

VOSM800 Evaluation Kit

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

Overview

VOSM800 evaluation kit is designed for programmers or developers who seek to reduce the time-to-market of their embedded products based on Vantron VOSM800 system-on-module. The evaluation kit features a VOSM800 evaluation board and a TMO070 open-frame touchscreen monitor, providing an enhanced platform for better showcasing the performance and capabilities of the VOSM800 system-on-module. This allows for the developers to explore its integration into different applications.

The VOSM800 evaluation board is powered by NXP i.MX 8M Mini quad-core ARM Cortex-A53 processor with main frequency up to 1.8GHz. It offers up to 4GB LPDDR4 memory and 64GB eMMC flash storage. Additionally, it boasts a variety of expansion interfaces, including video output interfaces, on-board Wi-Fi and Bluetooth, USB 2.0, UARTs, and GPIOs to increase its versatility for diverse scenarios.

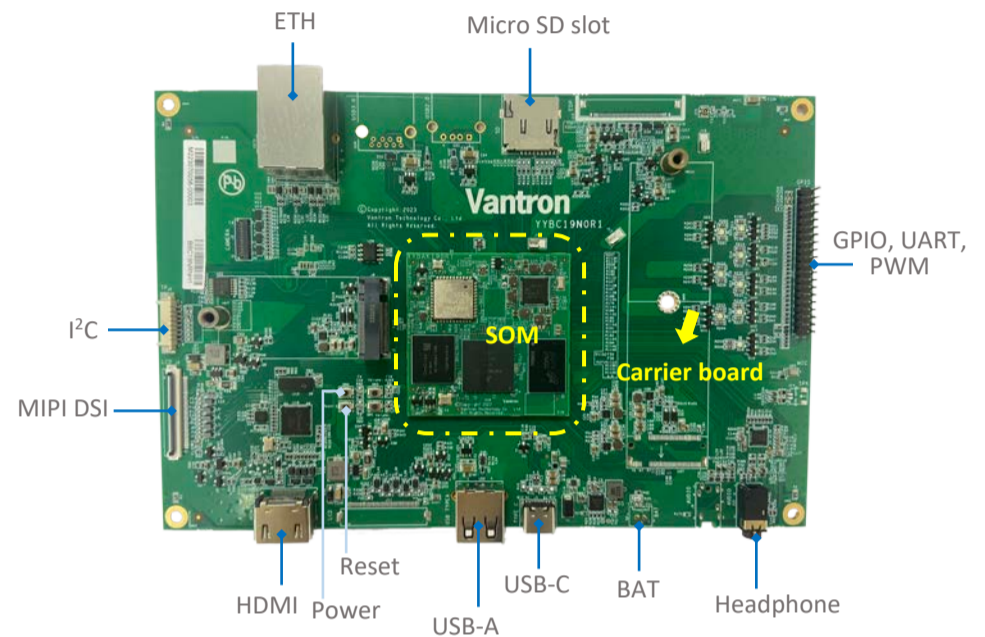
The TMO070 open-frame touchscreen monitor applies a 7-inch multi-point PCAP touch screen and features quick response time, a large visible area and wide viewing angles. It is designed to deliver excellent visual experience and improve human-machine interaction accuracy.

Accessories available in the kit

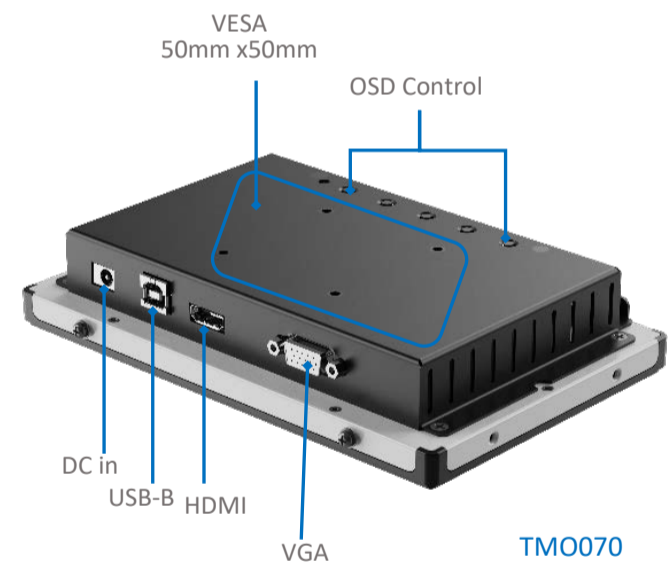
- VOSM800 evaluation board (carrier board + SOM)
- TMO070 open-frame touchscreen monitor
- Power adapters (5V DC for the board¹, 12V DC for the touchscreen monitor)
- Touch USB cable
- HDMI cable



