

# VT-SBC35-3576

## Single Board Computer



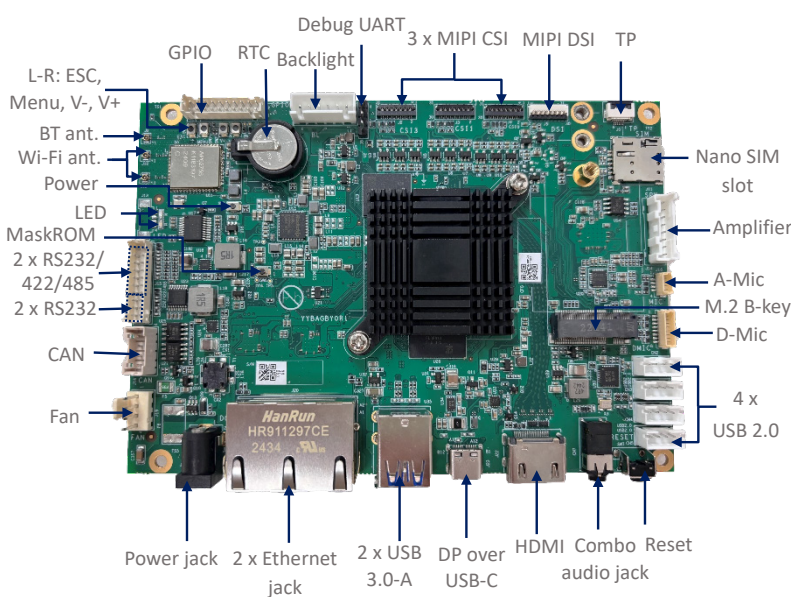
### Product Brief

VT-SBC35-3576 single board computer comes in a 3.5-inch form factor that is ideal for integration into embedded devices. The board is powered by Rockchip RK3576 high-performance, low-power octa-core processor that integrates four Cortex-A72 cores and four Cortex-A53 cores, running at up to 2.2GHz. This processor also includes a NEON co-processor for efficient SIMD (Single Instruction, Multiple Data) operations. The Arm Mali-G52 MC3 GPU supports OpenGL ES1.1/2.0/3.2, OpenCL 2.1, and Vulkan 1.2 for enhanced 2D/3D graphic acceleration, along with H.264 and H.265 video codec support.

The built-in NPU offers 6 TOPS of processing performance, with support for mainstream deep-learning frameworks such as TensorFlow, TF-Lite, Pytorch, Caffe, Onnx NN, Android NN, etc. The board offers three MIPI CSI interfaces for camera use, supporting 16 Megapixel ISP.

For connectivity, VT-SBC35-3576 offers dual Gigabit Ethernet ports, a combo Wi-Fi 6 and Bluetooth 5.1 module, and optional 4G/5G cellular network for IoT applications. In addition, it provides rich peripherals for application in diverse settings, such as advertising HMIs, cash registers, smart whiteboards, gateways, industry-specific tablets, network video recorders, and Over the Top (OTT) services.

