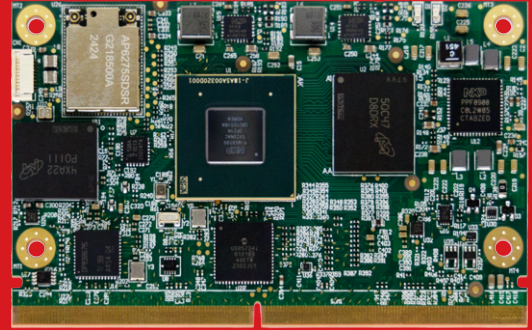


VEST SMX i.MX95

VEST introduces the new i.MX 95 series, expanding its SGeT-compliant SMARC line. Designed for high-performance edge intelligence, the i.MX 95 family delivers powerful AI acceleration, scalable real-time processing, and robust security. It's ideally suited for industrial automation, edge AI systems, smart medical devices, and advanced HMI applications.



**High Performance
CPU**



**Edge Neural
Processing**



**Rich
Multimedia**



Industrial 4.0

ABOUT OUR PRODUCT

Unlock powerful edge AI with the VEST i.MX 95 SMARC module, available in Hexa-core (i.MX 9596, i.MX 9556) and Quad-core (i.MX 9594, i.MX 9554) variants. It combines up to six Arm® Cortex®-A55 cores with Cortex®-M7/M33 for real-time and safety-critical processing, and integrates a 8.0 eTOPS NXP eIQ® Neutron NPU for high-performance ML at the edge.

Multimedia features include 4-lane MIPI CSI and support various combinations of LVDS (dual-channel 4-lane or single 8-lane) and 4-lane MIPI DSI, enabling vivid displays up to 4Kp30, powered by the Arm® Mali™ GPU.

It offers dual Gigabit Ethernet with TSN, PCIe Gen3, USB 3.0, CAN-FD, and LPDDR5/4X for high-speed connectivity. Security is strengthened with NXP EdgeLock® Secure Enclave, and software support includes Linux®, Yocto, FreeRTOS™, Zephyr, and the eIQ® ML toolkit.

Introducing the VEST SMX i.MX95 SMARC SOM, a high-performance and scalable solution designed for a wide range of edge applications, such as:

- Industrial Automation, Industry 4.0 and Gateways
- Medical: Pumps, respirators, clinical monitoring
- IoT: Smart appliances, video/audio conferencing, IP phones, smart carts, home automation gateways

Key Features

- Up to six Arm® Cortex®-A55 cores with Cortex®-M7 and Cortex®-M33 for high-performance, real-time processing.
- Integrated 8.0 eTOPS NPU enables efficient AI/ML acceleration using the NXP eIQ® ML toolkit, optimized for high-performance embedded edge applications.
- Dual Gigabit Ethernet with two ports for Time Sensitive Network (TSN) collaborating with NXP Real Time Edge Software for deterministic control with precise time-synchronization.
- Arm® Mali™ GPU delivers smooth 3D graphics and display capabilities up to 4Kp30 resolution, offering rich multimedia capabilities.

Support



Specifications (VEST SMX i.MX95)

CPU Details	
CPU	Up to 6x Cortex®-A55 @ 1.8GHz (Ind), 1x Cortex®-M7, 1x Cortex®-M33
GPU	Arm® Mali-G310, 3D GPU supporting 64 GFLOPs FP32, OpenGL® ES 3.2, Vulkan® 1.2, OpenCL 3.0
NPU	NXP eIQ® Neutron NPU up to 8.0 eTOPS at 1 Ghz (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, 4.2 GT/s x 32 LPDDR5 or 4.0 GT/s x 32 LPDDR4x (with inline ECC)
Storage	Up to 256GB eMMC 5.1
External Storage	1x SDIO 3.0
Operating System / Driver	
BSP	Yocto Linux, Debian, FreeRTOS, Zephyr, NXP Real Time Edge, NXP eIQ®
Security	
SOC	EdgeLock® Secure Enclave
Multimedia	
VPU	Decoder: H.264, H.265, 4Kp30 Encoder: H.264, H.265, 4Kp30
Camera**	1x MIPI CSI (2 & 4-Lane SMARC exception), 1x MIPI CSI (4-Lane)
Display**	Dual Channel LVDS interface up to 1080p60 1x MIPI DSI (4-lane) supporting 4kp30 or 3840x1440p60
Audio	2x I2S
Connectivity	
Wireless	Wi-Fi 6/Bluetooth 5.3 (Optional)
Networking	2x 1Gb Ethernet with PHY and support Time Sensitive Networking (TSN), IEEE 1588
USB	2x USB 2.0, 2x USB 3.0, 1x USB 2.0 OTG
PCIe	2x PCIe Gen 3.0 (1-lane)
Serial Communication	2x UART (TX,RX,CTS,RTS), 2x UART (TX,RX), 2x CAN-FD (without transceivers)
I2C	2x I2C
GPIO	13x GPIO, 2x I2S
Debugging	JTAG
Power	5Vdc +/-5%
Physical	
Form Factor	82mm x 50mm
Operating Temperature	Industrial (-25°C to 85°C)
Ordering Information and Enquiries	
For all ordering enquiries and i.MX95 multiplexing MIPI DSI/CSI combination options**, please contact sales@apc-vest.com .	

