

# Open-Q™ 845 μSOM (micro System on Module)

Based on the Qualcomm® Snapdragon™ SDA845 processor

Intrinsyc's Open-Q™ 845 μSOM is an ultra-compact (50mm x 25mm) production-ready SOM based on the powerful Qualcomm® Snapdragon™ SDA845 SoC, their latest and most powerful IoT chipset. With the 3rd-Gen Qualcomm® AI Platform, Spectra™ ISP, Kryo™ Octa-core CPU, Hexagon™ DSP, and a new dedicated secure processor, the 845 μSOM is ideal for powering the most advanced robotics, drones, cameras, and embedded IoT devices. In addition to the 845's impressive processing capabilities and on-device AI powers, it also includes new and improved I/O interfaces compared to previous Snapdragon™ generations — four camera ports, two USB3.1 ports (including 4K60 DisplayPort + concurrent SS data), and a Gen3 PCIe interface.

This powerful new hardware platform will be supported by your choice of full-featured Android or flexible Yocto Linux software.

## Key Features

- Qualcomm® Snapdragon™ SDA845 processor
- Built on 2nd-Gen 10nm LPP technology
- 4GB or 6GB LPDDR4X + 32GB or 64GB UFS
- 4 MIPI CSI camera ports
- Vault-like security features built-in
- 802.11ac 2x2 MU-MIMO Wi-Fi / BT 5.x
- Ultra-compact 50mm x 25mm

## Applications

- VR/XR platforms with 6DoF and SLAM
- Robotics and Drone products
- Premium camera platforms with cinema-grade video
- On-device artificial intelligence & machine learning
- Advanced graphics and 3D gaming
- Multi-camera systems
- Machine vision platforms



## Hardware Specifications

<b>Processors</b>	Qualcomm® Snapdragon™ SDA845 built on 2nd-Gen 10nm technology: Qualcomm® Kryo™ 385 CPU: 4 Kryo Gold 2.649GHz cores + 4 Kryo Silver low-power 1.766GHz cores Qualcomm® Hexagon™ 685 DSP with Hexagon Vector eXTensions (dual-HVX512) Qualcomm® Adreno™ 630 GPU with OpenGL RD 3.2 + AEP, DX next, Vulkan 2, OpenCL 2.0 full profile	
<b>Memory/Storage</b>	4GB or 6GB dual-channel high-speed LPDDR4X SDRAM at 1866MHz + 32GB or 64GB UFS Flash Storage	
<b>Wireless</b>	Wi-Fi 802.11a/b/g/n/ac 2.4/5Ghz 2x2 MU-MIMO (WCN3990) with 5 GHz external PA & U.FL antenna connector Bluetooth 5.x	
<b>Display Interfaces</b>	2x 4-lane MIPI DSI D-PHY 1.2, up to 3840 × 2400 10-bit 60 fps VESA DisplayPort v1.4 on USB Type-C, up to 4K60 with USB data concurrency	
<b>Camera Interfaces</b>	3x 4-lane MIPI CSI + 1x 2-lane MIPI CSI	Qualcomm® Spectra™ 280 ISP: 16 +16 + 2 MP sensor resolution 32MP 30fps ZSL with dual ISP; 16 MP 30 ZSL with a single ISP
<b>Video Performance</b>	Encode: 4K60 for H.264/H.265, 4K30 for VP8 Support for HDR 10-bit capture (HLG)	Decode: 4K60 H.264/H.265/VP9 Support for HDR 10-bit video playback (HLG, HDR10)
<b>Audio Interfaces</b>	Dedicated audio DSP integrated with support for external WCD9340 codec and WSA8810/WSA8815 speaker amps 1x SLIMBus interface for external Qualcomm® Codecs 1x 4-lane MI2S interface + 2x 2-lane MI2S interfaces (muxed with SLIMBus) for other external audio devices	
<b>I/O Interfaces</b>	2 USB ports: 1x USB3.1 with support for Type-C + DisplayPort v1.4 with USB data concurrency, 1x USB 3.1 1x PCIe Gen3 1-lane, 4-bit SD 3.0, UART, I2C, SPI, configurable GPIOs	
<b>Sensor Core Interface</b>	SPI, I2C, GPIO connections to sensor core DSP	
<b>Power/Battery Management</b>	Power management and battery charging solution on SOM Qualcomm® PM845 + PM8998 + PM8005	
<b>Operating Environment</b>	Input voltage: 3.5V to 4.7V Operating Temperature: -25°C to +85°C Tc (based on component case temperature specifications)	
<b>Form Factor</b>	50mm x 25mm with 3x 100 pin board to board connectors	

## Software

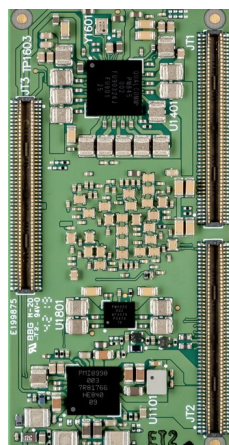
<b>OS Support</b>	Android™ 9 Pie based on kernel v4.9, Linux OS based on Yocto Rocko, kernel v4.9 Note that all hardware features may not be supported by all SW — see latest SW release notes for details.
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## Purchasing Information

<b>Open-Q 845 μSOM 4GB DDR + 32GB UFS</b>	Part number: QC-DB-P10004
<b>Open-Q 845 μSOM 6GB DDR + 64GB UFS</b>	Part number: QC-DB-P10004B

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: [sales@intrinsic.com](mailto:sales@intrinsic.com)

## Planned Certifications



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