Qualcomm

Qualcomm® 5G Fixed Wireless Access Gen 3 Platform

The Qualcomm 5G Fixed Wireless Access (FWA) Gen 3 is a highly integrated, 5G advanced-ready FWA platform aimed to drive global adoption and help bridge the digital divide.

The Qualcomm FWA Gen 3 is designed to achieve breakthrough speeds, coverage, mobility, and link robustness across 5G, mmWave, and Wi-Fi. This third-generation platform is ideal for operators turning to mobile networks for 5G FWA broadband to reach more people with connected broadband experiences.

It features the Snapdragon® X75 5G Modem-RF System for breakthrough 10 Gbps 5G performance and optimizations, with the Qualcomm® QTM567 mmWave Antenna Modules providing reliable and extended mmWave and Sub-6GHz coverage, and Qualcomm Tri-Band Wi-Fi 7 for blazing-fast Wi-Fi with low latency, reliable connectivity, and mesh capability.

Powerful processing from a quad-core CPU and hardware acceleration boost performance and support enhanced self-install capabilities, enablement of indoor mmWave Customer Premises Equipment (CPE) deployments, and 5G Dual-SIM Dual-Active (DSDA) and Dual-SIM Dual-Standby (DSDS) configurations.

Highlights

Fully integrated platform built for superior performance

Tight multi-gigabit connectivity integration of the 5G modem-RF with Sub-6GHz & mmWave, GNSS receiver, Tri-Band Wi-Fi 7 with 10 GB Ethernet, and powerful on-board processing will help OEMs accelerate time to launch, improve performance, and lower the development effort for building cutting-edge FWA CPEs at scale. The converged mmWave-Sub6 hardware architecture reduces footprint, cost, board complexity, and power consumption, and Qualcomm® 5G PowerSave Gen 4 provides additional power savings.

Fast-tracking global FWA adoption

Extended-range mmWave, extended-range Sub-6GHz, support for power class 1.5 (PC 1.5), and enhanced self-install capabilities provide maximum spectrum flexibility and help lower costs, enable quicker installation, and speed up service rollouts. The Qualcomm® RF Sensing Suite helps with indoor mmWave CPE deployments, expanding deployment opportunities. Regional support includes a flexible software architecture with support for multiple frameworks, including OpenWRT and RDK-B.

Next-gen connectivity features for immersive experiences

Springboard integrated connectivity forward with next-gen modem-RF system technologies enabling advanced spectrum aggregation, multi-gigabit speed, and improved uplink coverage with FDD uplink MIMO and uplink carrier aggregation. Next-gen Wi-Fi 7 brings significant performance as well, with Tri-Band support in the 6GHz, 5GHz, and 2.4GHz spectrum bands, 320MHz channels in the 6GHz band doubling channel width from Wi-Fi 6, 4K QAM modulation, and advanced Multi-Link technology enabling lower latency in heavily congested environments.

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The Qualcomm 5G FWA Gen 3 platform leverages wireless connectivity to extend broadband internet access more affordably to homes, schools, and businesses previously underserved in both urban and rural areas. FWA can be quickly set up to mobilize or relocate networks for shorter-term use. It also enables wireless remote access to controlling devices for remote operation.

Features

- Integrated 3GPP Rel-17 5G modem (2G to 5G and including GNSS) with support for Sub-6GHz and mmWave connectivity, a quad-core CPU, and Tri-Band Wi-Fi 7.
- Extended-range mmWave and Sub-6GHz with eight receiver antennas and support for PC 1.5
- Sub6-mmWave convergence (one transceiver)
- Eight Rx enhancements – FDD, 2CC (F+T)
- Excellent carrier aggregation and dual-connectivity supports Qualcomm Tri-Band Wi-Fi 7 with expert Multi-Link Operation (MLO) for blazing-fast lower latency, reliable connections, and mesh capability for seamless coverage
- Quad-core CPU and hardware acceleration boosts
- Enhanced self-install capabilities facilitated by Qualcomm Dynamic Antenna Steering Gen 2 technology
- Qualcomm RF Sensing Suite to enable and accelerate indoor mmWave CPE deployments
- Support for 5G DSDA and DSDS configurations
- Flexible software architecture with support for multiple frameworks, including OpenWRT and RDK-B
- Global 5G band support including n259 (41GHz), n70, and n53

Specifications

Modem Name	Snapdragon X75 5G Modem-RF System
mmWave Name	Qualcomm QTM567 mmWave Antenna Module
Cellular 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)
Cellular Modem-RF Specs	800MHz bandwidth (mmWave), Eight carriers (mmWave), 2x2 MIMO (mmWave), 300MHz bandwidth (Sub-6GHz), 4x4 MIMO (Sub-6GHz)
5G Peak Download Speed	10 Gbps
5G Peak Upload Speed	3.7 Gbps
Performance Enhancement Technologies	Qualcomm 5G PowerSave Gen 4, Qualcomm Dynamic Antenna Steering Gen 2, Dual-layer polarization in downlink and uplink (mmWave), Beam tracking (mmWave), Beam forming (mmWave), Beam steering (mmWave), Wide Scan Angle (mmWave), Qualcomm® 5G Ultra-Low Latency Suite, Qualcomm® Smart Transmit™ Gen 4 technology, Qualcomm® 5G RF Sensing Suite
Wi-Fi Generation	Wi-Fi 7, Wi-Fi 6E, Wi-Fi 6, Wi-Fi 5, Wi-Fi 4
Wi-Fi Standards	802.11be, 802.11ax, 802.11ac, 802.11n, 802.11g, 802.11b, 802.11a
Wi-Fi Spectral Bands	6GHz, 5GHz, 2.4GHz
Spatial Streams	Up to 12
Peak QAM	Up to 4K QAM
Wi-Fi Features	Simultaneous & Alternating Multi-Link, Adaptive Interference Puncturing, OFDMA (UL/DL), MU-MIMO (UL/DL)

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