

SOM Modules

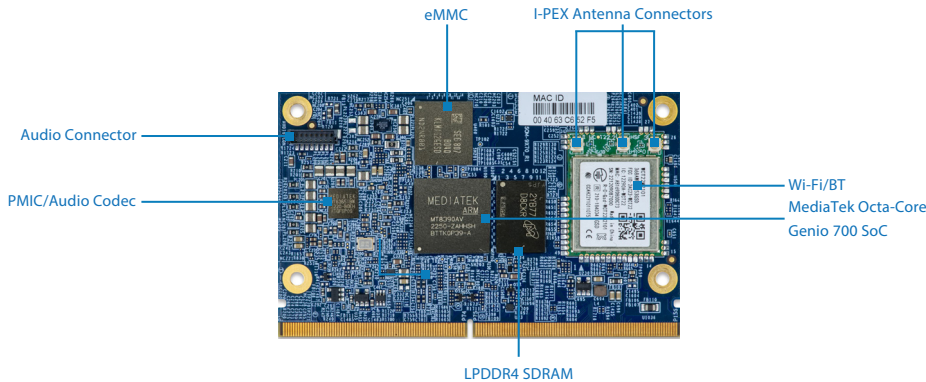
VIA
SOM-5000

Fanless low-power platform for Edge AI applications with MediaTek Genio 700 Octa-Core processor

Features

- High-performance Octa-Core MediaTek Genio 700 processor
- Integrated AI processor for Edge AI applications
- 4K hardware accelerated H.265/H.264 video encoding and decoding
- Dual-band 802.11ac Wi-Fi with Bluetooth 5.0
- Dual MIPI DSI display and dual MIPI CSI camera support

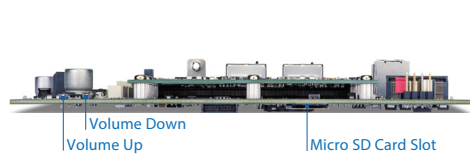
Board Placement



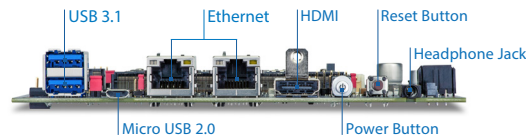
Specifications

Model Name	SOM-5000
Processor	MediaTek Genio 700 Octa-Core Processor - Two Cortex-A78 @ 2.2GHz - Six Cortex-A55 @ 2.0GHz
System Memory	4GB LPDDR4/X DRAM (max. 4GB)
Storage	16GB eMMC Flash memory
Graphics	ARM Mali-G57 MC3 High Performance GPU - Graphics engine supporting OpenGL® ES 1.1/2.0/3.2, OpenCL ES 2.2, and Vulkan 1.0/1.1 hardware acceleration - Supports H.265 and H.264 video decoding up to 4K@75fps - Supports H.265 and H.264 video encoding up to 4K@30fps - Supports Cadence Tensilica Vision P6 AI accelerated processing and HiFi 5 audio processing
Wireless Connectivity	Integrated 802.11ac WLAN/BT 5.0 Module
Ethernet	Integrated 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 (1 x 4-Lane, 1 x 2-Lane) 1 HDMI Port 1 Display Port 1 USB 3.1 3 USB 2.0 2 SPI 1 I²S 6 I²C UART x3 1 PCIe 1 SDIO 1 Gigabit Ethernet 11 GPIO 5V DC-in
Onboard I/O	3 I-PEX connectors to attach RF antennas for Wi-Fi and Bluetooth 1 Audio connector for Headphone out and MIC-in
Operating System	Android 13.0, Yocto 4.0, and Ubuntu 22.0 LTS
System Monitoring and Management	Watchdog Timer and System Management
Operating Temperature	0°C ~ 60°C (wider range can be supported on request, excluding Wi-Fi/BT)
Operating Humidity	0% ~ 90% (relative humidity; non-condensing @ 60°C)
Form Factor	SMARC 2.11 (82mm x 50mm, 3.22" x 2")

