VT-SBC35-VOSM6490

Single Board Computer

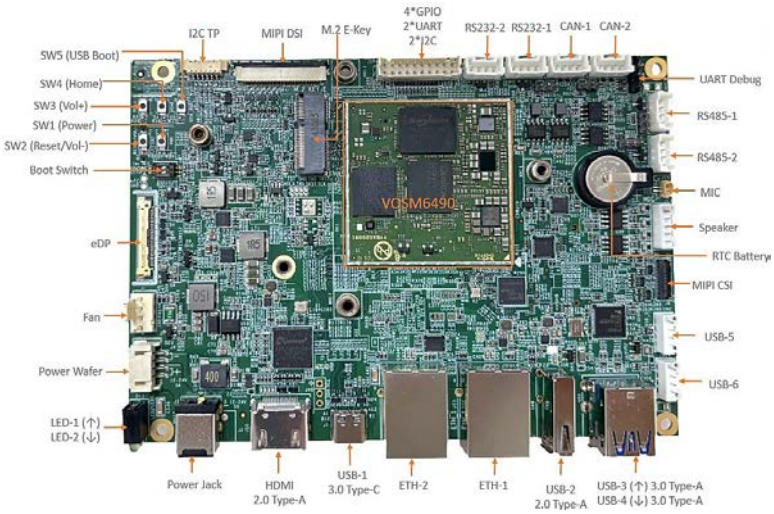
Product Brief

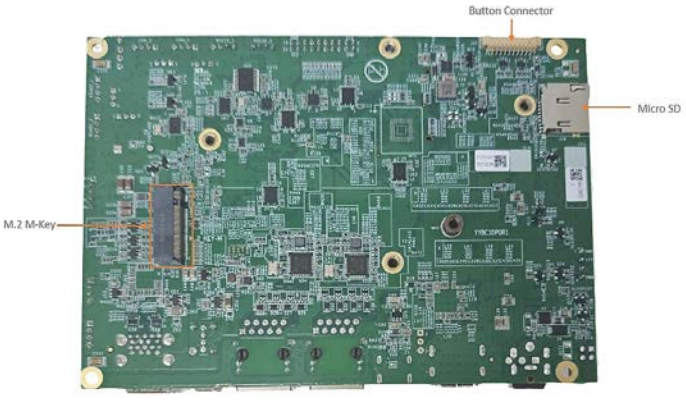
The VT-SBC35-VOSM6490 Single Board Computer is based on Vantron's high-performance VOSM6490 system-on-module, offering a carrier board that implements diverse interfaces to facilitate the use of VOSM6490. Powered by the Qualcomm QCS6490 chipset, it features an octa-core Kryo 670 CPU cluster running at up to 2.7 GHz, an Adreno™ 643 GPU, and a Hexagon™ NPU, delivering 12 TOPS of AI processing. This combination provides substantial compute performance for intensive edge-AI workloads while maintaining efficient power consumption.

The SBC supports dual GbE ports, Wi-Fi, and Bluetooth for flexible connectivity. It offers extensive peripheral interfaces, including USB, PCIe, GPIO, RS232/485, CAN, and audio channels, supporting a wide range of industrial and commercial IoT applications.

The SBC supports Android 15+, Windows 11 IoT, with Linux distributions available upon request. It also supports operation in extended temperature, making it well-suited for demanding applications such as human-machine interfaces (HMI), machine vision systems,

Exterior and Features



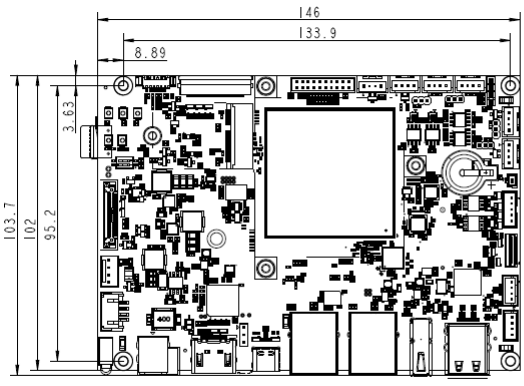


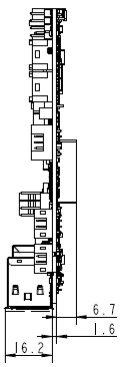
- Qualcomm high-performance, low-power edge AI processor
- Up to 12 TOPS NPU for efficient real-time inference
- Dual GbE, Wi-Fi & BT for flexible connectivity
- Rich I/O: USB, RS232/485, UART, I²C, CAN, GPIO
- Single video output via MIPI DSI/eDP/HDMI@1080p
- M.2 slots for flexible expansion

