Penguin Edge™ IFC67X1

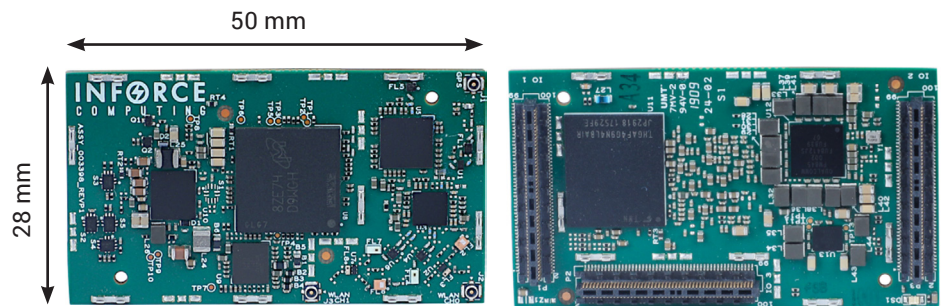## Micro SoM based on the Qualcomm® Snapdragon™ 845 Processor

- Higher performance with Qualcomm Kryo 385 CPU with independent efficiency and power clusters, each designed to optimize for a unique UX
- Hexagon 685 DSP and Adreno 630 GPU featuring room-scale 6DoF with SLAM, to support on-device AI and efficient rendering of advanced 3D graphics
- Dual 14-bit Spectra 280 ISPs support up to 16MP for simultaneous concurrent cameras
- Qualcomm content protection framework; secure boot; storage and debug security
- Extended lifecycle; OEM engagement options for build-to-order and custom variants
- Production-ready with volume-conscious pricing
- Dedicated technical support from TechWeb

A compact compute module featuring on-device AI and immersion for embedded applications

The Penguin Edge™ IFC67X1 Micro SoM is a small compute module that integrates Qualcomm Kryo 385 CPU, Adreno 630 GPU, Hexagon 685 DSP, Spectra 280 camera ISP and Qualcomm's 3rd generation AI-Engine. This enables optimized AI performance for a more responsive, power-efficient user-experience and capture of cinema-grade videos in UHD @ 60fps resolution.

These components, coupled with 2x2 802.11ac Wi-Fi, BT 5.x, a full featured USB-C interface with UHD display capability and high fidelity audio make IFC67X1 Micro SoM a perfect fit for applications that necessitate on-device AI and immersive multimedia experiences. Optional SKUs support extended operating temperature range and EMI shielding for better RF noise protection, while also doubling up as a medium for heat spreading and dissipation to further improve performance.
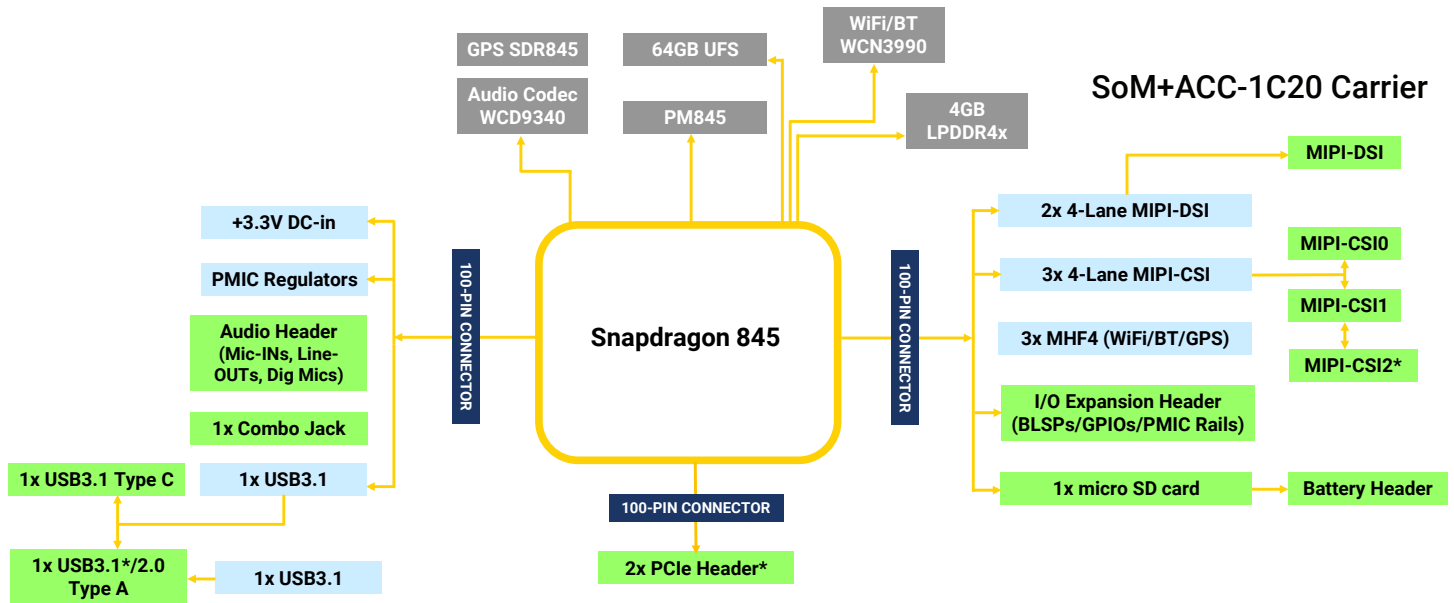

