

DATASHEET

Wi-Fi 7 with BT 5.4, M.2 2230 Combo Module

AW7925-BED

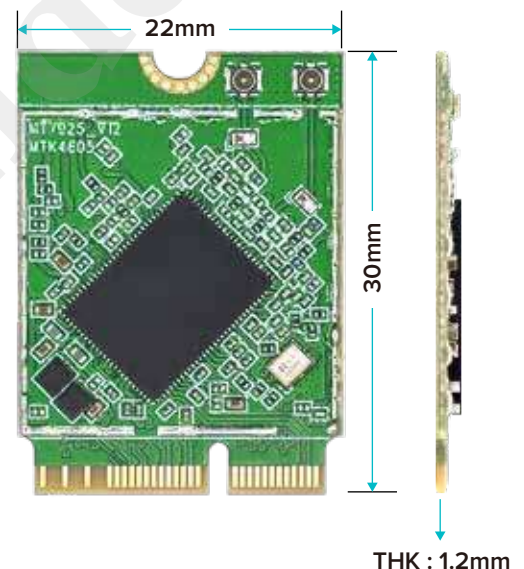


1. Description

AsiaRF introduces the IEEE 802.11 2X2 Wi-Fi 7 with Bluetooth 5.4 combo M.2 module --- **AW7925-BED**.

AW7925-BED is a highly integrated single-chip that support 2-stream 802.11ax solutions with Multi-user MIMO (Multiple-Input, Multiple-Output) with Wireless LAN (WLAN) PCI Express network interface controller with integrated Bluetooth 5.4 USB interface controller. It combines a WLAN MAC, a 2T2R capable WLAN baseband, and RF in single chip.

AW7925-BED integrates MediaTek MT7925 SoC with TDD Bluetooth function shared with Wi-Fi antenna. MT7925 is highly integrated single chip which features a low power 2x2 Wi-Fi 7 dual-band subsystem and a Bluetooth subsystem. The Wi-Fi subsystem contains the 802.11a/b/g/n/ac/ax/be radio, baseband, and MAC that are designed to meet both the low power and high throughput application, and 32-bit RISC MCU to handle Wi-Fi tasks. The Bluetooth subsystem contains the Bluetooth radio, baseband, link controller, and 32-bit RISC MCU for Bluetooth protocols.



2. Features

WLAN

- IEEE 802.11 a/b/g/n/ac/ax/be compliant
- Support 20/40 MHz bandwidth in 2.4 GHz band
- Support 20/40/80/160 MHz bandwidth in 5 GHz band and 6 GHz band
- Support MU-MIMO RX
- Support STBC, LDPC and beamforming
- Greenfield, mixed mode, legacy modes support
- IEEE 802.11 d/e/h/i/k/mc/r/v/w support
- Security support for WPA WPA2/WPA3 personal/enterprise, WPS2.0, FIPS
- QoS support of WPA WMM, WMM PS
- Integrated LNA, PA, and T/R switch

Bluetooth

- Bluetooth specification 2.1+EDR
- Bluetooth 4.2 Low Energy (LE)
- Bluetooth 5.4
- Support BLE Isochronous channel + NBC
- Integrated BALUN and PA
- Scatternet support: Up to 7 piconets simultaneously with background inquiry page scan
- Up to 7 BT links + 16 BLE links
- Support SCO and eSCO links with re-transmission
- Support wide-band speech and hardware accelerated SBC (Sub-Band Codec) for A2DP streaming
- Packet loss concealment
- Channel quality driven data rate adaptation
- Channel assessment and WB RSSI for AFH