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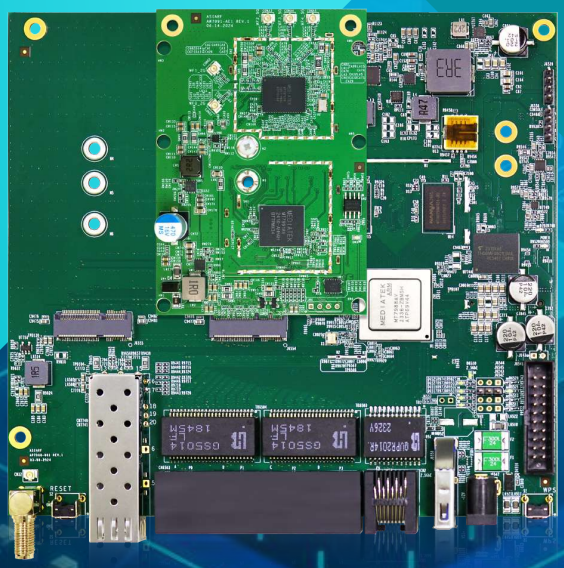
DATASHEET

ARF-DP-BE300

Wi-Fi 7 Development Platform With AW7991 AE1

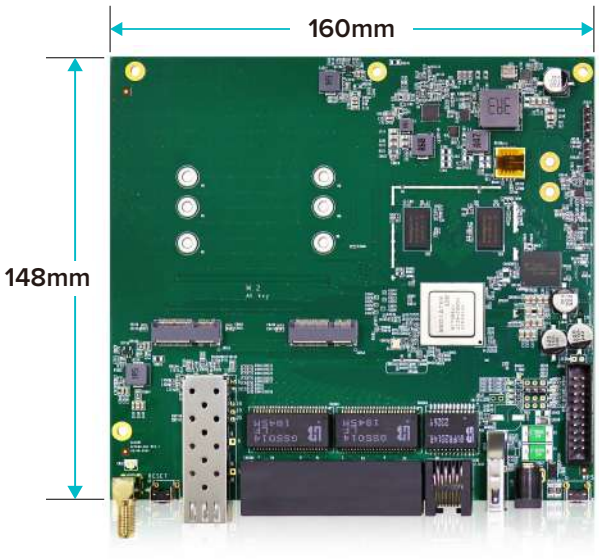


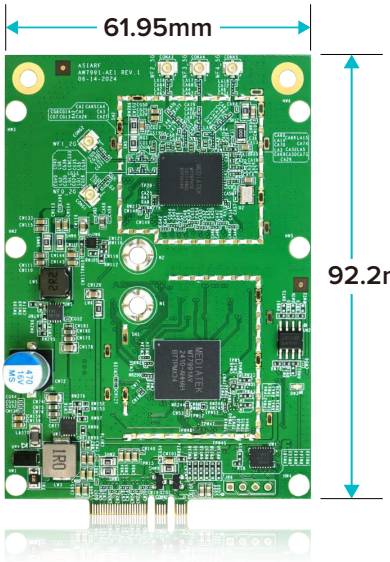
Description

ARF-DP-BE300 Wi-Fi 7 development platform with MediaTek MT7988A quad-core ARM Corex-A73 design,1GB DDR4 RAM,8GB eMMC, 128MB SPI-NAND flash on board, also have 1x10Gbit SFP,1x2.5Gbit and 4x Gbit network port, with USB3.2 port, M.2 B key support 4G/5G WWAN Module. 2x M.2 AE key slots with PCIe3.0 2lane interface for Wi-Fi 7 NIC (Network Interface Card).

The MT7988A further enables seamless Wi-Fi 7 tri-band, 2.4 GHz,5 GHz and 6 GHz connectivity with its Wi-Fi 7 companion chip that features 320-MHz bandwidth, 4096-QAM, MLO, MRU, and AFC.

