VEST Your Partner in Innovation
Embedded Solutions

VEST SMARC Development Kit

Build the next generation of Home and Industrial Automation, IoT, Smart Cities, and Industry 4.0 solutions using VEST Dev Kits — delivering AI/ML, Vision, Multimedia, Matter Protocol, and seamless connectivity to speed innovation and reduce time-to-market for intelligent, connected solutions.

Applications

- Advanced Multimedia Human Machine Interface
- Video & Audio Conferencing
- Medical & Healthcare Devices
- Point of Sales, Digital Signage, Smart Retail, Smart Cities
- Test and Measurement Instruments
- Home, Building & Industrial Automation
- Industrial IoT & Industry 4.0

180mm x 120mm (Carrier Board)
82mm x 50mm (SMARC SOM)

Specifications

- **VEST i.MX8M Plus Dev Kit S:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 2D/3D graphics, NPU (2.3 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot, Hailo-8/8L AI module via M.2 Key E (Optional)
- **VEST i.MX8M Mini Dev Kit S:**
  Up to Quad-Core Cortex®-A53, Cortex®-M4, 2D/3D graphics, 2GB RAM, 16GB eMMC, Micro SD slot, Hailo-8/8L AI module via M.2 Key E (Optional)
- **VEST i.MX8M Nano Dev Kit S:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 3D graphics, 2GB RAM, 16GB eMMC, Micro SD slot
- **Operating System**

debian Zephyr FreeRTOS

SMARC module · TELEDYNE Teledyne e2v · HAILO Empowering Intelligence

VEST i.MX8M Plus Dev Kit S

VED8MPNSMX/VED8MPNH8SMX/
VED8MPNH8LSMX

Omnivision OV5640, LI-IMX715-MIPI Camera (Leopard Imaging), Teledyne e2v (Optimom 2.0)

2x MIPI CSI (4-lane each), ISP up to 12 MP

On SOM Dual Band Wi-Fi/Bluetooth, Intel® AX210 Wi-Fi 6E module/BE200 Wi-Fi 7 module via M.2 Key E slot (Optional)*

2x Gigabit Ethernet with PoE (1x TSN)

2x M.2 Key B Form Factor Expansion Daughter Board Socket for MIPI CSI & LDVS

Telit LN920 via M.2 NGFF (LTE Cat 12/13/6, GNSS: GPS/GLONASS/Galileo/Beidou) (Optional)*

NXP Real-Time Edge Software, NXP eIQ®, HailoRT

VEST i.MX8M Mini Dev Kit S

VED8MM7SMX/VED8MM7H8SMX/
VED8MM7H8LSMX

Omnivision OV5640, LI-IMX715-MIPI Camera (Leopard Imaging), Teledyne e2v (Optimom 2.0)

1x MIPI CSI (4-lane)

On SOM Dual Band Wi-Fi/Bluetooth, Intel® AX210 Wi-Fi 6E module/BE200 Wi-Fi 7 module via M.2 Key E slot (Optional)*

1x Gigabit Ethernet with PoE

2x M.2 Key B Form Factor Expansion Daughter Board Socket for MIPI CSI & LDVS

Telit LN920 via M.2 NGFF (LTE Cat 12/13/6, GNSS: GPS/GLONASS/Galileo/Beidou) (Optional)*

NXP Real-Time Edge Software, NXP eIQ®, HailoRT

VEST i.MX8M Nano Dev Kit S

VED8MN7SMX

1x MIPI CSI (4-lane)

LVDS Connector with backlight for 7" & 10" LCD Pane, I2C Touch Connector for 7" & 10" LCD Panel

Headphone Jack with Microphone Input, 4 Pin Header for Speaker L&R, Up to 10W/ch into 8ohm Load

Dual Band Wi-Fi/Bluetooth (Optional on SOM module)

1x Gigabit Ethernet with PoE

1x USB 2.0 Type-C with PD

2x M.2 Key B Form Factor Expansion Daughter Board Socket for MIPI CSI & LDVS

M.2 Key E (SDIO, UART, GPIO)

NXP eIQ®

*: *The Intel® BE200/AX210 Wi-Fi 6E/Telit LN920 LTE and Hailo AI modules utilize the same M.2 Key E interface. Only one module can be installed at a time. Concurrent operation is not supported.*

LEOPARD IMAGING OMNIVISION SCANDIT Telit Cinterion

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VEST SMARC NXP i.MX8M Family System On Module

VEST SMARC modules offer a complete, scalable solution for Edge Computing, integrating powerful capabilities like rich multimedia, real-time control, and on-board AI/Machine Learning. They are fully equipped for industrial deployment, featuring support for common industrial communication buses and robust connectivity options.

