Atheros XSPAN™ Technology
Expanding performance. Expanding possibilities.

The Atheros AR5008 chipsets are Atheros' highest performance wireless LAN solutions to date. AR5008 products are compliant to the draft 802.11n specification, to deliver the ultimate wireless triple play experience for video, voice and data transmission throughout the home or office.

Video: With real world throughput levels up to 300 Mbps PHY rate, new wireless routers and gateways featuring Atheros XSPAN technology will readily accommodate multiple high-definition (HD) streams on a single home network.

Voice: Single-antenna wireless voice handsets and legacy devices networked to Atheros-based access points achieve range and robustness from Atheros' triple transmitter architecture.
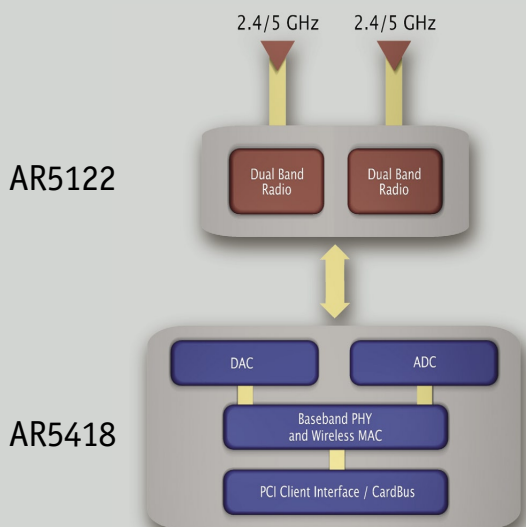
Data: The array of data applications ranging from simple network computing to transmission of large data, music or image files is enhanced through the high bandwidth provided by XSPAN products.

AR5008E-2NX Product Overview
With the introduction of new bandwidth intensive applications and growth of Gigabit Ethernet ports, there is increasing demand for wireless LAN throughput. Featuring the Atheros AR5008E-2NX, our first 2.4/5 GHz IEEE draft 802.11n WLAN solution. The Atheros AR5008E-2NX dramatically increases the overall throughput of the wireless LAN by supporting link rates as high as 300 Mbps - an improvement of nearly six times the throughput of standard 802.11a or 802.11g.
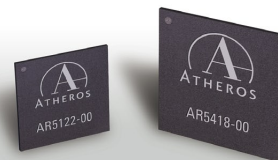
The AR5008E-2NX is interoperable with standard 802.11a, 802.11b and 802.11g devices and fully supports industry standards compliant security and Quality of Service (QoS). Full reference design support is available.

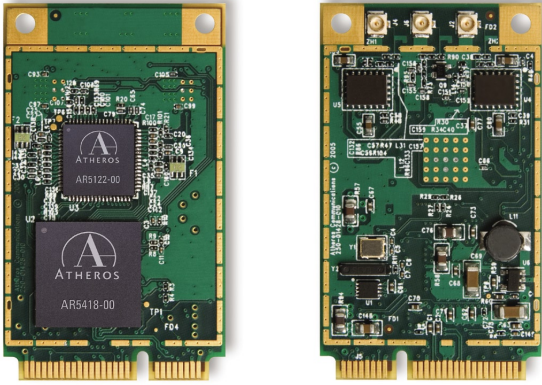## AR5008E-2NX System Architecture

AR5008E-2NX

Highest performance 2.4/5 GHz client solution with PCI-Express™ support

AR5008E-2NX Solution Highlights
- Second generation ultra high-performance MIMO wireless LAN client solution
- IEEE draft 802.11n wireless LAN client technology
- Enhanced performance with Atheros XSPAN technology optimized for higher throughput at long range
- Support for up to 2x2 MIMO with spatial multiplexing
- Enables PHY rate of up to 300 Mbps
- WLAN MAC and baseband processing engine
- Two dual band WLAN radios operate from 2.300 to 2.500 GHz and 4.9 to 5.925 GHz
- Compliant with IEEE 802.11a, 802.11b, 802.11g, 802.11d, 802.11e, 802.11h, 802.11i, 802.11j and draft 802.11n
- Available in commercial and industrial temperature grades
- Lead-free RoHS compliant

WIRELESS FUTURE. UNLEASHED NOW.™

AR5008E-2NX Reference Design Highlights

- Compliant with PCI-Express Mini Card 1.0 standard
- Line rate WLAN to LAN performance
- Support for 5, 10, 20 and 40 MHz channels
- Interoperability with standard 802.11a, 802.11b and 802.11g products
- Driver support for Windows XP and Windows 2000
- Supports the latest security and Quality of Service (QoS) standards
- Worldwide regulatory compliance

The AR5008E-2NX consists of a 2x2 MIMO radio and a MAC/baseband processor. This combination of chips delivers a complete, high-performance draft 802.11n client solution with PCI-Express support.

AR5122 2x2 MIMO Radio

- Two integrated dual-band 2.4/5 GHz radios
- Eliminates all IF filters and most RF filters; no external voltage-controlled oscillators (VCOs) or surface acoustic wave (SAW) filters needed
- Support for 5, 10, 20 and 40 MHz channels. Rx filter supports blocking specifications for half and quarter rate channels.

AR5418 MAC/Baseband Processor

- Intelligent MIMO spatial multiplexing techniques
- Backwards compatibility with legacy 802.11
- Hardware encryption engine to support WEP, TKIP and AES
- PCI-Express 1.0a client interface
- Integrated analog-to-digital and digital-to-analog converters

AR5008E-2NX Specifications

Frequency Band	2.300 to 2.500 GHz and 4.9 to 5.925 GHz
Network Standard	802.11a, 802.11b, 802.11g, draft 802.11n
Modulation Technology	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK
FEC Coding Rate	1/2, 2/3, 3/4, 5/6
Hardware Encryption	AES, TKIP, WEP
Quality of Service	802.11e
Communication Interface	PCI-Express
Peripheral Interface	GPIOs, LEDs
Memory Interface	EEPROM

Supported Data Rates	
IEEE 802.11a	6 - 54 Mbps
IEEE 802.11b	1 - 11 Mbps
IEEE 802.11g	6 - 54 Mbps
XSPAN	6.5 - 300 Mbps

Contact your local Atheros representative and ask about the AR5008 series of technologies or other solutions from Atheros:

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