

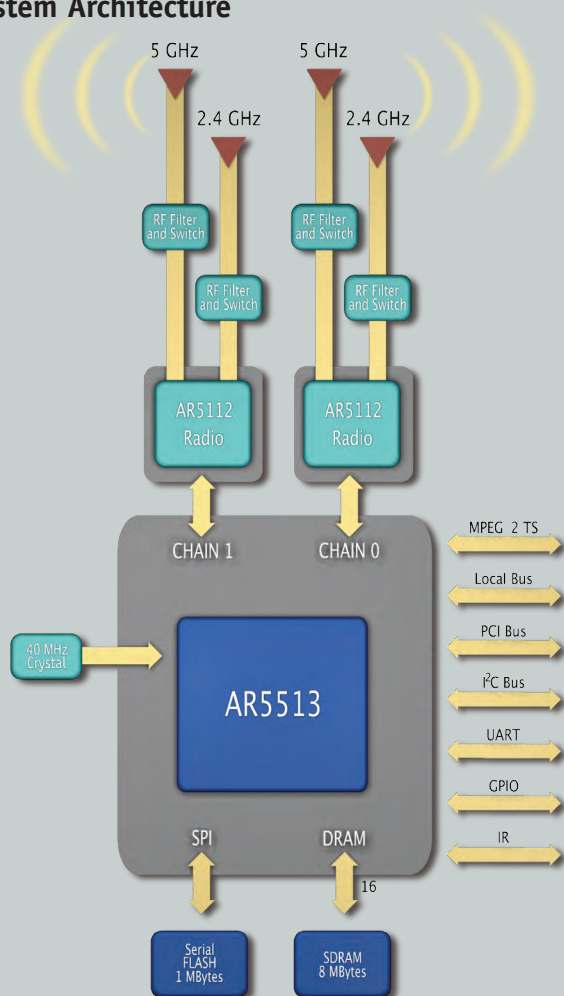


AR5005VL Technology Overview

Based on Atheros' VLocity™ High-Performance Wireless Technologies, the AR5005VL solution is unique in its ability to boost performance on both ends of a wireless link (multiple input and multiple output), on the transmit side only (multiple output), or on the receive side only (multiple input). As a result, home routers, enterprise access points, or public hot spots that use VLocity deliver higher performance with a wide array of non-MIMO wireless LAN devices, including end users' existing network interface cards, laptops with embedded wireless LAN, and digital media adapters.

The AR5005VL chipset is available in both 802.11g and 802.11a/g versions, supporting configurations with up to four antennas. These chipsets deliver up to 50 Mbps of actual user throughput when operating on both sides of the wireless connection. In mixed networks with a wide range of different 802.11g products, the Atheros technology delivers up to 27 Mbps of user throughput across a 3000-square-foot home even when on just one side of the link.

AR5005VL System Architecture



AR5005VL

*Smart-Antenna Wireless Chipset
Delivering MIMO Performance
to Standard 802.11 Products*



AR5513 Multi-Radio Smart Antenna Video Processor

- Integrated video/audio controller support with direct interfaces, host capability, MPEG and DMA acceleration to popular HDTV, SDTV, DVR and STB chipsets
- Supports Multiple DVD-quality (6-8Mbps) or combination of HDTV-quality (19-24Mbps) and DVD-quality wireless connections
- Multiple Radio Smart Antenna support with Transmit Beamforming and Receive Combining
- Enhanced Quality of Service with Hardware Packet Jitter Control, MPEG Transport Stream Aggregation, and MPEG Encapsulation
- Hardware accelerated AES encryption provides security and digital media content protection
- Integrated MIPS R4000-class processor (180 MHz)
- Super AG® support for 108Mbps data links