Applications

- Advanced Multimedia Human Machine Interface
- Video & Audio Conferencing Intercom
- Smart Home with Matter Protocol and Building Automation
- Point of Sales, Digital Signage, and Industrial Scanning
- Machine Vision Inspection and Test & Measurement Equipment
- Transportation and Healthcare Devices
- Industrial IoT and Industry 4.0 Solutions

82mm x 50mm (SMARC SOM)

Specifications

- **VEST SMX i.MX8M Plus:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 2D/3D graphics, NPU (2.3 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot
- **VEST SMX i.MX8M Mini:**
  Up to Quad-Core Cortex®-A53, Cortex®-M4, 2D/3D graphics, 2GB RAM, 16GB eMMC, Micro SD slot
- **VEST SMX i.MX8M Nano:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 3D graphics, 2GB RAM, 16 GB eMMC, Micro SD slot
- **Operating System**

debian Zephyr

SMARC module

VEST SMX i.MX8M Plus

VE8MP4SMX42WC/VE8MP4SMX42WI

Arm® Cortex®-A53 (Dual/Quad-core), Arm® TrustZone® DRM Ciphers, Security key Storage

2x MIPI CSI (4-lane each), ISP up to 12 MP

HDMI 2.0a TX, LVDS (4/8-lane) TX, MIPI DSI (4-lane)

Cadence® Tensilica® HiFi 4 DSP @ 800MHz

Dual Antenna Wi-Fi/BT 2.5 GHz/ 5GHz (Optional)

2x Gigabit Ethernet with PoE (1x TSN)

1x USB 3.0/USB 2.0 OTG, 2x USB 2.0 Host, 2x USB 3.0 Host via on-board USB Hub

1x PCIe Gen 3.0

NXP Real-Time Edge Software, NXP eIQ®

VEST SMX i.MX8M Mini

VE8MM4SMX42WC/VE8MM4SMX42WI

Arm® Cortex®-A53 (Dual/Quad-core), Arm® TrustZone® DRM Ciphers, Security key Storage

1x MIPI CSI (4-lane)

Dual Channel LVDS (default) or MIPI DSI (4-lane)

Dual Band Wi-Fi/Bluetooth (Optional)

1x Gigabit Ethernet with PoE

1x USB 2.0 OTG, 4x USB 2.0 Host

1x PCIe Gen 2.0

3x UART (for Wifi-BT version) or 4x UART (for without Wifi-BT version)

4x I2C

NXP Real-Time Edge Software, NXP eIQ®

VEST SMX i.MX8M Nano

VE8MN4SMX42WC/VE8MN4SMX42WI

Arm® Cortex®-A53 (Dual/Quad-core), Arm® TrustZone® DRM Ciphers, Security key Storage

1x MIPI CSI (4-lane)

Dual Channel LVDS (default) or MIPI DSI (4-lane)

Dual Band Wi-Fi/Bluetooth (Optional)

1x On Board 10/100/1000 Mbps Ethernet PHY

1x USB 2.0 OTG

3x UART (for Wifi-BT version) or 4x UART (for without Wifi-BT version)

4x I2C

NXP eIQ®

SMARC module

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VEST Open Standard Module (OSM)

The compact VEST OSM form factor (30x30mm) unlocks a vast range of Edge Computing solutions. It supports a versatile processor selection, from the powerful NXP i.MX8M Plus and efficient i.MX93 (both ideal for AI/ML applications like vision and time-series predictive maintenance) down to the ultra-low-power i.MX 8ULP, which is perfect for voice-enabled applications.

