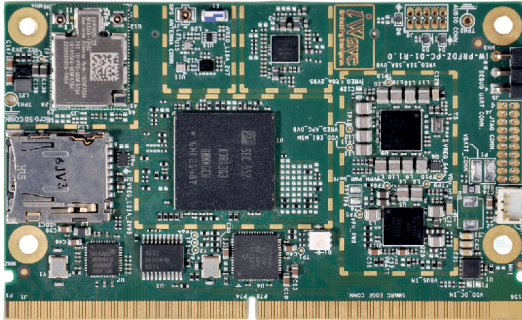


# System On Module iW-RainboW-G25M Snapdragon 820 System on Module



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)

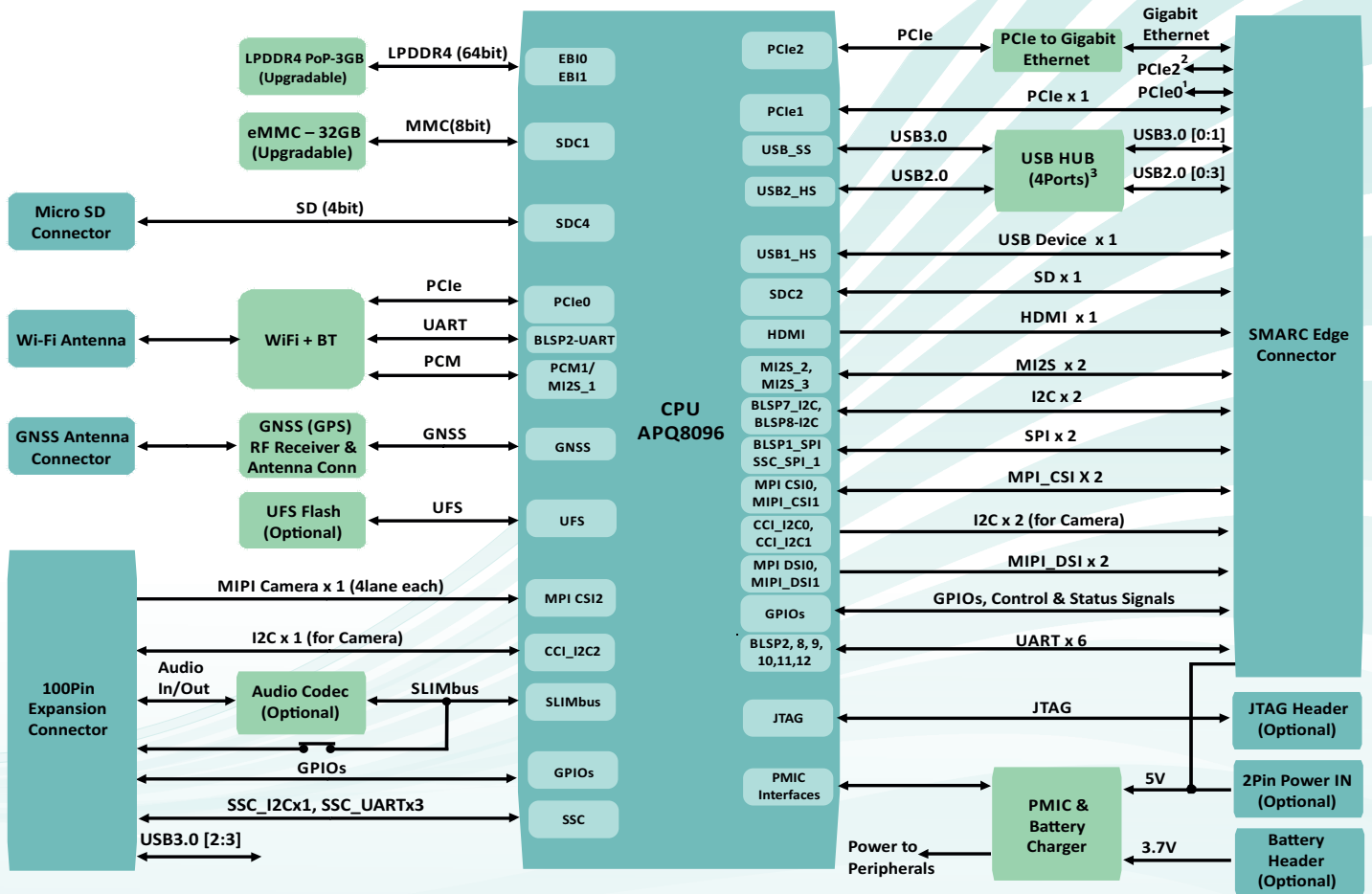
I2C x 1 Port, GPIOs, SLIM bus

**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>

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