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

Compact but Powerful
• Ideal for advanced visual intelligence applications
• It has the smarts and connectivity to power your latest AI camera product
• Ultra-compact size and excellent price-performance ratio

Lantronix’s Open-Q™ 610 µSOM is an ultra-compact (50mm x 25mm) production-ready SOM based on the advanced Qualcomm QCS610 SoC, with built-in Neural Processing Engine for on-device edge AI capabilities. Aimed at connected visual intelligence applications, with advanced built-in image sensor processing such as:
  • Staggered HDR, lens de-warp
  • Dual camera stitching
  • Image de-fog

The 610 µSOM is the ideal platform for your next smart camera product. Available with a full-featured development kit for ease of evaluation and POC development, the platform is supported by a Yocto Linux SDK with Qualcomm optimizations, GStreamer audio/video framework, and AI support for TensorFlow Lite and Qualcomm SNPE.

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 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
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: 2GB LPDDR4X SDRAM, 16GB 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 OS based on Yocto Thud, kernel v4.14, Android 10 coming later
  - Note that all hardware features may not be supported by all SW

Purchasing Information:

- **Open-Q 610 µSOM**
  P/N: QC-DB-V10004P

- **Open-Q 610 Dev Kit**
  P/N: QC-DB-V10003

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: [IES-Sales@Lantronix.com](mailto:IES-Sales@Lantronix.com)

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