

Open-Q™ 8550CS μ SOM

Based on Qualcomm® Dragonwing™ QCS8550 System-on-Chip



Ideal for Advanced Video and AI Applications

The Open-Q™ 8550CS μ SOM is the compact SOM variant in Lantronix's Open-Q 8550 product series. Powered by Qualcomm's Dragonwing™ QCS8550, it delivers premium performance with 48 INT8 TOPs and 12 FP16 TOPs, meeting the advanced AI/ML requirements of extreme edge computing.

Its compact size and low power draw make it ideal for drone integration. For gimbal camera systems, it can operate without Wi-Fi or Ethernet at the hardware level, simplifying design and reducing weight.

With its cost-effectiveness, compact footprint, and broad support for AI models and multimodal capabilities including AI context sharing across camera, audio, and sensors, the Open-Q 8550CS μ SOM is a compelling choice for modern video surveillance and low-cost, compact video conferencing devices.

Lantronix offers TAA and NDAA compliant products with at least 10 years of longevity for the Open-Q 5430CS, Open-Q 6490CS, Open-Q 5165RB, Open-Q 8250CS, and Open-Q 8550CS with strict Bill-of-Material and quality control. Combined with over 20 years of hardware design and software development experience, and 1200+ successful projects, Lantronix will be your long-term partner, ensuring the ongoing success of your product journey.

Key Features

- Qualcomm® 8550 SoC
- Up to 12GB LPDDR5x RAM + 256GB UFS Flash
- Android™ 13 and Linux Yocto Kirkstone
- On-device AI Engine with Qualcomm Hexagon™ Tensor Processor (HTP)
- Dedicated Computer Vision Engine
- Multiple MIPI camera and display ports
- Multiple high speed connectivity options

Applications

- Industrial drone and gimbal camera systems
- Compact video collaboration devices
- Multi-camera and smart camera systems
- Retail
- Cloud Gaming
- Autonomous mobile robots

Engineering Services:

We provide a full solution – our unparalleled engineering expertise and product development skills deliver innovative products that are cost-effective and can jumpstart your Go-to-Market timeline.

Our business model offers turnkey product development services, or we can augment your team in specific areas of development. The choice is yours.

Key development expertise in:

- Camera development and tuning
- Voice control
- Machine learning
- Mechanical & RF design
- Thermal & power optimization

IoT product development made easy.



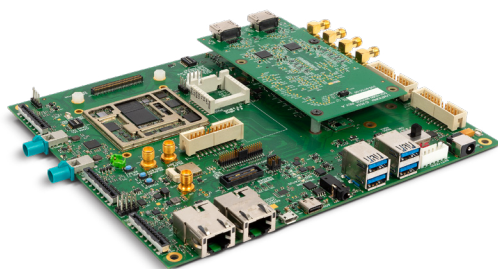
Hardware Specifications:

• Processors	Qualcomm® 8550CS SoC built on 4nm technology: Kryo™ Octa-core CPU: 1 Prime @ 3.2 GHz + 4 Gold @ 2.8 GHz + 3 Silver @ 2.0 GHz	
	Adreno™ 740 GPU Spectra™ Image signal processor Adreno™ 8550 video processing unit	Adreno™ 1295 display processing unit Dual eNPU V3, 4x HVX, HMX, 48 INT8, 12 FP16 TOPs Secure processing unit
• Memory/Storage	12GB LPDDR5x and 256GB UFS	
• Wireless	Supports external Wi-Fi and Bluetooth connectivity	
• Display Interfaces	Up to four concurrent displays. Up to QHD+ @ 144Hz on-device display, up to 4K@60 Hz external display 2x 4-lane MIPI DSI D-PHY 1.2 Support DisplayPort v1.4 on USB Type-C with USB3.1 Gen 2	
• Camera Interfaces	8x MIPI CSI D-PHY 1.2 or C-PHY 2.0 camera ports + CCI I2C control	Up to five concurrent cameras, 18bpp, 64 + 36 MP30, or 3x 36 MP30, or 1x 108 MP 30 fps ZSL, 3IFE + 2 IFE Lite, Always-on camera
• Video Performance	Decode	Video decode up to 4K240/8K60. Native decode support for H.265 Main 10, H.265 Main, H.264 High, VP9 profile 2
	Encode	Video encode up to 4K120/8K30. Native encode support for H.265 Main 10, H.265 Main, H.264 High
	Dec & Enc	Concurrent 4K60 Dec and 4K60 Enc
• Audio	Supports WCD938x high fidelity audio codec and WSA884x speaker amp on carrier board. Dedicated Hexagon™ audio DSP, SoundWire, MI2S, DMIC interfaces for audio devices on carrier board	
• High Speed Connectivity	1x PCIe Gen3 2-lane, 1xPCIe Gen4 2-lane 1x USB 3.1 Gen 2 with support for Type-C + DisplayPort v1.4	
• I/O Interfaces	2x SDC v 3.0, 1x SD, UART, I2C, I3C, SPI, configurable GPIOs, sensor I/O to Qualcomm Sensing Hub 3.0	
• Power/Battery	Power management and battery charging solution on SOM	
• Operating Environment	Input voltage: 3.7V nominal Operating Temperature: -25°C to +85°C	
• Form Factor	33 x 39 x 3.85 mm LGA SOM	

Software:

• OS Support	Android™ 13 and Linux Yocto Kirkstone
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* QCS8550 Chipset Performance, see SOM Release Notes for details on tested configurations and platforms.



Companion Development Kit, accessories
available separately

Purchasing Information:

QC8550-1AP-E0	Open-Q™ 8550CS μSOM (12GB/256GB)
Alternate SOM configurations available by special order (minimum order quantities apply) - e.g. different memory size, etc. Contact sales to discuss your specific needs today.	

Certifications

