

## SOM Modules

VIA

# SOM-9X20

Compact solution for graphics intensive HMI applications

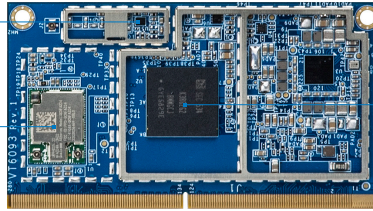
## Features

- Qualcomm Snapdragon 820 quad-core SoC
- Enhanced graphics engine decoding supporting 4K@60fps, 8 x 1080p@30fps
- Built-in Wi-Fi 802.11 a/b/g/n/ac, Bluetooth 4.1, and GPS
- Compact form factor module with the MXM 3.0 314-pin connector
- 5 years longevity support

## Board Placement

GPS/GNSS receiver

Wi-Fi + BT 4.1 module

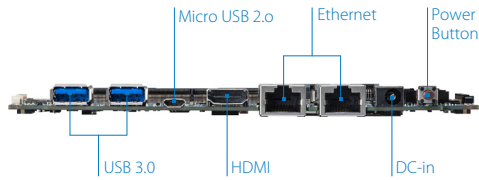


Snapdragon 820 SoC + POP LPDDR4 RAM

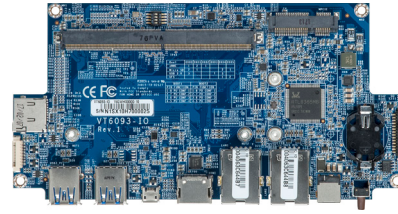
## Specifications

Model Name	SOM-9X20
<b>Processor</b>	Qualcomm Snapdragon 820 quad-core SoC <ul style="list-style-type: none"><li>- Two high-performance Kryo cores up to 2.15GHz</li><li>- Two low power Kryo cores up to 1.593GHz</li></ul>
<b>System Memory</b>	4GB POP LPDDR4 RAM
<b>Storage</b>	64GB eMMC 5.1 Flash Memory
<b>Graphics</b>	Qualcomm Adreno 530 GPU 3D graphics accelerator with 64-bit addressing 624 MHz Graphic engine supporting OpenGL ES 3.1/GEP, GL4.4, DX11.3/4, OpenCL 2.0, Renderscript-Next Supports H.264, VP8, HEVC 8/10-bit, VP9 video decoding up to: 4K@60fps, 1080p@240fps, 8 x 1080p@30fps
<b>Trusted Platform Module</b>	TPM1.2 : ST33TPM12I2C
<b>Wireless Connectivity</b>	NFA324A-12H32 QCA6174A-1 Wi-Fi 802.11 a/b/g/n/ac + BT 4.1 combo module with 2 antenna connectors Qualcomm WGR7640 GPS/GNSS RF receiver with antenna connector
<b>HDMI</b>	Integrated HDMI 2.0 Transmitter
<b>Supported I/O through MXM 3.0 connector</b>	1 HDMI 2.0 port 2 MIPI DSI 4-Lane connectors 3 MIPI CSI 4-Lane connectors 1 USB 3.0 OTG 1 USB 2.0 host 2 SDIO 1 PCM 1 I2S Multi-function pins for UART, I2C, SPI, GPIO 1 JTAG 2 PCIe 2.0 1-Lane
<b>Operating System</b>	Android 7.1.1
<b>Operating Temperature</b>	0°C ~ 60°C
<b>Operating Humidity</b>	0% ~ 95% (non-condensing)
<b>Form Factor</b>	8.2cm x 4.5cm (3.23" x 1.77")

## Carrier Board Back Panel I/O



## Carrier Board (SOMDB2)



## Specifications

<b>Model Name</b>	<b>SOMDB2</b>
<b>Audio</b>	Qualcomm WCD 9335 Audio Codec
<b>LAN</b>	RealTek RTL8111G Ethernet Controller RealTek RTL8365M8 LAN Hub
<b>Onboard I/O</b>	1 LCD panel connector 1 P-Cap Touch connector 2 USB 2.0 milli-grid connectors supporting 1.1A 1 MIPI CSI Interface for camera module 1 COM connector (TX/RX only for debugging) 8 GPIO 2 I <sup>2</sup> C connectors for light & proximity sensor and NFC module 1 Front panel connector 1 Audio connector for Mic-in 2 2W speaker connectors 1 RTC battery connector 1 Micro SD card slot 1 miniPCle slot 1 MXM 3.0 slot
<b>Back Panel I/O</b>	1 HDMI 2.0 port 2 USB 3.0 ports 1 Micro USB 2.0 port (for debugging) 2 Gigabit Ethernet ports 1 Power button 1 12V DC-in jack
<b>Operating Temperature</b>	0°C ~ 60°C
<b>Operating Humidity</b>	0% ~ 95% (non-condensing)
<b>Form Factor</b>	17cm x 8.6cm (6.69" x 3.89")

## Ordering Information

Model Name	SoC Frequency	Description
10GWG23Q100A0	Qualcomm Snapdragon 820 quad-core SoC @ 2.15GHz/1.593GHz	SOM module with Qualcomm Snapdragon 820 quad-core SoC, 64GB eMMC, 4GB POP LPDDR4 RAM, HDMI, 2 DSI, 3 CSI, USB 3.0, USB 2.0, UART, GPIO, 2 SDIO, Wi-Fi + Bluetooth 4.1, GPS/GNSS, 2 PCIe 2.0 1-Lane
10GWH000000A0	N/A	SOM-9X20 evaluation carrier board

## Block Diagram