AW7991-AE1 is an 92.2x62mm WiFi7 BE5000 NIC with MediaTek MT7991AV chipset supports Wi-Fi7 technology and feature IEEE802.11a/b/g/n/ac/ax/be compliant, 2.4GHz 2x2 2ss,5GHz 3x3 3ss BE5000 Wi-Fi subsystem. The MT7991AV offers feature-rich wireless connectivity at high standards and delivers reliable, cost-effective throughput from an extended distance.





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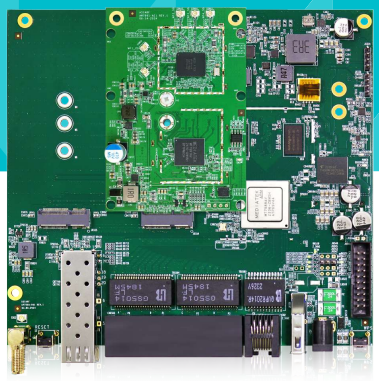

Features

ARF-DP-BE300 Development Platform

- MediaTek MT7988AV (Filogic 880) quad-core Arm Cortex-A73, 1.8GHz processor
- 1GB DDR4
- 8GB eMMC flash
- 128MB SPI-NAND Flash
- 1 x 10GbE SFP port
- 1 x 2.5GbE network port
- 4 x GbE network port
- 1 x USB3.2 slot
- 1 x M.2 B Key slot with USB3.2 interface for 4G/5G WWAN Module
- 2 x M.2 A-E Key slots with PCIe3.0 2lane interface for Wi-Fi 7 NIC (Network Interface Card)
- Frame Engine
- Packet Aggregated DMA (A-DMA)
- QoS DMS (QDMA)
- Packet Switch Engine (PSE)
- Look-aside and inline encryption and decryption engine (EIP-197)
- Packet Processing Engine (PPE)
- Tunnel o'oad s system (TOPS)

AW7991-AE1

WLAN

- IEEE802.11a/b/g/n/ac/ax, be compliant
- Frequency band\2.4GHz
  -Bandwidth:20/40MHz
  -2T2R 2ss
- Frequency band\5GHz
  -Bandwidth:20/40/80/160MHz
  -3T3R 3ss
- Dual-Band Dual Concurrent (DBDC)
- Supports up to 4096-QAM
- Data rate of up to 688Mbps for 40MHz channel in 2.4Ghz and 4323Mbps for 160MHz in 5GHz mode
- Integrated power detector to support per packet Tx power control
- Multi-user multiple input multiple output (MU-MIMO) for Tx and Rx
- Multi-user Orthogonal Frequency-Division Multiple Access (MU-OFDMA) for Tx and Rx
- Support STBC, LDPC, Tx beamformer and Rx beamformee
- Support greenfield mode, mixed mode, and legacy mode

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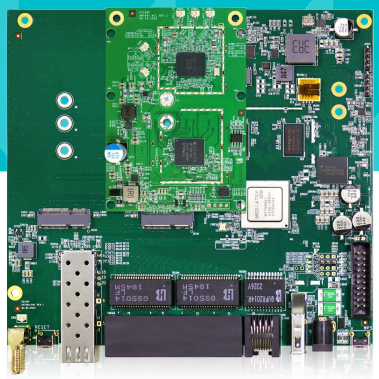


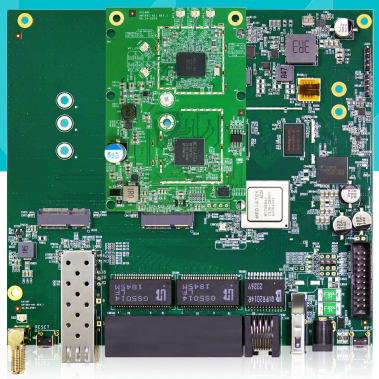
Specification

ARF-DP-BE300

CPU	MediaTek MT7988A Quad-core Arm Corex-A73,1.8GHz processor
Memory	1GB DDR4 8GB eMMC Flash 128MB SPI-NAND Flash SPI-NOR Flash (reserve)
Network Port	1x 10GbE SFP port 1x2.5GbE network port 4x GbE network ports
USB	1x USB3.2 slot
M.2 Interface	1x M.2 B Key slot with USB3.2 interface for 5G 2x M.2 A-E Key slots with PCIe3.0 2lane interface for Wi-Fi 7 NIC
Buttons	Reset button, boot Jumper
LEDs	Power status Led,2.5GbE LED and RJ45 Led
DC Power	12V/6.2A or 19V/3.9A
Sizes	147.94x160mm

