

VOSM568 Evaluation Kit

A comprehensive tool kit for development of embedded products to implement industrial IoT applications

Overview

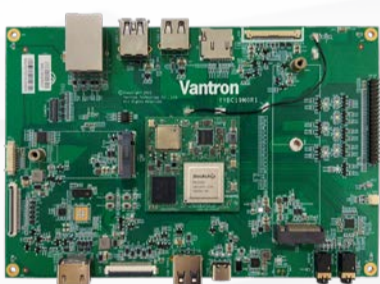
VOSM568 evaluation kit is designed for programmers or developers who seek to reduce the time-to-market of their embedded products based on Vantron VOSM568 system-on-module. The evaluation kit features a VT-SBC-VOSM568-EVB evaluation board and a TMO070 open-frame touchscreen monitor, providing an enhanced platform for better showcasing the performance and capabilities of the VOSM568 system-on-module. This allows for the developers to explore its integration into different applications.

VT-SBC-VOSM568-EVB evaluation board is powered by RK3568 quad-core Arm Cortex-A55 processor with main frequency up to 2.0GHz. The processor integrates a Mali-G52-2EE GPU to maximize the display performance, and a high-performance NPU that supports up to 1 TOPS processing power. Additionally, it boasts a variety of expansion interfaces, including video output interfaces, on-board Wi-Fi and Bluetooth, USB 2.0, USB 3.0, UARTs, and GPIOs to increase its versatility for diverse scenarios.

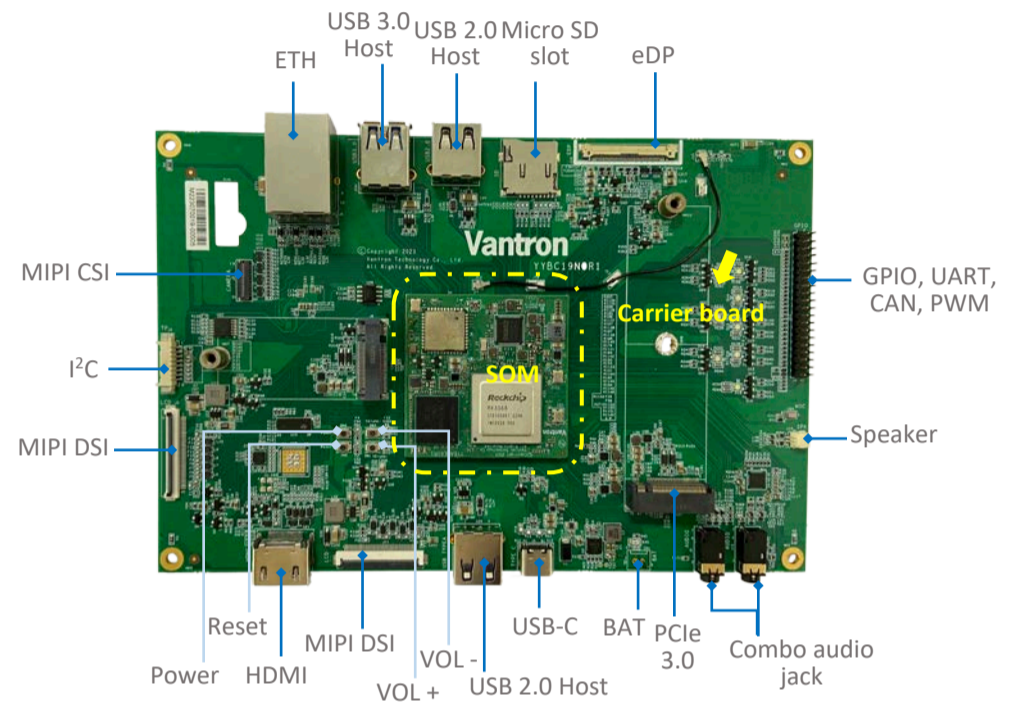
TMO070 open-frame touchscreen monitor applies a 7-inch multi-point PCAP touch screen and features quick response time, a large visible area and wide viewing angles. It is designed to deliver excellent visual experience and improve human-machine interaction accuracy.

