VT-SBC-3588 Single Board Computer

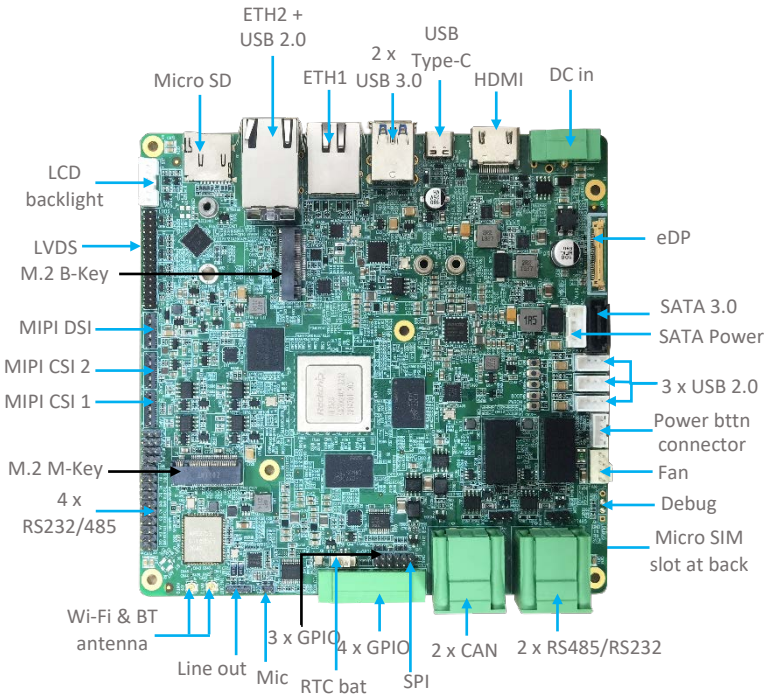
Product Brief

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

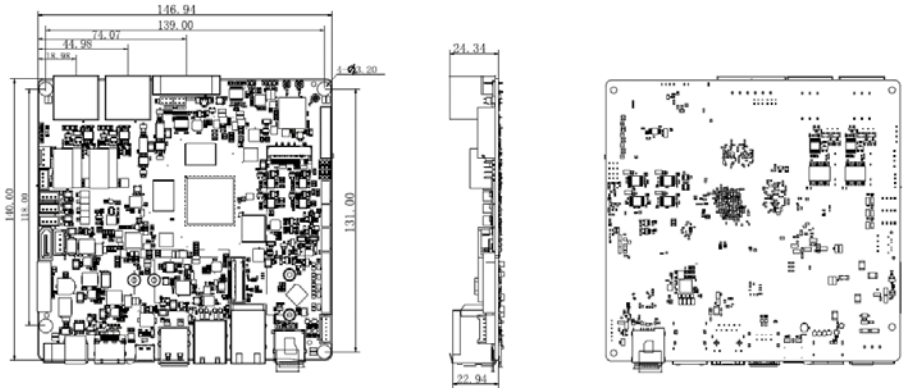


VT-SBC-3588
RK3588 Quad-core Cortex-A76 + Quad-core Cortex-A55 processor
HDMI/eDP/MIPI DSI for high-quality display
Rich interfaces for expansion
Wi-Fi (6)/BT/4G/5G/ETH for communication
Industrial-grade wide temperature design
High computing power
Deep learning acceleration
Industrial longevity

