

Edge AI Platforms

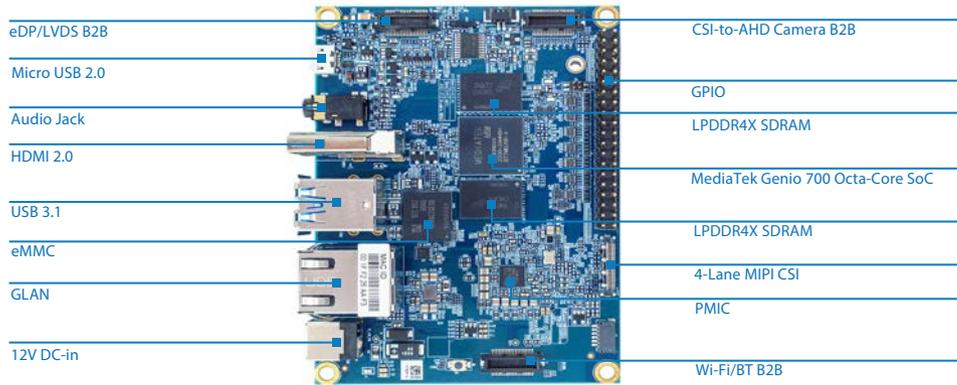
VIA VAB-5000

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

Features

- High-performance MediaTek Genio 700 Octa-Core SoC
- Powerful and efficient MediaTek Deep Learning Accelerator 3.0 and Vision Processor 6 APU
- 4K hardware accelerated H.265/H.264 video encoding and decoding
- MIPI CSI camera, AHD camera, and eDP/LVDS display panel support
- Optional 4G/5G mobile broadband support with onboard M.2 and Nano SIM card slots

Board Placement



Specifications

Model Name	VAB-5000
Processor	MediaTek Genio 700 Octa-Core Processor - Two Cortex-A78 @ 2.2GHz - Six Cortex-A55 @ 2.0GHz
System Memory	4GB/8GB LPDDR4X (2 x LPDDR4X)
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
AI Processor	MediaTek Deep Learning Accelerator (MDLA) 3.0 and Vision Processor 6 (VP6) APU
Audio DSP	Supports Cadence® Tensilica® Vision HiFi 5 DSP
Ethernet	Realtek RTL8211F(I)-CG Gigabit Ethernet Transceiver
PMIC/Audio Codec	MediaTek MT6365
Video	Integrated HDMI 2.0b Transmitter
USB	VIA VL817 USB 3.1 Gen1 Hub Controller
Onboard I/O	1 40-pin Raspberry Pi-type GPIO header 1 Micro coaxial 4-Lane MIPI CSI connector 1 RTC battery connector 1 4-pin header for auto power on setting 1 Download button 3 40-pin B2B connectors for Wi-Fi, LVDS/eDP and CSI-to-AHD camera daughter cards
Front I/O	1 MicroSD Card Slot
Rear I/O	1 HDMI port 2 USB 3.1 ports 1 Micro USB 2.0 OTG port 1 Gigabit Ethernet port 1 3.5mm headphone jack (supports Headphone-out and MIC-in) 1 12V DC-in power connector
Bottom I/O	1 M.2 slot (for optional 4G LTE or 5G module) 1 Nano SIM card slot 1 UART connector for debugging
Power Supply	12V DC-in
Operating System	Android 13, Yocto 4.0, Debian 12
Operating Temperature	-20°C ~ 60°C
Operating Humidity	0% ~ 95% (relative humidity; non-condensing)
Form Factor	Pico-ITX (10cm x 7.2cm, 3.9" x 2.8")
Compliance	CE, FCC, BSMI, NCC, UKCA, TELEC



VAB-5000 Front I/O



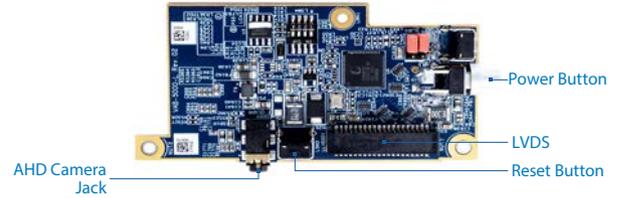
VAB-5000 Rear I/O



VAB-5000 Bottom I/O



LVDS and AHD Camera Expansion Board I/O (10GRB000300A0)



eDP and AHD Camera Expansion Board I/O (10GRB000400A0)



