

SOM Evaluation Kits

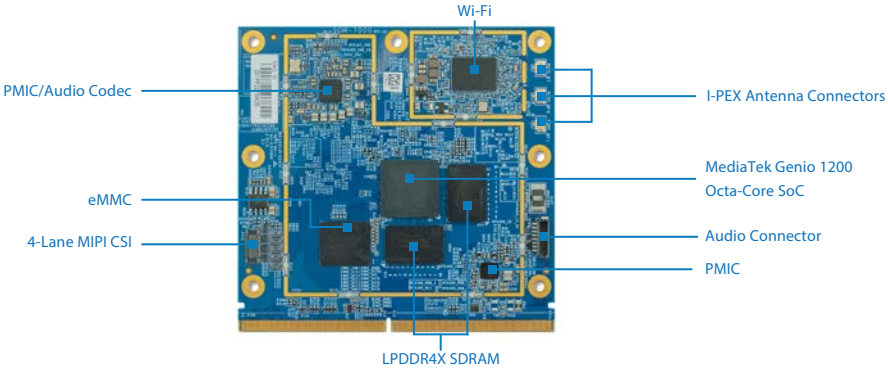
VIA
SOM-7000

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

Features

- High-performance MediaTek Genio 1200 Octa-Core SoC
- Powerful and efficient MediaTek Deep Learning Accelerators 2.0 and Cadence® Tensilica® Vision P6 NPUs supporting up to 4.8 TOPS
- Dual-band Wi-Fi 6
- 4K hardware accelerated H.265/H.264 video processing
- Dual 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	8GB LPDDR4X SDRAM (2 x LPDDR4X)
Storage	16GB eMMC Flash Memory
Graphics	ARM Mali-G57 MC5 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 and video encoding up to 4K@60fps
AI Processor	2 MediaTek Deep Learning Accelerators (MDLA) 3.0 and 2 Cadence® Tensilica® Vision P6 NPUs (supports upto 4.8 TOPS)
Audio DSP	Cadence® Tensilica® HiFi 4
PMIC/Audio Codec	MediaTek MT6365
Wireless Connectivity	MediaTek MT7921 - Dual-band Wi-Fi 6 with MU-MIMO
Ethernet	Realtek RTL8211F(I)-CG Gigabit Ethernet Transceiver
HDMI	Integrated HDMI 2.0 Transmitter
Supported I/O through Golden Finger	2 4-Lane MIPI DSI 1 HDMI 2.0 1 Display Port 2 MIPI CSI-2 (1 4-Lane, 1 2-Lane) 1 USB 3.1 and 3 USB 2.0 1 GLAN 1 SPI 1 I2S 6 I2C (including I2C for HDMI) 2 UART 1 PCIe (2-Lane) 1 SDIO 12 GPIO 1 5V DC-in
Onboard I/O	1 4-Lane MIPI CSI-2 connector 3 I-PEX connectors for antennas Audio connector for Headphone out and MIC-in
Operating System	Android 13, Yocto 4.0, Debian 12
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	SMARC 2.11 (82mm x 80mm, 3.22" x 3.15")
Compliance	CE, FCC, TELEC, UKCA



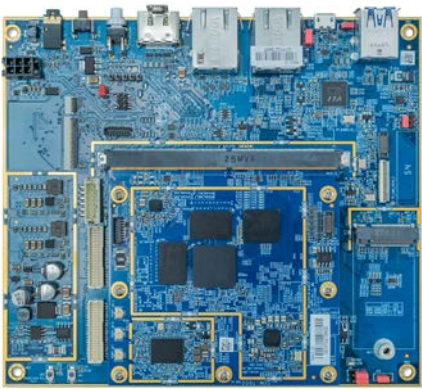
SOMDB7 Carrier Board Front I/O



SOMDB7 Carrier Board Back 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	1 4-Lane MIPI-DSI connector 2 LVDS dual-channel connectors (up to QSXGA 2560x2048@60Hz) 2 MIPI CSI-2 connectors (1 4-Lane, 1 2-Lane) 1 Capacitive touch panel connector 1 LVDS backlight connector 1 SIM card slot 1 M.2 B-key slot (supports USB 3.1/USB 2.0/USIM) 1 M.2 E-key slot (supports PCIe x1) 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 I/O	1 Download/Volume+ button 1 Volume- button 1 MicroSD card slot
Back 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 Audio 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")

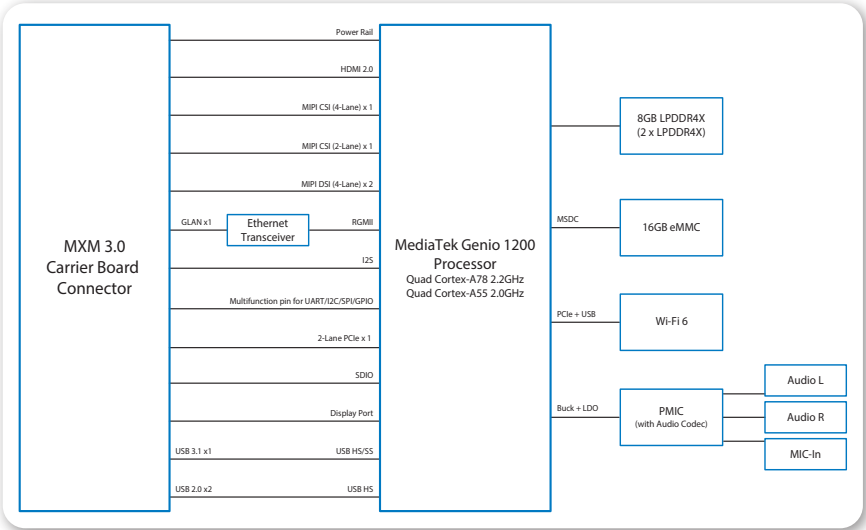
Ordering Information

Part Number	SoC Frequency	Description
STK-SOM700-00A0	MediaTek Genio 1200 Octa-Core SoC @ 2.2GHz/2.0GHz	VIA SOM-7000 Evaluation Kit with VIA SOM-7000 module, VIA SOMDB7 carrier board and accessory kit

Optional Accessories

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

Block Diagram



Evaluation Kit Packing List

Items
VIA SOM-7000 module
VIA SOMDB7 carrier board
7" MIPI LCD and touch panel
3 antennas
5MP CMOS sensor camera module
Heatsink
Audio cable
Power cable
Debug console cable
12V AC power adapter