Applications

- Advanced Multimedia HMI, Video/Audio Conferencing
- Medical & Healthcare Devices, Portable Patient Monitoring
- Smart Home, Building Automation, Matter Controller/devices
- Energy Management (EV charging, Generation, HVAC)
- Industrial IoT, Industry 4.0, Edge Gateways
- Intelligent Machine Vision, Robotics, Scanning, Test & Measurement Equipment
- Smart city: Lighting, Safety, Transport

30mm x 30mm (OSM Size-S)

Specifications

- **VEST OSM i.MX8M Plus:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 2D/3D graphics, NPU (2.3 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot, 1x MMC (8-bit), 1x SDIO 3.0 (4-bit)
- **VEST OSM i.MX 8ULP:**
  Dual-Core Cortex®-A35, Cortex®-M33, 2D/3D graphics & PXP, 2GB RAM, 16GB eMMC, Micro SD slot
- **VEST OSM i.MX93/i.MX91:**
  i.MX93: Up to Dual-Core Cortex®-A55, Cortex®-M33, PXP, NPU (Arm Ethos™-U65 0.5 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot
  i.MX91: Single-Core Cortex®-A55, 2GB RAM, 16GB eMMC, Micro SD slot
- **Operating System**

OPEN STANDARD MODULE™

VEST OSM i.MX8M Plus

VE8MPN4OSS420C/VE8MPN4OSS420I

- Arm® Cortex®-A53 (Quad-core), Arm® TrustZone® DRM Ciphers, Security key Storage
- 2x MIPI CSI (4-lane)
- HDMI 2.0a TX, LVDS (4/8-lane) TX, MIPI DSI (4-lane)
- Cadence® Tensilica® HiFi 4 DSP @ 800MHz
- Temperature compensated RTC (Optional)
- 2x Gigabit Ethernet (1x TSN)
- 2x USB 3.0 OTG
- 1x PCIe Gen 3.0
- 4x I2C
- NXP Real-Time Edge Software, Matter, NXP eIQ®

VEST OSM i.MX 8ULP

VE8ULP2OSS420C/VE8ULP2OSS420I

- Arm® Cortex®-A35 (Dual-core), EdgeLock® Secure Enclave
- 1x MIPI CSI (4-lane)
- MIPI DSI (4-lane), 18-bit RGB
- Tensilica® Fusion DSP for low power audio
- 1x 10/100 Mbps RMII for Ethernet
- 2x USB 2.0 OTG
- 2x I2C, 1x I3C
- 24 GPIO (can use to configure 8 Ch DMIC), 2x I2S
- NXP eIQ®, Matter

VEST OSM i.MX93/i.MX91

VE932OSS420C/VE932OSS420I
VE911OSS420C/VE911OSS420I

- i.MX93 (Arm® Dual-core Cortex®-A55), i.MX91 (Arm® Single-Core Cortex®-A55), EdgeLock® Secure Enclave
- MIPI CSI (2-Lane) with ISI, 8 bpp parallel YUV/RGB Camera*
- MIPI DSI (4-Lane), LVDS (4-lane), 24 bpp parallel RGB Display*
- 2x Gigabit Ethernet (1x TSN)
- 2x USB 2.0 OTG (Controller and PHY)
- 3x I2C
- 4x ADC
- NXP Real-Time Edge Software, Matter, NXP eIQ®

For 8bpp parallel YUV/RGB Camera Application, and 24 bpp parallel RGB Display Application. Contact **sales@apc-vest.com*

OPEN STANDARD MODULE™

For More Enquiries, Scan Here.
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VEST
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VEST Single Board Computer (SBC)

VEST series of industrial SBCs, available in Mini-ITX or custom formats, they feature the high-performance Intel® Gen 15th Core™ Ultra (Arrow Lake) and the robust iMX8M Mini. These platforms are optimized for commercial and industrial environments. They enable advanced AI/ML capabilities using their embedded NPU or optional Hailo AI Accelerators. Get powerful, accelerated edge computing solutions.