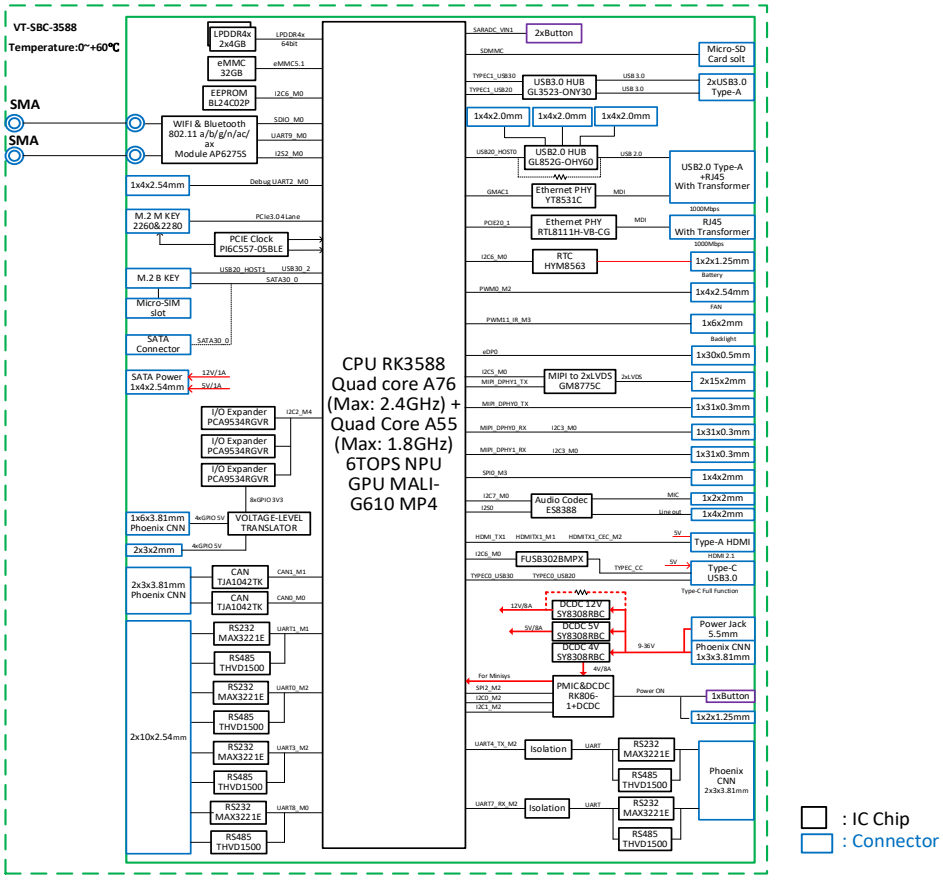
VT-SBC-3588 Single Board Computer Datasheet

VT-SBC-3588			
System	CPU	RK3588 Quad-core Cortex-A76 + Quad-core Cortex-A55, Max. 2.4GHz	
	GPU	ARM Mali-G610 MC4, Max. 1GHz	
	NPU	6 TOPS	
	Memory	8GB LPDDR4 (Optional: 16GB)	
	Storage	32GB eMMC V5.1, up to 128GB	1 x Micro SD slot
		SSD supported by an M.2 M-Key/M.2 B-Key (256GB ~ 1TB)	
Communication	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	4 x RS232/RS485 connector
		1 x TTL, for debugging	
	Fan	1 x CPU fan connector	
	SIM slot	1 x Micro SIM slot	
	RTC	Supported	
	Watchdog	Supported	
	Button	1 x Power button connector	
Expansion	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	
	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	
Software	OS	Android12, Debian 11, Ubuntu 20.04	
	Device management platform	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℃ ~ +60℃	Storage: -40℃ ~ +85℃
	Humidity	0~95% RH (non-condensing)	

Product Outlines



Block Diagram



Ordering Information

Ordering No.	Memory	Storage	Description
VT-SBC-3588	8GB	32GB	USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth
VT-SBC-3588-4G	8GB	32GB	USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth, 4G
VT-SBC-3588-SSD1	8GB	32GB + 256GB (SSD)	USB 2.0, USB 3.0, RS232, RS485, Ethernet, Wi-Fi, Bluetooth

* More variants are available, please contact the sales executive for details.

Packing list			
IBOX3588 Embedded industrial computer	1	256GB/512GB/1T SSD for SSD version	1
Wi-Fi & Bluetooth antenna	2	4G antenna/5G antenna for cellular version	2/4
DC power connector	1	/	
Optional accessories			
12V DC Power adapter	1	Power cord	1

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.