

Qualcomm Dragonwing™ N7 Platform



Wi-Fi 7 networking platform with up to Tri-band and 10-stream configuration. Ideal for premium service provider gateways, enterprise routers, and whole-home mesh systems.

The Dragonwing N7 Platform leverages advanced Wi-Fi 7 features and Qualcomm® Multi-Link Mesh innovation to deliver peak speeds and low latency to serve the needs of today's and tomorrow's applications like real-time gaming, high-resolution video or XR, and realize the full capacity of next-gen broadband access.

Utilizing an innovative modular platform architecture, it is designed to be small enough and cost effective to deploy in virtually every size home while being powerful enough to support the demands of today's smart home and enterprise networks.

The Dragonwing N7 Platform's specialized Packet Processing Engine offloads WAN networking and QoS traffic management, thereby freeing up powerful quad-core CPU compute to support differentiating services and applications, such as device management and control, content filters, and security features.

Extensive support for open-source OS and middleware elements simplifies broadband service providers and OEMs' integration and accelerates time-to-market.

Plus, high client count support and easy integration with IoT applications make this platform a truly future-proof solution.

Ordering Information

Product / Part Number

Dragonwing N7 Platform / IPQ5332



Materials are subject to change without notice.
87-87290-1 Rev. A

Highlights

SUPERIOR WI-FI 7 CONNECTIVITY

Experience superior Wi-Fi 7 connectivity with a platform designed to deliver up to 20.7 Gbps* peak aggregate wireless system capacity, reliable connections, and incredibly low latency even in congested networks thanks to expert implementation of advanced Wi-Fi 7 features like 320MHz channel support, 4K QAM, and Multi-Link operation.



BUILT FOR SMART HOMES AND ENTERPRISES

Modular silicon architecture optimized for compact, power-efficient, and cost-effective product designs. Built to satisfy the demands of today's and tomorrow's smart homes and enterprises, the platform enables easy integration with IoT applications and is able to associate and maintain stable connectivity for hundreds of client devices simultaneously.



QUALCOMM MULTI-LINK MESH

Innovative Qualcomm Multi-Link Mesh networking technology intelligently optimizes traffic flows to dynamically adapt to network conditions, client capabilities, and home topology. Client devices can realize higher capacity, extended coverage, deterministic low latency, and multi-Gig throughput.



* Capacity claims refer to maximum physical layer (PHY) capacity.

Qualcomm Immersive Home Platform and Qualcomm Multi-Link Mesh are products of Qualcomm Technologies, Inc. and/or its subsidiaries.



Dragonwing N7 Platform

The Dragonwing N7 Platform is designed to deliver premium Wi-Fi 7 connectivity for broadband gateways, whole home mesh systems, and small-to-medium business routers for a new era of extremely high throughput, low latency, high capacity, and extended coverage.

Features

- Powerful platform with up to a Tri-band, 10-stream configuration enables simultaneous operation in the 2.4GHz, 5GHz, and 6GHz spectrum bands
- Architecture optimizations including integrated Wi-Fi front-end module (FEM) can minimize the number of external components and help ensure end products are compact and cost efficient
- Low power consumption thanks to advanced process node and power saving capabilities
- Powerful Quad-core CPU and specialized Packet Processing Engine provides powerful networking acceleration and QoS traffic management while offloading CPU
- Dedicated Security Processing Engine designed to ensure secure network transactions with embedded networking crypto engine, Secure Boot with root-of-trust transfer, and TrustZone
- Open API porting for multi-source development (OpenWRT, RDK-B, PrplOS) and support of OpenSync™ and TIP OpenWiFi for easy integration of customized services
- Turnkey Dragonwing Automated Frequency Coordination (AFC) Suite is designed to support maximized 6GHz operation, in regions where available
- Easy integration for IoT applications with platform extensions and coexistence interface

Specifications

CPU	Cores: Quad-core Clock Speed: Up to 1.5 GHz**
Wi-Fi	Peak PHY Rate: Up to 20.7 Gbps Generation: Wi-Fi 7, Wi-Fi 6E, Wi-Fi 6, Wi-Fi 5, Wi-Fi 4 Standards: 802.11be/ax/ac/n/g/b/a Spectral Bands: 6GHz, 5GHz, 2.4GHz Channels: 320MHz, 240MHz, 160MHz, 80MHz, 40MHz, 20MHz Maximum Band Configuration: Tri-band Spatial Streams: Up to 10 Peak QAM: 4K QAM Encryption: AES-CCMP, AES-GCMP Security: WPA3 Personal, WPA3 Enterprise, WPA3 Enhanced Open, WPA3 Easy Connect, WPA2, WPS, 802.11i security, PRNG, TKIP, WAPI2, WAPI1, WEP Wi-Fi Features: Simultaneous and Alternating Multi-Link modes, Adaptive Interference Puncturing, UL/DL OFDMA, UL/DL MU-MIMO
Memory	Type: DDR3L, DDR4 16-bit
Flash	Type: NOR, NAND, eMMC Interface: SPI
Interfaces	Supported Interfaces: 3x PCIe 3.0, PTA Coex, 2x USXGMII/SGMII+, SPI, UART, USB 3.0, USB 2.0, I2S, PCM, TCM Platform Extensions: 4G/5G FWA, 802.15.4 (Zigbee/Thread), Bluetooth®
Ethernet	Number of Ports: 2 Ports: 5 GE, 10 GE
Passive Optical Network	Deployment Types: XGS-PON Residential Gateway (HGS/ONT), XGS-PON SFU ONU, XGS-PON SFU+ ONU Peak Downstream Rate: 10 Gbps Peak Upstream Rate: 10 Gbps
Operating System	Linux Kernel, Open WRT

** Maximum CPU speed will vary based on platform version. Consult OEM specifications for device CPU speed.

To learn more visit: qualcomm.com