Exterior



VOSM800 evaluation board



TMO070 Touchscreen monitor

Features and benefits

- Rich interfaces on the evaluation board for diverse peripherals
- Android 11 operating system
- Extended service life (7+ years)
- 7" TFT LCD, 300 nits, 1024 x 600
- Scalable platform

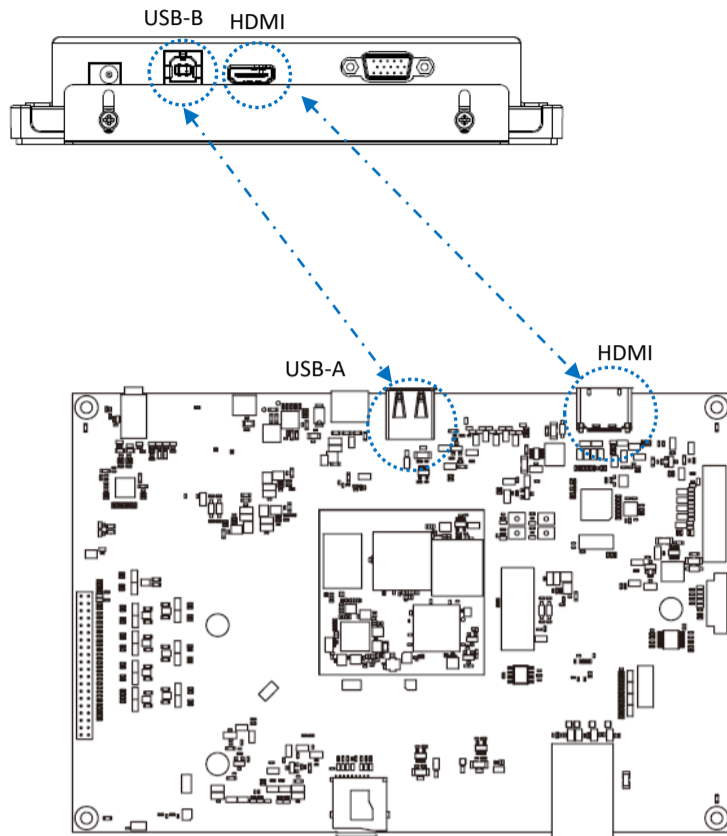
¹ A USB-C to dual USB-A male extension cable is used to connect both the power adapter and host PC for supplying power and debugging the board, respectively.

