



Qualcomm® Networking Pro A7 Elite Platform

Revolutionize home and enterprise wireless networking with the power of AI, elevating the Wi-Fi 7 user experience and delivering generative AI processing capabilities to virtually all network-connected devices.

The Qualcomm Networking Pro A7 Elite Platform is at the forefront of wireless networking technology, combining high-performance Wi-Fi 7 and edge AI. This next-generation Wi-Fi networking platform provides generative AI processing capabilities to network-connected devices, paving the way for unprecedented service innovation. Featuring an AI coprocessor with up to 40 TOPS of NPU processing power, the Qualcomm Networking Pro A7 Elite ushers in a new era for Wi-Fi routers, broadband gateways, and access points. With the integration of edge AI, privacy is managed by keeping sensitive information on the edge device, while also enabling personalization with contextualized understanding of the environment and immediacy with near real-time responses.

Highlights

Groundbreaking AI Innovation

The Qualcomm Networking Pro A7 Elite platform introduces a powerful AI coprocessor featuring a Qualcomm® Hexagon™ NPU, bringing groundbreaking AI computing to wireless networking. It can support connected devices to leverage its edge AI processing capabilities for AI/ML and generative AI applications. This unlocks new opportunities for operators and enterprises to develop innovative services in areas such as security and surveillance, energy management and automation, health monitoring, personalized virtual assistants, and more.



AI-Powered Wi-Fi 7

The platform offers high-performance Wi-Fi 7 connectivity, designed to deliver up to 33 Gbps* peak aggregate capacity, and elevates the user experience with AI-driven features. Utilizing Qualcomm® Networking AI Engine acceleration, the Qualcomm® Networking AI Suite features AI-driven functionalities designed to optimize user experiences across various applications, such as streaming and gaming. It can also improve signal coverage and integrates networking AI Ops capabilities to boost operational efficiency.



Comprehensive Broadband-to-Antenna Platform

The platform is engineered to streamline system development and reduce design complexity by integrating key elements—from broadband to antenna—including 10G Fiber (XGS-PON), Ethernet, front-end modules, and filters into an integrated platform. Additionally, it can accelerate development by offering comprehensive support for leading open-source software and middleware elements.



Ordering Information

Product	Part Number
Qualcomm Networking Pro A7 Elite Platform	IPQ5424

Related Products

The Qualcomm® Networking Pro A7 Platform is a comprehensive Wi-Fi 7 networking solution integrating key elements—from broadband to antenna—including 10G Fiber, Ethernet, front-end modules, and filters into an integrated platform.

Developer and Ecosystem-Ready

Qualcomm Technologies provides developer tools from the Qualcomm® AI Stack and the Qualcomm® AI Hub to streamline the creation of next-generation AI apps. OEMs and ecosystem partners can access a growing library of pre-optimized AI models or optimize their own models, reducing development time and accelerating time to market.



Materials are subject to change without notice.
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* Performance claims refer to maximum physical layer (PHY) performance.

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Features

Wi-Fi 7

- Flexibility with up to quad-band and 16 streams
- Designed to deliver up to 33 Gbps* peak aggregate wireless system capacity
- Expert implementation of advanced Wi-Fi 7 features with 320MHz channel support, 4K QAM, multi-link operation, and adaptive interference puncturing
- Turnkey Qualcomm* Automated Frequency Coordination (AFC) Suite

Qualcomm* Networking AI Engine

- Integrated accelerator designed for AI models specific to Wi-Fi and networking applications

Qualcomm* Networking AI Suite

- Suite of AI-driven features that enhance Wi-Fi and networking user experience, includes:
 - Smart Traffic Classifier: Application type classification enables traffic flow prioritization and optimization. Combined with Qualcomm* Service Defined Wi-Fi, gaming, video calls, and streaming traffic designed to achieve up to a 50% average latency reduction in congested environments
 - Range boost: AI-based transmitter optimization can boost the Wi-Fi signal's range by enabling up to a peak 2.5dB increase in transmit power
 - Networking AI Ops: Improved operational efficiency with AI-based networking fault identification and logging

AI

- AI coprocessor featuring Qualcomm* Hexagon™ NPU
- Up to 40 INT8 TOPS

Platform

- Software-defined data path for flow optimization and hardware acceleration designed to ensure peak performance for the most demanding applications
- Comprehensive support for leading open-source software and middleware elements (OpenWRT, RDK, TiP OpenWiFi, prpIOS, OpenSync™)
- Powerful compute with quad-core CPU
- Easy integration of IoT applications through platform extensions and a coexistence interface

Specifications

CPU	Cores: Quad-core Clock Speed: Up to 1.8 GHz*
	Peak PHY Rate: Up to 33 Gbps 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 Maximum Band Configuration: Up to Quad-band Channels: 320MHz, 240MHz, 160MHz, 80MHz, 40MHz, 20MHz
Wi-Fi	Spatial Streams: Up to 16 Peak QAM: 4K QAM Encryption: AES-CCMP, AES-GCMP Security: WPA3 Enhanced Open, PRNG, TKIP, WPS, WPA3 Personal, WPA2, WEP, WAPI2, WAPI1, WPA3 Enterprise, WPA3 Easy Connect Wi-Fi Features: Simultaneous and Alternating Multi-Link modes, Adaptive Interference Puncturing, Up to 4K QAM, DL/UL OFDMA & DL/UL MU-MIMO, Qualcomm AFC Suite
Memory	Type: DDR3L, DDR4 Bit Width: 16-bit, 32-bit
Flash	Type: NOR, NAND, eMMC
Interfaces	Supported Interfaces: 3x USXGMII/SGMII+, 4x PCIe 3.0, I ² C, I ² S, PTA Coex, SPI, UART, USB 2.0, USB 3.0 Platform Extensions: 4G/5G FWA, 802.15.4 (Zigbee/Thread), Bluetooth*
Packet Processing	WAN tunnel processing offload, QoS acceleration
Process Node and Technology	Process Node: 14 nm
Artificial Intelligence	Up to 40 TOPS
Ethernet	Number of Ports: 3 Ports: 10/2.5 GE
Passive Optical Network	Standard: XGS-PON Deployment Types: XGS-PON Residential Gateway (HGS/ONT), XGS-PON SFU/ONU, XGS-PON SFP+ ONU Peak Downstream Rate: 10 Gbps Peak Upstream Rate: 10 Gbps
Development Software	AI Development: Qualcomm* AI Stack

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

To learn more visit: [qualcomm.com](https://www.qualcomm.com)

