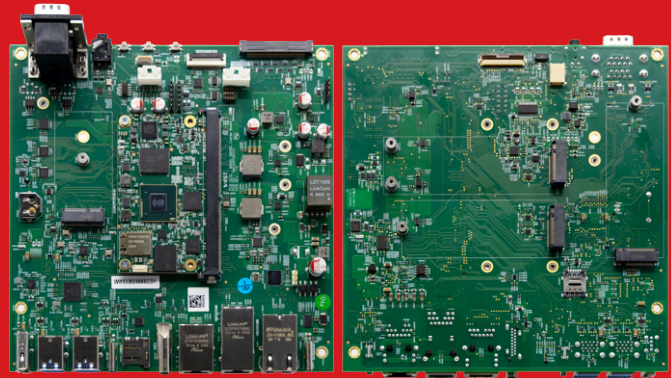


VEST i.MX95 Dev Kit (Mini ITX)

VEST is a leading embedded solutions provider, committing to excellence and innovation. VEST i.MX95 SMARC Dev Kit in SMARC 2.2 standard form factor expedite product development and manufacturing for supply resilience, enabling swift market entry for your products and ensuring a competitive advantage.



**High Performance
CPU**



**Edge Neural
Processing**



**Rich
Multimedia**



Industrial 4.0

ABOUT OUR PRODUCT

Introducing the VEST i.MX95 SMARC Development Kit, a compact and powerful platform for Edge and Generative AI applications across smart industrial, vision, and retail solutions. Combining a high-performance SMARC 2.2 System on Module (SoM) with a feature-rich Mini-ITX carrier board, it unlocks the full potential of the NXP i.MX95 processor to deliver efficient AI acceleration, rich graphics performance, and scalable connectivity for next-generation embedded designs.

High-Performance Processing and 3D Graphics

The VEST SMTX i.MX95-A Dev Kit integrates the NXP i.MX95 application processor, featuring:

- 6x Arm® Cortex®-A55 cores for advanced Edge computing
- Dual Real-Time Subsystem (Cortex®-M7/M33) for low-latency control
- Arm® Mali™ GPU delivering smooth 3D graphics for advanced Human Machine Interfaces (HMI)
- Support for dual displays and rich multimedia, including 4K H.264/H.265 encoding and decoding

Edge and Generative AI Capabilities

Integrated NPU architecture for balanced performance and power efficiency:

- NXP eIQ® Neutron NPU delivering up to 8.0 eTOPS at 1Ghz
- Enables efficient AI/ML acceleration for compute-intensive edge applications
- Optimized for real-time analytics and next-generation AI workloads

Secure, Connected and Scalable

- Connectivity: Dual GbE with TSN support (one PoE 25W port) and a 10GbE for high-bandwidth data transmission
- Security: Integrated NXP EdgeLock® Secure Enclave and Safety: SIL 2 (Optional)
- Expansion: Flexible M.2 slots (Key M, E, B) for NVMe storage, high-speed Wi-Fi, and custom I/O

This Dev Kit is versatile and ideal for a diverse range of applications, such as:

- Smart Industrial: Industrial automation (Industry 4.0), Edge Computing Systems, Test & Measurement
- Vision Systems: Advanced HMI applications, Video & audio conferencing
- Enterprise: Point of sale (POS) systems, Digital Signage, Smart Retail, Smart Cities
- Specialized: Point of Care Devices (e.g., Pumps, Respirators, Monitoring Systems)

Support



Specifications (VEST i.MX95 Dev Kit - Mini ITX)

CPU Details	
CPU	Up to 6x Cortex®-A55 @ 1.8GHz (Ind)/2Ghz (Com), 1x Cortex®-M7, 1x Cortex®-M33
GPU	Arm® Mali-G310, OpenGL® ES 3.2, Vulkan® 1.2, OpenCL 3.0
NPU	NXP eIQ® Neutron NPU up to 8.0 eTOPS at 1Ghz (eTOPS: equivalent TOPS)
Package	NXP VZ (19mm x 19mm, 0.7mm pitch), NXP VT (15mm x 15mm, 0.5mm pitch)
Memory	
Memory	Up to 16GB LPDDR4X (NXP VT) or LPDDR5 (NXP VZ), 32-bit, up to 6.4 GT/s, with inline ECC
Storage	Up to 256GB eMMC 5.1
External Storage	Mirco SD Slot
Operating System	
BSP	Yocto Linux, Debian, FreeRTOS, Zephyr, NXP Real Time Edge, NXP eIQ®, Matter
Security	
SOC	EdgeLock® Secure Enclave
External Safety	SE050 (Optional), SIL-2 (IEC61508) (Optional)
Multimedia	
VPU	Decoder: H.264, H.265, 4Kp60 Encoder: H.264, H.265, 4Kp60
Display	Dual Channel LVDS interface up to 1080p60 1x MIPI DSI (4-Lane) up to 3840x1440p60 (optional) 7" or 10" LCD with I2C touch 1x HDMI Type A (Optional)
Audio	Audio Codec SGT5000, 3.5mm Audio Jack (Line In, Mic) 10W Max Speaker Header
Expansion Slot	
Display	M.2 Key B for Display Signal Expansion (LVDS0/DSI0, LVDS1, PWM, I2C, GPIO)
Camera	2x 4-lane MIPI CSI, Cam CLK, I2C, SPI, GPIO
M.2 Key M (2280)	1x 1-lane PCIe Gen 3.0, I2C
M.2 Key E (2230)	1x 1-lane PCIe Gen 3.0, SDIO, USB 2.0, UART (TX,RX,CTS,RTS), I2S, I2C
M.2 Key B (USB 3.0) 2280	LTE/5G
Audio	FFC (2x I2S,I2C, 4x GPIO)
Connectivity	
Wireless	Wi-Fi 6/Bluetooth 5.3 (Optional)
Networking	2x 1GbE with PHY, TSN & IEEE 1588 support (1× PoE 25W) 1x 10 GbEthernet (only on 19x19mm package)
USB	4x Type-A USB 3.0, Type-A USB 2.0, USB 2.0 OTG Type-C
Stacked D-SUB	Upper Stack: RS-232/422/485 (Software selectable)
	Lower Stack: 2x CAN
Real Time Clock	12mm Diameter Coin Battery holder (Optional)
Debugging	2x UART, JTAG
Power	5V DC +/-5%, USB Type-C with PD (65W, 20V Maximum) or PoE (25W)
Physical	
Form Factor	170mm x 170mm (Mini ITX) 82mm x 50mm (SMARC)
Buttons	Power, Reset, Force Recovery
Operating Temperature	Commercial/Industrial (Optional)
Ordering Information and Enquiries	
Please contact sales@apc-vest.com	

