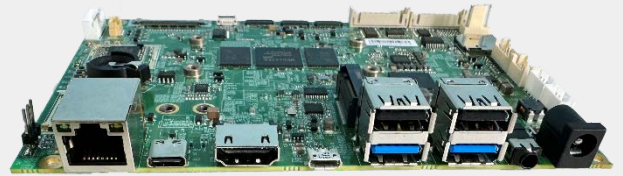# VT-SBC35-G510 Single Board Computer

## Product Brief

Adopting the 3.5-inch form factor, VT-SBC35-G510 single board computer is powered by the MediaTek MT8370 processor that combines two high-performance Cortex-A78 cores with four power-efficient Cortex-A55 cores, striking a balance between power and performance for a wide range of IoT applications. It integrates a Mali G57 MC2 GPU for enhanced 2D/3D graphic acceleration complemented by AV1/VP9/H.265/H.264 video codec support. The HiFi 5 audio DSP offers efficient pre-/post-processing capability for audio and video contents. In addition, it incorporates a Tensilica VP6 APU backed by MediaTek Deep Learning Accelerator (MDLA 3.0), offering 2.8 TOPS AI performance for demanding imaging, computer vision, and neural network applications.

VT-SBC35-G510 boasts versatile display output options that enable dual displays in extended mode. It provides an RJ45 Ethernet jack and a combo Wi-Fi 5 and Bluetooth 5.0 chip for IoT connectivity. The board offers an M.2 Key B slot is for expansion of either Wi-Fi 6 and Bluetooth 5.2 or 4G/5G connectivity. Additionally, it provides rich on-board interfaces to meet diverse application scenarios such as smart retail, edge AI, IoT gateways, and digital media.

Exterior and Features
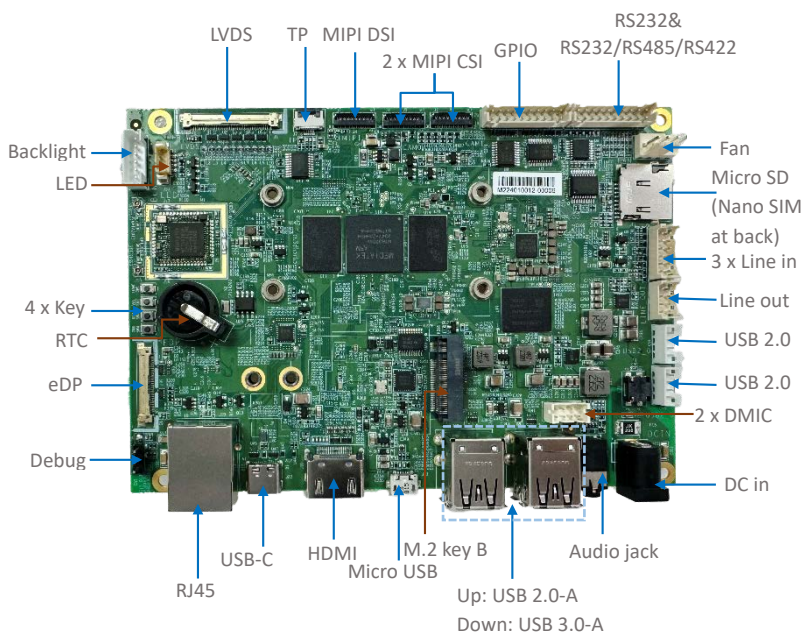
VT-SBC35-G510
MediaTek MT8370 hex-core processor
Optional Wi-Fi 6/4G/5G connectivity
Display output up to FHD @60Hz and 4K @60Hz
4K @30fps video encoder, 4K @60fps decoder
16MP + 16MP @30fps for dual-camera ISP
Rich I/Os: COM, USB, SPI, UART, I^{2}C, GPIO
Powerful AI acceleration & graphic processing
3.5-inch form factor

Labels on board diagram:
LVDS, TP, MIPI DSI, 2 x MIPI CSI, GPIO, RS232& RS232/RS485/RS422, Backlight, LED, 4 x Key, RTC, eDP, Debug, USB-C, RJ45, HDMI, Micro USB, M.2 key B, Up: USB 2.0-A, Down: USB 3.0-A, Audio jack, Fan, Micro SD (Nano SIM at back), 3 x Line in, Line out, USB 2.0, USB 2.0, 2 x DMIC, DC in

