PENGUIN™ SOLUTIONS

Penguin Edge™ IFC6503

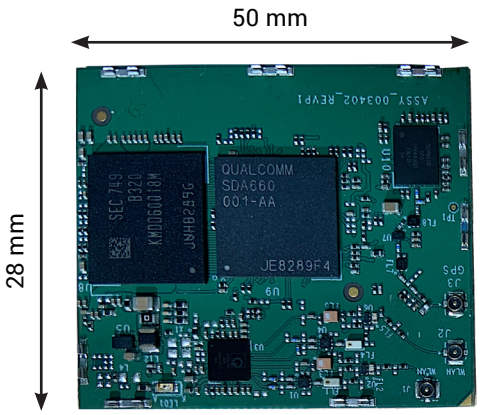
Nano SoM based on the Qualcomm® Snapdragon™ 660 Processor

- Higher performance with Qualcomm Kryo 260 CPU with independent efficiency and power clusters, each designed to optimize for a unique UX
- Vector eXtensions (HVX) on Hexagon 680 DSP and Adreno 512 GPU, to support machine learning and efficient rendering of advanced 3D graphics
- Dual 14-bit Spectra 160 ISPs support up to 16MP for simultaneous concurrent cameras
- 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 in an LGA package for rugged embedded applications

The Penguin Edge™ IFC6503 Nano SoM is a compact compute module in an LGA package that integrates Qualcomm Kryo 260 CPU, Adreno 512 GPU, Hexagon 680 DSP and the Spectra 160 camera ISP to enable advanced visual computing, enhanced graphics and on-device machine learning capabilities.

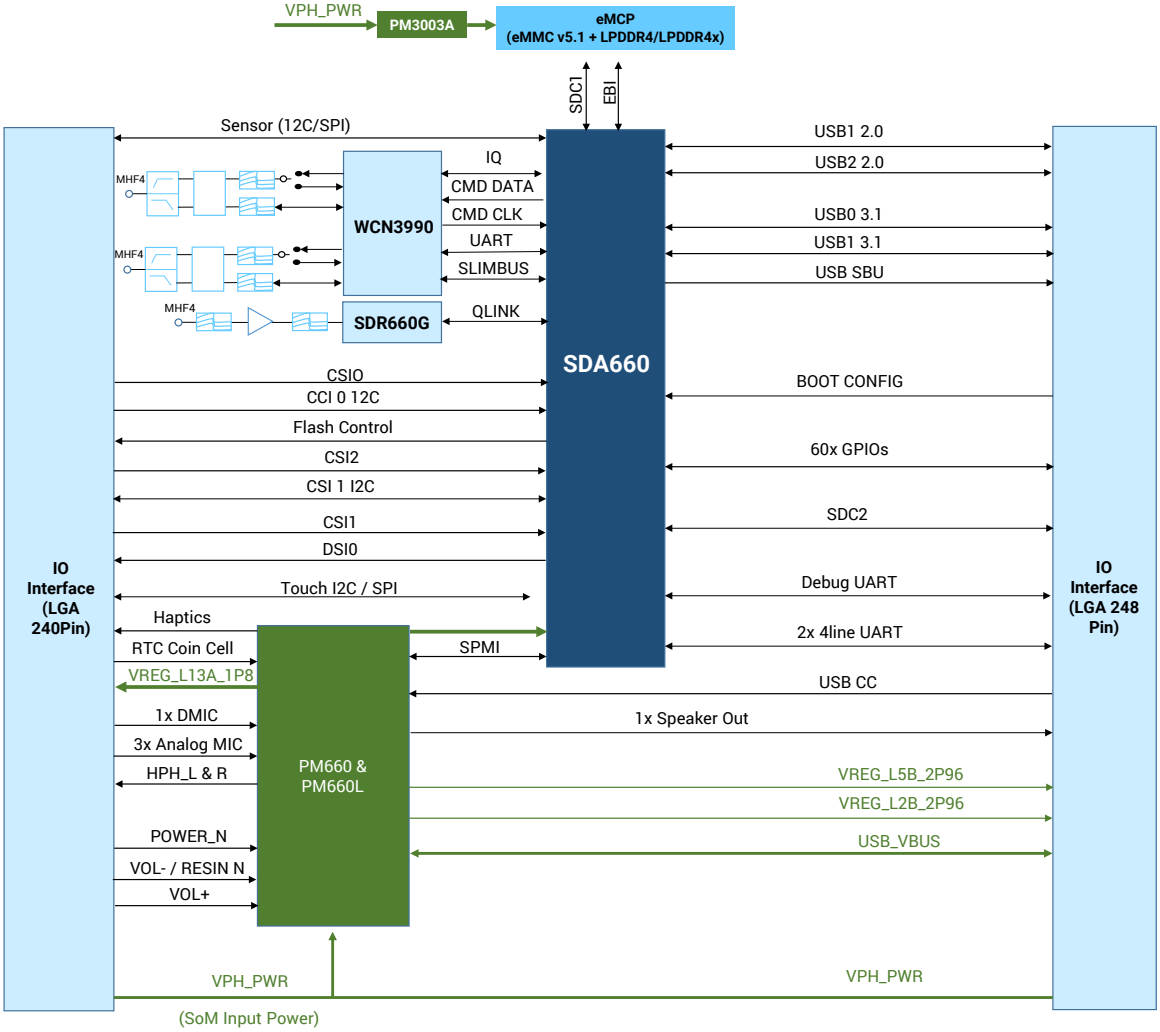
These components, coupled with 2x2 802.11ac Wi-Fi, Bluetooth 5.x, haptics and a full featured USB-C interface with UltraHD display capability, make the IFC6503 Nano SoM a perfect fit for rugged applications that obligate sturdy mechanical fitment and need low vertical profiles. Optional SKUs support 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 improve performance.



