

Qualcomm

# Qualcomm<sup>®</sup> QCM6490/ Qualcomm<sup>®</sup> QCS6490 SoCs

These extended life chipsets are designed for Enterprise and IoT applications including support for 5G and Wi-Fi 6E for ubiquitous coverage, powerful AI and expanded interfaces for industrial use cases.

The 6nm QCM6490/QCS6490 is a powerful System-on-Chip (SoC) that delivers premium-tier features with true global 5G and support for Wi-Fi 6E, with advanced camera, AI and compute for powerful performance at low-power, purpose built for industrial and commercial IoT applications such as ruggedized handhelds and tablets, kiosks, industrial scanners, point of sale systems and human machine interface systems.

As companies in the industrial and commercial space are increasingly dependent on wireless connectivity to efficiently operate and connect countless IoT devices, the QCM6490 provides the advantages of 5G for full mobility, high data rates and coverage, while connecting the unconnected to unlock data and insights to help increase efficiency and drive adoption of emerging technologies like computer vision and machine learning. An enterprise grade Wi-Fi 6E also provides extended coverage and scale.

The QCM6490/QCS6490 supports the latest re-engineered Qualcomm<sup>®</sup> Hexagon<sup>™</sup> processor that features a fused AI-accelerator architecture to bring astonishing performance at low power.

Improvements to our Qualcomm<sup>®</sup> Kryo<sup>™</sup> CPU and Qualcomm<sup>®</sup> Adreno<sup>™</sup> GPU provide powerful computing performance.

Combined with a high-performing triple-ISP and support for up to five concurrent cameras, and video encode/decode at up to 4K30/4K60 respectively, these chipsets deliver powerful edge AI for high-performance at low power.

Support for freeway lane-level vehicle navigation (with meter-level positioning) and urban pedestrian navigation with sidewalk accuracy.

## Highlights

### Ubiquitous coverage with 5G

True global coverage with 5G mmWave/Sub 6GHz that offers widespread coverage and high-speed mobility with standalone and non-standalone modes, TDD and FDD, spectrum sharing, LTE and legacy modes (3G, 2G). This is designed to enable OEMs to bring blazing fast connected devices to global networks in nearly any form factor.



### Powerful enterprise grade Wi-Fi 6 and Wi-Fi 6E connectivity

Enterprise grade Wi-Fi 6 and Wi-Fi 6E (6 GHz) featuring Qualcomm<sup>®</sup> 4K QAM, 160MHz bandwidth, bi-directional Multi-User MIMO and advanced Dual Band Simultaneous functionality. Transforms connectivity experiences with multi-gigabit speeds (up to 3.6Gbps), extended capacity and dramatic latency reduction.



### Powerful AI/ML transforming experiences

The Qualcomm<sup>®</sup> AI Engine features a fused AI-accelerator architecture and brings the total performance up to up to 13 TOPS. On-device machine learning enables Edge computing use cases growing at an exponential scale.



### Expanded interfaces and peripherals

Many features supported to enable industrial and commercial IoT devices like: USB 3.1 Type-C with DisplayPort, USB2.0, 2xPCIe and discrete memory beyond LP4X/LP5 MCP.



### Extended life software and hardware

Long term support for Android OS upgrades, security updates and enterprise grade hardware.



Qualcomm

QCS6490  
QCM6490

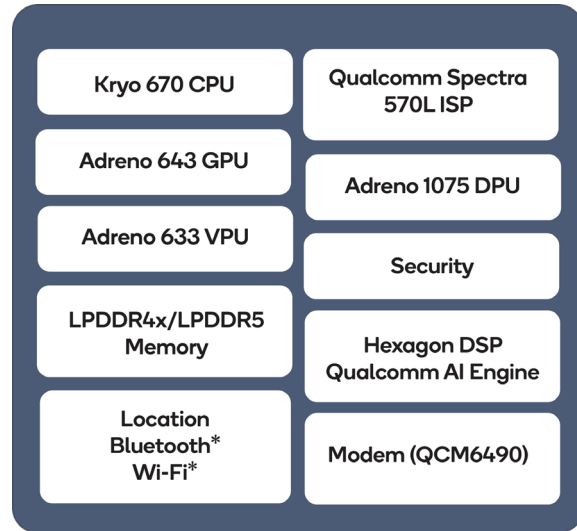
## QCM6490/QCS6490 Target Segments

- Transportation & Logistics
- Smart Warehousing
- Retail
- Manufacturing
- Healthcare
- Ecommerce