Embedded AI/ML   Smart Cameras   Medical Imaging   Wearable   Digital Signage

SoM+ACC-1C20 Carrier

Diagram labels:
- GPS SDR845
- Audio Codec WCD9340
- 64GB UFS
- PM845
- WiFi/BT WCN3990
- 4GB LPDDR4x
- +3.3V DC-in
- PMIC Regulators
- Audio Header (Mic-INs, Line-OUTs, Dig Mics)
- 1x Combo Jack
- 1x USB3.1 Type C
- 1x USB3.1
- 1x USB3.1*/2.0 Type A
- 1x USB3.1
- 100-PIN CONNECTOR
- Snapdragon 845
- 100-PIN CONNECTOR
- 100-PIN CONNECTOR
- 2x PCIe Header*
- 2x 4-Lane MIPI-DSI
- 3x 4-Lane MIPI-CSI
- 3x MHF4 (WiFi/BT/GPS)
- I/O Expansion Header (BLSPs/GPIOs/PMIC Rails)
- 1x micro SD card
- MIPI-DSI
- MIPI-CSI0
- MIPI-CSI1
- MIPI-CSI2*
- Battery Header

Features available on IFC67A1 SKU only.

Processors

▸ Custom 64-bit Kryo Octocore ARM V-8 compliant

▸ CPU (SDA845 SoC) @ 2.8/1.8GHz each

▸ Qualcomm Adreno 630 GPU with support for

▸ OpenGL ES 3.2, Vulkan 2 and OpenCL

▸ Qualcomm Hexagon 685 DSP with dual-HVX512 for ultra low-power audio processing

Storage, Multimedia, and Connectivity

▸ 4GB LPDDR4 RAM/64GB UFS

▸ SD V3.0 µSD card interface

▸ 2x USB 3.1 interfaces off which one is USB-C (USB 3.1/ Gen1)

▸ DP Alternate Mode on USB-C for 4K-DCI @ 24fps display

▸ Concurrent 4K60 10b encode + 4K60 10b decode

▸ Dual 4-lane MIPI-CSI lines for HEVC capture @ 4K60

▸ 802.11n/ac MU-MIMO WiFi and BT/LE 5.x via WCN3990

▸ 1x 1-lane PCIe Gen 2 and 1x 1-lane PCIe Gen 3

Software

▸ Android 10 BSP pre-loaded with Hexagon/SNPE/OpenCV SDKs enabled

▸ Debian Linux BSP

Power, Mechanical, and Environmental

▸ **Power:** +3.8V/6A Input

▸ **Operating Temp:** Commercial grade

▸ **Relative Humidity:** 5 to 95% non-condensing

▸ **Compliance:** RoHS and WEEE

▸ **Certification:** FCC, CE and Japan