Applications

- Factory Automation, Process Control & Robotics (AGV/AMR)
- Industrial PCs and Energy Management (EV Charging, Smart Grid)
- Advanced HMI & Smart Retail (Kiosks, Signage, POS)
- Industrial and Commercial IoT
- Medical Edge Compute, Point of care, Remote Monitoring
- Telematics, Video/Audio Streaming
- Gateway, Edge Vision, Traffic & Warehouse Management

Picture does not represent the actual product

170mm x 170mm (Mini ITX)

Specifications

- **VEST SBC i.MX8M Mini:**
  Quad-core Cortex®-A53, Cortex®-M4, 2D/3D graphics, 2GB RAM, 8GB eMMC, Micro SD slot
- **Operating System**

debian Zephyr

- **VEST Intel® Gen 15th Core™ Ultra (Arrow Lake) Intel® Core™ Ultra 5 (235UA, 225U, 235U), Intel® Core™ Ultra 7 (255U, 265U):**
  Up to 12 cores (2P + 8E + 2e)
  Platform TOPS: Up to 24
  Intel® Graphics: Up to 8 TOPS Integrated
  NPU: Up to 13 TOPS, Intel Deep Learning Boost
- **Operating System**

debian Windows 11

HAILO
Empowering Intelligence

VEST SBC i.MX8M Mini

VED8MM4SBC41WC

- Arm® Cortex®-A53 (Quad-core)
- Support up to1080p60 Display through MIPI DSI
- LVDS & I2C touch connector for 7"/10" LCD, Dual-channel LVDS, 4-lane MIPI-DSI, I2C, PWM, up to 1A backlight output
- Dual Band Wi-Fi/Bluetooth with 1x Antenna (Optional)
- 1x USB 2.0 OTG (Micro Type-B), 6x USB 2.0 Host (Type-A)
- 1x Gigabit Ethernet with AVB, IEEE 1588, EEE (Energy Efficient Ethernet for Low Power)
- 0.5mm 2×25-pin header: MIPI CSI (4-lane), SPDIF, SPI, PWM, UART, I2C, GPIO
  Mini PCIe (half/full size) with Micro SIM socket
- 1x Power & Reset buttons, 1x 2mm 3-pin header for power/reset,
  1x GPIO-controlled LED indicator

Picture does not represent the actual product

VEST Intel® Gen 15th Core™ Ultra (Arrow Lake)

Intel® Core™ Ultra 5 (235UA, 225U, 235U)
Intel® Core™ Ultra 7 (255U, 265U):

- Memory Support: Up to LPDDR5/X 8400 MT/s, Up to DDR5 6400 MT/s
- PCIe Support: Up to 20 PCIe 4.0
- Connectivity: Integrated Wi-Fi 7, Bluetooth 5.4, Up to 4x Thunderbolt 4 ports
- Graphics Output: DP 2.1 UHBR20, HDMI 2.1 FRL, eDP1.4b
- Base Power: 15W

For More Enquiries, Scan Here.
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Email: sales@apc-vest.com

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VEST Embedded High-Speed Scanning Kit

VEST, in partnership with Teledyne e2V, provides an embedded vision hardware kit leveraging a selection of NXP i.MX8M Plus, Mini, and i.MX93 processors. Integrating SCANDIT firmware, the kit offers a high-speed scanning solution that instantly captures and deciphers multiple 1D/2D barcodes, QR, Matrix, and Aztec Codes simultaneously. This makes the VEST High-speed scanning kit suitable for a wide array of applications, including warehousing, logistics, medical, and factory automation.

Applications

- Barcode and OCR Scanning
- Industrial Automation: Scanning for Tracking, Inspection, Industry 4.0
- Robotics, Drones and UAV
- Logistics
- Embedded Vision Systems
- IoT Edge Devices
- Auto ID Systems

Specifications

- **VEST Embedded Vision Kit:**
  Up to Quad-Core Cortex-A53, Cortex®-M7, 2D/3D graphics & GPU computing, NPU (2.3 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot
- **Operating System**

debian Zephyr™

180mm x 120mm (Carrier Board), 82mm x 50mm (SMARC SOM)

100mm x 72mm (Carrier Board) 30mm x 30mm (OSM Size-S)

SCANDIT TELEDYNE Teledyne e2v

VEST Embedded High-Speed Scanning Kit

VEV8MPSMXTB01/VEV8MPSMXTC01
VEV8MPSMXTB02/VEV8MPSMXTC02

180mm x 120mm (Carrier Board)
82mm x 50mm (SMARC SOM)

Features

Arm® Cortex®-A53 (Quad-core)

