Qualcomm Dragonwing™
QCS4490/QCM4490 Processors

Premium connectivity meets next-gen processing with the QCS4490 and QCM4490 Processors.

The QCS4490 and QCM4490 processors deliver key, advanced features now required by industrial handheld, industrial computing, and other IoT devices. They come loaded with Wi-Fi 6E for multi-gigabit speeds, extended range, and low latency with powerful, efficient processing to handle complex computing tasks. With planned support for Android releases through version 18, you can use this processor for industrial designs through 2030, helping save costs and development time. We've designed a mid-tier solution packed with a lot of purpose.

Highlights

PREMIUM CONNECTIVITY AT MID-TIER

- Supports multi-gigabit speeds, extended range, massive capacity, and ultra-low latency through Wi-Fi 6E
- Wi-Fi 6E harnesses the 6 GHz spectrum to extend advanced Wi-Fi 6 MU-MIMO and OFDMA into the new band to deliver superior performance, even in congested areas

NEXT-GEN SYSTEM PERFORMANCE

- Built-in, powerful, efficient processing for advanced IoT device computing tasks
- Multi-gen leap to Qualcomm® Kryo™ Octa-core CPU (up to 2x over previous generation in performance benchmarks)
- On-device processing allows for efficient data analysis between device and cloud (intelligent edge computing)
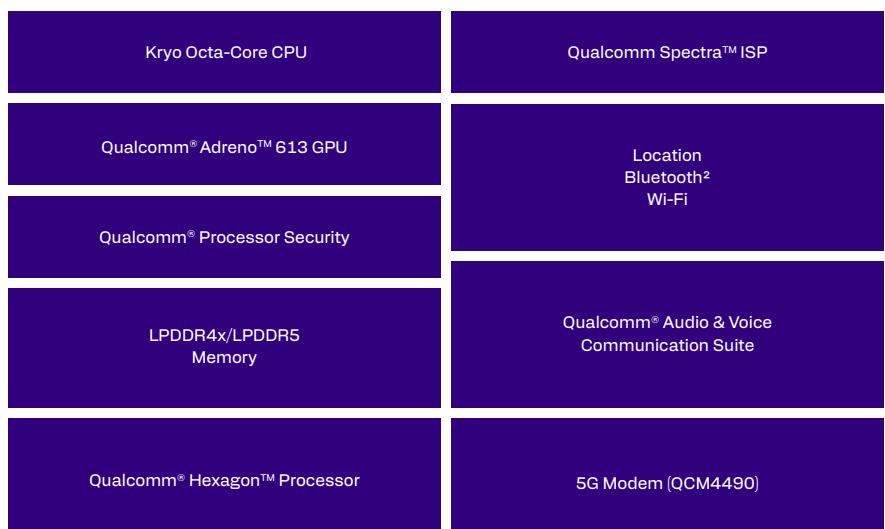
LONGEVITY AND COST SAVINGS

- Save costs and development time with the Product Longevity Program
- Planned support for Android releases 13 through 18 allows you to design products up to 2030[1]

[1] Subject to change without notice.

Block Diagram

Kryo Octa-Core CPU	Qualcomm Spectra™ ISP
Qualcomm® Adreno™ 613 GPU	Location Bluetooth[2] Wi-Fi
Qualcomm® Processor Security	
LPDDR4x/LPDDR5 Memory	Qualcomm® Audio & Voice Communication Suite
Qualcomm® Hexagon™ Processor	5G Modem (QCM4490)

[2] Supported with a companion module

Target Applications

- Industrial Handheld
- Retail POS Devices
- Control & Automation
- Industrial Computing Devices
- Industrial & Personal Security Panels

Features

- Wi-Fi 6E that uses the 6 GHz spectrum to extend advanced Wi-Fi 6 MU-MIMO and OFDMA into the new band and deliver superior performance, even in congested areas

- Delivers speeds of up to 3.6 Gbps, supported by Qualcomm® 4K Quadrature Amplitude Modulation (QAM), 160 MHz channel support and unique 4-stream (2x2 + 2x2) Dual Band Simultaneous (DBS)

- 4th generation 5G NR Sub-6 modem with 3GPP Rel. 16-capable and true global carrier support

- Voice-over-NR (VoNR), 5G location (E-CID)

- Multi-gen leap to Kryo Octa-core CPU (up to 2x over previous generation in performance benchmarks)

- On-device processing allows for efficient data analysis between device and cloud (intelligent edge computing)

- Planned software support for Android releases 13 through 18 allows you to design products up to 2030[3]

- Save costs by investing in just one processor for multi-year industrial design, development, and maintenance support

- Significant reductions in latency and increased responsiveness for latency-sensitive applications (voice, video)

- Smooth handoffs and superior connectivity, even in large, complex environments with multiple high-demand devices such as hospitals and warehouses

- Audio AI accelerator enhances voice quality and voice UI accuracy

- Enhanced camera ISP hardware to support superior image quality

[3] Subject to change without notice.

Specifications

Process Node	4 nm
CPU	Kryo Octa-core CPU: 2x Gold @ 2.4 GHz + 6x Silver @ 2.0 GHz, 1 MB L3 cache
GPU	Adreno GPU 613
Memory	LPDDR4X/LPDDR5 SDRAM (2 x 16-bit) @ up to 3.2 GHz
Modem	5G R16 Sub-6 100 MHz (QCM4490 only)
Camera	Qualcomm Spectra™ ISP
Connectivity	WLAN: Wi-Fi 6E (802.11b/g/n/ac/ax) 2x2 160 MHz, 4K QAM, 2x2 DBS (Qualcomm® WCN6856) Bluetooth® 5.2
Display	FHD+ (1080 x 2520) @ 90/120 Hz
Video	Video decodes: Up to 1080p60D for H.264/H.265/VP9 Video encodes: Up to 1080p60E for H.264/H.265
Audio	eNPU processor, Integrated SVA, 1 MB shared LPI with sensor
Interfaces	USB 3.1 type-C, eMMC v5.1, SD 3.0, UFS 3.1, PCIe
Security Features	Secure boot, Secure debug, HW encryption, Qualcomm® Trusted Execution Environment (TEE), pIMEM, TME 1.0
Location	Gen 9 VT v5, GPS, BeiDou, GLONASS, Galileo, dual-frequency L1/L5, Navic

Ordering Information

Product	Part Number
QCS4490	QCS-4490-0-AB
QCM4490	QCM-4490-0-AB

Please check part numbers for accuracy before ordering

To learn more visit: qualcomm.com

Expected Product Longevity: April 2030