Embedded AI/ML | Smart Cameras | Medical Imaging | Wearable

Qualcomm

PENGUIN™ EDGE



Processors

- Custom 64-bit Kryo Octocore ARM V-8 compliant CPU (SDA660 SoC) @ 2.2/1.8GHz each
- Qualcomm Adreno 512 GPU with support for OpenGL ES 3.2, Vulkan and OpenCL
- Qualcomm Hexagon 680 DSP with dual-HVX512 @ 787MHz for ultra low-power audio processing

Storage, Multimedia, and Connectivity

- 3GB LPDDR4 RAM/32GB eMMC (eMCP); SD V3 µSD card
- 1x USB-C (USB 3.1/Gen2) and 1x USB 2.0 interfaces
- DP Alternate Mode on USB-C for 4K-DCI @ 24fps display
- Dual 4-lane MIPI-DSI lines with Full HD+ display capability
- Dual 4-lane MIPI-CSI lines for capture @ 4K30
- 802.11n/ac MU-MIMO WiFi and BT/LE 5.x via WCN3990

Software

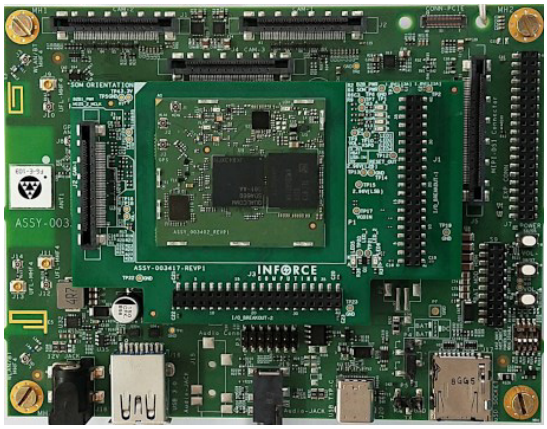
- Android 8+ BSP pre-loaded wth Hexagon/SNPE/OpenCV SDKs enabled

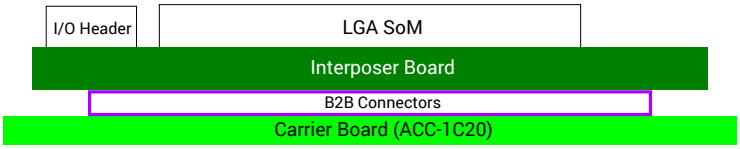
Power, Mechanical, and Environmental

- **Power:** +3.8V/6A Input
- **Operating Temp:** Commercial temperatures
- **Relative Humidity:** 5 to 95% non-condensing
- **Compliance:** RoHS and WEEE

Penguin Edge™ IFC6503 Nano SoM based Reference Design

ACC-1C20 - A small but complete carrier that brings out all native interfaces of SDA660 processor and includes a mezzanine card to which the LGA SoM is soldered. This card connects to the carrier through standard 100-pin board-to-board (B2B) connectors common to Penguin Edge SoMs.





Ordering Information	
Part Number	**Description**
IFC6503-00-P1	Micro SoM (Android Oreo OS); Commercial temp support (0°C to 70°C)
SYS6503-00-P1	IFC6503-00-P1 SoM based Reference Design

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About Penguin Solutions

Penguin Solutions accelerates customers' digital transformation with the power of emerging technologies in HPC, AI, and IoT with solutions and services that span the continuum of edge, core, and cloud. The company designs highly advanced infrastructure, machines and networked systems that enable the world's most innovative enterprises and government institutions to build the autonomous future, drive discovery and amplify human potential. The Penguin Edge portfolio covers system on modules, single board computers and application-ready platforms that extend insight, intelligence, and analytical capabilities closer to where the data is generated - optimizing a range of use cases across industries and rugged environments.

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