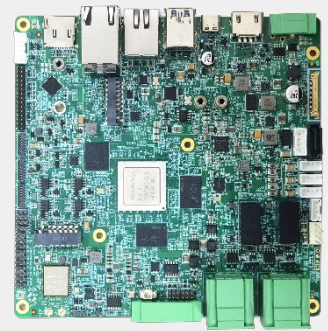


VT-SBC-3588 Single Board Computer



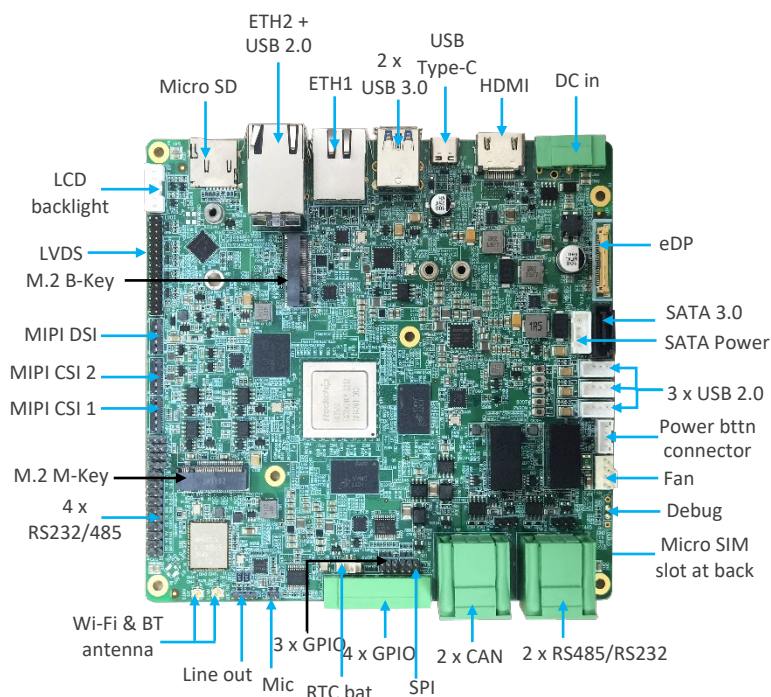
Product Brief

Vantron VT-SBC-3588 Single Board Computer is powered by Rockchip latest flagship RK3588 AIoT chipset that is equipped with an 8-core 64-bit CPU, an ARM Mali-G610 MP4 quad-core GPU, and a built-in AI acceleration NPU, capable of providing 6 TOPS computing power and supporting mainstream deep learning frameworks. With the development of the technology, there definitely will be a rising demand for AI-based products from the industrial control market, including but not limited to industrial robots, automated control, drones, etc., and VT-SBC-3588 comes into being.

The single board computer offers two Gigabit Ethernet ports, supports 2.4GHz/5GHz Wi-Fi 6 and Bluetooth 5.0, and provides an M.2 slot for 4G/5G expansion to keep communication uninterrupted. It also supports 8K video decoding and encoding to deliver optimized display performance.

Since the single board computer provides rich interfaces, a wide range of peripherals can be connected for extended applications like ARM PC, edge computing, cloud server, smart NVR, and other fields. Moreover, the different operating systems provide a stable and secure system environment for users.