Ordering Information

Part Number	SoC Frequency	Description
10GRB22S900A0	MediaTek Genio 700 Octa-Core SoC @ 2.2GHz/2.0GHz	VAB-5000 Pico-ITX board with 2.2GHz/2.0GHz MediaTek Genio 700 Octa-Core SoC, 16GB eMMC, 4GB LPDDR4X SDRAM, HDMI, Raspberry Pi-type GPIO, MIPI CSI, 2 USB 3.1, Micro USB 2.0 OTG, Gigabit Ethernet, M.2 slot, Nano SIM card slot, MicroSD card slot, Audio jack, 12V DC-in
10GRB22S700A0	MediaTek Genio 700 Octa-Core SoC @ 2.2GHz/2.0GHz	VAB-5000 Pico-ITX board with 2.2GHz/2.0GHz MediaTek Genio 700 Octa-Core SoC, 16GB eMMC, 8GB LPDDR4X SDRAM, HDMI, Raspberry Pi-type GPIO, MIPI CSI, 2 USB 3.1, Micro USB 2.0 OTG, Gigabit Ethernet, M.2 slot, Nano SIM card slot, MicroSD card slot, Audio jack, 12V DC-in

Optional Accessories

Wireless Module Options

Part Number	Description
VAB-ACK-4G00A0	4G mobile broadband M.2 module with antennas and assembly
VAB-ACK-5G00A0	5G mobile broadband M.2 module with antennas and assembly
10GRB000600A0	Dual-band Wi-Fi 6 and Bluetooth 5.2 module

Expansion Options

Part Number	Description
10GRB000300A0	Power button, Reset button, LVDS and AHD camera expansion board
10GRB000400A0	Power button, Reset button, eDP and AHD camera expansion board

Camera Option

Part Number	Description
VAB-ACK-CC00A0	5MP CSI camera and cable

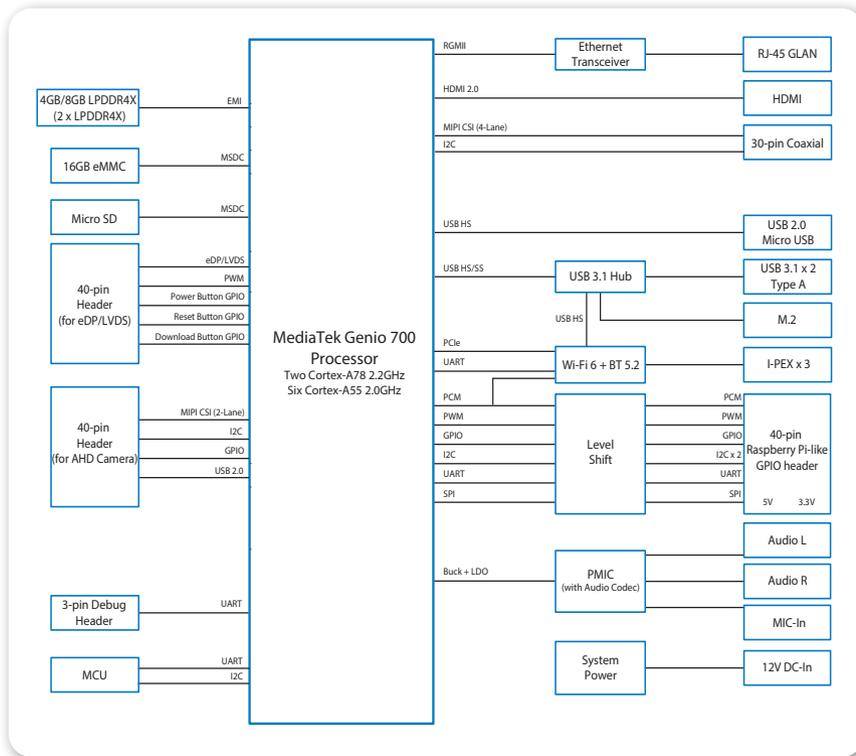
Power Option

Part Number	Description
VAB-ACK-PA00A0	12V 6.67A AC-to-DC adapter and power cord (for Japan only, available for other regions upon request)

Development Option

Part Number	Description
10GNN00000020	Debug card and cable

Block Diagram



Packing List

Items

VIA VAB-5000 board (including RTC battery)