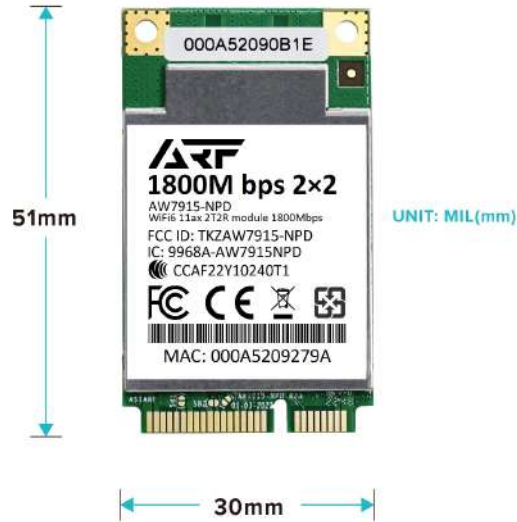


DATASHEET

WiFi 6 Mini PCIe Module AW7915-NPD



Description

The AW7915-NPD is a WiFi6 Mini PCIe Module based on the Mediatek MT7915DAN chipset. It supports 573+1201 Mbps PHY rate and complies with IEEE 802.11ax/ac standards. It offers reliable wireless connectivity in Dual Bands Dual Concurrent (DBDC) mode.

The module features optimized RF architecture and low power consumption. It offloads Wi-Fi tasks from the host processor and supports standard-based features for security and quality of service.

Deep sleep mode reduces power consumption with multiple power domains. It has two CPU systems for clock control and power management. PDMA engines enable efficient data buffer management.

The MT7915DAN chipset combines the Wi-Fi MAC and BBP subsystems for best-in-class performance. It supports MU-MIMO for simultaneous transmission to multiple clients.

The module uses PCIe2.1 for stable bandwidth and supports deep sleep mode. It provides high-performance wireless connectivity in a compact form factor.

Version: 1.0

Release date: 2023-10-03

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Features

- 2T2R in 2.4G+2T2R in 5G with support of up to 573+1201Mbps PHY rate
- Supports 20, 40, 80 channels
- HE MCS0-11 BW20/40/80MHz with Nss=1~2
- Short Guard Interval
- Space-time block code (STBC)
- 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
- Embedded 32-bit RISC microprocessor
- Support STBC, LDPC, TX Beamformer and RX Beamformer Decoded BW20/40/80 up to 4x2 MU MIMO feedback
- 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

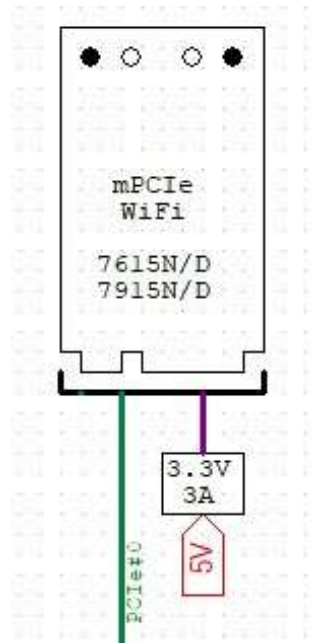


Specifications

Standard	Wireless: IEEE 802.11ax/ac/b/g/n (2Tx2R)
BUS Interface	Mini PCIe
Data Rate	IEEE 802.11ax 1773Mbps@TX/RX IEEE 802.11ac 1773Mbps@TX/RX IEEE 802.11a/n 600Mbps@TX/RX IEEE 802.11a/g 108Mbps IEEE 802.11b 22Mbps IEEE 802.11ac up to 1733Mbps
Output Power	11b: 23dbm +/- 1.5dbm @ 11Mbps 11g: 20dbm +/- 1.5dbm @ 54Mbps 11g/n: 20dBm +/- 1.5dbm @MCS7,HT20, 17dBm@MCS7,HT40 11a: 19.5dBm +/- 1.5dbm @ 54Mbps 11a/n: 19.5dBm +/- 1.5dbm @MCS7,HT20, 17dBm@MCS7,HT40 11ac HT20: 20+/-1.5dBm@MCS8 11ac HT40: 17+/-1.5dBm@MCS9 11ac HT80: 14.5+/-1.5dBm@MCS9 11ax HT20: 20+/-1.5dBm@MCS9 11ax HT40: 17+/-1.5dBm@MCS9 11ax HT80: 14.5+/-1.5dBm@MCS11
Certification	CE FCC ID: TKZAW7915-NPD IC ID: 9968A-AW7915NPD NCC: CCAF22Y10240T1
Receiver Sensitivity	11b: -99dBm@11Mbps 11g: -95dBm@54Mbps 11g/n: -90dBm@HT20,MCS7, -86dBm@HT40,MCS7 11a: -90Bm@54Mbps 11a/n: -85dBm@HT20,MCS7, -81dBm@HT40,MCS7 11ac: -90dBm +/- 2dBm @VHT20 MCS8 11ac: -85dBm +/- 2dBm @VHT40 MCS9 11ac: -68dBm +/- 2dBm @VHT80 MCS9 11ax: -61dBm +/- 2dBm @HE20 MCS11 11ax: -58dBm +/- 2dBm @HE40 MCS11 11ax: -55dBm +/- 2dBm @HE80 MCS11
Antenna	External Antenna connector (IPEX) x2
Frequency Range	US, Canada 2.412GHz~2.462 GHz (CH1~CH11) EU, Japan: 2.412GHz~2.472GHz (CH1~CH13) 5.15GHz ~5.875GHz
Software	Security: 64/128-bit WEP Encryption, WPA, WPA2 Driver: Linux
Operating Voltage	DC 3.3V ± 5%
Temperature	Operating: 0°C ~ +70°C Storage : -20°C ~ +90°C
Humidity	Operating Humidity: 10%~90% non-condensing Storage Humidity: 10%~90% non-condensing
Dimension	50.95(H) x 30(W)mm
Weight	0.0125 kg



Power consumption maximum is 9.1W, average is 7W. Main board Power Supply design please provide 3.3V 3.5A, minimum 3.3V 3A.



