

AR5005UG

802.11b/g USB 2.0 WLAN Solution



Delivering high-performance 802.11b/g wireless connectivity with Atheros' Super G™ technology to any device with a USB port



AR5005UG 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)
- Integrated 32-bit MIPS R4000-class processor with 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 XR™ eXtended Range technology to give Wi-Fi products twice the range of existing designs

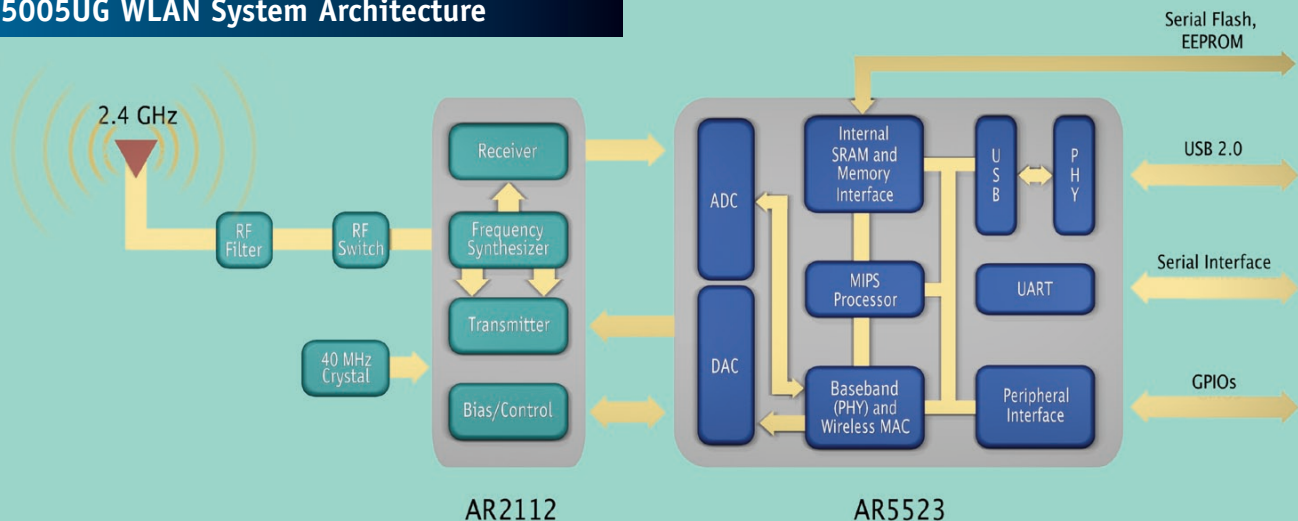
AR2112 Radio-on-a-Chip for 2.4 GHz WLAN

- 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

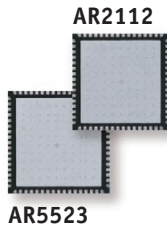
AR5523 Multiprotocol MAC/baseband processor

- Integrated MIPS 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
- USB 2.0 compatible interface
- High speed UART with DMA supports data rates up to 1 Mbps
- Integrated analog-to-digital and digital-to-analog converters
- Serial FLASH/EEPROM, LEDs, GPIOs peripheral interfaces
- Low power operational and sleep modes

AR5005UG WLAN System Architecture



AR5005UG



AR5005UG 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	USB 2.0
Communication Interface	High Speed UART
Peripheral Interface	GPIOs, LEDs
Memory Interface	Serial FLASH/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	AR5523
Operating Voltage	2.5V +/-5% 3.3V +/-10%	3.3V +/-5%
Package Dimensions	9mm x 9mm	10mm x 10mm
Package	64 Leadless Plastic Chip Carrier	68 Leadless Plastic Chip Carrier

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AR5005UG 802.11b/g USB 2.0



- Windows® drivers for Windows XP, Windows 2000, Windows ME and Windows 98 SE
- A single driver and firmware code base supports all Atheros USB chipsets
- Integrated WPA supplicant supports Windows XP, Windows 2000, Windows ME and Windows 98 SE
- Client utility supports configuration profiles, current link status, statistics and diagnostics

For more information on Atheros and Atheros WLAN Technology please visit www.atheros.com
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