

# Qualcomm® QCS5430/ QCM5430 SoCs for IoT

**The Qualcomm QCS5430/QCM5430 Processors are mid-tier IoT solutions that combine premium connectivity, high-level performance, and edge AI-powered camera capabilities with the option to upgrade features over-the-air via software now or later, according to your product needs.**

These next generation, premium software defined System-on-Chips (SoCs) deliver superior system performance, exceptional compute and best-in-class connectivity. The scalable performance of these SoCs is designed to deliver superior features and performance across all dimensions of IoT, specifically for Robotics, Industrial Handhelds (IHH), Retail, Cameras, and Drone applications. This includes support for 5G and Wi-Fi 6E for ubiquitous coverage, a unified software stack, powerful AI and expanded interfaces across ecosystems.

The Qualcomm QCS5430/QCM5430 Processors were designed with premium features and flexibility to design IoT products. They come loaded with Wi-Fi 6E for multi-gigabit speeds, seamless connectivity, powerful heterogeneous computing, and edge AI-powered multi-camera support. Select between pre-set feature packs or customize one according to your product needs today or wait and easily upgrade OTA in the future via software to unlock even greater performance.

The 6nm QCS5430/QCM5430 are powerful SoCs that deliver premium-tier features 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. They are Qualcomm Technologies first scalable 5G-enabled mid-tier platforms for IOT.

## New scalable performance via software-defined SKU

Customize performance or upgrade features via software now or later according to your IoT product needs. Select between pre-defined (feature packs or work with our team on designing a Custom Feature Pack.



## Premium connectivity at mid-tier

Enjoy premium connectivity with this mid-tier processor for multi-gigabit speeds, massive capacity and ultra-low latency, Enterprise grade Wi-Fi 6 and Wi-Fi 6E (6 GHz) featuring Qualcomm® 4K QAM, 160MHz bandwidth, bi-directional Multi-User MIMO and advanced Dual Band Simultaneous functionality. Transforms connectivity experiences with multi-gigabit support.



## AI-powered camera features

Connect, upload, and process streams from multiple connected cameras using low power with advanced edge AI processing. The Qualcomm® AI Engine features a fused, scalable AI-accelerator architecture and brings the total performance up to 13 TOPS via software defined SKUs. 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, USB 2.0, 2x PCIe and discrete memory beyond LP4X/LP5 MCP.



## Extended life for software and hardware support

Extended support for Yocto Embedded Linux, Windows 11 Enterprise IoT, Android and Ubuntu. OS upgrades, security updates and enterprise grade hardware cover a wider footprint of IoT devices and deployment configurations.



# QCS5430/QCM5430 Target Applications

- Robotics
- Industrial Handheld
- Retail
- Cameras
- Drones and Controllers
- Edge AI Box
- Autonomous Mobile Robots

Qualcomm

QCS5430  
QCM5430

## Features

- All feature packs include premium connectivity and enterprise-grade security with upgradeable options for:
  - Increased CPU, GPU, and AI performance
  - Expanded peripherals support
- Significant reductions in latency, smooth handoffs and increased responsiveness for latency sensitive applications
- Reliable location accuracy
- QCM5430 also includes:
  - 5G modem – Sub6/mmW for True Global Support
  - VoNR
- Qualcomm AI Engine includes a hardware and software AI solution with on-device machine learning to enable edge computing
- Qualcomm® Edge AI intelligently chooses between device edge or cloud processing of multiple camera connections, optimizing processing time and power efficiency
- Support for up to five concurrent vision sensor inputs
- Qualcomm® Kryo™ 670 CPU built on Arm v8 Cortex technology
- 6th Gen Qualcomm AI Engine: A fused AI accelerator packing Qualcomm® Hexagon™ Tensor Accelerator (HTA), Large shared AI memory, Hexagon Scalar Accelerator, Hexagon Vector eXtensions (HVX)
- Security features including Qualcomm® Trusted Execution Environment (TEE)