Exterior and Features



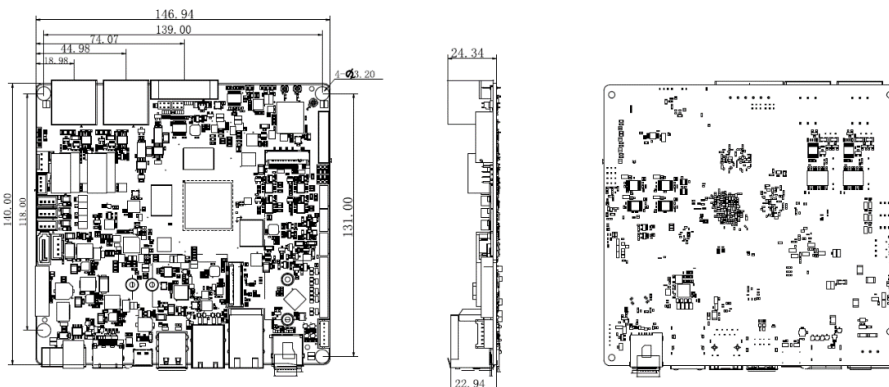
VT-SBC-3588

- Rockchip RK3588 Octa-core flagship processor
- HDMI/eDP/MIPI DSI for high-quality display
- Rich interfaces for expansion
- Wi-Fi (6)/BT/4G/5G/ETH for communication
- Industrial-grade wide temperature design
- High computing power
- Deep learning acceleration
- Industrial longevity

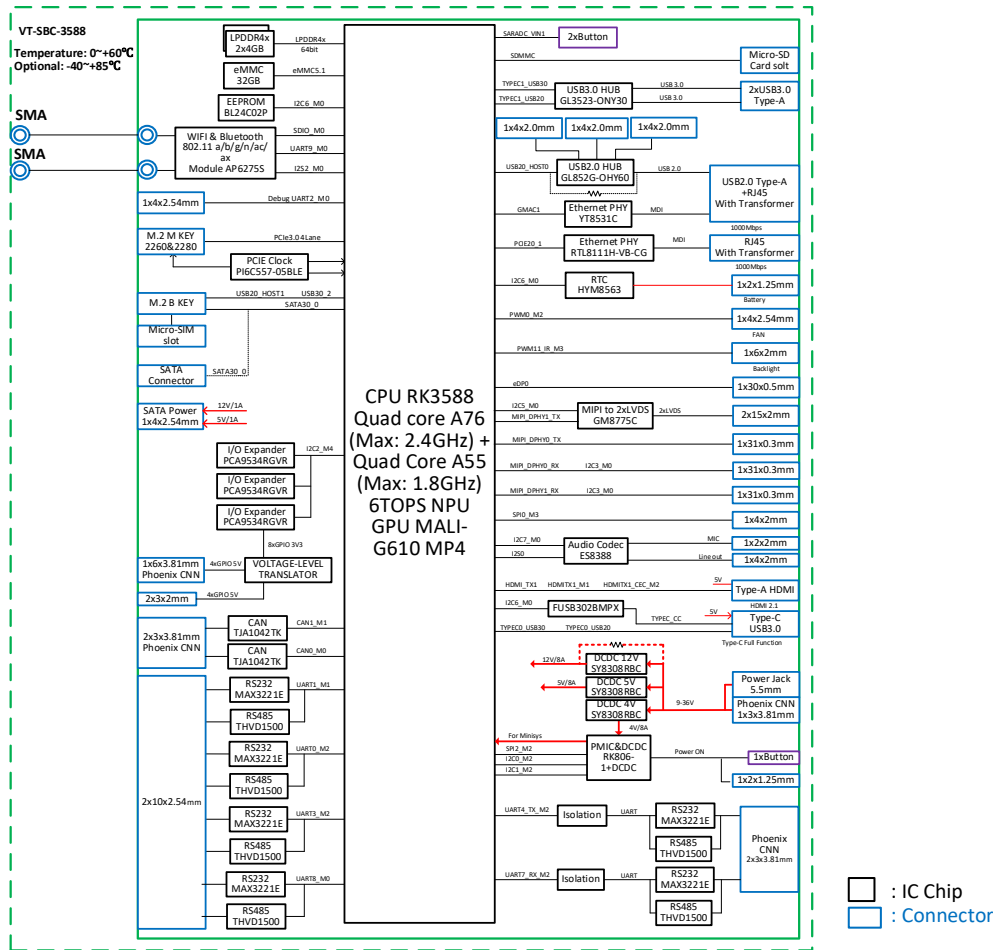
VT-SBC-3588 Single Board Computer Datasheet