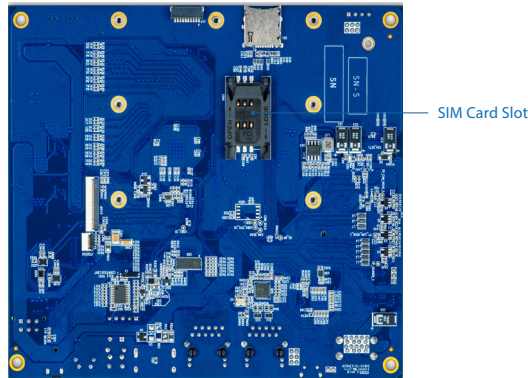
Carrier Board Front Panel I/O



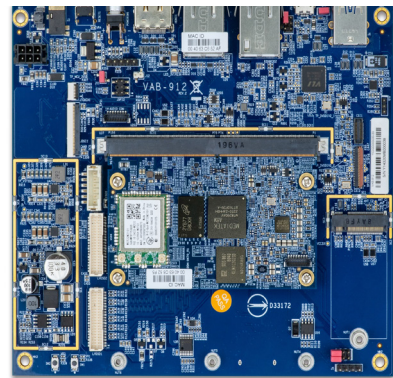
Carrier Board Back Panel I/O



Carrier Board Bottom Panel I/O



SOMDB7 Carrier Board



Specifications

Model Name	SOMDB7 Carrier Board
LVDS	Chrontel CH7515 eDP/DP to LVDS Converter
Ethernet	Realtek RTL8153 GbE USB 3.0 Ethernet Network Interface Controller
USB	VIA VL817 USB 3.1 Gen1 Hub Controller
MCU	STMicroelectronics STM32L011F4P6 32-bit MCU
Onboard I/O	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 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	1 Download/Volume+ button 1 Volume- button 1 MicroSD card slot
Back Panel I/O	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	151mm x 134mm (5.94" x 5.28")
Compliance	CE, FCC, UKCA

Ordering Information

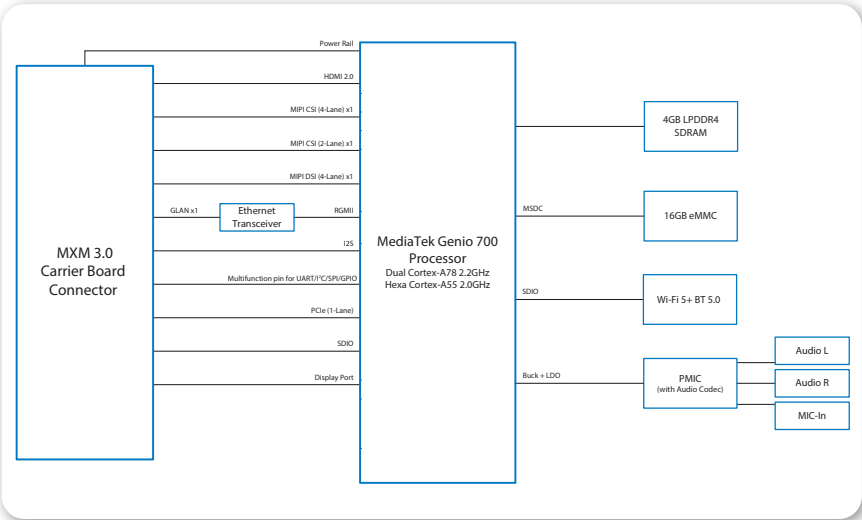
Part Number	SoC Frequency	Description
10GQR22S10020	MediaTek Genio 700 Octa-Core SoC @ 2.2GHz/2.0GHz	VIA SOM-5000 Module with 2.2/2.0GHz GHz MediaTek Genio 700 Octa-Core SoC, 16GB eMMC, 4GB LPDDR4 SDRAM, Wi-Fi 5, and Bluetooth 5.0.
STK-SOM500-00A0		VIA SOM-5000 Starter Kit with VIA SOM-5000 Module,SOMDB7 reference carrier board and Accessory Kit

Optional Accessories

Development Options	
Part Number	Description
SOM-ACK-00A0	Development Pack including 5MP CMOS camera, Wi-Fi/BT antenna and 12V 3A worldwide AC adapter
99G47-01025F	10.1" 1920x1200 MIPI LCD + touch panel display

Wireless Module Options	
Part Number	Description
EMIO-2576-00A0	4G LTE mobile broadband M. 2 module with two antennas and assembly

Block Diagram



Starter Kit Packing List

Items
VIA SOM-5000 module
VIA SOMDB7 carrier board
Heatsink
Audio cable
Power cable
Debug console cable



Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

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[10GQR22S10020A0](#)