Lantronix’s Open-Q™ 820 μSOM is our best combination of power and performance in an ultra-compact, production ready, pre-certified SOM. The 820 μSOM features advanced technology and an extensive peripheral set, providing the ideal platform for creating high performance embedded, IoT and mobile devices. Despite its ultra-small size, the SOM offers seamless connectivity to external memory, sensors and a host of other peripheral devices via a comprehensive list of configurable IO. Leverage our best power—performance combination in a class leading form factor with support for a variety of Android™ and Linux® releases to fast track your product development.

Lantronix® also offers a supporting development kit for the 820 μSOM to allow easy evaluation of the SOM and to fast-track new product development.

**Key Features**
- Qualcomm® APQ8096 SoC
- 3GB LPDDR4 and 32GB UFS
- FCC/IC Pre-certified Wi-Fi/BT Module
- Qualcomm® IZat™ Gen 8C GNSS location solution
- Battery Charging support
- Ultra-compact 50mm x 25mm
- Android™ 9, Debian Linux®

**Applications**
- Wearable cam / Action cam / 360 degree cam
- Smart home / IP cam / Security cam
- Industrial machine vision camera
- Stereo-vision camera
- Retail analytics camera
- Robotics / drones

**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:

## Open-Q™ 820 μSOM

**Processor**
- Qualcomm® APQ8096 built on 14nm technology
- Qualcomm® Kryo™ Quad-Core, 64-bit 2.15GHz
- Qualcomm® Adreno™ 530 GPU OpenGL ES 3.1, OpenCL 2.0 Full, DirectX 11, Path Rendering
- Qualcomm® Hexagon™ 680 DSP

**Memory/Storage**
- 3GB LPDDR4 RAM (1866MHz)
- 32GB UFS 2.0 Flash 1-lane, gear 3

**Wireless**
- Pre-certified Wi-Fi 802.11a/b/g/n/ac 2.4/5GHz 2x2 MU-MIMO (QCA6174A) with U.FL antenna connector
- Bluetooth 4.2 + BLE

**Location Services**
- Qualcomm® IZat™ Gen 8C—GPS, GLONASS, Compass (WGR7640) with U.FL antenna connector

**LCD/Touchscreen Interface**
- 2x MIPI-DSI 4-lane, up to 4K Ultra HD 60fps
- 1x HDMI 2.0 up to 4K @ 60fps

**Camera Interface**
- Qualcomm® Spectra™ ISP
  - Up to 28MP with 3x 4-lane MIPI CSI and dual ISPs

**Video**
- Video Capture up to 4K Ultra HD at 30fps
- Video Playback 4K Ultra HD
- H.264 (AVC) and H.265 (HEVC)

**Audio**
- 1x SLIMbus and 2x 12S, or 3x 12S
- Qualcomm® Fluence™ HD with Noise Cancellation (optional)

**Power/Battery Management**
- Power management and battery charging (PMI8996)

**I/O**
- 1x USB 3.0 client or host, 1x USB 2.0 client or host, 2x PCIe v2.1, 8x BLSP configurable ports (I2C, SPI, UART or GPIO), 1x SDIO, LED driver outputs

**Operating Environment**
- Input 3.6V to 4.2V
- Operating Temperature -10°C to +70°C
- 3x 100 pin board to board connector
- 50mm x 25mm

### Software:

**OS Support**
- Android™ 9, Android™ 8, Android™ 7, Debian Linux

*Note that all hardware features may not be supported by all SW versions — see latest SW release notes for details*

## Purchasing Information:

**Open-Q™ 820 μSOM**

PN: QC-DB-I10004

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.

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