

QUALCOMM®

AR9271

Highly integrated single-chip USB
with 802.11n support



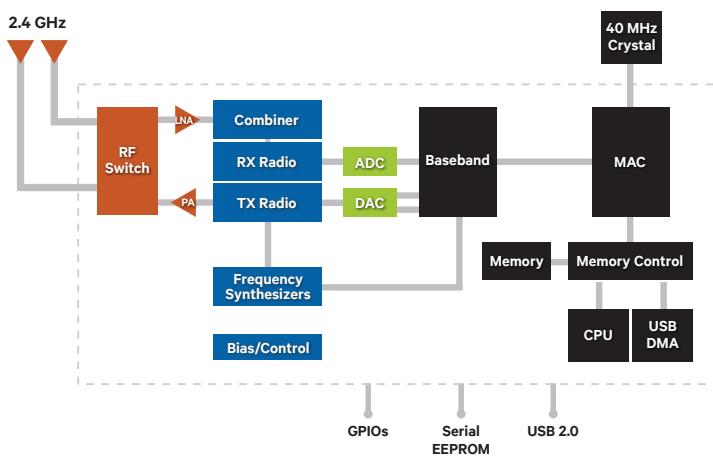


Qualcomm offers the industry's most innovative and complete portfolio of 802.11n wireless LAN chip solutions. Building on the company's Wi-Fi leadership – with enhanced performance, higher integration, smaller formfactors and lower overall cost – to meet the needs of today's 802.11n market.

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
- Integrated 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



Qualcomm Align® Technology Overview

WLAN is ubiquitous in notebooks and netbooks, a standard feature especially in portable computing platforms, meeting user demand for mobile wireless connectivity. Many computers are shipping with 11n technology, and a large proportion of value-class notebooks and netbooks now feature Qualcomm's popular 1-stream 11n technology, Align. Bluetooth, the most popular personal area network technology, is contained in nearly half of netbooks shipping today, enabling wireless connectivity with peripherals such as keyboards, mice and headsets. As a result, many portable computing platforms contain both WLAN and Bluetooth capabilities. However, these two wireless technologies are commonly located on separate PCIe cards within the same system, posing size and cost design challenges.

Product Overview

The Qualcomm 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 Qualcomm 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.



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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

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

Qualcomm Atheros is a wholly owned subsidiary of Qualcomm Technologies, Inc. and a leading provider of wireless and wired technologies for the mobile, networking, computing and consumer electronics markets. We're focused on inventing technologies that connect and empower people in ways that are elegant and accessible to all.

Our broad connectivity portfolio allows us to offer our global customer base high-performance, end-to-end solutions, featuring Wi-Fi®, GPS, Bluetooth®, FM, Ethernet, HomePlug™ Powerline and PON technologies. By leveraging substantial expertise in RF, signal processing, software and networking we can deliver highly-integrated, low-power, system-level solutions that enable developers to create high-performance, differentiated products.

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