

VT-SBC-RK3576-NT

Single Board Computer



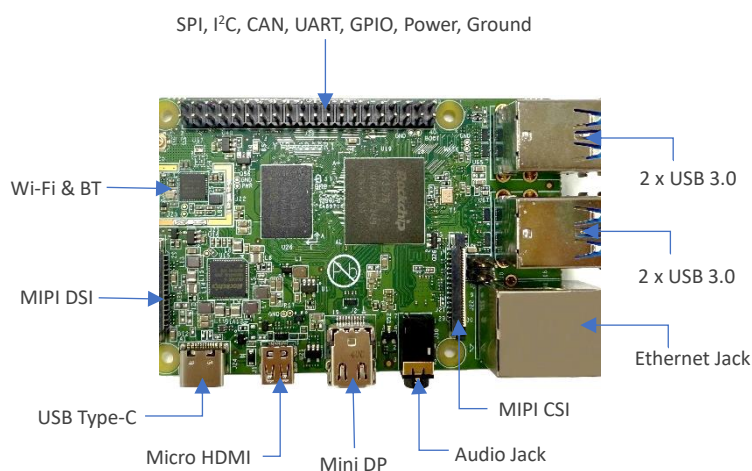
Brief Introduction

VT-SBC-RK3576-NT single board computer is powered by Rockchip RK3576 processor, which integrates 4x Cortex-A72 high-performance cores and 4x Cortex-A53 high-efficiency cores, featuring high performance and low power consumption. The built-in ARM Mali-G52 MC3 graphics processor supports OpenGL ES1.1/2.0/3.2, OpenCL 2.1, and Vulkan 1.2, providing up to 8K video decoding and 4K video encoding capabilities. The NPU with 6 TOPS arithmetic power supports mainstream AI and deep learning frameworks.

VT-SBC-RK3576-NT offers multiple expansion interfaces and video outputs, including MIPI DSI, Mini DP, Micro HDMI, USB, GPIO, and UART, ensuring flexible integration and expansion capabilities. The board provides a Gigabit Ethernet port and a Wi-Fi 6 and Bluetooth 5.4 combo module for connectivity. In addition, it offers multiple peripherals that are widely applicable to smart terminals and applications in industrial applications, banking and finance, automotive, medical and other industries.

Vantron NiceLit series targets at both commercial and industrial fields, empowering developers and businesses to accelerate time-to-market and deliver high-performance solutions.

Exterior and Features



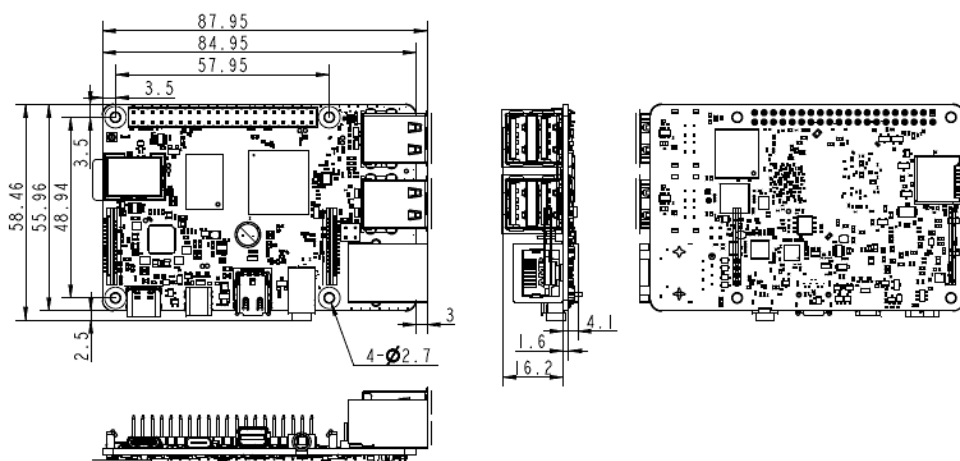
VT-SBC-RK3576-NT

- Rockchip RK3576 octa-core powerful processor
- Up to 8K video decoding and 4K video encoding
- Up to three displays in extended mode
- Multiple interfaces for flexible expansion
- Gigabit Ethernet, Wi-Fi 6, Bluetooth 5.4
- AI acceleration and edge computing
- Optimized for energy efficiency
- Compact and scalable