Accessories available in the kit

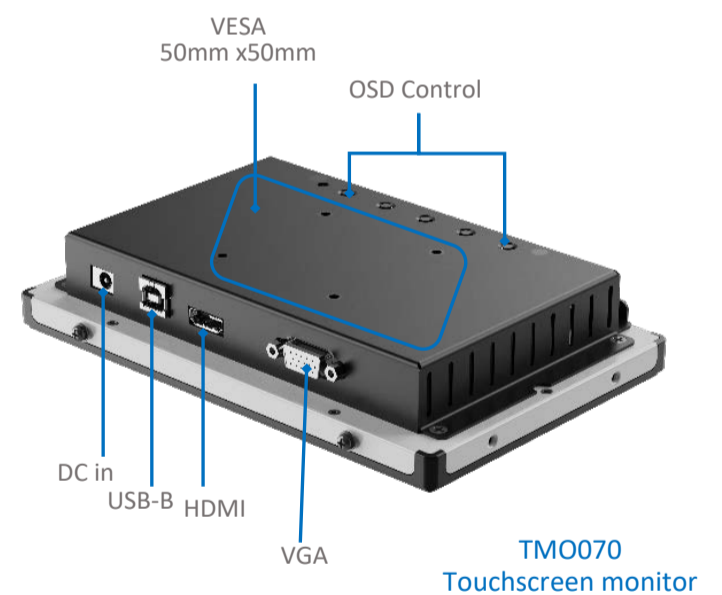
- VT-SBC-VOSM568-EVB evaluation board (carrier board + SOM)
- TMO070 open-frame touchscreen monitor
- Power adapters (5V DC for the board¹, 12V DC for the touchscreen monitor)
- Touch USB cable
- HDMI cable



Exterior



VOSM568 evaluation board



Features and benefits

- Rich interfaces on the evaluation board for diverse peripherals
- Android & Linux systems supported
- Extended service life (7+ years)
- 7" TFT LCD, 300 nits, 1024 x 600
- Scalable platform

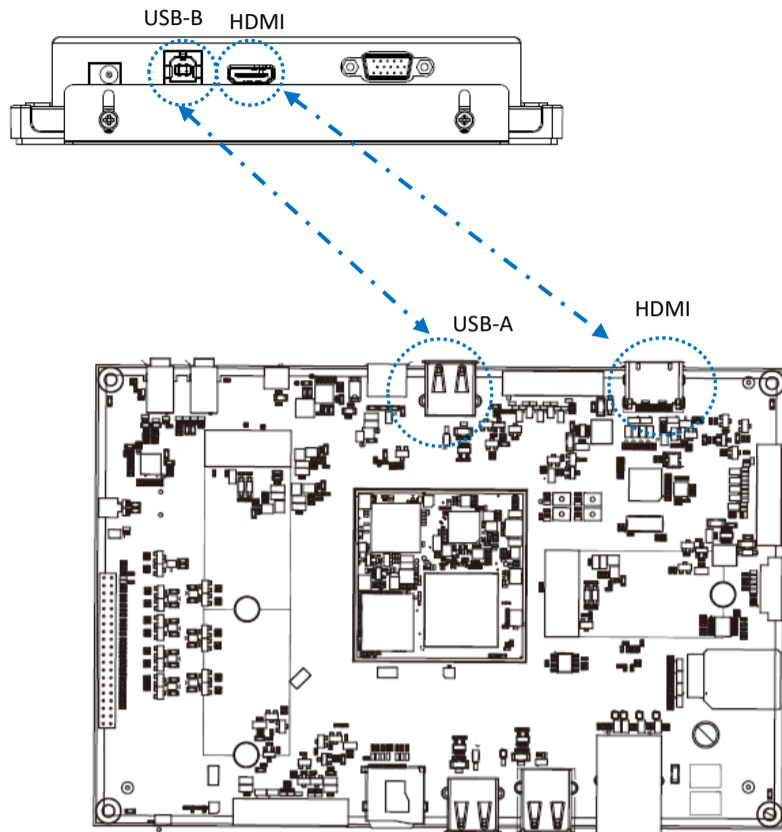
¹ A USB-C to dual USB-A male extension cable is used to connect both the power adapter and host PC for supplying power and debugging the board, respectively.

