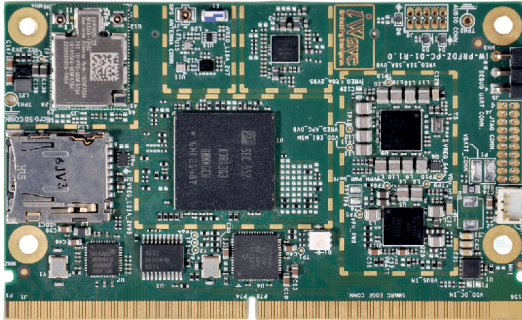# Snapdragon 820 System on Module

The Snapdragon 820 SMARC System On Module integrates Qualcomm's APQ8096 SOC offering 64-bit Quad Kryo CPU, H.265 hardware decode & encode, Adreno 530 GPU with on board 802.11ac Wi-Fi, BT4.1 and the GPS. The Snapdragon 820 SOM module is intended for high end embedded computing applications which require high processing power, graphics and multimedia capabilities such as Augmented & Virtual Reality, 4K Digital signage, Media streaming, Connected home & entertainment, High end wearables, Drones, Secure POS, Video analytics to name a few.

APPLICATIONS: Augmented & Virtual Reality, 4K Digital Signage, Media streaming, Connected home & entertainment, High end wearables, Drones, Secure POS, Video analytics.

iW-RainboW-G25M HIGHLIGHTS

64-bit Quad Kryo Snapdragon 820 CPU

- Dual Kryo cores Gold cluster @ (2.15 GHz)

- Dual Kryo cores Silver cluster @ (1.6 Ghz)

Adreno 530 3D Graphics @ 624MHz

H.265 4K60 decode, 4K30 encode

Hexagon 680 DSP @ 825MHz

14-bit Qualcomm Spectra ISP

802.11ac Wi-Fi & BT 4.1

Qualcomm IZat Gen8C GPS

SMARC R2.0 compatible

SPECIFICATIONS

SOC: Qualcomm APQ8096
64-bit Quad Kryo core
Adreno 530 3D Graphics @ 624MHz
H.265 4K60 decode, 4K30 encode
Qualcomm Hexagon DSP
Memory:
3GB LPDDR4
32GB eMMC or optional UFS Flash
Micro SD Slot
Communication:
PCIe to Gigabit Ethernet + PHY
USB3.0 HUB
Wi-Fi+ BT, GPS
Power Supply:
5V through SOM edge connector
Temperature support :
0°C to 70°C
Form Factor: 82mm x 50mm
SMARC R2.0 compatible