2x MIPI CSI (4-lane each), 2x ISP

LVDS connector with backlight for LCD Panel,
I2C Touch Connector, HDMI 2.0a TX

Optimom 1.5: 1920 (H) x 800 (V), 2.5µm, F/4.0, 10 cm,
100fps @ 8bit, 65fps @ 10 bit, 3.5e-, 37.4 dB

Optimom 2.0: 1920 (H) x 1080 (V), 2.5µm, F/4.0, 10 cm,
130fps @ 8bit, 80fps @ 10 bit, 3.5e-, 37.4 dB

Dual Band WiFi, 2x2 MIMO + Bluetooth 5.2

2x Gigabit Ethernet with PoE (1x TSN)

1x USB2.0/3.0 Type C with PD, 2x USB 2.0/3.0 Type A, 1x USB 2.0 Type A

M.2 KeyB (4-lane 2x MIPI CSI < 2x I2C, 2x UART, 2x SPI, GPIO)
M.2 KeyB (LVDS 4/8 Lane default or MIPI DSI (4 lane), 2x I2C, 2x UART)
PCIe M.2 Key E 2230 (1 Lane PCIe Gen 3.0, USB, SDIO, I2S, UART, GPIO)

NXP Real-Time Edge Software, NXP eIQ®, HailoRT

Also available on VEST PICO ITX

For More Enquiries,
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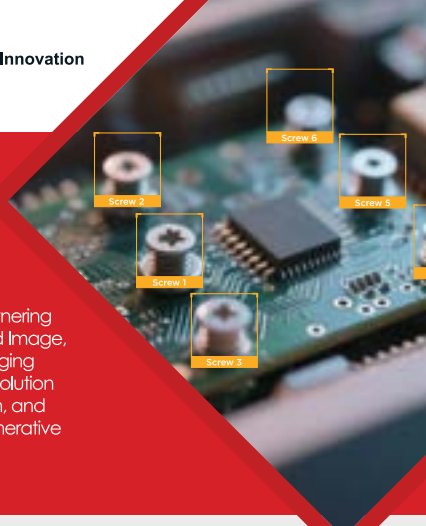

VEST
AI Vision Kit

VEST delivers a powerful AI Vision Kit by partnering with camera module vendors (like Leopard Image, Omnivision, and Teledyne e2V) and leveraging the Hailo-8 AI module (up to 26 TOPS). This solution is ideal for vision-based counting, detection, and identification. For applications needing generative AI, the kit supports the NXP Kinara ARA-2.

Applications

- Barcode and OCR Scanning
- Industrial Automation: Scanning for Tracking, Inspection, Industry 4.0
- Robotics, Drones and UAV
- Logistics
- Embedded Vision Systems
- IoT Edge Devices
- Auto ID Systems

Specifications

- **VEST Embedded Vision Kit:**
  Up to Quad-Core Cortex-A53, Cortex®-M7, 2D/3D graphics & GPU computing, NPU (2.3 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot, Hailo-8 AI module
- **Operating System**

debian Zephyr™

180mm x 120mm (Carrier Board),
82mm x 50mm (SMARC SOM)

100mm x 72mm (Carrier Board)
30mm x 30mm (OSM Size-S)

LEOPARD IMAGING · TELEDYNE Teledyne e2v · HAILO Empowering Intelligence

VEST AI Vision Kit

VEV8MPSMXTB01/VEV8MPSMXTC01
VEV8MPSMXTB02/VEV8MPSMXTC02

180mm x 120mm (Carrier Board)
82mm x 50mm (SMARC SOM)

Features

Arm® Cortex®-A53 (Quad-core)

2x MIPI CSI (4-lane each), 2x ISP

LVDS connector with backlight for LCD Panel,
I2C Touch Connector, HDMI 2.0a TX

Optimom 1.5: 1920 (H) x 800 (V), 2.5µm, F/4.0, 10 cm,
100fps @ 8bit, 65fps @ 10 bit, 3.5e-, 37.4 dB

Optimom 2.0: 1920 (H) x 1080 (V), 2.5µm, F/4.0, 10 cm,
130fps @ 8bit, 80fps @ 10 bit, 3.5e-, 37.4 dB

Dual Band WiFi, 2x2 MIMO + Bluetooth 5.2

2x Gigabit Ethernet with PoE (1x TSN)