AR5112 Dual Band Radio-on-a-Chip

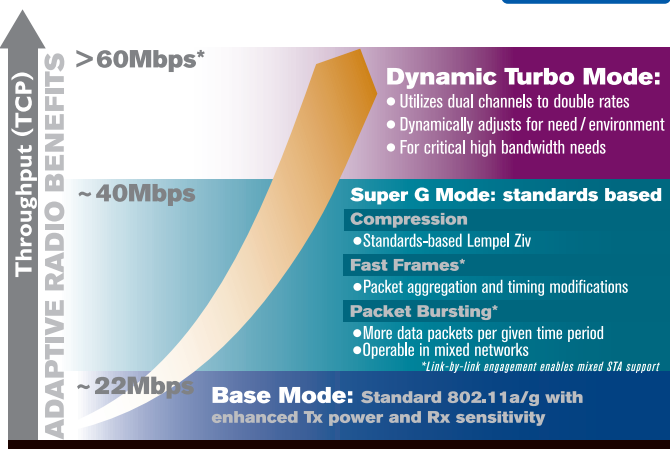
- All CMOS dual band radio chip
- Multiple Radio Smart Antenna Support for Two and Four Antennas
- Support for IEEE 802.11a, 802.11b, 802.11g
- Operates from 2.300 - 2.500 GHz and 4.900 - 5.850 GHz
- Eliminates all IF filters and most RF filters; no external voltage-controlled oscillators (VCOs) or surface acoustic wave (SAW) filters needed
- Industry-leading receive sensitivity, transmit power and multipath tolerance

Super AG Technology

Atheros Super AG for the highest real world throughput and performance

Super G® and Super AG® technologies offer the highest actual throughput – 1.5 to 2 times faster than standard 802.11g or 802.11a/g products in the wireless LAN market today – they are ideal for any application requiring high-speed transmission

- Streaming media: video, DVD, MPEG
- High-speed gaming
- Photo printing
- Large file transfers
- VoIP
- Or, providing multiple users on a single WLAN with optimal speeds despite network demand

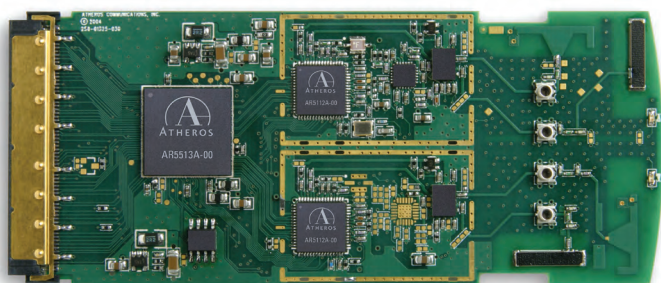


* Theoretical wireless link rate based on applicable IEEE 802.11 standards. Actual user throughput will be lower than the theoretical link rate and will vary, as network conditions and environmental factors can lower actual throughput rate.

Summary of Benefits

- Whole home coverage with multiple radio and smart antenna
- Interoperable with all 802.11a, 11b, 11g wireless networks. Compliant with 802.11 a,b,g,e,h,i,j
- Enhanced Quality of Service with Hardware Packet Jitter Control, MPEG Packet Encapsulation, MPEG-TS Aggregation
- Low-cost, highly-integrated CMOS implementation

AR5005VL 802.11a/g Cardbus Reference Design



For more information on Atheros and Atheros WLAN Technology please visit www.atheros.com
For more information on Super G and Super AG technology please visit www.super-ag.com

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AR5005VL Specifications

Frequency Band	4.900 to 5.850 GHz and 2.300 to 2.500 GHz	
Network Standard	802.11a, 802.11b, 802.11g	
Modulation Technology	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK	
Transport Technology	Multiple Radio Smart Antenna, Transmit Beamforming, Receive Combining	
Hardware Security	AES, TKIP, WEP, WPA, WPA2, 802.11i	
Quality of Service	Wi-Fi Multimedia, HW Jitter Control, 802.11e	
Media Access Technique	CSMA/CA	
Data Path Interfaces	PCI, CardBus	
Control Interfaces	PCI, CardBus	
Other Interfaces	SPI, GPIOs, LEDs, EJTAG	
Memory Interfaces	Serial FLASH, SDRAM	
Supported Data Rates		
IEEE 802.11a	6 to 54 Mbps	
IEEE 802.11b	1 to 11 Mbps	
IEEE 802.11g	6 to 54 Mbps	
Atheros Super AG Mode	Up to 108 Mbps	
Chip Specifications	AR5513	AR5112
Operating Voltage	1.8V +/-5% 3.3V +/-10%	2.5V +/-5% 3.3 +/-10%
Package Dimensions	15mm x 15mm	9mm x 9mm
Package	261 BGA	64 Leadless Plastic Chip Carrier

Contact your local Atheros sales representative for more information on the AR5005VL-5X and AR5005VL-2G (our 802.11b/g solution)

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