Marvell Avastar 88W8964 Dual-Band 802.11ac Wave-2 4x4 SoC with Multi-User MIMO and 160-MHz Support

Supports Multi-Gigabit Speed, Reliability and Quality for Next-Generation, Very High Throughput WLAN Products

AVASTAR™ series

OVERVIEW

The Marvell® Avastar 88W8964 is a new member of its award winning Avastar WiFi processor family. It features 160MHz bandwidth and Multi-User Multi-Input Multi-Output (MIMO) while achieving 2.6 Gbps peak data rate for high speed, secure, and reliable access points and smart gateways.

For security, the Marvell Avastar 88W8964 supports high-performance 802.11i security standards through implementation of the Advanced Encryption Standard (AES)/Counter Mode CBC-MAC Protocol (CCMP), Wired Equivalent Privacy (WEP) with Temporal Key Integrity Protocol (TKIP), Advanced Encryption Standard (AES)/Cipher-Based Message Authentication Code (CMAC) and WLAN Authentication and Privacy Infrastructure (WAPI) security mechanisms.

The 88W8964 delivers 802.11e Quality of Service (QoS) to reduce latency for video, voice and multimedia applications. In addition it provides 802.11h Dynamic Frequency Selection (DFS) for detecting radar pulses when operating in the 5GHz band. The Marvell Avastar 88W8964 has a PCI Express v2.0 host interface that is backwards compatible with v1.1.

APPLICATIONS

88W8964 is targeted at enterprise access points and hotspots, retail access points, service provider gateways and set-topboxes. With a peak PHY rate of 2.6 Gbps, the 88W8964 enables retail access points with the highest data rates. The high data rates, 4x4 configuration in combination with the industry's most mature and proven explicit and implicit Beamforming implementation enables service provider gateways and set-top boxes capable of multi-stream 4K video content distribution over wireless in residential environments.

BEAMFORMING TECHNOLOGY

Beamforming is a specialized method of radio-frequency transmission used in WiFi access points. Beamforming enhances the signal reception at the client, significantly extending the WiFi signal coverage. A feature of all Marvell Avastar SoCs, Marvell's Beamforming technology doesn't require a special antenna nor will it incur any other cost increase of the wireless subsystem. The result is an increased throughput over a range compared to existing technology, depending on the environment. In addition to improving rate over range, the Marvell Transmit (Tx) Beamforming technology increases the battery life of any device connecting to the Avastar 88W8964.

MULTI-USER MIMO TECHNOLOGY

Multi-User MIMO allows simultaneous sessions from one access point to several client devices at the same time. The 88W8964 supports three 1x1 or a mix of 2x2 and 1x1 connections at the same time.

KEY FEATURES

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4x4 MIMO Dual-band 802.11ac Wave-2 solution enabling 2.6Gbps WLAN PHY rate
Multi-User MIMO support to three 1x1 or a mix of 2x2 and 1x1 client devices
Backward compatible with 802.11a/b/g/n
Channel Bandwidth up to 160, 80, 40 and 20MHz
256 QAM Modulation Scheme
Market proven implicit and xxplicit transmit Beamforming technology
Low Density Parity Check (LDPC)
Integrated ARM® Dual-Core Cortex A9 CPU and internal SRAM enables significantly offloads the host CPU from WLAN processing
Marvell's Integrated Spectrum Management technology simplifies Enterprise and Carrier deployments and maintenance by identifying and reporting radio interference that may impact network performance
802.11mc support for precision indoor locations

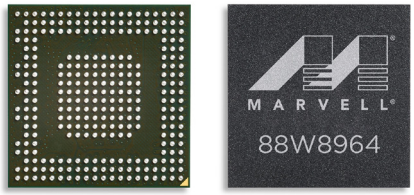

Fig 1. Photo of 88W8964

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MARVELL

Marvell Semiconductor, Inc.

5488 Marvell Lane
Santa Clara, CA 95054

Phone 408.222.2500
www.marvell.com