Marvell Avastar 88W8887 WLAN/Bluetooth/NFC/FM Receive Single-Chip SoC

Quad-Radio Connectivity Solution

AVASTAR®
wireless

OVERVIEW

The Marvell® Avastar® 88W8887 is a highly integrated quad-radio connectivity solution enabling 1x1 Very High Throughput (VHT) WLAN, Bluetooth 4.2, Near Field Communication (NFC) and FM Receive in a single-chip. The Marvell Avastar 88W8887 has been specifically designed to meet the speed, reliability, and quality needs of next-generation applications requiring high performance, while minimizing space and power requirements. With integrated front-ends, Marvell Avastar 88W8887 significantly reduces RBOM and simplifies layout design for fast time-to-market.

Marvell 88W8887 builds on the success of Marvell's industry-leading multi-radio solutions. These solutions provide seamless wireless connectivity to enable the digital connected lifestyle experience, while minimizing power consumption at the system level. The Very High Throughput (VHT) WLAN, Bluetooth 4.2 and FM radios enable a rich multi-media experience and NFC enhances user experience with intuitive pairing to other devices. It also enables payments and authentication on mobile devices.

With AECQ100 qualification, Marvell Avastar 88W8887 extends the digital connected lifestyle to the automobile. The device builds on top of the feature-rich and robust software architecture of earlier generations of Marvell's automotive-grade products and provides a seamless upgrade path to cutting-edge technologies, such as VHT for multiple high-definition video streaming for rear-seat entertainment and Bluetooth LE for remote key entry.

In addition, internal coexistence arbitration and a Mobile Wireless Systems (MWS) serial transport interface provide the functionality for connecting an external Long Term Evolution (LTE) device.

The Marvell Avastar System-On-Chip (SoC) provides both simultaneous and independent operation of the following:

- IEEE 802.11ac compliant, 1x1 spatial stream with data rates up to MCS9 (433 Mbps)
- Bluetooth 4.2 Dual-mode + High Speed
- NFC connectivity technology, per NFC Forum specification, for short-range, contactless communication
- FM receive (digital decoder FM radio with RDS/RBDS)

For security, the 802.11i security standard is supported through several protocols. And for video, voice and multimedia applications, the 802.11n block acknowledgement extension is supported. The device also supports 802.11h Dynamic Frequency Selection (DFS) for detecting radar pulses when operating in the 5 GHz range, thus extending the frequency spectrum available for use.

Generic interfaces include SDIO 3.0, high-speed UART and PCM interfaces for connecting WLAN/Bluetooth/FM to the host processor. NFC can share the SDIO or UART interfaces with Bluetooth or use a separate I2C-compatible slave interface. For FM receive, the device supports Inter-IC Sound (I2S)/analog stereo audio interfaces. FM can also share the host interface with Bluetooth. The device is available in QFN and CSP Flip Chip Package options.
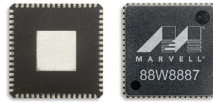
APPLICATIONS

With its quad-radio functionality working seamlessly, Marvell has eliminated the challenge of platform manufacturers having to design multiple wireless SoCs to pair with their processors. The integrated BOM and simplified design provides manufacturers added flexibility for a complete and seamless wireless experience and short time-to-market. Therefore, a number of electronic devices will significantly benefit from Marvell's Avastar 88W8887 chip, especially Smartphone, tablet, portable consumer devices, video box and automobile head-units. Supporting a data rate of 433 Mbps, the device allows consumers to transmit multiple HD videos in tandem with simultaneous Bluetooth and NFC operation.

The NFC capabilities transform the mobile device into electronic wallets, enabling e-commerce from consumer electronic products. NFC enhances the connectivity experience as a complementary technology to Wi-Fi and Bluetooth, enabling the mobile device to be paired by simply touching to another device. By leveraging WI-FI CERTIFIED Miracast™ and DRCS, consumers can stream video from their mobile devices while simultaneously surfing the Internet, without losing the connection. In addition, the Marvell Avastar 88W8887 enables constant connectivity, keeping e-mail, social media and digital content up-to-date, even when a device is in standby mode.

Sample applications include:

- Smart phones and tablets
- Home audio/video systems including set-top boxes, media servers
- Mobile routers
- Automobile head-units and telematics
- Printers and cameras

Marvell Avastar 88W8887 SoC (not actual size)

THE MARVELL ADVANTAGE: Marvell chipsets come with complete reference designs which include board layout designs, software, manufacturing diagnostic tools, documentation, and other items to assist customers with product evaluation and production. Marvell's worldwide field application engineers collaborate closely with end customers to develop and deliver new leading-edge products for quick time-to-market. Marvell utilizes world-leading semiconductor foundry and packaging services to reliably deliver high-volume and low-cost total solutions.

ABOUT MARVELL: Marvell (NASDAQ: MRVL) is a global leader in providing complete silicon solutions enabling the digital connected lifestyle. From mobile communications to storage, cloud infrastructure, Internet of Things (IoT), digital entertainment and in-home content delivery, Marvell's diverse product portfolio aligns complete platform designs with industry-leading performance, security, reliability and efficiency. At the core of the world's most powerful consumer, network and enterprise systems, Marvell empowers partners and their customers to always stand at the forefront of innovation, performance and mass appeal. By providing people around the world with mobility and ease of access to services adding value to their social, private and work lives, Marvell is committed to enhancing the human experience. As used herein, the term "Marvell" refers to Marvell Technology Group Ltd. and its subsidiaries.

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