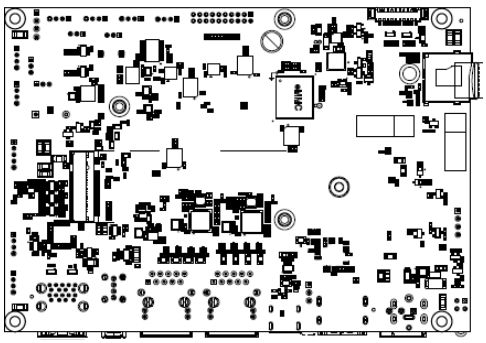
Specifications

VT-SBC35-VOSM6490				
System	CPU	Qualcomm QCS6490 Kryo 670 processor: 1 x A78@2.7GHz, 3 x A78@2.4GHz, 4 x A78@1.9GHz		
	GPU	Qualcomm Adreno 643 GPU, Support OpenGL ES 3.2, Vulkan 1.x, OpenCL 2.0, DX FL12		
	NPU	Qualcomm Hexagon 770 NPU, up to 12 Dense TOPS		
	Memory	8GB LPDDR5		
	Storage	64GB eMMC 5.1	1 x Micro SD slot	
		Optional UFS 2.2/3.1, up to 512GB	Expansion via M.2 M-Key supported	
Communication	Ethernet	2 x RJ45, 10/100/1000Mbps		
	Wi-Fi & Bluetooth	Optional (Expansion via M.2 E-key)		
Media	Video processing	2160p@60 8-bit decoder for H.265/H.264	2160p@30 8-bit encoder for H.265/H.264	
	Image signal processing	Qualcomm Spectra 570L ISP, up to 64MP@30fps ZSL		
	Digital signal processing	Qualcomm Hexagon DSP, 1980 MPPS		
I/O	Display (Single output)	1 x 4-lane MIPI DSI D-PHY / 1 x HDMI 2.0 / 1 x 4-lane eDP 1.4, up to 2520 x 1080@144Hz		
	Camera	1 x 4-lane MIPI CSI D-PHY, up to 64MP@30fps ZSL		
	Audio	1 x A-Mic	1 x Dual-channel 5W/8R speaker	
	TP	1 x I^2C TP header		
	USB	1 x USB 2.0 Type-A	2 x USB 3.0 Type-A	
		1 x USB 3.1 Type-C OTG (non-DP ALT mode)	2 x USB 2.0 connector (USB-5 muxed with M.2 E-Key)	
	COM	2 x RS232, up to 120Kbps	2 x RS485, up to 250Kbps	
		2 x UART (1 x LPI UART, 1 x Non-LPI UART), 3.3V, up to 1Mbps		
	Debug	1 x Debug UART (1.8V)		
	GPIO	4 x GPIO (2 x LPI GPIO, 2 x Non-LPI GPIO), 3.3V		
	CAN	2 x CAN FD		
	I^2C	2 x I^2C (1 x LPI I^2C, 1 x Non-LPI I^2C)		
	Expansion	1 x M.2 M-Key (2280), PCIe 3.0 x2 for NVMe SSD		
		1 x M.2 E-Key (2230), PCIe 3.0 x1/USB 2.0 (muxed with USB-5)/UART/PCM for Wi-Fi & BT		
	SD slot	1 x Micro SD slot		
	RTC	1 x Coin battery holder (1225)		
	WDT	Integrated watchdog timer		
System Control	Key	1 x Power button	1 x Force USB boot button	
		1 x Volume + button	1 x Volume - / Reset button	
		1 x Home button	1 x Button connector	
	Switch	1 x 2-Bit boot switch		
	LED indicator	1 x SOM power-on LED	2 x User-defined LED	
Power	Input	12V~24V DC input, max. 60W	1 x Power jack	1 x 4-Pin power connector
Software	Operating system	Android 15+, Windows 11 IoT, Linux upon request		
	Device management	BlueSphere MDM (Optional for Android version)		
Mechanical	Dimensions	149.63mm x 103.7mm x 24.5mm (SBC)	45mm x 45mm x 3mm (SoM)	
Environmental Condition	Temperature	Operating: -20℃ ~ +60℃	Storage: -40℃ ~ +80℃	
	Humidity	5%~95% RH (Non-condensing)		