## Features

- Kryo 670 CPU built on Arm v8 Cortex technology
  - Kryo Gold plus: high-performance core up to 2.7 GHz
  - Kryo Gold: three high-performance core at 2.4 GHz
  - Kryo Silver: four low-power cores at 1.9 GHz
- Designed with the 6 nm process, for superior performance and power efficiency.
- 6th gen Qualcomm AI Engine: Compute Hexagon DSP with dual Hexagon Vector eXtensions (HVX), Hexagon Co-processor (Hexagon CP) 2.0 and Hexagon Tensor Accelerator
- Adreno 643 GPU at 812 MHz
- Dual-channel non-PoP high-speed memory, LPDDR5/LPDDR4x SDRAM
  - LPDDR5 SDRAM designed for 3200 MHz clock (2 × 16 bit)
  - LPDDR4X SDRAM designed for 2133 MHz clock (2 × 16 bit)
- Qualcomm® Universal Bandwidth Compression (UBWC) with camera, display, GPU, video, and compute DSP
- Display support: FHD+, 10 bit DisplayPort, eight hardware layers, improved HDR10+, and wide color Gamut, Qualcomm® Low-Power Picture Enhancement display feature, and Qualcomm® True Palette Display feature
- One 4-lane DSI DSC1.2, D-PHY 1.2, or C-PHY 1.0; VESA DSC 1.2
- Triple 14-bit image signal processing (ISP) + two lite ISP 22 + 22 + 22 MP, 64 MP/30 fps
- Five 4-lane CSIs (4/4/4/4/4) D-PHY 1.2 or C-PHY 1.2
- Adreno 633 VPU for high-quality, ultra HD video encode and decode
- Support for USB 3.1 Type-C with DisplayPort and USB2.0
- Long term support for Android OS upgrades, security updates and enterprise grade hardware.

## QCM6490/QCS6490 Block Diagram



\* Supported with a companion module

## QCM6490/QCS6490 Specifications

<b>AI</b>	6th gen Qualcomm AI Engine
<b>Modem</b>	2G/3G/4G/5G – mmWave and sub-6 GHz bands (Rel. 15) 3.7 Gbps DL, 2.5 Gbps UL, 400 MHz mmW, 100 MHz sub-6 (QCM6490 only)
<b>Connectivity</b>	WLAN: Wi-Fi 6 (802.11ax) and Wi-Fi 6E (6 GHz), Bluetooth® 5.2 and FM supported. Uplink/Downlink MU-MIMO, 4K QAM, 160MHz channels (5 & 6 GHz)
<b>CPU</b>	8x Kryo 670 CPU from 1.9 up to 2.7 GHz
<b>GPU</b>	Adreno GPU 643 with support for Open GL ES 3.2, Open CL 2.0, Vulkan 1.x, DX FL 12
<b>DSP</b>	Compute Hexagon DSP with dual HVX and 4K HMX
<b>Memory &amp; Storage</b>	Dual channel, non-PoP LPDDR5/LPDDR4X SDRAM, UFS 2.x/3.1, two-lane HS gear 4, SD v3.0, eMMC 5.1, PCIe two-lane NVMe
<b>Display Support</b>	Adreno 1075 DPU
<b>Camera Support</b>	Qualcomm Spectra™ ISP 570L 64 MP / 36 + 22 MP / 3x22 MP at 30fps ZSL 192 MP non-ZSL
<b>Video</b>	Up to 4K60 decode for H.264/H.265/VP9, Up to 4K30 encode for H.264/H.265; Support for HDR10 and HDR10+ playback
<b>Location</b>	GPS, GLONASS, NavIC, BeiDou, Galileo, QZSS, and SBAS
<b>Operating System</b>	Android

Qualcomm Universal Bandwidth Compression, Qualcomm Low-Power Picture Enhancement, Qualcomm True Palette Display and Qualcomm Spectra are products of Qualcomm Technologies, Inc. and/or its subsidiaries.

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

Qualcomm