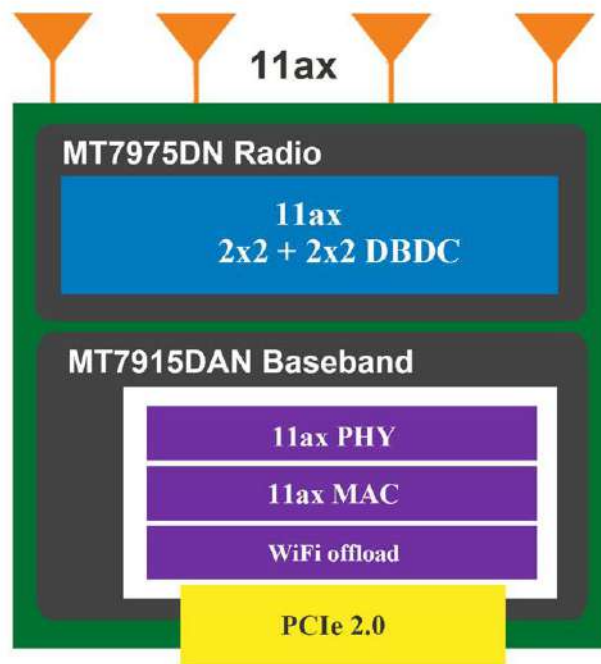
11ax related reading:

[Introduction to 802.11ax High-Efficiency Wireless - NI](#)

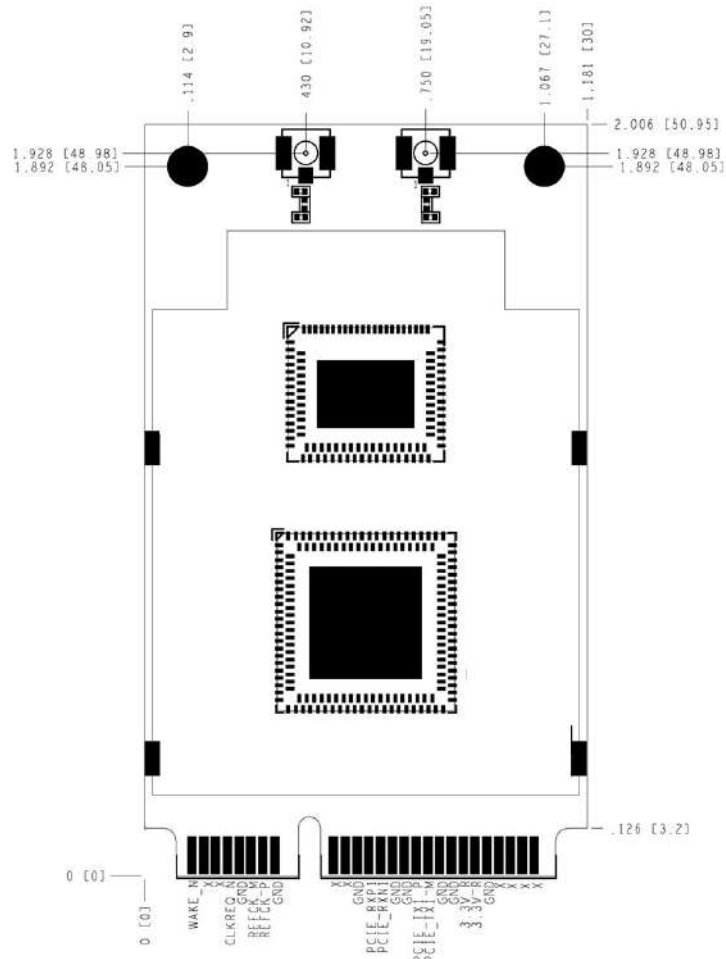
[IEEE 802.11ax - Wikipedia](#)

AW7915-NPD Block Diagram



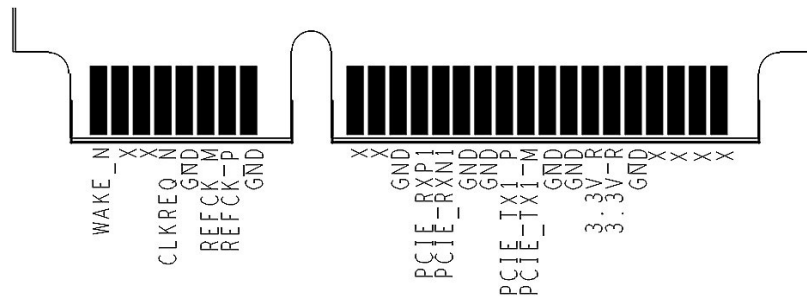


Dimension (mil [mm])



Top side





Bottom side