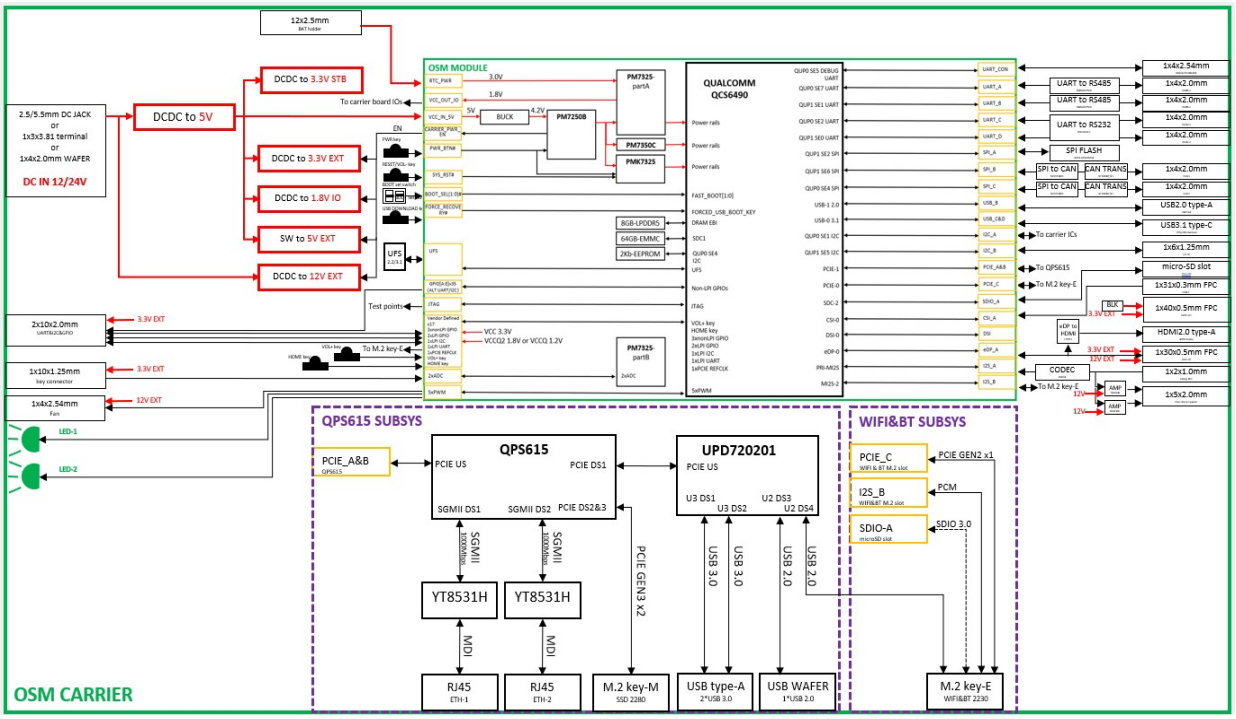
Product Outlines







Block Diagram



Ordering Information

Ordering No.	Memory	Storage	Connectivity
VT-SBC35-VOSM6490	8GB LPDDR5	64GB eMMC	Ethernet
VT-SBC35-VOSM6490-WLAN	8GB LPDDR5	64GB eMMC	Ethernet, Wi-Fi & Bluetooth

Packing List	
VT-SBC35-VOSM6490 Single Board Computer	1

Optional Accessories	
12V 3A DC power adapter	1
Power cord	1
UART-USB debug kit	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.