

# AR5004G

802.11b/g WLAN Solution



Provides a 2.4 GHz data-centric upgrade path from legacy 802.11b networks.



## AR5004G Solution Highlights

- Support for IEEE 802.11b, 802.11g
- Uses digital CMOS technology exclusively, minimizing power consumption and cost while maximizing reliability
- Highly integrated 2-chip set
- 2.4 GHz Radio-on-a-Chip (RoC)
- Multiprotocol MAC/baseband processor that supports the RoC
- Wireless Multimedia Enhancements Quality of Service support (QoS)
- Super G mode delivers up to 108 Mbps raw data rate with typical end user throughput exceeding 60 Mbps
- Super G utilizes Adaptive Radio to automatically identify clear channels for maximum throughput and standards compatible operation
- 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
- Support for draft IEEE 802.11e, h, i and j standards
- Atheros eXtended Range (XR) technology to give Wi-Fi products twice the range of existing designs
- Power-saving design improvements reduce system power consumption by 60%

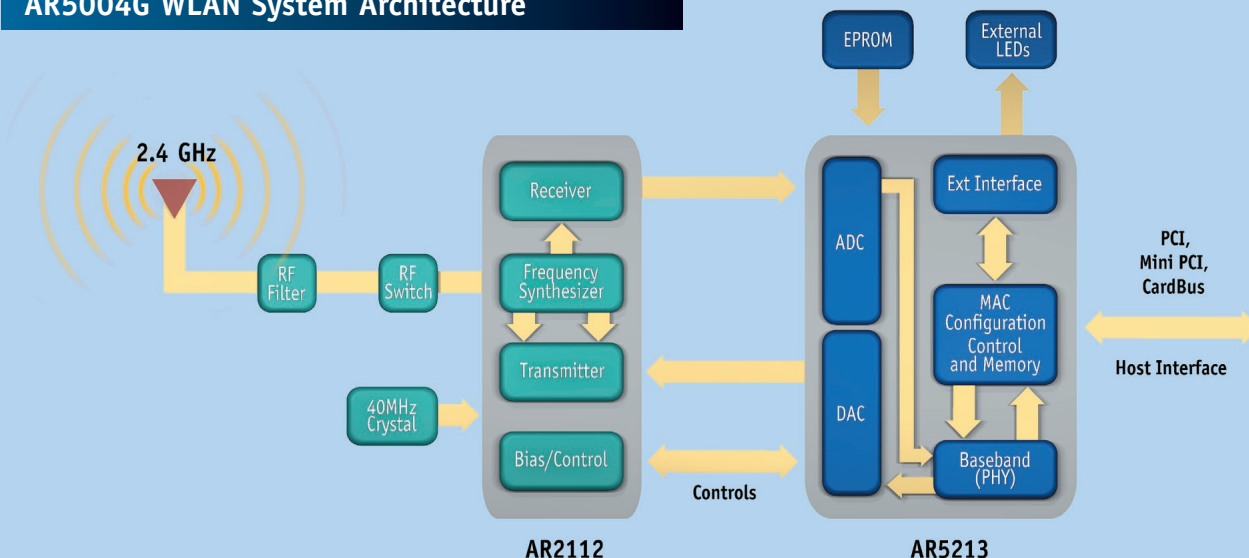
## AR2112 Radio-on-a-Chip for 2.4 GHz WLAN

- Support for IEEE 802.11b, 802.11g
- Operates from 2.300 - 2.500 GHz
- Advanced wideband receiver with best path sequencer for better range and multipath resistance than conventional equalizer-based designs
- Integrated 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
- Enhanced transmit and receive chains

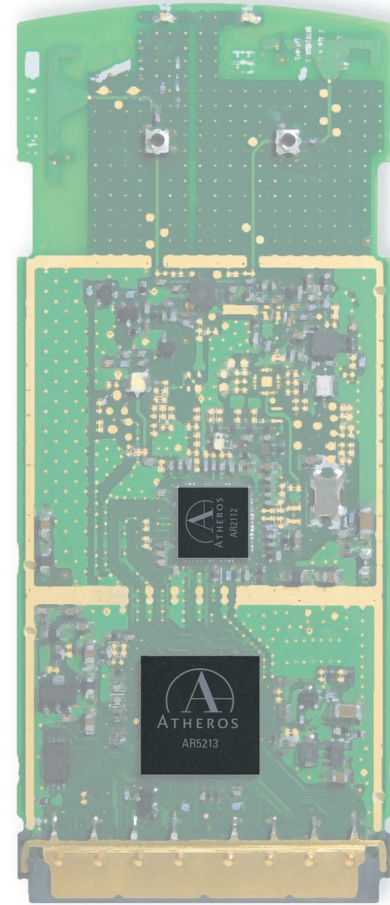
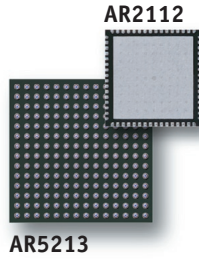
## AR5213 Multiprotocol MAC/baseband processor

- Supports both 2.4 GHz and 5 GHz RoCs
- Super AG mode includes dynamic 108 Mbps capability, real-time hardware data compression, Fast Frames™ and standards-compliant bursting
- eXtended Range (XR) technology
- 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

## AR5004G WLAN System Architecture



AR5004G



AR5004G Chipset Specifications

Frequency Band	2.300 to 2.500 GHz
Network Standard	802.11b, 802.11g
Modulation Technology	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK
FEC Coding Rate	1/2, 1/3, 1/4
Hardware Encryption	AES, TKIP, WEP
Quality of Service	802.11e draft
Media Access Technique	CSMA/CA
Host Interface	Mini PCI, CardBus, PCI
Peripheral Interface	GPIOs, LEDs
Memory Interface	EEPROM

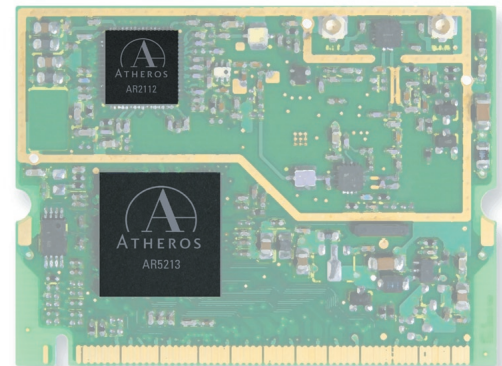
Supported Data Rates

IEEE 802.11b	1 to 11 Mbps
IEEE 802.11g	1 to 54 Mbps
Atheros Super G Mode	Up to 108 Mbps

Chip Specifications

	AR2112	AR5213
Operating Voltage	2.5V +/-5%	1.8V +10%, -5%
	3.3V +/-10%	3.3V +/-10%
Package Dimensions	9mm x 9mm	15mm x 15mm
Package	64 Leadless Plastic Chip Carrier	196 Plastic Ball Grid Array

AR5004G 802.11b/g Mini PCI



- Windows® drivers for Windows XP, Windows 2000, Windows ME, Windows 98 SE and Windows NT 4.0
- A single driver and firmware code base supports all Atheros chipsets, and provides both backward and forward compatibility with Atheros previous and next-generation multi-standard designs.
- Integrated WPA supplicant supports Windows XP, Windows 2000, Windows ME, Windows 98 SE and Windows NT 4.0
- Client utility supports configuration profiles, current link status, statistics and diagnostics