VT-SBC-3588			
System	CPU	RK3588 Quad-core Cortex-A76 (Max. 2.4GHz) + Quad-core Cortex-A55 (Max. 1.8GHz) Optional: RK3588J Quad-core Cortex-A76 (Max. 2.0GHz) + Quad-core Cortex-A55 (Max. 1.7GHz)	
	GPU	ARM Mali-G610 MC4, Max. 1GHz	
	NPU	6 TOPS	
	Memory	8GB LPDDR4, up to 32GB	
	Storage	64GB eMMC V5.1, up to 128GB	1 x Micro SD slot
Communication	SSD supported by an M.2 M-Key/M.2 B-Key (256GB ~ 1TB)		
	Ethernet	2 x RJ45, 1000Mbps	
	4G/5G	Optional (expansion by an M.2 B-Key)	
	Wi-Fi & Bluetooth	Wi-Fi 802.11 a/b/g/n/ac/ax + BT 5.0	
Media	Display	1 x HDMI 2.1 (4096 x 2160 @60Hz) 1 x Dual-channel LVDS (1920 x 1200 @60Hz)	1 x eDP (1920 x 1080 @60Hz) 1 x MIPI DSI (1920 x 1080 @60Hz)
	Camera	2 x MIPI CSI	
	Audio	1 x Mic in connector	1 x Line out connector
I/Os	USB	2 x USB 3.0 Host, Type-A 1 x USB 2.0 Host, Type-A	1 x USB Type-C OTG 3 x USB 2.0 Host connector
	Serial port	2 x RS232/RS485 on the Phoenix terminal 1 x TTL, for debugging	4 x RS232/RS485 connector
	Fan	1 x CPU fan connector	
	SIM slot	1 x Micro SIM slot	
	RTC	Supported	
	Watchdog	Supported	
	Button	1 x Power button connector	
	M.2 slot	1 x M.2 M-Key (2260/2280), PCIe 3.0 x 4, for SSD 1 x M.2 B-Key (2242/3052), USB3.0/SATA3.0, for 4G/5G/SSD	
Expansion	GPIO	4 x GPIO on the Phoenix terminal	3 x GPIO pin header
	SPI	1 x SPI	
	CAN	2 x CAN on the Phoenix terminal	
	OS	Android 12, Debian 11, Ubuntu 20.04	
Software	Device management	BlueSphere MDM (Android version optional)	
Power	Input	12V/5A, 24V/3A	1 x Power terminal
Mechanical	Dimensions	146.94mm x 140mm x 24.34mm	
Environment condition	Temperature	Operating: 0°C ~ +60°C (Optional: -40°C~85°C)	Storage: -40°C ~ +85°C
	Humidity	0~95% RH (non-condensing)	

Product Outlines



Block Diagram



Ordering Information

Nomenclature

VT-SBC-3588-[OS-C-SSD-T-OB]		
Operating system:		Null-8GB + 64GB; M1-16GB + 64GB; M2-32GB+64GB
Null-Android; D-Debian; U-Ubuntu		On-board capacity: H1-8GB + 128GB; H2-16GB+128GB; H3-32GB+128GB
Cellular: Null-NA; 4G-4G; 5G-5G		Operating temp.: Null-0°C ~ +60°C; E: -40°C ~ +85°C
		M.2 SATA SSD: Null-NA; SSD1-128GB; SSD2-256GB; SSD3-512GB; SSD4-1TB

Example Ordering No.	Operating System	Cellular Connectivity	SSD Expansion	Operating Temperature	On-Board Capacity
VT-SBC-3588	Android 12	-	-	0°C ~ +60°C	8GB + 64GB
VT-SBC-3588-DEM1	Debian 11	-	-	-40°C ~ +85°C	16GB + 64GB
VT-SBC-3588-U4GSSD1E	Ubuntu 20.04	4G	128GB	-40°C ~ +85°C	8GB + 64GB

Packing List	
VT- SBC-3588 single board computer	1
Wi-Fi & Bluetooth antenna	2
DC power connector	1

Optional Accessories	
12V power adapter & power cable	1 kit
128GB/256GB/512GB/1T SATA SSD	1
4G/5G cellular antenna	2/4