

AR9271

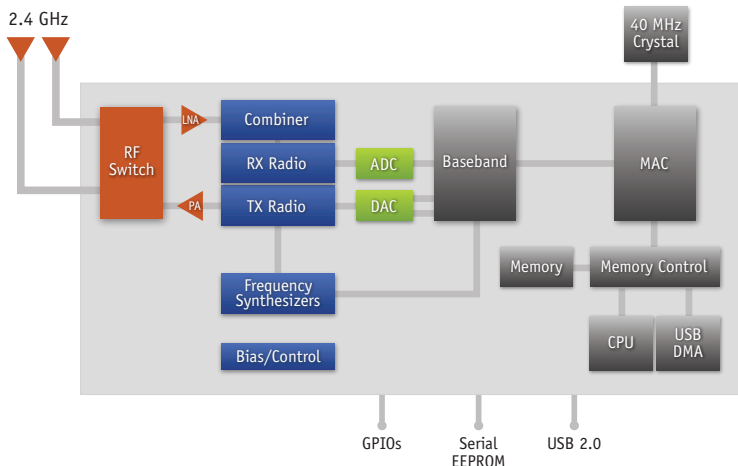
Highly integrated single-chip USB
with 802.11n support



Solution Highlights

- Single-chip, 802.11n compliant wireless LAN client solution with integrated both a CPU and memory to run more of the wireless LAN function on-chip
- Intergrated RF front end with high-output PA, LNA, Rx/Tx switch
- Internal diversity switch which selects antenna 1 or 2 for baseband signal processing
- Enables PHY rate of up to 150 Mbps
- Based on fourth-generation 802.11n compliant technology
- Compliant with IEEE 802.11b, 802.11g, 802.11d, 802.11e, 802.11i, and 802.11n
- Lead-free RoHS compliant

AR9271 Architecture



Technology Overview

The AR9271 single-chip USB solution features Atheros Align® technology which leverages the 802.11n 1-stream specification to provide the optimal upgrade path from legacy 802.11 solutions.



The single-stream feature enables a new class of Wi-Fi devices that deliver performance enhancements over the existing 802.11g technology, at comparable price points. Align® solutions are forward compatible to higher-performance, multi-stream, MIMO-based 802.11n, and are available in reference designs to serve the networking, PC and consumer electronics markets. The enhanced throughput of Align 1-stream solutions improves network efficiency by occupying the wireless channel for shorter periods than slower 11g devices – reducing congestion and increasing capacity for additional wireless devices. Align employs all the mandatory and select optional features of the 11n specification, and Atheros' advanced radio design techniques, to effectively double the wireless coverage over legacy WLAN.

Product Overview

The Atheros AR9271 single-chip USB solution provides enhanced Wi-Fi performance and value for home gateways, set-top boxes, gaming consoles, printers and a variety of other embedded wireless products. The solution can also be integrated into wireless USB adapters for notebooks and desktops, to enable simple, low-cost performance upgrades on legacy PCs. The AR9271 WLAN USB single chip features a new architecture that integrates both a CPU and memory to run more of the wireless LAN function on-chip. Unlike competitive 11g and 11n USB solutions, the Atheros integrated CPU offloads the wireless processing overhead from the host appliance. This design breakthrough enables consumer electronics devices with host processors not originally intended to support wireless functions, to now offer robust Wi-Fi performance. With the AR9271's innovative host offload capability, the WLAN operates autonomously and enables the main device application to operate seamlessly.

There is Here.™

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AR9271 Reference Design Highlights

- Support for both USB dongle and USB module form factors
- Compliant with USB 2.0 standard
- Line rate WLAN to LAN performance
- Interoperability with 802.11b, 802.11g and 802.11n compliant products
- Driver support for Win7, Vista, Windows XP and Linux operating systems
- Worldwide regulatory compliance

Atheros Communications is a leading developer of semiconductor system solutions for wireless and other network communications products. Atheros combines its wireless and networking systems expertise with high-performance radio frequency (RF), mixed signal and digital semiconductor design skills to provide highly integrated chipsets that are manufactured on low-cost, standard complementary metal-oxide semiconductor (CMOS) processes. Atheros technology is used by a broad base of leading customers, including networking equipment, computing and consumer device manufacturers.

AR9271 Specifications

Frequency Band	2.4 GHz
Network Standard	802.11b, 802.11g, 802.11n
Modulation Technology	OFDM with BPSK, QPSK, 16 QAM, 64 QAM; DBPSK, DQPSK, CCK
FEC Coding	1/2, 2/3, 3/4, 5/6
Hardware Encryption	AES, TKIP, WEP
Quality of Service	802.11e
Communications Interface	USB 2.0
Peripheral Interface	GPIOs, LEDs
Memory Interface	EEPROM, Flash
Supported Data Rates	11b: 1 - 11 Mbps 11g: 6 - 54 Mbps 11n: 6.5 to 150 Mbps

For more information on the AR9271 or other solutions from Atheros contact your local representative:

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