VT-SBC35-G510 Single Board Computer Datasheet

VT-SBC35-G510			
System	CPU	MediaTek MT8370, Dual-core ARM Cortex-A78 (2.0 GHz) processor + Quad-core ARM Cortex-A55 (2.0 GHz) processor	
	GPU	Mali-G57 MC2	
	APU	2.8 TOPS, Tensilica VP6 + MediaTek Deep Learning Accelerator (MDLA 3.0)	
	Audio DSP	HiFi 5	
	Memory	4GB 64-bit LPDDR4x	
	Storage	64GB eMMC 5.1	Optional: SSD expansion (M.2 Key B)
Communication	Ethernet	1 x RJ45, 10/100/1000Mbps	
	Wireless	Wi-Fi 5 & BT 5.0	Optional: Wi-Fi 6 & BT 5.2 or 4G/5G (M.2 Key B)
Media	Display (Extend mode of dual displays supported)	1 x HDMI 2.0, up to 4K @60Hz	
		1 x MIPI DSI/Dual LVDS, up to 2K @30Hz	
		1 x eDP, up to 2K @60Hz	
		1 x DisplayPort over USB Type-C, up to 4K @60Hz	
	Audio	1 x 3.5mm Combo audio jack	2 x DMIC
		1 x Line out connector	3 x Line in connector
	Camera	2 x MIPI CSI-2, ISP: 32MP @30fps (single cam.) / 16MP + 16MP @30fps (dual cam.)	
	Touch	1 x TP connector	
I/Os	Serial	2 x RS232 connector	2 x RS232/RS422/RS485 connector
	USB	2 x USB 2.0 Type-A 2 x USB 2.0 connector	1 x Micro USB 2.0 (Debug)
		2 x USB 3.0 Type-A	1 x USB 3.0 Type-C (DisplayPort)
	GPIO header	12 x GPIO (Max.), including 1 x SPI, 1 x UART (3.3V, with RTS/CTS), 2 x I^2C	
	Fan	1 x Fan connector	
	UART	1 x Debug UART (1.8V)	
	SD & SIM	1 x Micro SD slot	1 x Nano SIM slot
	RTC	Supported	
	WDT	Supported	
Expansion	M.2 Key B	1 x M.2 key B (2242, PCIe 2.0 for SSD or 3052, USB 3.0 for 4G/5G or Wi-Fi 6 & BT 5.2)	
System control	Key & LED	4 x Key (Home, Reset, Volume, Power)	2 x LED connector
Power	Input	12V/3A DC (via the DC jack or USB Type-C)	
Software	Operating system	Android 13, Yocto	
Mechanical	Dimensions	146mm x 102mm	
Environment Condition	Temperature	Operating: -20℃~+70℃ (Optional: -40℃~+80℃)	Storage: -40℃~+85℃ (Optional: -55℃~+85℃)
	Humidity	5%-95% RH (Non-condensing)	
	Certification	FCC, ISED, CE	