Evaluation Kit Datasheet

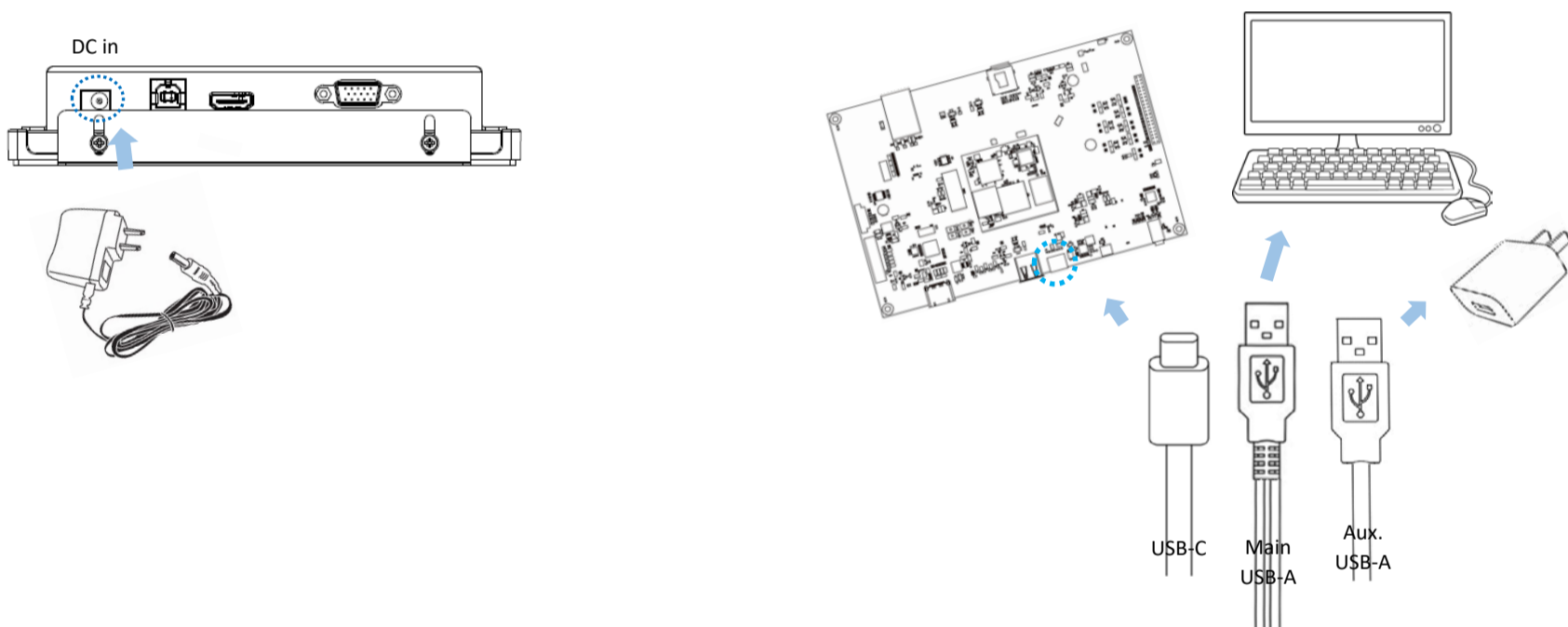
VOSM800 Evaluation Board				
System	CPU	NXP i.MX 8M Mini, Quad-core ARM Cortex-A53, up to 1.8GHz		
	Memory	2GB LPDDR4 (Optional: 4GB)		
	Storage	16GB eMMC 5.1 (Optional: 64GB)		
	EEPROM	2Kb (for hardware configuration information)		
	PMIC	PCA9450AHN		
Communication	Ethernet	1 x RJ45, 10M/100/1000Mbps		
	Wi-Fi & Bluetooth	Wi-Fi 802.11 a/b/g/n/ac + Bluetooth 5.0		
Media	Video processing	1080p60 H265, VP9 decoder	1080p60 H.264, VP8 encoder	
	Graphics processing	1080p60 H264, VP8 decoder	GC320 for 2D acceleration	
I/Os	Display (single display mode)	1 x 4-lane MIPI DSI (up to 1080P @60Hz output) 1 x HDMI		
	MIPI CSI	1 x 4-lane MIPI CSI		
	Audio	1 x Headphone jack		
	USB	1 x USB 2.0 Type-A	1 x USB Type-C (USB 2.0 OTG, power supply)	
	I ² C	1 x I ² C		
	GPIO header	12 x GPIO, 1 x Debug UART (1.8V level), 2 x Communication UART (TTL), 2 x PWM		
	SD slot	1 x Micro SD slot		
	JTAG	Supported		
	Key	1 x Power key	1 x Reset key	
	Power	Input	5V/2A DC input	
	Software	Operating system	Android 11, Linux (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	800:1		
	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%		
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 supply to the touchscreen monitor. Plug the main USB-A port of the USB-C to dual USB-A male extension cable into the host PC (if necessary), the auxiliary USB-A port to the 5V DC adapter, and the USB-C into the evaluation board for debugging and charging purposes;



3. Plug the adapters separately into 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.