Evaluation Kit Datasheet

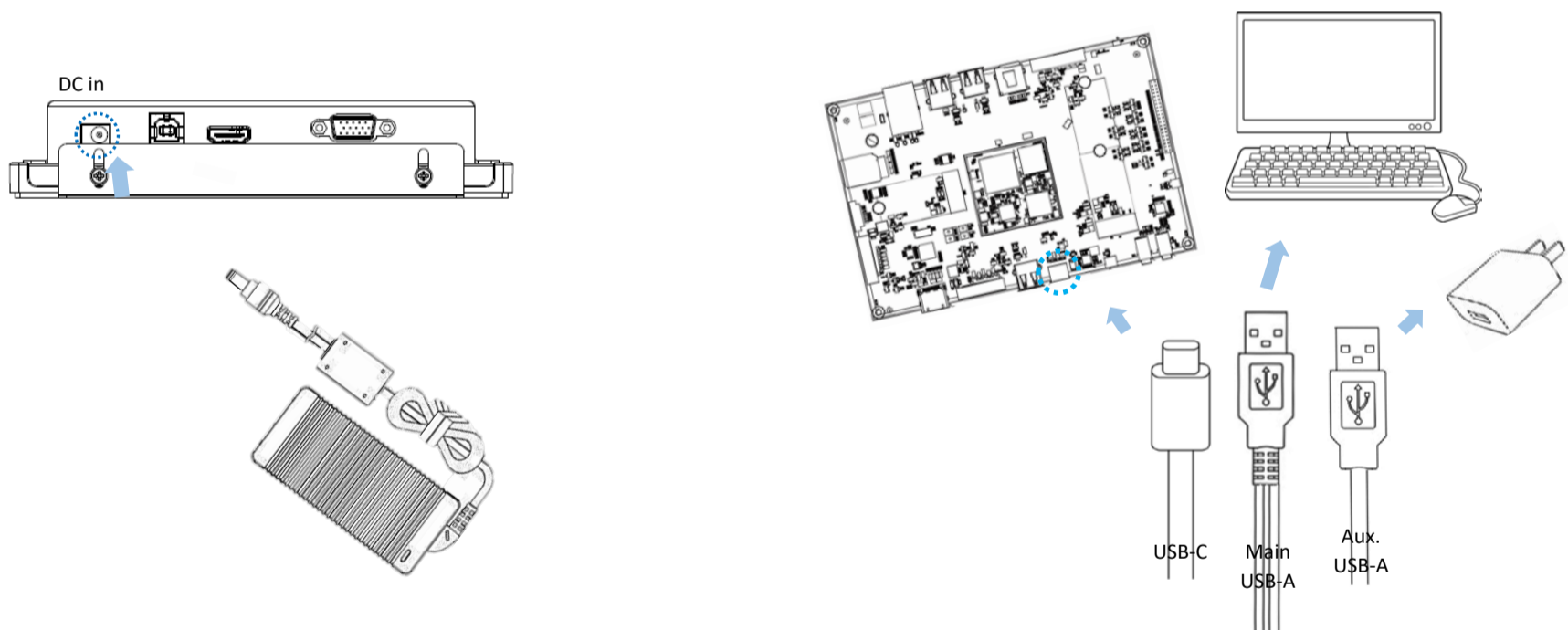
VT-SBC-VOSM568-EVB Evaluation Board				
System	CPU	RK3568 Quad-core ARM Cortex-A55 processor, up to 2.0GHz		
	GPU	ARM Mali-G52 GPU, 600Hz		
	NPU	Up to 1 TOPS performance		
	Memory	2GB LPDDR4 (Optional: 4GB)		
	Storage	16GB eMMC 5.1 (Optional: 64GB)		
	EEPROM	2Kb (for hardware configuration information)		
	PMIC	RK809		
Communication	Ethernet	1 x RJ45, 10M/100M/1000Mbps		
	Wi-Fi & Bluetooth	Wi-Fi 802.11 a/b/g/n/ac + Bluetooth 5.0		
Media	Video processing	4K 60, H.265/H.264/VP9 video decoder 1080p 60, H.265/H.264 video encoder		
	Graphics processing	Support OpenGL ES 1.1/2.0/3.2, OpenCL 2.0 and Vulkan 1.1		
I/Os	Display (Extended mode supported)	2 x 4-lane MIPI DSI (up to 1920 x 1080 @60Hz, not for simultaneous use)		
		1 x 4-lane eDP (up to 2560 x 1600 @60Hz)		
		1 x HDMI 2.0 (up to 1080p @120Hz or 4096 x 2304 @60Hz)		
	MIPI CSI	1 x 4-lane MIPI CSI		
	Audio	2 x 3.5mm Combo audio jack 1 x Speaker connector		
	USB	2 x USB 2.0 Type-A	1 x USB 3.0 Type-A	
		1 x USB Type-C (USB 2.0 OTG, power supply)		
	I ² C	1 x I ² C		
	PCIe	1 x PCIe 3.0 x2		
	GPIO header	12 x GPIO, 2 x CAN, 1 x Debug UART (1.8V level), 4 x Communication UART (TTL), 4 x PWM		
	SD slot	1 x Micro SD slot		
	Key	1 x Power key	1 x Reset key	
		1 x Volume + key	1 x Volume - key	
Power	Input	5V/2A DC input		
Software	Operating system	Android 11, Linux Yocto, Debian 10, other Linux distributions (Support by request)		
	Device management	BlueSphere MDM (Optional for Android version)		
Mechanical	Dimensions	180mm x 120mm x 15mm (EVB)	45mm x 45mm x 1mm (SOM)	
Environment Condition	Temperature	Operating: -10°C ~ +60°C (Optional: -40°C ~ +85°C)	Storage: -20°C ~ +70°C	
	Humidity	≤ 95% RH (Non-condensing)		
	Certification	CE, FCC, CCC		
TMO070 Open-frame Touchscreen Monitor				
Display	Diagonal size	7" TFT LCD with LED backlight		
	Aspect ratio	16:9		
	Resolution	1024 x 600		
	Brightness	300 nits		
	Active area	154.21mm × 85.92mm		
	Contrast ratio	568:1		
	Number of colors	16.7M		