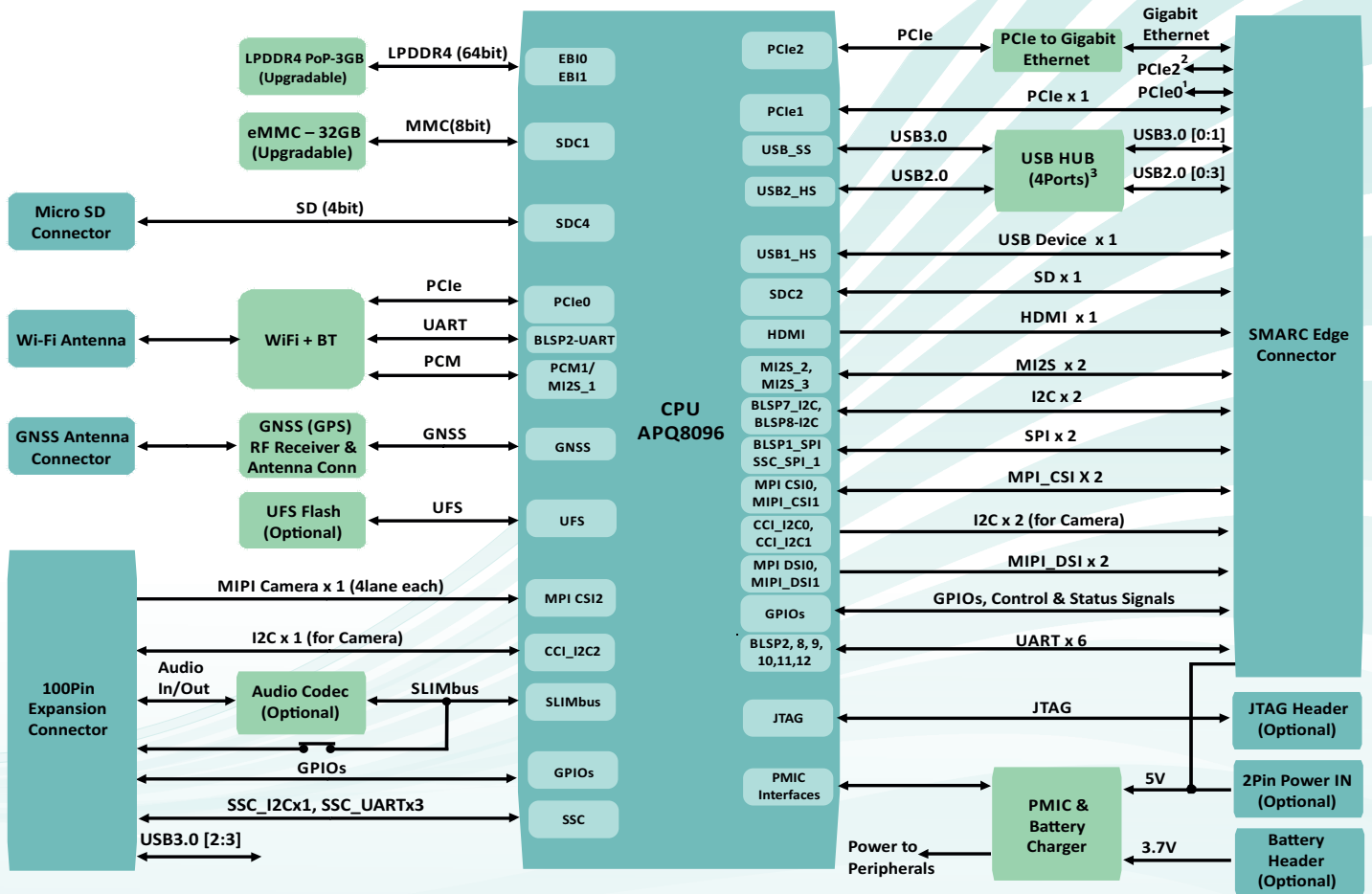| SMARC Edge Connector Interfaces: |
| --- |
| Gigabit Ethernet x 1 Port |
| PCIe x 1 Port |
| HDMI2.0 x 1 Port |
| USB3.0 host x 2 Ports* |
| USB2.0 host x 2 Ports |
| USB2.0 device x 1 Port |
| MIPI CSI0 x 2 lanes |
| MIPI CSI1 x 4 lanes |
| MIPI DSI x 2 port (4 lanes each) |
| SD (4bit) x 1 Port |
| UART x 6 Ports |
| MI2S x 1 Port |
| SPI x 2 Ports, I2C x 2 Ports |
| RTC & GPIOs |
| **Expansion Connector interfaces:** |
| MIPI CSI x 1 Port (4 lanes) |
| I2C x 1 Port, GPIOs, SLIM bus |
| **OS Support:** Android Marshmallow or Higher, Linux** |

*Note: *USB3.0 host ports can be used as USB2.0 host ports.*
**Optional features are not supported by default

Snapdragon 820 SOM - BLOCK DIAGRAM

Note1: If On-SOM WIFI+BT is used, PCIe0 cannot be used on SMARC Edge
Note2: If On-SOM Ethernet PHY is used, PCIe2 cannot be used on SMARC Edge
Note3: Four port/Two Port Hub can be supported

OS SUPPORT

Android Marshmallow
or Higher, Linux*

DELIVERABLES

Snapdragon 820 SOM
Board Support Package
User Manual

OPTIONAL KITS/Modules

SD820 SMARC Development Kit
5.5" Cap touch Display
Heat Sink
Camera Module

CUSTOM DEVELOPMENT

BSP Development/OS Porting
Custom SOM/Carrier Development
Custom Application/GUI Development
Design Review and Support

iWave Systems Technologies, established in 1999, focuses on Product Engineering Services involving Embedded Hardware, Software & FPGA. The company designs and develops cutting edge products and solutions. iWave has been an innovator in the development of highly integrated, high performance, low power and low cost System On Modules and Development Platforms. iWave's expertise has brought out multiple SOMs based on ARM NXP, Intel Atom, Marvell and TI Processors.

iWave System has won the confidence of its customers over the years by being a reliable partner in developing innovative products. Our engineers combine outstanding System design experience to deliver Quality Solutions. iWave specializes across Industrial, Automotive and Medical domains. We support our customers by being time efficient, which in turn helps our customers accelerate time to market their products. iWave is a Windows embedded Silver partner and a winner of the Partner Excellence Award.

*Optional items not included in the standard deliverables.

Note: iWave reserves the right to change these specifications without notice as part of iWave's continuous effort to meet the best in breed specification. The registered trademarks are proprietary of their respective owners.

Ordering the Snapdragon 820 SOM
The SOM Module can be ordered online from the iWave Website
http://www.iwavesystems.com/webforms

iW-G25M-BR-R1.3

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