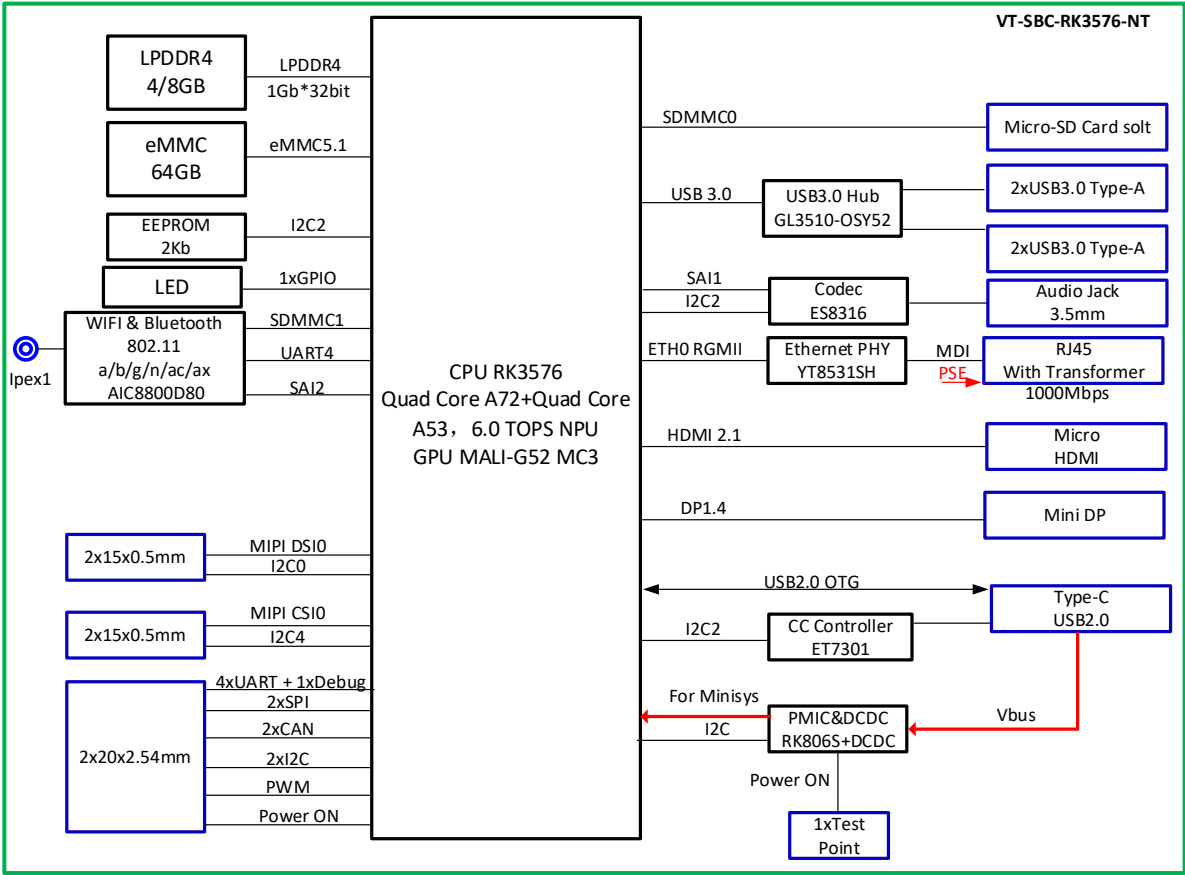
VT-SBC-RK3576-NT Single Board Computer Datasheet

VT-SBC-RK3576-NT			
System	CPU	Rockchip RK3576 Quad-core Cortex-A72 + Quad-core Cortex-A53, up to 2.2GHz	
	GPU	ARM Mali-G52 MC3, up to 1GHz (OpenGL ES1.1/2.0/3.2, OpenCL 2.1, Vulkan 1.2 supported)	
	NPU	6 TOPS, int4/int8/int16/FP16/BF16/TF32 supported	
	Memory	4GB 32-bit LPDDR4x (Optional: 8GB)	
	Storage	64GB eMMC V5.1	1 x Micro SD slot, up to 128GB
Communication	Ethernet	1 x RJ45, 10/100/1000Mbps	
	Wi-Fi & BT	Wi-Fi IEEE 802.11 a/b/g/n/ac/ax + BT 5.4	
Media	Video processing	8K@30 or 4K@120 H.265 or 4K@60 H.264 decoder, 4K@60 H.264/H.265 encoder	
	Camera ISP	16MP ISP, with resolutions up to 4672 x 3504 (HDR, 3DNR, 2DNR)	
	Display (Support multi-display in extended mode)	1 x 4-lane MIPI DSI, up to 4096 x 2160 @120Hz	
		1 x Mini DP 1.4, up to 4096 x 2160 @120Hz	
		1 x Micro HDMI 2.1, up to 4096 x 2160 @120Hz	
		Dual-display mode: 4096 x 2160 @120Hz, 2560 x 1600 @60Hz	
	Camera	Triple-display mode: 4096 x 2160 @120Hz, 2560 x 1600 @60Hz, 1920 x 1080 @60Hz	
		1 x MIPI CSI-2	
I/O	Audio	1 x 3.5mm combo audio jack (CTIA)	
	USB	4 x USB 3.0 Type-A	1 x USB 2.0 Type-C (power in, data transfer, OTG)
		2 x SPI	2 x CAN
		2 x I ² C	4 x Communication UART
		28 x GPIO (Max.)	1 x Debug UART
		2 x 5V Power pin	2 x 3.3V Power pin
Miscellaneous	Antenna	8 x Ground pin	
	RTC	1 x Wi-Fi & BT antenna connector (IPEX-1)	
	Watchdog timer	Supported	
Power	Input	5V/3A DC, USB Type-C	
Software	Operating system	Android 14, Ubuntu 22.04, Debian 11	
	Device management	BlueSphere MDM (Android version optional)	
Mechanical	Dimensions	87.95mm x 58.46mm x 21.9mm	
Environmental Condition	Temperature	Operating: -20°C ~ +70°C	Storage: -40°C~+85°C
	Humidity	10%-90%RH (Non-condensing)	

Product Outlines



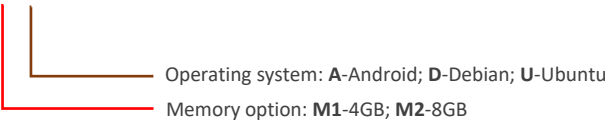
Block Diagram



Packaging Information

Nomenclature

VT-SBC-RK3576-NT-[M-OS]



Example Ordering No.	Memory	Operating System	Description
VT- SBC-RK3576-NT-M1A	4GB	Android 14	MIPI DSI, Micro HDMI, Mini DP, MIPI CSI, USB-A, USB-C, Ethernet, CAN, I²C, SPI, GPIO
VT- SBC-RK3576-NT-M2U	8GB	Ubuntu 22.04	
VT- SBC-RK3576-NT-M2D	8GB	Debian 11	

Packing List	
VT- SBC-RK3576-NT single board computer	1
5V/3A USB power adapter & power cable	1 kit

Optional Accessory	
Wi-Fi & BT antenna	1