### Exterior and Features

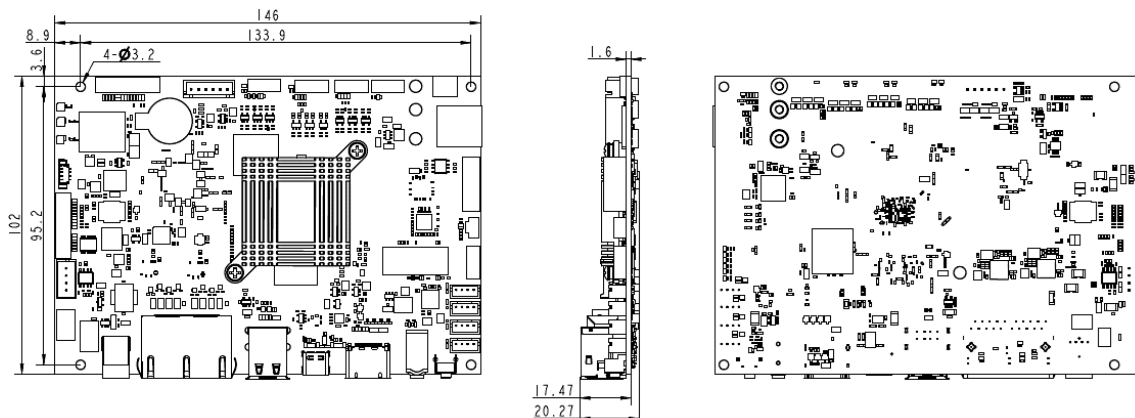


VT-SBC35-3576	
	Rockchip RK3576 octa-core processor
	Ethernet, Wi-Fi 6, BT, optional 4G/5G
	Supports up to three displays in extended mode
	H.264/H.265 video codec
	Three camera interfaces, 16MP ISP with HDR
	Rich I/O for flexible user expansion
	Powerful AI acceleration & graphic processing
	3.5-inch form factor

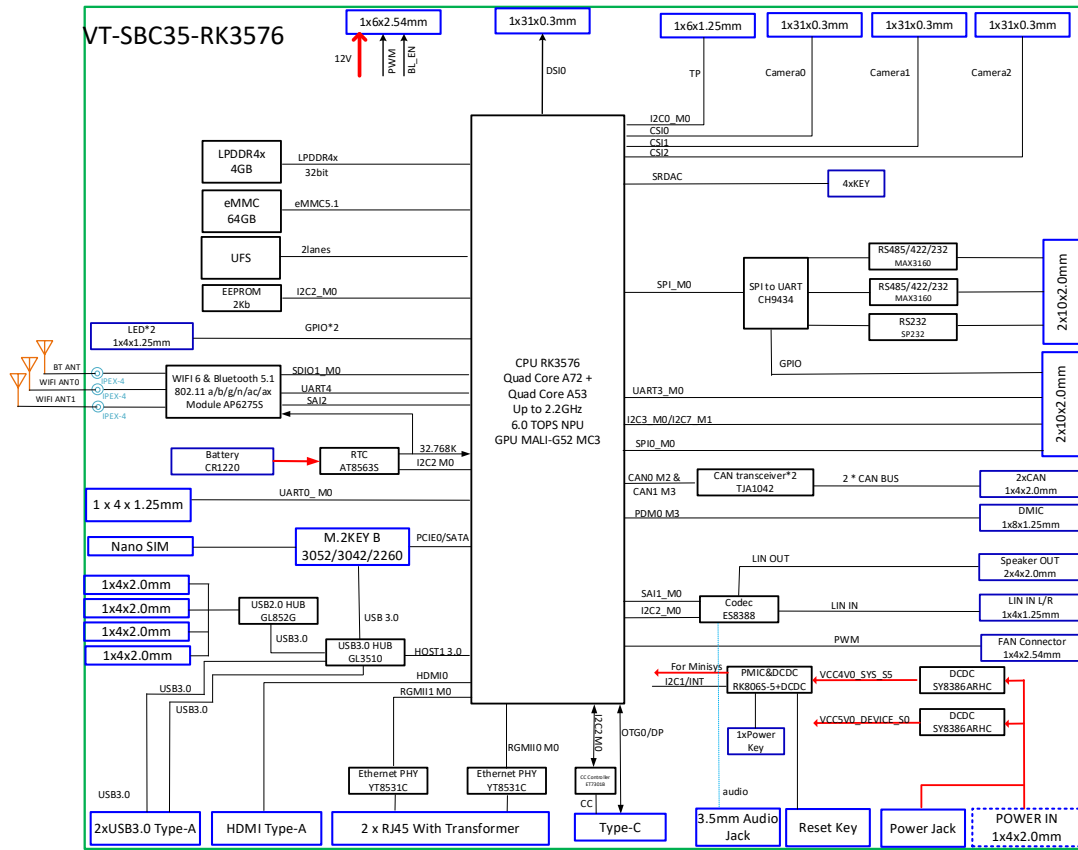
**VT-SBC35-3576 Single Board Computer Datasheet**

