

# 820 Nano SOM

## OVERVIEW

The 820 Nano SOM from Mistral is an easy to use, ultra-compact, light-weight System on Module providing very high processing power. The SOM is based on Qualcomm Snapdragon 820 and is ideal for advanced, next-gen embedded applications. With a PCB size of just 51mm x 26mm, this is one of the smallest Snapdragon based SOMs available in the market currently.

Equipped with powerful specifications and features, the 820 Nano SOM is ideal for designs requiring 4K Ultra HD HEVC (H.265) video and graphics processing, wireless connectivity, low power consumption and advanced processing power. The feature-rich 820 Nano SOM supports latest features like Type-C functionality, 4K Encode/Decode and integrated 9-axis MEMS on a very small footprint, making it ideal for several powerful applications.

Based on a complete "System on Module" architecture, the 820 Nano SOM consists of the 64-bit quad-core Qualcomm® Kryo™ CPU, 2.2GHz capable of 4K Encode/Decode, 3/4GB LPDDR4, 32/64GB UFS and with major interfaces available via inter-board connectors. Application Development on the 820 Nano SOM is enabled with Android and Embedded Linux through a feature-rich carrier board that enables prototyping in record time. Optional Adaptor boards like LCD, Camera, Sensors and Battery Charger are also available for increased scope of development around the 820 Nano SOM.

The 820 Nano SOM is ideal for designing products like wearable computers, camera solutions, media gateways, Infotainment, drones, assistive devices and other smart gadgets requiring small package and high processing power.

## FEATURES

- ▶ Qualcomm's 2.2GHz Qualcomm® Kryo™ CPU quad core processor
- ▶ 3/4GB LPDDR4 RAM
- ▶ 32/64GB UFS
- ▶ Type-C Functionality
- ▶ 4K Encode/Decode
- ▶ On-board 9-axis MEMS
- ▶ Scalable power management
- ▶ Multiple Connectivity Solutions
- ▶ Board-to-board Expansion connector
- ▶ Linux and Android Nougat support



## SPECIFICATIONS

### Snapdragon 820 (APQ8096)

- ▶ Quad-core Kryo™ 2.2 Ghz 64-bit CPU
- ▶ Adreno 530 GPU
- ▶ Hexagon 680 DSP
- ▶ Spectra ISP

### PMIC

- ▶ PMI8996
- ▶ PM8996

### Memory

- ▶ 3/4GB LPDDR4 RAM POP @ 1866 MHz

### Storage

- ▶ 32/64 GB UFS 2.0

### Wireless

- ▶ Wi-Fi 802.11a/b/g/n/ac 2.4/5.0 GHz 2x2 MU-MIMO
- ▶ Bluetooth 4.2
- ▶ Wireless interface terminated in RF connector
- ▶ GPS - Qualcomm IZat™ Gen 8C

### Audio CODEC

- ▶ WCD9335

### Display

- ▶ Display Port (DP) over Type-C
- ▶ 1x HDMI 2.0 up to 4096x2160, 60fps
- ▶ 2x MIPI-DSI 4-lane, 60fps, up to 2560x1600 (single port), 4096x2160 (dual port)

### Camera

- ▶ 3x MIPI-CSI 4-lane, dual ISP, up to 28MP

### PCIe

- ▶ 2x PCIe v2.1

### 9-Axis MEMS Sensor

### USB

- ▶ 1x USB 3.0 OTG
- ▶ 1x USB 2.0 host

### SD

- ▶ 1x 4Bit SDIO

## Audio

- 3x Analog MIC, 2x Digital MIC
- 1x Headphone out, 2x Analog Line Out
- 1x PDM, 1x I2S

## Configurable Serial Ports

- 6x port configurable as I2C, SPI, UART or GPIO

## Operating Environment

- Input Power – 3.5V to 4.2V
- Operating Temperature 0°C to +70°C (Commercial)
- Dimension 51mm x 26mm

## RoHS, REACH and WEEE compliant

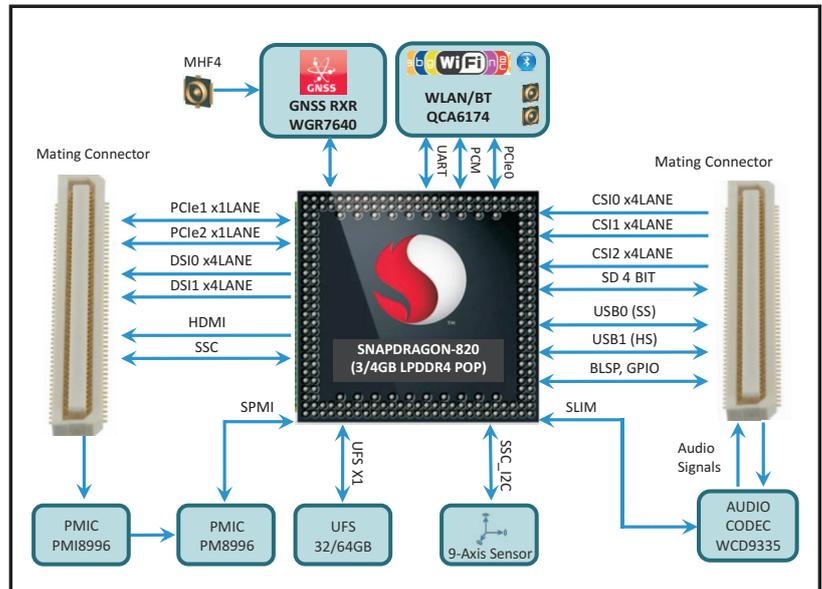
## SOFTWARE

- Android Nougat
- 4K Media Encode/Decode (H.265 HEVC)
- Wireless Display
- Yocto Linux 2.0
- Demo Apps and Test Suites

## APPLICATIONS

- Wearable Electronics
- Camera Solutions
- Assistive Electronics
- Home Media Gateways
- Drones
- Infotainment

## BLOCK DIAGRAM



## DELIVERABLES

- 820 Nano SOM Board
- Quick Start Guide
- Software Package and Documentation (Online)

## ORDERING

For ordering information please email us at [sales@mistralsolutions.com](mailto:sales@mistralsolutions.com) or call +1-408-705-2240 for USA and +91-80-3091-2600 for rest of the world.

## ABOUT MISTRAL

Mistral is a technology design and systems engineering company providing end-to-end solutions for product design and application deployment. Mistral focuses in two business domains: Product Engineering Services and Defense & Homeland Security.

Mistral provides total solutions for a given requirement, which may include hardware board design, embedded software

development, FPGA design, systems integration and customized turnkey solutions.

Mistral's strategic partnerships with leading technology companies help provide customers with a comprehensive package of end-to-end solutions.



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