25mm
50mm
Open-Q 845 µSOM
(SDA845)
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PN: 362-0100

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

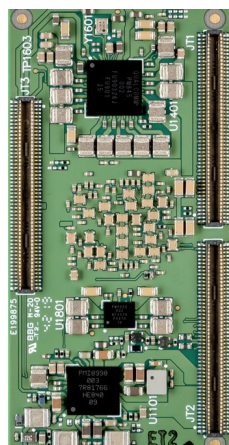|	
Processors	Qualcomm® Snapdragon™ SDA845 built on 2nd-Gen 10nm technology: Qualcomm® Kryo™ 385 CPU: 4 Kryo Gold 2.649GHz cores + 4 Kryo Silver low-power 1.766GHz cores Qualcomm® Hexagon™ 685 DSP with Hexagon Vector eXtensions (dual-HVX512) Qualcomm® Adreno™ 630 GPU with OpenGL RD 3.2 + AEP, DX next, Vulkan 2, OpenCL 2.0 full profile
Memory/Storage	4GB or 6GB dual-channel high-speed LPDDR4X SDRAM at 1866MHz + 32GB or 64GB UFS Flash Storage
Wireless	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
Display Interfaces	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
Camera Interfaces	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
Video Performance	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)
Audio Interfaces	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
I/O Interfaces	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
Sensor Core Interface	SPI, I2C, GPIO connections to sensor core DSP
Power/Battery Management	Power management and battery charging solution on SOM Qualcomm® PM845 + PM8998 + PM8005
Operating Environment	Input voltage: 3.5V to 4.7V Operating Temperature: -25°C to +85°C Tc (based on component case temperature specifications)
Form Factor	50mm x 25mm with 3x 100 pin board to board connectors

Software

OS Support	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.

Purchasing Information

Open-Q 845 µSOM **4GB DDR + 32GB UFS**	Part number: QC-DB-P10004
Open-Q 845 µSOM **6GB DDR + 64GB UFS**	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@intrinsyc.com

Planned Certifications

Datasheet: Open-Q 845 µSOM v1.0