

SOM Modules

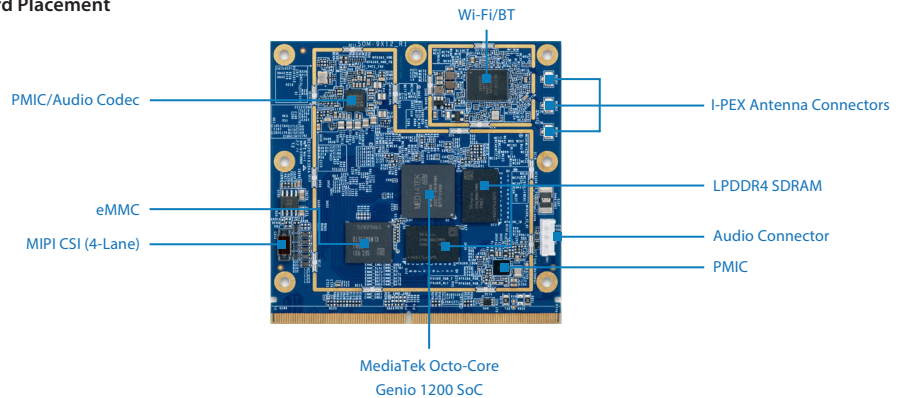
VIA SOM-9X12

Fanless low-power platform for AIoT applications with Octo-Core MediaTek Genio 1200 processor

Features

- High-performance Octo-Core MediaTek Genio 1200 SoC
- Integrated AI processor for AIoT applications
- Dual-band Wi-Fi 6 with Bluetooth 5.2
- UHD Hardware accelerated H.265/H.264 video decoding
- Dual MIPI DSI display, and dual MIPI CSI-2 camera support

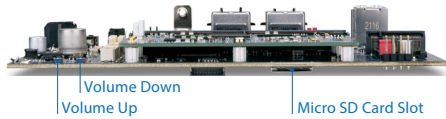
Board Placement



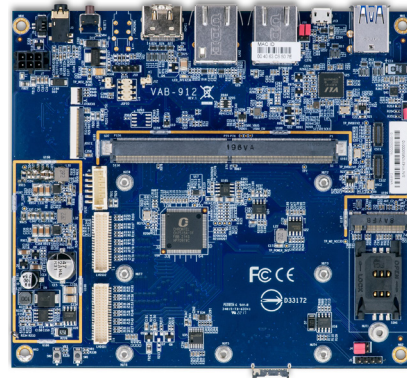
Specifications

Model Name	SOM-9X12-V4
Processor	MediaTek Genio 1200 Octo-Core SoC - Four Cortex A78 @ 2.2GHz - Four Cortex A55 @ 2.0GHz
System Memory	4GB LPDDR4 SDRAM
Storage	16GB eMMC Flash Memory
Graphics	ARM Mali-G57 MCS High Performance GPU 3D graphic accelerator capable of processing 17600M pixel/sec @ 880MHz Graphics engine supporting OpenGL® ES 3.2, OpenCL ES 2.0, and Vulkan 1.1 hardware acceleration Supports H.265 and H.264 video decoding up to 4K@90fps Supports H.265 and H.264 video encoding up to 4K@60fps Supports Cadence® Tensilica® Vision HiFi 4 DSP
Wireless Connectivity	MediaTek MT7921 Dual-band Wi-Fi 6 with MU-MIMO Bluetooth 5.2
Ethernet	Realtek RTL8211E-VL-CG 10/100/1000M Ethernet Transceiver
PMIC/Audio Codec	MediaTek MT6365
HDMI	Integrated HDMI 2.0 Transmitter
Supported I/O through Golden Finger	2 4-Lane MIPI DSI 2 MIPI CSI-2 (1 x 4-Lane, 1 x 2-Lane) 1 HDMI 1 Display Port 1 USB 3.1 3 USB 2.0 1 GLAN 2 SPI 2 I2S 3 I2C 2 UART 1 PCIe x 2 1 SDIO 4.3V DC-in
Onboard I/O	4-Lane MIPI CSI connector 3 I-PEX connectors for Wi-Fi and Bluetooth antennas Audio connector for Earphone out and MIC-in
Operating System	Android 11, Yocto 3.5
System Monitoring and Management	Watchdog Timer, System Management, Boot Select
Operating Temperature	0°C ~ 60°C
Operating Humidity	0% ~ 95% (relative humidity ; non-condensing)
Form Factor	82mm x 80mm (3.22" x 3.15")
Compliance	SMARC 2.11

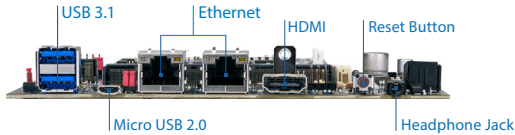
SOM-9X12 Carrier Board Front Panel I/O



SOM-9X12 Carrier Board



SOM-9X12 Carrier Board Back Panel I/O



Specifications

Model Name	SOM-9X12 Carrier Board
LVDS	Chrontel CH7515 eDP/DP to LVDS Converter
Ethernet	Realtek RTL8153 GbE USB 3.0 Ethernet Network Interface Controller
MCU	STMicroelectronics STM32L011F4P6 32-bit MCU
Onboard I/O	<ul style="list-style-type: none"> 2 4-Lane MIPI-DSI connectors (One by ODM request) 2 LVDS dual-channel connectors (up to QSXGA 2560x2048@60Hz) 2 MIPI CSI-2 connectors (1 x 4-Lane, 1 x 2-Lane) 1 MicroSD card slot 1 SIM card slot 1 M.2 B-key slot (supports PCIe x1/USB3.1/USB 2.0/SIM) 1 ADC/GPIO pin header (for multiplexed Analog inputs/GPIOs) 1 Optional RTC battery connector (by customized request) 1 Console connector 1 12V DC-in power connector
Front Panel I/O	<ul style="list-style-type: none"> 1 Download/Volume+ button 1 Volume- button 1 MicroSD card slot
Back Panel I/O	<ul style="list-style-type: none"> 1 HDMI port 2 USB 3.1 ports 1 Micro USB 2.0 port (for image download) 2 GLAN ports 1 3.5mm phone jack (supports Headphone-out and MIC-in) 1 Reset button 1 Power button with LED
Power Supply	12V DC-in
Operating Temperature	0°C ~ 60°C
Operating Humidity	0% ~ 95% (relative humidity ; non-condensing)
Form Factor	3.5" SBC, 146mm x 102mm (5.75" x 4.17")
Compliance	CE, FCC, UKCA

Ordering Information

Part Number	SoC Frequency	Description
10GPZ22M00020	MediaTek Genio 1200 Octo-Core SoC @ 2.2GHz/2.0GHz	VIA SOM-9X12-V4 module with 2.2/2.0GHz GHz MediaTek Genio 1200 Octo-Core SoC, 16GB eMMC, 4GB LPDDR4 SDRAM, Wi-Fi 6 + Bluetooth 5.2, MIPI CSI
10GQD00000020		VIA SOM-9X12 Carrier Board

Optional Accessories

Wireless Module Options

Part Number	Description
99G40-07325K2	Thales MV31-W M.2 Ultra high-speed 5G module

Block Diagram