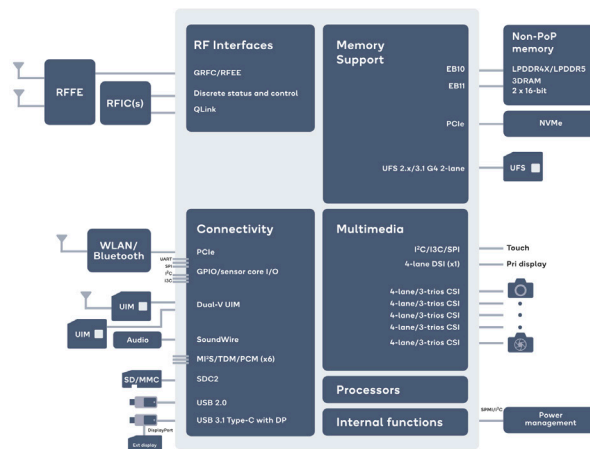
## Ordering Information

Product	Part Number
QCS5430	QCS-5430-1-PSP1287-TR-00-0-AA
QCM5430	QCM-5430-1-PSP1287-TR-00-0-AA

Please check part numbers for accuracy before ordering

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

## Block Diagram



## QCS5430/QCM5430 Specifications

QCS5430/QCM5430 is available via two pre-defined feature packs, or through custom build. The scalable specs are CPU, GPU, DSP, Display, Camera, and USB. Please see Feature Pack 1 and Feature Pack 2 below, as well as the customizable range available through a custom feature pack.

	Feature Pack 1	Feature Pack 2	Custom Feature Pack
Process Node/Technology	6nm, 12mm x 14mm; non-PoP		
CPU	Hex-core Kryo 670 CPU from 1.8GHz to 2.1 GHz	Octa-core Kryo 670 CPU from 1.8GHz to 2.1 GHz	Octa-core Kryo 670 CPU Scalable via licensing from 1.9GHz to 2.7 GHz
GPU	Qualcomm® Adreno™ 642L GPU @ 315MHz		Scalable via licensing Adreno 642L GPU @ 812MHz
Memory / Storage	Dual channel, non-PoP LPDDR5/LPDDR4X SDRAM, UFS 2.x/3.1, two-lane HS gear 4, SD v3.0, eMMC 5.1		
Compute DSP	Hexagon DSP with dual HVX and 2K HMx (~3.5 INT8 TOPS) Clock Speed 1.4GHz		Scalable via licensing (12.15 INT8 TOPS)
Connectivity	WLAN: Wi-Fi 6 (802.11ax) & Wi-Fi 6E (6 GHz), Bluetooth® 5.2 & FM supported Uplink/Downlink MU-MIMO, 4K QAM, 160MHz channels (5 & 6 GHz)		
Display Technology	Adreno 1075 DPU, On-device Display Resolution: FHD+ (1080x2520 pixels) 8L@120 fps, 1x DSI D-PHY (4-lane), DP 1.4 SST		On-device Display Resolution scalable via licensing to FHD+ @ 144Hz, FHD+ @ 120 fps
Camera ISP	Qualcomm Spectra™ 570L ISP, Dual Camera: 2x22 MP		Scalable via licensing to 3x22 MP
Video	Up to 4K60 decode for H.264/H.265/VP; Up to 4K30 encode for H.264/H.265; Support for HDR10 and HDR10+ playback		
Audio	Qualcomm® Noise and Echo Cancellation V10, Integrated low power VA (more keywords, Command First), Audio ML DSP: LPI, Shared 2MB, 1.4GHz		
Interfaces	USB Type-C 3.1, USB 2.0, UFS 2.x/3.1, eMMC5.1, SD3.0, 1x PCIe	with 2x PCIe	Scalable via licensing with 2x PCIe
Security Features	Hardware Key Manager & ECC, Secure boot, Crypto Engine, Secure key provisioning, Qualcomm TEE, Qualcomm® Content Protection (Widevine, Camera Security Framework, Secure User Interface)		
Cellular Modem RF (QCM5430)	400 MHz bandwidth (mmWave), 100 MHz bandwidth (sub-6 GHz)		
Location (QCM5430)	GPS, GLONASS, NavIC, BeiDou, Galileo, QZSS, and SBAS		

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