VT-SBC35-3576			
<b>System</b>	CPU	Rockchip RK3576, quad-core ARM Cortex-A72 + quad-core ARM Cortex-A53 processor, up to 2.2GHz	
	GPU	Arm Mali G52 MC3 GPU, OpenGL ES1.1/2.0/3.2, OpenCL 2.1, and Vulkan 1.2 supported	
	NPU	6 TOPS	
	Memory	4GB 32-bit LPDDR4x	
<b>Communication</b>	Storage	128GB UFS 2.1 (UFS boot) 64GB eMMC 5.1	Optional: SATA SSD (M.2 B-Key), up to 1TB
	Ethernet	2 x RJ45, 10/100/1000Mbps	
	Wi-Fi & Bluetooth	Wi-Fi 6: 802.11 a/b/g/n/ac/ax + BT 5.1	
<b>Media</b>	Cellular	Optional: 4G/5G (M.2 B-Key)	
	Display	1 x MIPI DSI, up to 2560 x 1600 @60Hz	1 x DisplayPort over USB-C, up to 4K @120Hz
	(extended mode)	1 x HDMI 2.1, up to 4K @120Hz	
	Backlight	1 x Backlight connector (for LVDS converted from MIPI DSI)	
	Video CODEC	8K30 or 4K120 H.264/H.265/VP9/AV2/AVS2 decoder, 4K60 H.264/H.265 encoder	
	Audio	4 x D-Mic with 2 PDM ports 1 x 3.5mm combo audio jack (CTIA standard)	1 x A-Mic 1 x Power amplifier connector
	Camera	3 x MIPI CSI-2, ISP: 16MP with HDR	
	Touch	1 x I <sup>2</sup> C TP connector	
<b>I/O</b>	Serial port	2 x RS232	2 x RS232/485/422
	USB	2 x USB 3.0 Type-A	4 x USB 2.0 connector 1 x USB 3.0 Type-C (OTG, DisplayPort 1.4)
	CAN	2 x CAN	
	GPIO	1 x GPIO header, including 1 x SPI, 1 x UART, 1 x I <sup>2</sup> C, 2 x GPIO	
	Fan	1 x PWM fan connector (12V)	
	UART	1 x Debug UART (3.3V)	
	SIM	1 x Nano SIM slot	
	Antenna	2 x Wi-Fi antenna connector (IPEX-4)	1 x Bluetooth antenna connector (IPEX-4)
<b>Miscellaneous</b>	RTC	Supported	
	WDT	Supported	
<b>Expansion</b>	M.2 slot	1 x M.2 B-Key (2260, SATA SSD / 3042, USB 3.0 for 4G / 3052, USB 3.0/PCIe 2.1 for 5G)	
<b>System Control</b>	Key	1 x Reset key, 1 x MaskROM key, 1 x Power key, 4 x Key (Volume +/-, ESC, Menu)	
	LED indicator	2 x LED indicator (Red: Power on, Green: Normal operation; user definable)	
<b>Power</b>	Input	12V DC	1 x Power jack
	Consumption	Typical: 2.4W	Max.: 6W
<b>Software</b>	Operating system	Android 14	Debian 11
<b>Mechanical</b>	Dimensions	146mm x 102mm	Heat dissipation: Heat sink
<b>Environment Condition</b>	Temperature	Operating: -20°C~+70°C (Optional: -40°C~+85°C)	Storage: -30°C~+80°C (Optional: -55°C~+85°C)
	Humidity	20%-80% RH (Non-condensing)	

**Product Outlines**



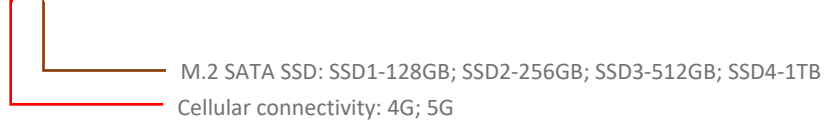
## Block Diagram



## Ordering Information

### Nomenclature

VT-SBC35-3576-**C-SSD**



Example Ordering No.	Memory	Storage	Add-on	Description
VT-SBC35-3576	4GB	64GB + 128GB	/	MIPI DSI, MIPI CSI, HDMI, USB-A, USB-C, RS232, RS485, RS422, CAN, I <sup>2</sup> C, SPI, GPIO
VT-SBC35-3576-4G	4GB	64GB + 128GB	4G LTE	
VT-SBC35-3576-SSD1	4GB	64GB + 128GB	128GB M.2 SATA SSD	

Packing list	
VT-SBC35-3576 single board computer	1
Wi-Fi antenna (sample orders)	2
Bluetooth antenna (sample orders)	1

Optional accessories	
12V 3A power adapter	1
Power cable	1

VT-SBC35-3576 V1.7 © 2024 Vantron Technology, Inc. All rights reserved. This document may be updated or modified by Vantron Technology without prior notice.