1x USB2.0/3.0 Type C with PD, 2x USB 2.0/3.0 Type A, 1x USB 2.0 Type A

M.2 KeyB (4-lane 2x MIPI CSI < 2x I2C, 2x UART, 2x SPI, GPIO)
M.2 KeyB (LVDS 4/8 Lane default or MIPI DSI (4 lane), 2x I2C, 2x UART)
PCIe M.2 Key E 2230 (1 Lane PCIe Gen 3.0, USB, SDIO, I2S, UART, GPIO)

NXP Real-Time Edge Software, NXP eIQ®, HailoRT

Also available on VEST PICO ITX

OMNIVISION™ BASLER the power of sight

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VEST SMARC i.MX95 Development Kit

Experience the future of Edge Computing with the powerful NXP i.MX95 processor family. Powered by Hexa Arm Cortex®-A55 cores, it delivers high-performance computing for demanding applications. Boost AI and ML tasks with the integrated NXP eIQ® Neutron NPU (2.0 TOPS), and create immersive HMIs using the embedded Mali 3D GPU. Enjoy ultra-fast, reliable connectivity with 10GbE and TSN, expandable via dual PCIe ports—all secured by the EdgeLock® Secured Enclave.

Applications

- Smart Appliances, Smart Home, AV Conferencing
- Industrial Control & Automation, Robotics, Scanning & Inspection
- Advanced Ruggedized HMI, Industrial Gateway, & PCs
- Smart Kiosk, Signage, Vision Payment Systems
- Medical Devices (Pumps, Respirators & Monitoring)

Picture does not represent the actual product

180mm x 120mm (Carrier Board)
19mm x 19mm (SMARC SOM)

Specifications

- **VEST i.MX95 Dev Kit S:**
  Up to Hexa-Core Cortex®-A55, Arm Cortex®-M7, Arm Cortex®-M33, Arm Mali-G310, 2D/3D graphics, NXP eIQ® Neutron NPU (Up to 2.0 TOPS), Up to 16 GB LPDDR5 (with inline ECC), Up to 256GB eMMC 5.1, Micro SD slot
- **Operating System**

debian Zephyr

SMARC module
TELEDYNE Teledyne e2v
HAILO Empowering Intelligence

VEST SMARC i.MX95 Development Kit

180mm x 120mm (Carrier Board)
19mm x 19mm (SMARC SOM)

Picture does not represent the actual product

Features

Arm® Cortex®-A55 (Hexa-Core), EdgeLock® Secure Enclave

1 x USB Type-C with PD for Power (Up to 20V, 3A)

1 x HDMI Type-A

Dual-Channel LVDS, 2 x MIPI CSI (4-lane each)

Dual Band Wi-Fi 6, BT 5.2 (Optional on SOM Board)

10 GbE SERDES0 (NXP i.MX95 integrated USXGMII),
1x 10/100/1000 BaseT RJ45 Ethernet,
1x 10/100/1000 BaseT RJ45 Ethernet with PoE

1x USB 2.0 Type-C DRP, 4x USB 3.0 Type-A, 1x USB 2.0 Type-A

1x M.2 Key E, 1x M.2 Key M, 1x M.2 Key B with Nano SIM Card Socket

1x RS232/RS422/RS485, 2x CAN FD, 2x UART Debug Header

2x Expansion Daughter Board Socket for Display and Camera

NXP Real-Time Edge Software, NXP eIQ®, Matter

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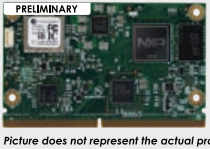
VEST SMARC i.MX95 SOM

VEST i.MX95 SMARC module design for consumer to industrial applications with high-computing & processing performance, including high-speed connectivity. With a multimedia focus by Arm Mali GPU for immersive graphics & 4K display resolution. The solution for secure, connected, & intelligent needs.

