput
- Hardware encryption for the Wi-Fi Protected Access (WPA) and IEEE 802.11i security specifications, provides Advanced Encryption Standard (AES), Temporal Key Integrity Protocol (TKIP) and Wired Equivalent Privacy (WEP) without performance degradation
- Extended tuning range (2.300-2.500 & 4.900-5.850 GHz) for worldwide use
- Dynamic Frequency Selection/Transmit Power Control (DFS/TPC) for international operation
- Support for draft IEEE 802.11e, h, and i standards
- Enhanced third-generation performance, transmission range and reliability

AR5112 Dual band Radio-on-a-Chip (RoC)

- All CMOS dual band radio chip
- Dynamic IF Dual Conversion architecture provides super-heterodyne performance at Zero IF prices
- Support for IEEE 802.11a, 802.11b, 802.11g
- Operates from 2.300 - 2.500 GHz and 4.900 - 5.850 GHz
- Integrated third-generation power amplifier (PA) and low-noise amplifier (LNA)
- External PA and/or LNA can be used for special applications
- Eliminates all IF filters and most RF filters; no external voltage-controlled oscillators (VCOs) or surface acoustic wave (SAW) filters needed
- Increased sensitivity and multipath tolerance
- Enhanced transmit and receive chains

AR5212 Multiprotocol MAC/baseband processor

- Supports both 2.4 GHz and 5 GHz RoCs
- Super A/G mode includes dynamic 108 Mbps capability, real-time hardware data compression, dynamic transmit optimization and standards-compliant bursting
- No external FLASH or RAM memory needed
- PCI 2.3 and PC Card 7.1 host interfaces with DMA support
- Integrated analog-to-digital and digital-to-analog converters
- Serial EEPROM, LEDs, GPIOs peripheral interfaces
- Low power operational and sleep modes

AR5002X WLAN System Architecture