AW7991-AE1

Chipset	MT7991AV with MT7976CN
Frequency Range	2.4GHz: 2.412~2.472GHz 5GHz: 5.15~5825GHz
Wireless	2.4GHz 2T2R 802.11b/g/n/ac/ax/be 5GHz 3T3R 802.11a/n/ac/ax/be
Channel Spectrum Widths	Supports 20/40MHz at 2.4GHz Supports 20/40/80/160MHz at 5GHz
Max Tx Power	2.4GHz:22dBm 5GHz: 20dBm
Antenna	External Antenna connector (IPEX) x5
Memory	8M Byte
Power Consumption	11.5W
Host Interface	M.2 A-E Kay interface with PCIe 3.0
Operating Voltage	DC 3.3V ± 5%
Environmental Temperature	Operating: -10°C to 70°C, Storage: -20°C to 90°C
Environmental Humidity	Operating: 10% to 90%, Storage: Max. 90%
Dimensions (mm)	92.2x62mm
Operating System	OpenWrt



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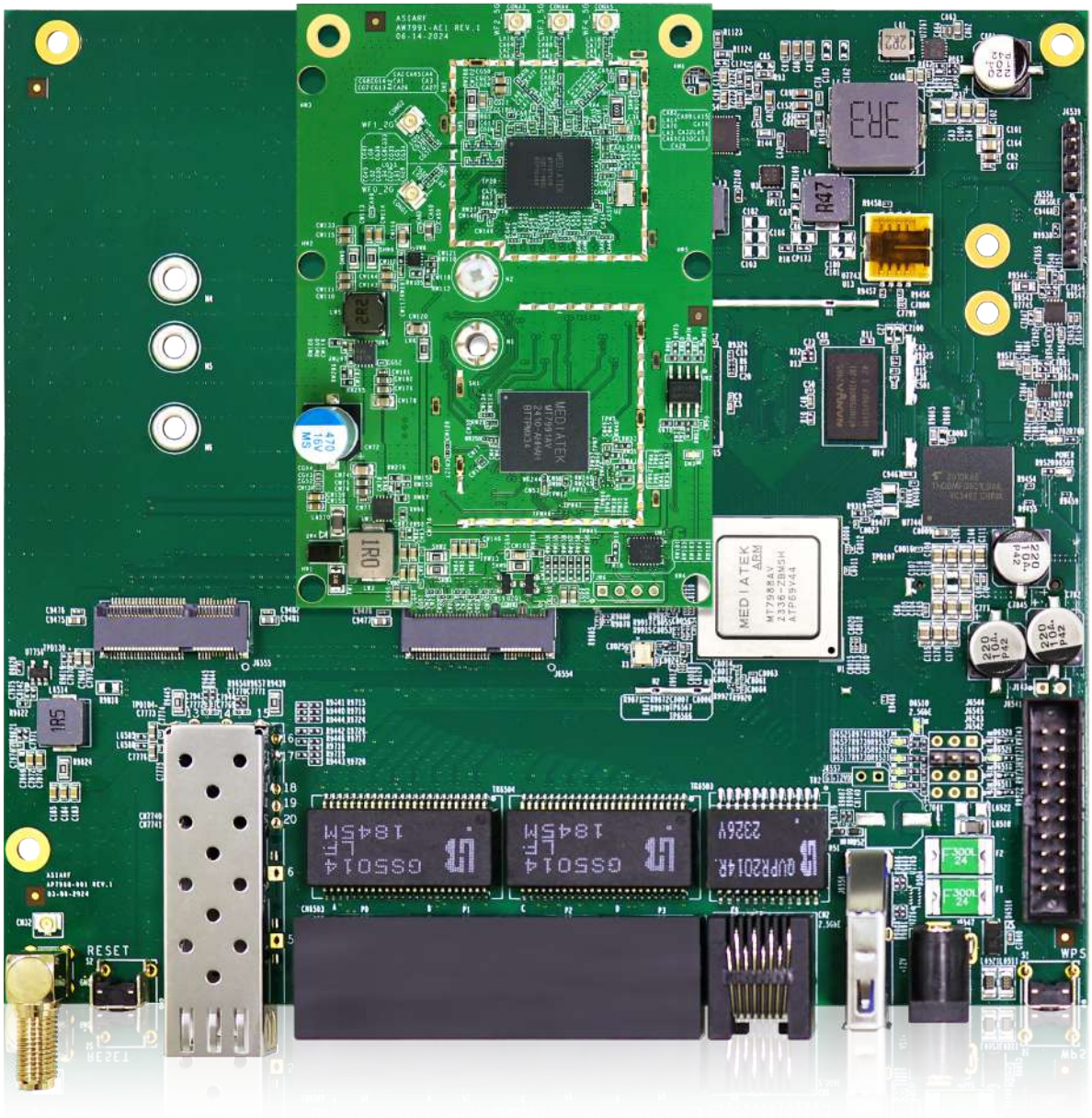
Wi-Fi 7 Development Platform With AW7991-AE1