Applications

- 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



Picture does not represent the actual product

19mm x 19mm (SMARC SOM)

Specifications

- **VEST i.MX95 Dev Kit S:**
  Up to Hexa-core Cortex®-A55, Arm Cortex®-M7, Arm Cortex®-M33, Arm Mali-G310, 2D/3D graphics, NXP eIQ® Neutron NPU (Up to 2.0 TOPS), 16 GB LPDDR5 (with inline ECC), 64GB eMMC 5.1, Micro SD slot
- **Operating System**

debian Zephyr

SMARC module

VEST SMARC i.MX95 SOM

VED9596SMX84WI/C

19mm x 19mm (SMARC SOM)

Picture does not represent the actual product

Features

Arm® Cortex®-A55 (Hexa-Core), EdgeLock® Secure Enclave

1x MIPI CSI with PHY (4-lane, 2.5Gbps/lane4),
1 x HDMI (via DSI to HDMI bridge),
Dual-Channel LVDS, 1x MIPI DSI (4-lane)

WiFi-6/Bluetooth 5.3 (Optional)

Ethernet with TSN Support: 10 GbE SERDES0 (NXP i.MX95 USXGMII),
1x 10/100/1000 BaseT RJ45 Ethernet,
1x 10/100/1000 BaseT RJ45 Ethernet with PoE

2x USB 2.0, 2x USB 3.0, 1x USB 2.0 OTG

2x PCIe Gen 3.0 (1-lane)

2x UART (TX,RX,CTS,RTS), 2x UART (TX,RX),
2x CAN-FD (without transceivers)

NXP Real-Time Edge Software, NXP eIQ®, Matter

SMARC module

For More Enquiries,
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VEST Generative AI (Kinara)

The VEST PICO ITX SBC integrates NXP i.MX8M Plus with Kinara's Ara-2 AI accelerator, delivering up to 40 TOPS of AI performance for edge computing. Built on Kinara's efficient dataflow architecture, Ara-2 enables real-time execution of large language models (LLMs), vision transformers, and generative AI workloads with extremely low latency.

Applications

- Smart Cities: Public Safety, Traffic Monitoring
- Healthcare: Diagnostics, Patient Monitoring
- Retail: Video Analytics for Customer Behavior, Inventory Monitoring, Automated Checkout Systems
- Physical Security: Facial Recognition, Object Detection, Anomaly detection, Real-Time Alerts, Edge-Based Threat Analysis
- Factory Automation: Defect Detection, Robotic Control, Sensor & Camera Integration, Predictive Maintenance

VEST PICO ITX i.MX8M Plus Kinara Ara-2 Module

Specifications

- **VEST PICO ITX i.MX8M Plus with Kinara Ara-2 Module:**
  PICO ITX i.MX8M Plus:
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 2D/3D graphics, NPU (2.3 TOPS), 4GB RAM, 32GB eMMC, Micro SD slot
  Kinara Ara-2 Module:
  40 TOPS INT8 AI Module via M.2 M-Key, up to 16GB LPDDR4
- **Operating System**

yocto PROJECT

kinara

VEST Generative AI (Kinara)

Features

VEST PICO ITX i.MX8M Plus:

Arm® Cortex®-A53 (Quad-Core)

1 x HDMI 2.0 Type A, 1x HDMI 1.4 Type A

1x with I2C Touch & Backlight, 1x MIPI CSI-2 (4-Lane)

2x Gigabit Ethernet (1x TSN)

USB: 1x Type-C (3.0), 2x Type-A (3.0), 1x Header (2.0)

M.2 Key E 2230 slot: 1x PCIe (1-Lane), 1x SDIO, 1x UART, 1x SAI, 1x I2C

1x RTC & Coin Battery, USB Type-C with PD (up to 20V, 3A)

NXP Real-Time Edge Software, NXP eIQ®

Kinara Ara-2 Module:

TensorFlow, PyTorch, ONNX

Stable Diffusion 1.4: 7 sec/image
Llama2-7B: 12 output tokens/sec
MobileNetV1 SSD: 974 IPS (1.03 ms latency)

3W (typical workload)
8W (full performance)

Active cooling (heatsink with fan)

VEST PICO ITX i.MX8M Plus
Kinara Ara-2 Module

LEOPARD IMAGING

TELEDYNE
Teledyne e2v

OMNIVISION

For More Enquiries,
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VEST Your Partner in Innovation
Embedded Solutions

VEST PICO-ITX 2.5" Single Board Computer (SBC)

The compact VEST PICO-ITX SBC family provides scalable performance, spanning the i.MX8M Plus to the i.MX93 processors. It offers comprehensive multimedia (MIPI, HDMI, audio) and industrial communication support. Critical for AI/ML, the M.2 Key E interface accelerates operations using the Hailo-8 module or the NXP Kinara ARA-2 for generative AI use cases.