Product Outlines

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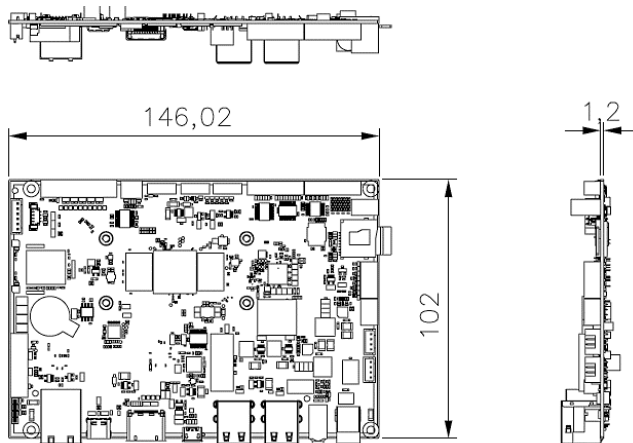
Block Diagram
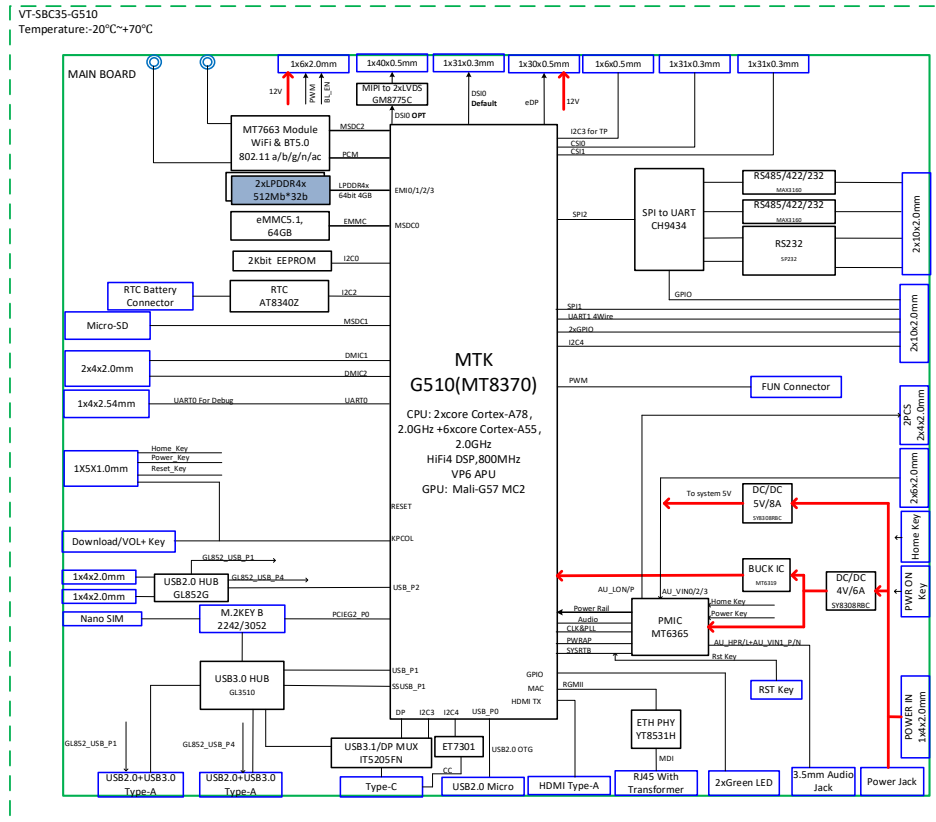
Ordering Information

Ordering No.	CPU	I/Os	Connectivity
VT-SBC35-G510	MediaTek MT8370 hexa-core processor	HDMI, MIPI DSI/LVDS, eDP, DP, MIPI CSI, RS232, RS232/485/422, USB-A, USB-C, Micro USB, SPI, UART, I^{2}C, GPIO	Ethernet, Wi-Fi 5 & BT 5.0
VT-SBC35-G510-W6			Ethernet, Wi-Fi 6 & BT 5.2
VT-SBC35-G510-4G			Ethernet, Wi-Fi 5 & BT 5.0, 4G

* More variants with cellular and Wi-Fi features are available, please contact the sales executive for details.

Packing list	
VT- SBC35-G510 single board computer	1
12V 3A power adapter & power cable	1 kit

Optional accessories
Wi-Fi 6 & Bluetooth 5.2 module, 2 x antenna / 4G module, 2 x antenna / 5G module, 4 x antenna

Since its establishment in 2002 by two Silicon Valley entrepreneurs, Vantron Technology has been at the forefront of the connected IoT devices and IoT platform solutions. Today, Vantron boasts a global customer base that includes many Fortune Global 500 companies. Its product lines cover edge intelligent hardware, IoT communication devices, industrial displays and BlueSphere cloud platforms.

With over 20 years of experience in R&D of intelligent edge hardware, Vantron has provided users with diverse embedded solutions featuring ARM and X86 architectures. Its offerings range from Linux, Android to Windows, from embedded to desktop level, and from gateways to servers. In addition, it provides users with system trimming, driver transplantation and more to cater to the unique needs of its users.