	Response time	25ms		
	Viewing angle	Horizontal: 150°	Vertical: 140°	
Touch panel	Touch point	5-point PCAP touchscreen		
	Touch control	Finger, stylus pen		
	Cover lens thickness	1.1mm		
	Surface treatment	Anti-fingerprint, tempered glass	Optional: Anti-glare / Anti-reflection	
	Light transmittance ratio	>85%		
	Touch communication interface	USB 2.0 Type-B		
Video	Video interface	1 x VGA	1 x HDMI	
Mechanical	Dimensions	186.2mm x 119.9mm x 35.7mm (without brackets)		
	Weight	0.9kg		
	Installation	VESA mounting (50mm x 50mm)	Side bracket mounting	
	OSD	Built-in OSD (set up with OSD keys)	Controls: Menu, Up, Down, Back, Power	
Software	Power input	12V DC		
	Power consumption	< 6W		
	Adjustment of brightness, contrast, color temp.	Supported		
Environment Condition	Temperature	Operating: 0°C ~ +40°C	Storage: -20°C ~ +60°C	
	Humidity	10%~90% RH (non-condensing)		
	MTBF	50,000 hours		
	Warranty	3 years		
	ESD	ESD: ±4KV (contact) and ±8KV (air)		
	Certificate	CCC, FCC, CE, UL		

Wiring

1. Use the HDMI cable and touch USB cable to connect the touchscreen monitor and the evaluation board for display and touch purposes, respectively;



2. Connect the 12V DC power adapter to the touchscreen monitor. Connect the main USB-A port of the USB-C to dual USB-A male extension cable into the host computer (if necessary), the auxiliary USB-A port to the 5V DC adapter, and the USB-C to the evaluation board for debugging and power supply purposes;



3. Connect the power plugs separately to proper outlets to power on the devices.

Company Profile

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 several Fortune 500 companies. Its product lines cover intelligent edge hardware, IoT communication devices, industrial displays and BlueSphere cloud device management 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 to Windows, from embedded level to desktop level, and from gateways to servers. In addition, it provides users with system clipping, driver transplantation and other related services.