Applications

- HMI (Commercial, Industrial)
- Vision Systems (Smart Cameras)
- Industrial Automation, Robotics & Edge Gateways (Industry 4.0)
- Voice Recognition, Audio Intercom, Audio & Video Communication
- Smart POS, Smart Retail & Digital Signage
- Energy Management (EV Charging, Metering, Smart Grid)
- Test & Measurement, Healthcare & Medical Devices

100mm x 72mm (Carrier Board)
30mm x 30mm (OSM Size-S)

Specifications

- **VEST PICO ITX i.MX8M Plus:**
  Up to Quad-Core Cortex®-A53, Cortex®-M7, 2D/3D graphics, NPU (2.3 TOPS), 4GB RAM, 32GB eMMC, Micro SD slot, Hailo-8/8L AI module (Optional)
- **VEST PICO ITX i.MX93:**
  Up to Dual-Core Cortex®-A55, Cortex®-M33, PXP, NPU (Arm Ethos™-U65 0.5 TOPS), 2GB RAM, 16GB eMMC, Micro SD slot
- **VEST PICO ITX i.MX 8ULP:**
  Dual-Core Cortex®-A35, Cortex®-M33, 2D/3D graphics & PXP, 2GB RAM, 16GB eMMC, Micro SD slot
- **Operating System**

SMARC module · TELEDYNE Teledyne e2v · HAILO Empowering Intelligence

VEST PICO ITX i.MX8M Plus

VE8MPN4PX530C/VE8MPN4PX530I/
VE8MPN4PX53H8C/VE8MPN4PX53H8I/
VE8MPN4PX53H9I

- Arm® Cortex®-A53 (Quad-core), EdgeLock® Secure Enclave
- 1x HDMI 2.0 Type A, 1x HDMI 1.4 Type A
- 1x with I2C Touch & Backlight
- 1x MIPI CSI-2 (4-Lane)
- 2x Gigabit Ethernet (1x TSN)
- USB: 1x Type-C (3.0), 2x Type-A (3.0), 1x Header (2.0)
- M.2 Key E 2230 slot: 1x PCIe (1-Lane), 1x SDIO, 1x UART, 1x SAI, 1x I2C, AI modules (Hailo-8/8L)
- 1x RTC & Coin Battery
- USB Type-C with PD (up to 20V, 3A)
- NXP Real-Time Edge Software, Matter, NXP eIQ®

VEST PICO ITX i.MX93

VE9352PTX420C/VE9352PTX420I

- Arm® Cortex®-A55 (Dual-core), EdgeLock® Secure Enclave
- 1x HDMI 1.4 Type A
- 1x with I2C Touch & Backlight
- 1x MIPI CSI-2 (2-Lane)
- 2x Gigabit Ethernet (1x TSN)
- USB: 1x Type-C (3.0), 2x Type-A (3.0), 1x Header (2.0)
- M.2 Key E 2230 slot: 1x SDIO, 1x UART, 1x SAI, 1x I2C
- 1x RTC & Coin Battery
- USB Type-C with PD (up to 20V, 3A)
- NXP Real-Time Edge Software, NXP eIQ®, HailoRT

Picture does not represent the actual product

VEST PICO ITX i.MX 8ULP

VE8ULP2PTX420C

- Arm® Cortex®-A35 (Dual-core), EdgeLock® Secure Enclave
- 1x HDMI 1.4 Type A (via MIPI DSI, No Audio)
- 1x MIPI CSI (2-lane)
- 1x Camera LED FFC (SPI, I2C)
- 1x 10/100 Mbps RMII for Ethernet
- USB: 1x Type-C DRP (2.0), 2x Type-A (2.0), 1x Header (2.0)
- M.2 Key E 2230 slot: 1x SDIO, 1x UART, 1x SAI, 1x I2C
- 1x RTC & Coin Battery
- USB Type-C with PD (up to 20V, 3A)
- NXP Real-Time Edge Software, NXP eIQ®

OMNIVISION SCANDIT OPEN STANDARD MODULE™

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