

DATASHEET

Wi-Fi 6 11ax Mini PCIe Module AW7915-NPD



Description

The AW7915-NPD is a Wi-Fi 6 Mini PCIe Module based on the Mediatek MT7915DAN chipset which supports Wi-Fi PHY rate of 573+1201 Mbps and complies with IEEE 802.11ax standards. It offers feature-rich wireless connectivity in Dual Bands Dual Concurrent (DBDC) mode, supporting simultaneous operation in the 2.4GHz and 5GHz bands.

The module features optimized RF architecture and baseband algorithms, providing superb performance and low power consumption. Its intelligent MAC design offloads Wi-Fi tasks from the host processor.

Deep sleep mode is supported with multiple power domains implemented on the chip, enabling low power consumption. The module includes two CPU systems with 32-bit RISC MCU subsystems for clock control, power management, and host interface configuration. PDMA engine supports on-the-fly data buffer management.

The MT7915DAN chipset combines the Wi-Fi MAC and BBP subsystems, working together with the MT7915DAN chipset, to deliver best-in-class radio performance and low power consumption. It also supports MU-MIMO with different configurations for enhanced multi-user connectivity.

The module utilizes PCIe 2.1 for stable bandwidth between the host platform and the chipset. It provides high data throughput over WiFi and is designed for optimal performance and power efficiency.

Features

- **Wi-Fi PHY rate:** 2T2R in 2.4GHz+2T2R in 5GHz with support of up to 573+1201Mbps
- **Channels Bandwidth:** Supports 20/40MHz BW in 2.4G band and 20/40/80MHz BW in 5G band
- Short Guard Interval
- **Support Space-time block codes(STBC) and Low density Parity check (LDPC)**
- **Support digital pre-distortion** to enhance PA performance
- **Smoothing (channel estimation) extension** to MIMO case
- DFS radar detection
- Embedded ARM Cortex R4 processor for full host CPU offload
- **Microprocessor:** Embedded 32-bit RISC
- **Beamformer:** Decoded BW20/40/80 up to 2x2 BF matrix apply
- **Beamformee:** Decoded BW20/40/80 up to 4x2 MU matrix feedback
- **Modes:** Greenfield, mixed mode, legacy modes support
- **Highly integrated:** RF with 40nm low power process
- **Noise mitigation:**
 - Supports background scan function for fast channel switching
 - Supports spectrum analysis for non-Wi-Fi signals
- **Intelligent power saving:**
 - WFA WMM, WMM PS (QoS)
- **Integrate high efficiency:** internal 2.4G/5G PAs
- **Intelligent Calibration (iCal):** reduces the production time

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