The Board Configuration



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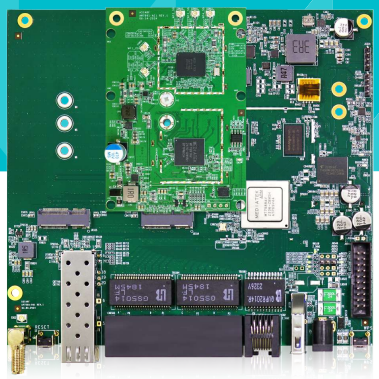
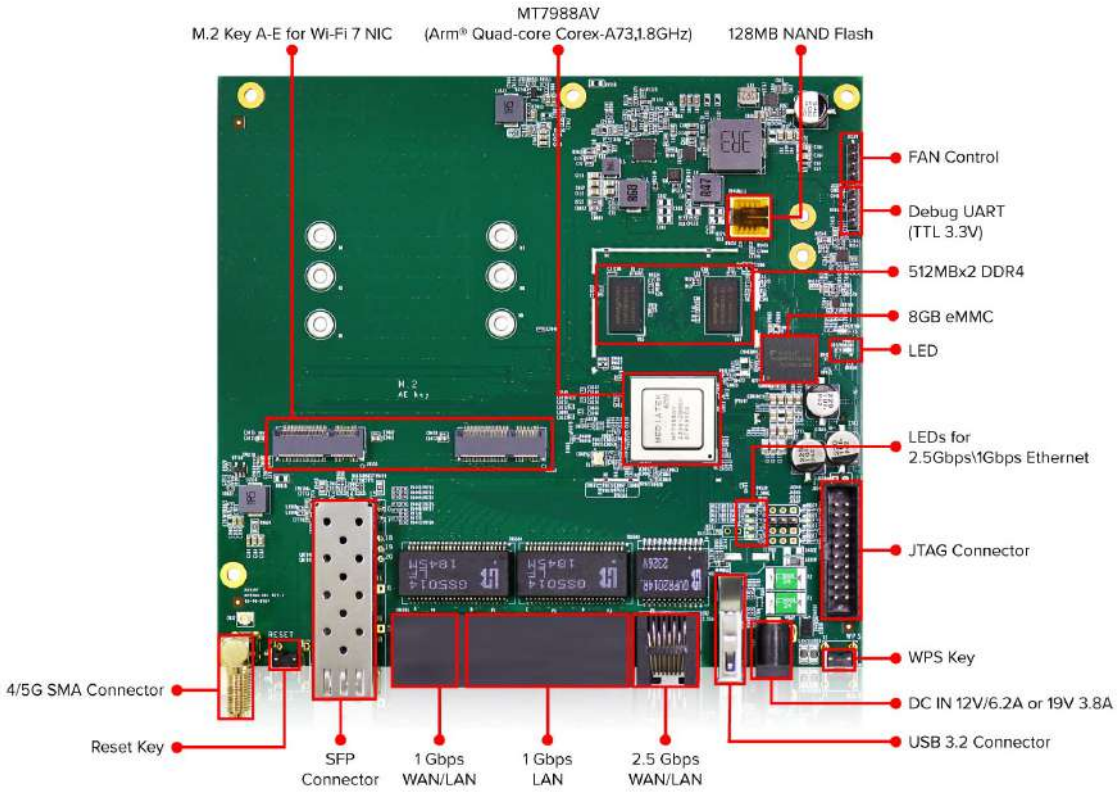
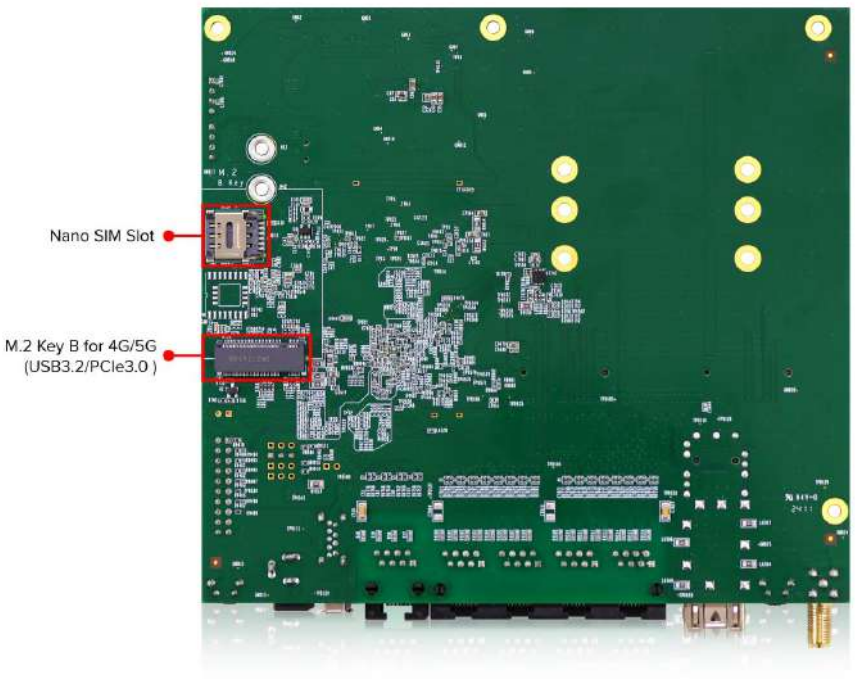


