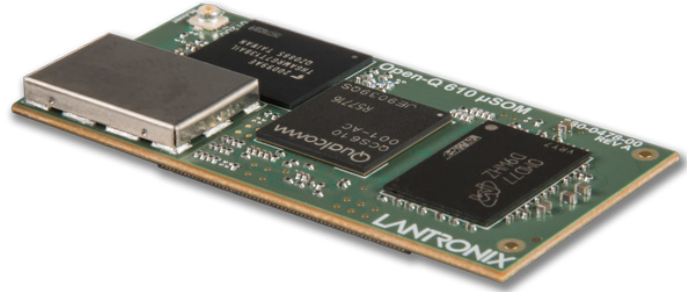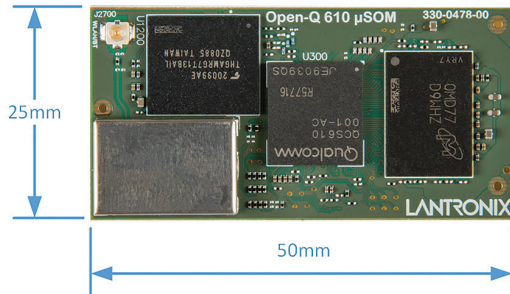# LANTRONIX®

Open-Q™ 610 µSOM (micro System on Module)
Based on the Qualcomm® QCS610 processor

Compact but Powerful

- Ideal for advanced visual intelligence applications; cost-effective high performance SOM solution with 4k30 encode/decode
- Improved camera, video, AI/ML software support and performance to power your latest AI camera product
- Available for Android 12 and Yocto Linux 5.4; product lifecycle extended to 2030

Lantronix's Open-Q™ 610 µSOM stands out as an optimal solution for cutting-edge visual intelligence applications, offering a cost-effective yet high-performance System-on-Module (SOM) with 4k30 encode/decode capabilities.

With an advanced Qualcomm QCS610 SoC and a built-in Neural Processing Engine, this ultra-compact (50mm x 25mm) SOM is tailored for on-device edge AI applications. Specifically designed for connected visual intelligence applications, the 610 µSOM incorporates sophisticated image sensor processing features such as

- Staggered HDR
- Lens de-warp
- Dual-camera stitching
- Image de-fog

With improved camera, video, AI/ML software support, and performance enhancements, it serves as the ideal platform to power your latest AI camera product. The SOM is available with Android 12 and Yocto Dunfell 5.4, with a product lifecycle extended to 2030 as part of Qualcomm's product longevity program.

Supported by Qualcomm optimizations, GStreamer audio/video framework, and AI capabilities for TensorFlow Lite and Qualcomm SNPE, the 610 µSOM comes with a full-featured development kit, facilitating seamless evaluation and Proof of Concept (POC) development for both Android and Linux models.

Key Features

- SoC 11nm technology for high performance with low power
- On-device artificial intelligence & machine learning
- Native Ethernet interface for reliable high-speed connectivity
- Three camera ports for multi-camera systems
- Yocto Linux or Android 12 with connected camera SDK
- RTSP streaming support with GStreamer
- Multiple options for AI inference engines

Applications

- AI connected cameras
- Video conference systems
- Edge AI computing platforms
- 360-degree pano cameras
- Companion robots
- Dash cameras
- Machine vision platforms

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.

Qualcomm

LANTRONIX®

Lantronix Open-Q™ 610 µSOM

Hardware Specifications:

• **Processors**	Qualcomm® QCS610:
	  Qualcomm® Kryo™ 460 CPU: 2 Kryo Gold 2.2 GHz cores + 6 Kryo Silver low-power 1.8GHz cores
	  Qualcomm® Hexagon™ Compute DSP with Hexagon Vector eXtensions (HVX)
	  Qualcomm® Adreno™ 612 GPU @ 845 MHz, with OpenGL ES 3.2, Vulkan® 1.1, OpenCL 2.0

• **Memory/Storage**	Non-PoP Memory: 4GB LPDDR4X SDRAM, 64GB eMMC Flash Storage
• **Wireless**	Wi-Fi 802.11a/b/g/n/ac 2.4/5Ghz (WCN3980) + Bluetooth 5.x
• **Display Interfaces**	1x 4-lane MIPI DSI D-PHY 1.2, up to 1920 x 1080p at 60 fps DisplayPort v1.4 on USB Type-C or separate DisplayPort connector

• **Camera Interfaces**	3x 4-lane MIPI CSI	Qualcomm® Spectra™ 230 Image Signal Processor
• **Video Performance**	Encode: 4K30 8-bit HEVC	Decode: 4K30 10-bit: HEVC/VP9

• **Audio Interfaces**	Supports Qualcomm® WCD9340 advanced audio codec on carrier board SLIMBus, SoundWire, and MI2S interfaces for a variety of audio solutions
• **I/O Interfaces**	2 USB ports: 1x USB3.1 with support for Type-C + DisplayPort v1.4 + 1x USB2.0 Ethernet RGMII interface, 4-bit SD 3.0, UART, I2C, SPI, configurable GPIOs
• **Sensor Core Interface**	SPI, I2C, GPIO connections to sensor core DSP
• **Power/Battery Management**	Power management and battery charging solution on SOM Qualcomm® PM6150 + PM6150L
• **Operating Environment**	Input voltage: 3.7V nominal Operating Temperature: -25°C to +85°C Tc (component case temperature)
• **Form Factor**	50mm x 25mm with 1x 120-pin + 2x 100-pin board to board connectors

Software:

• **OS Support**	Linux Yocto Dunfell, v5.4 Android 12
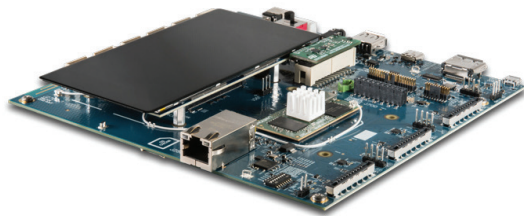
Companion Development Kit available separately

Purchasing Information:

Open-Q 610 µSOM (4+64GB, Android 12)	P/N: QC-DB-V10004B
Open-Q 610 µSOM (4+64GB, Yocto Dunfell)	P/N: QC-DB-V10004A
Open-Q 610 Dev Kit (Android 12)	P/N: QC-DB-V10003A
Open-Q 610 Dev Kit (Yocto Dunfell 5.4)	P/N: QC-DB-V10003B

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: americas_sales@lantronix.com

Planned Certifications

Learn more at lantronix.com/open-q-610-som

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