

SOM Modules

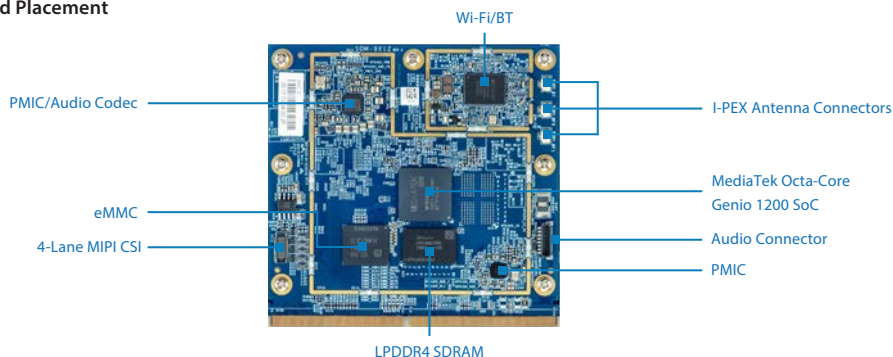
VIA SOM-7000

Fanless low-power Edge AI platform with MediaTek Genio 1200 Octa-Core processor

Features

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

Board Placement



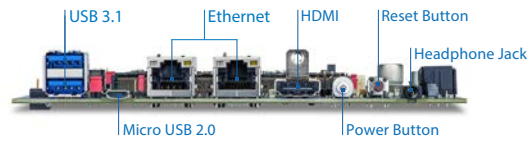
Specifications

Model Name	SOM-7000 Module
Processor	MediaTek Genio 1200 Octa-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
AI Processor	MediaTek AI Processor (dual-core)
Audio DSP	Supports Cadence® Tensilica® Vision HiFi 4 DSP
PMIC/Audio Codec	MediaTek MT6365
Wireless Connectivity	MediaTek MT7921 Dual-band Wi-Fi 6 with MU-MIMO Bluetooth 5.2
Ethernet	Realtek RTL8211F(I)-CG 10/100/1000M Ethernet Transceiver
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 3 I2S 3 I2C 2 UART 1 1-Lane PCIe 1 SDIO 5V DC-in
Onboard I/O	1 4-Lane MIPI CSI-2 connector 3 I-PEX connectors for Wi-Fi and Bluetooth antennas Audio connector for Headphone out and MIC-in
Operating System	Android 11, Yocto 4.0.6
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

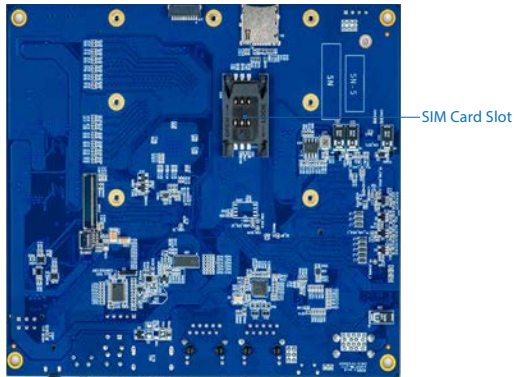
Carrier Board Front Panel I/O



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
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 touchscreen panel connector (I2C) 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 RTC battery connector 1 Debug 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
10GPZ22M30020	MediaTek Genio 1200 Octa-Core SoC @ 2.2GHz/2.0GHz	VIA SOM-7000 module with 2.2/2.0GHz MediaTek Genio 1200 Octa-Core SoC, 16GB eMMC, 4GB LPDDR4 SDRAM, CSI, audio (headphone out and MIC-in), Wi-Fi 6+ Bluetooth 5.2, 3 Wi-Fi/Bluetooth antenna I-PEX connectors
STK-SOM700-00A0		VIA SOM-7000 starter kit with VIA SOM-7000 module, VIA SOMDB7 reference carrier board and accessory kit

Optional Accessories

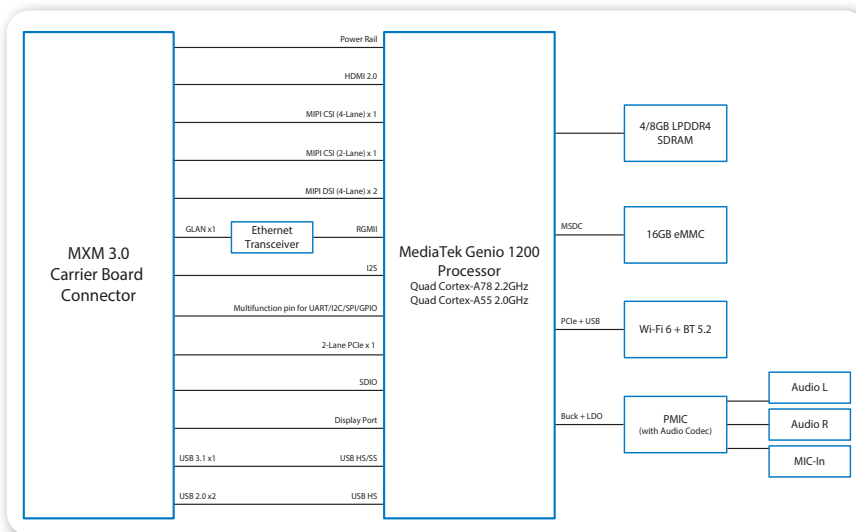
Development Options

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-7000 module
VIA SOMDB7 carrier board
Heatsink
Audio cable
Power cable
Debug console cable