

# AR7161

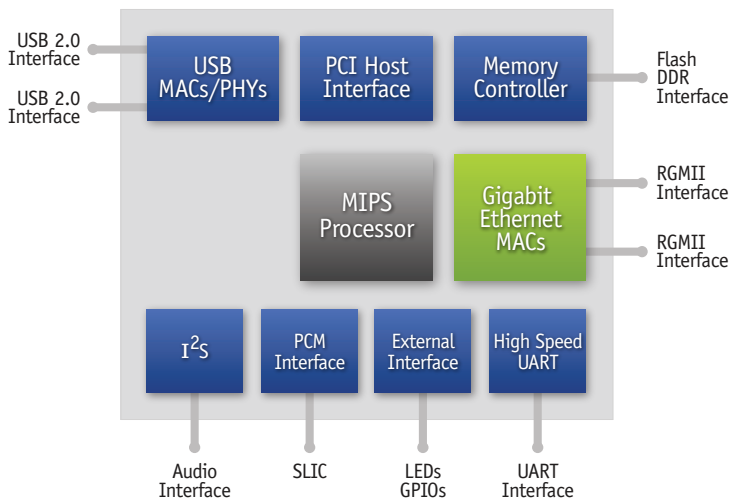
High-performance, wireless network processor



## Solution Highlights

- Wireless LAN processors for home and enterprise access points, routers and gateways
- 32-bit MIPS 24K processor core
- Two 10/100/1000 Ethernet MACs
- High-speed UART and GPIOs
- DDR and serial FLASH memory interface
- 32-bit, 33/66 MHz PCI 2.3 host interface
- Two integrated USB 2.0 MAC/PHYs
- PCM interface for glueless SLIC support
- I<sup>2</sup>S interface to directly support an external audio codec
- Available in commercial temperature grades
- Lead-free RoHS compliant option

## AR7161 Architecture



## AR7161 Product Overview

The AR7161 is Atheros' first-generation high performance, cost effective and scalable wireless network processor that enables efficient design of solutions that address triple-play services like voice, video and data. When combined with the Atheros IEEE 802.11a, 802.11b, 802.11g and 802.11n wireless chipsets, the AR7161 provides customers with best-in-class WLAN solutions for home and enterprise access points, routers and gateway applications.

The Atheros AR7161 wireless network processor offers a rich array of interfaces to support next-generation multimedia applications, such as dual USB 2.0 ports for wireless network storage and printing, a PCM interface for analog and VoIP telephony, and an I<sup>2</sup>S interface for audio streaming through the router. In addition, the AR7161 supports the PCI 2.3 interface to connect to WLAN modules, dual 10/100/1000 Ethernet interfaces to support LAN and WAN connectivity up to gigabit rates with a DDR controller to support large bandwidth applications.

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## AR7161 Applications

The AR7161 is optimized for WLAN applications. It offers a high performance solution that can be designed at cost points required for mass market adoption. Some of the common applications that can be designed using the AR7161 are:

- High performance 802.11a/b/g/n Access Points and Gigabit Routers
- Multimedia Wifi Router with USB, audio interfaces
- Simultaneous Dual-band Access Points and Gigabit Routers
- Wifi 11n VOIP gateway

## High Performance 802.11a/b/g/n Access Points and Routers

802.11a/b/g access points and routers require extra processing power to support both the 2.4 GHz and 5 GHz spectrums, processing power to enable the design of high performance products.

## Multimedia WiFi Routers

With 802.11n chipsets that have the capability of reaching over 450 Mbps, it is essential that the wireless LAN processor employed in 802.11n access points and routers ensure full performance. The 680 MHz AR7161 allows 802.11n products to realize their full potential. In addition, interfaces such as dual USB, I<sup>2</sup>S and SLIC allow customers to design solutions supporting printing, audio and VoIP applications.

## Dual-Band Access Points and Routers

Dual-band access points and routers offer performance advantages in the home and enterprise. The dual-concurrent architecture allows customers to design solutions for high definition video streaming via the 5 GHz radio while enabling data functions such as e-mail and web browsing via the 2.4 GHz radio. The Atheros AR7161 provides a dual-concurrent AP/Router solution which provides up to 2x the capacity when compared to single-band (2.4 GHz only) AP/Routers. Thus, the AR7161 wireless network processor enables robust solutions for the enterprise and retail segments.

## Development Kit Highlights

- Development platform to speed time-to-market. Atheros Access Point Software Development Kit available for Atheros WLAN-based solutions.
- Linux driver available



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## AR7161 Specifications

Processor Core	MIPS 24k
Processor Speeds	680 MHz
Memory interface	SDRAM/DDR1
Flash	SPI serial flash
USB interface	USB 2.0 Host
Processor frequency	AR7130 – 300 MHz AR7141 – 400 MHz AR7161 – 680 MHz
VoIP interface	I <sup>2</sup> S, SLIC
Ethernet interface	MII/RMII/RGMII/GMII

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