The Board Configuration





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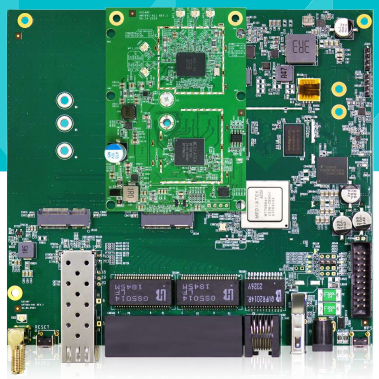
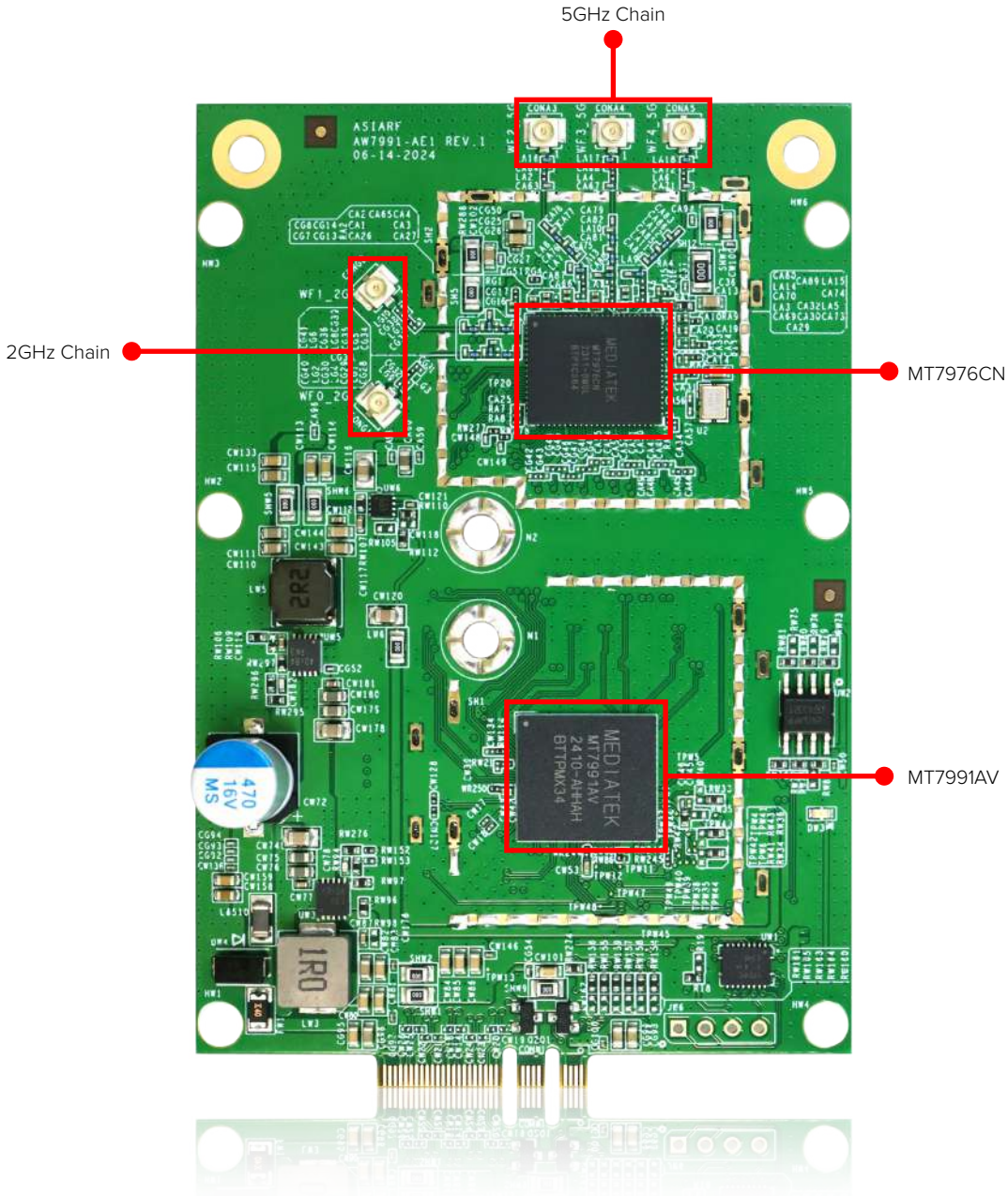
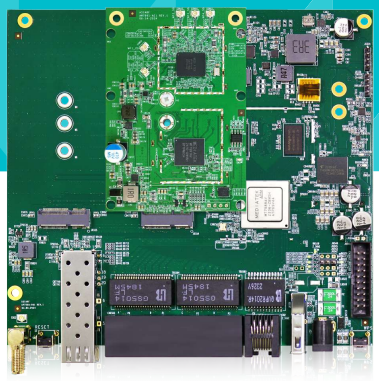


AW7991-AE1 Hardware Interface





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Wi-Fi 7 Development Platform With AW7991-AE1

Rivision History

Version	Revision Date	Description	Author	HW Vetted	SW Vetted	Approved