

## SOM Modules

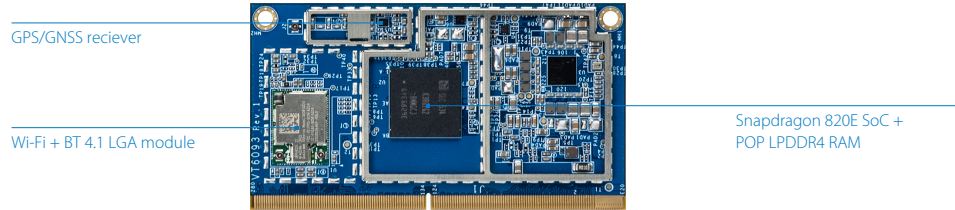
# VIA Edge AI Developer Kit

Ultra-compact solution for graphics-intensive edge computing applications

## Features

- Qualcomm Snapdragon 820E quad-core SoC
- Enhanced video decoding supporting 4K@60fps, 8 x 1080p@30fps
- Built-in Wi-Fi 802.11 a/b/g/n/ac, Bluetooth 4.1, and GPS
- 13MP CMOS camera module (1/3.06" 4224 x 3136 pixel)
- Android & Linux BSPs available

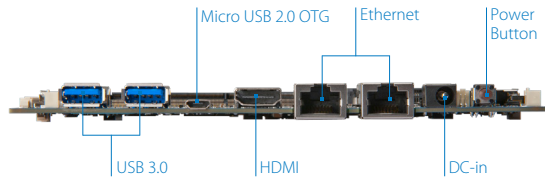
## Board Placement



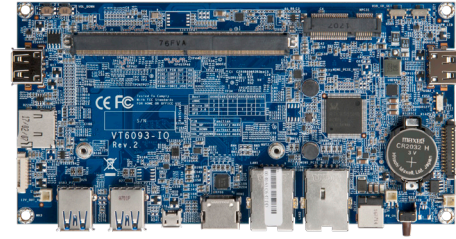
## Specifications

<b>Model Name</b>	<b>SOM-9X20</b>
<b>Processor</b>	Qualcomm Snapdragon 820E 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/UFS 2.0 Flash Memory
<b>Graphics</b>	Qualcomm Adreno 530 GPU 3D graphics accelerator with 64-bit addressing 624 MHz Graphics 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 LGA 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 port 2 MIPI DSI 4-Lane connectors 3 MIPI CSI 4-Lane connectors 1 USB 3.0 OTG 1 USB 2.0 host 1 SDIO 2 PCM/MI2S Multi-function pins for UART, I <sup>2</sup> C, SPI, GPIO 1 JTAG 2 PCIe 2.0 1-Lane
<b>Operating System</b>	Android 8.0, Linux Kernel 3.18.44
<b>Operating Temperature</b>	-20°C ~ 70°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 RTL8365MB LAN Hub
<b>Onboard I/O</b>	1 MIPI DSI LCD panel connector 1 MIPI CSI Interface for camera module 1 P-Cap Touch connector 2 USB 2.0 ports 1 USB 2.0 OTG switch (for Host mode/Device mode) 1 COM connector (TX/RX only for debugging) 1 GPIO connector (8 GPIO) 2 I <sup>2</sup> C connectors (for light & proximity sensor and NFC module) 1 Front panel connector 1 JTAG connector 1 Mic-in connector 2 2W speaker connectors 2 Audio module connectors (for VT6093 audio module) 2 Volume buttons 1 Boot switch 1 RTC battery connector 1 Micro SD card slot 1 miniPCIe slot 1 MXM 3.0 slot
<b>Back Panel I/O</b>	1 HDMI port 2 USB 3.0 ports 1 Micro USB 2.0 OTG port (for debugging) 2 Gigabit Ethernet ports 1 Power button 1 12V DC-in jack
<b>Operating Temperature</b>	-20°C ~ 70°C
<b>Operating Humidity</b>	0% ~ 95% (non-condensing)
<b>Form Factor</b>	17cm x 8.6cm (6.69" x 3.89")
<b>Compliance</b>	RoHS

## Ordering Information

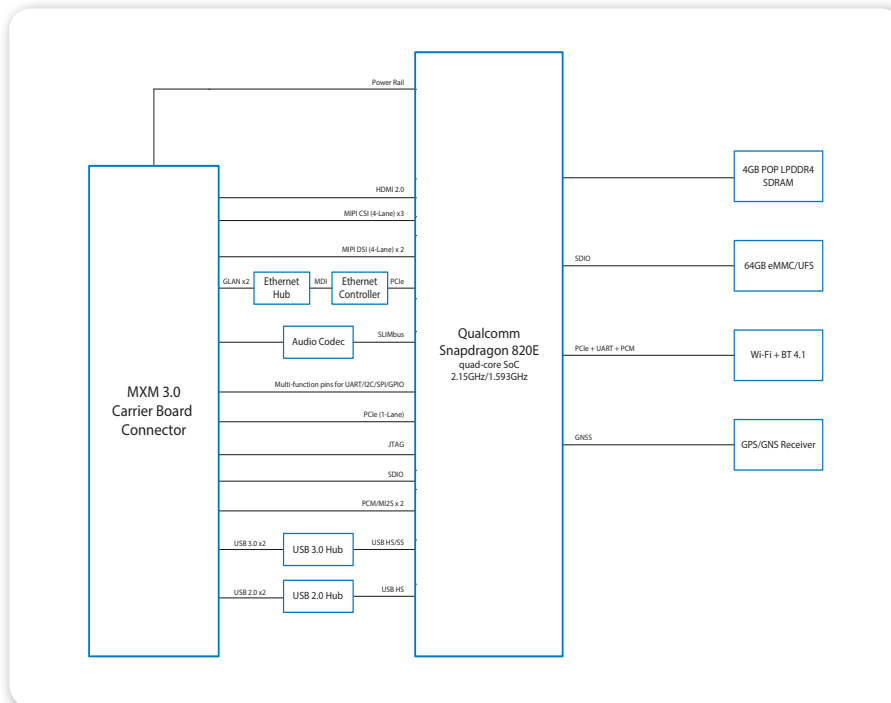
Part Number	SoC Frequency	Description
STK-VT6093-01A1	Qualcomm Snapdragon 820E quad-core SoC @ 2.15GHz/1.593GHz	SOM-9X20 module + SOMDB2 carrier board + 13MP CMOS camera module
STK-VT6093-00A1	Qualcomm Snapdragon 820E quad-core SoC @ 2.15GHz/1.593GHz	SOM-9X20 module + SOMDB2 carrier board

## Optional Accessories

### Touch Panel

Part Number	Description
99G47-01025F	10.1" MIPI 16:10 (WUXGA 1920 x 1200, 16.7M) LCD Touch panel with USB FPC touch cable and MIPI FPC cable

## Block Diagram



## Packing List

### Items for STK-VT6093-01A1

- SOM-9X20 module
- SOMDB2 carrier board
- VT6093 audio module
- COM cable
- AC adapter
- Power cord US type
- 2 Antennas for Wi-Fi & Bluetooth
- VT6093-CAM-T Camera-CSI converter board
- 13MP CMOS camera module
- 1 FPC cable for CSI connector

### Items for STK-VT6093-00A1

- SOM-9X20 module
- SOMDB2 carrier board
- VT6093 audio module
- COM cable
- AC adapter
- Power cord US type
- 2 Antennas for Wi-Fi & Bluetooth