

Qualcomm Dragonwing™ Mobile Broadband (MBB) Platform Gen 4



The Dragonwing MBB Platform Gen 4, featuring the Qualcomm® X85 5G Modem-RF, is the future of mobile broadband with leading 5G performance, seamless Wi-Fi and Bluetooth® wireless technology integration, and enhanced user experiences. It is the world's first 5G Advanced platform for Mobile Broadband applications, bringing an AI-enhanced 5G Advanced platform, AI-enhanced traffic classification, and high-performance carrier cloud control capabilities, revolutionizing mobile broadband solutions.

Featuring the Qualcomm X85 5G Modem-RF, the Dragonwing MBB Platform Gen 4 is at the forefront of mobile broadband innovation, delivering leading 5G performance, seamless connectivity, and enhanced user experiences for both individuals and businesses. It introduces the world's first 5G Advanced platform, offering category-defining downlink speeds of up to 12.5 Gbps with unrivaled coverage and long-range performance. The platform also features AI-enhanced traffic classification, a low-power design, and industry-leading Wi-Fi connectivity with a custom routing stack. Additionally, it includes high-performance carrier cloud control capabilities, making it an ideal solution for enhancing broadband carrier product portfolios with unparalleled performance and reliability.

Related Products

The [Qualcomm X85 5G Modem-RF](#) is a leading 5G platform that supports integrated AI for unrivaled performance, efficiency, speeds, and spectrum flexibility to accelerate 5G Advanced adoption.

Highlights

REVOLUTIONARY QUALCOMM X85 5G MODEM-RF

This cutting-edge modem-RF solution with AI support delivers unparalleled 5G performance. It is the world's first 5G-Advanced MBB platform, offering AI-enhanced capabilities for personalized, secure, and enriching experiences along with unrivaled coverage and long-range performance.



UNMATCHED PLATFORM INNOVATION

The most dynamic, feature-rich MBB platform is designed for global deployment. It boasts a powerful on-board processor for high-performance network management and feature-rich applications, comprehensive connectivity and integration solutions for challenging environments, and energy efficiency to meet the most stringent requirements.



NEXT-GEN CONNECTIVITY

Dragonwing MBB Platform Gen 4 delivers next-generation wireless performance through tri-band Wi-Fi 7 with High Band Simultaneous Multi-Link, enabling ultra-low latency and multi-gigabit throughput even in congested environments. It supports Bluetooth 5.4, offering enhanced reliability, increased broadcast capacity, and improved power efficiency for always-connected peripherals. These wireless technologies are further strengthened by intelligent traffic steering and adaptive signal optimization, ensuring seamless and resilient connectivity across mobile, home, and enterprise use cases.



Features

World's 1st 5G Advanced MBB platform, featuring the Qualcomm X85 5G Modem-RF

- Speeds
 - World's 1st MBB offering up to 12.5 Gbps DL (peak speed, FR1 + FR2)
 - 10+ Gbps peak DL (FR1), 3.5 Gbps peak UL
- Introduces key new capabilities to the MBB portfolio
 - Dual SIM Dual Active (DSDA), ideal for aggregation / reliability / carrier remote mgmt
 - NB NTN for satellite communication

AI-enhanced 5G modem capabilities

- Network Traffic Coordination: Orchestrates and coordinates AI workloads at the edge of the cellular network
- Qualcomm® 5G AI Suite w/ AI-enhanced traffic prioritization
 - Dynamic gaming traffic prioritization and AI-enhanced OTT-voice traffic prioritization
 - Dedicated AI (tensor) HW accelerator w/ 30% faster AI inference
- Dynamic multi-antenna 8Rx/6Rx/4Rx management for more robust coverage and efficient power handling
- On-device advanced Smart Network Signaling (SNS) for bad/weak cell avoidance, data stall detection, and enhanced low-latency service

Unrivald coverage and long-range performance

- Up to 14 km long-range mmWave performance

Power profile optimized for MBB

- 50% lower power profile than previous-generation Modem-RF when implemented in mobile hotspot applications

Integrated soft AP featuring Qualcomm® Wi-Fi 7 technology

- Peak Speed: 5.8 Gbps, Tri-Band Wi-Fi 7
- 320MHz support (or paired 160MHz channels)
- HBS multi-link technology, which aggregates traffic on 5GHz and 6GHz channels to deliver extremely high throughput and low latency
- Bluetooth 5.4

Carrier cloud-based control

- Expanded telemetry control and dashboard for device management
- Framework for diagnostic log collection and uploading to cloud server
- Self-heal framework for anomaly/fault detection and platform self-recovery

Specifications

Modem	▪ Qualcomm X85 5G Modem-RF ▪ mmWave: QTM567
Cellular	▪ Modem-RF specs: 400MHz bandwidth (Sub-6GHz), 8 carriers (mmWave), 800MHz bandwidth (mmWave), 2x2 MIMO (mmWave), 4x4 MIMO (Sub-6) ▪ Technology: Sub-6 carrier aggregation (TDD-TDD, FDD-FDD, FDD-TDD), Sub-6GHz, 5G FDD, 5G TDD, 5G NR, Dynamic Spectrum Sharing (DSS), mmWave, mmWave-Sub-6GHz aggregation, SA (standalone), NSA (non-standalone), WCDMA (DB-DC-HSDPA), WCDMA (DC-HSUPA) ▪ Features: Qualcomm® DSDA, 1024-QAM Sub-6, 3GPP Release 17 and Release 18 support, NB-IoT NTN Satellite Communication
Peak 5G DL/UL	▪ Download: 12.5 Gbps ▪ Upload: 3.5 Gbps
Wi-Fi/Bluetooth	▪ Generation: Wi-Fi 7, Wi-Fi 6E, Wi-Fi 6, Wi-Fi 5, Wi-Fi 4 ▪ Standards: 802.11be, 802.11ax, 802.11ac, 802.11n, 802.11g, 802.11b, 802.11a ▪ Spectral bands: 6GHz, 5GHz, 2.4GHz ▪ Wi-Fi 7 with HBS Multi-Link ▪ Peak Wi-Fi DL/UL: 5.8 Gbps ▪ 320MHz channels ▪ Max band configuration: Tri-band ▪ Security: WPA3 Personal, WPA3 Enterprise, WPA3 Enhanced Open, WPA3 Easy Connect, WPA2, WPS, 802.11i security, PRNG, TKIP, WAPI2, WAPI1, WEP ▪ Encryption: AES-CCMP, AES-GCMP ▪ Peak QAM: 4K QAM ▪ Features: Simultaneous and Alternating Multi-Link, Adaptive Interference Puncturing, OFDMA (UL/DL), MU-MIMO (UL/DL) ▪ Bluetooth 5.4
Middleware	▪ Software supported: OpenWRT, RDK-B, prpIOS

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