

iG-G77V

Versal AI Edge Gen2 3U VPX Plug-in Module (Payload Profile)

The Versal AI Edge Gen2 3U VPX Plug-in Module (Payload Profile) integrates the AMD Versal AI Edge Gen2 adaptive SoC in a rugged 3U VPX (160 mm × 100 mm) form factor designed for AI-accelerated embedded computing. The device features Arm Cortex-A78AE application processors and Cortex-R52 real-time processors, along with AI Engines for advanced machine learning and signal-processing workloads. It

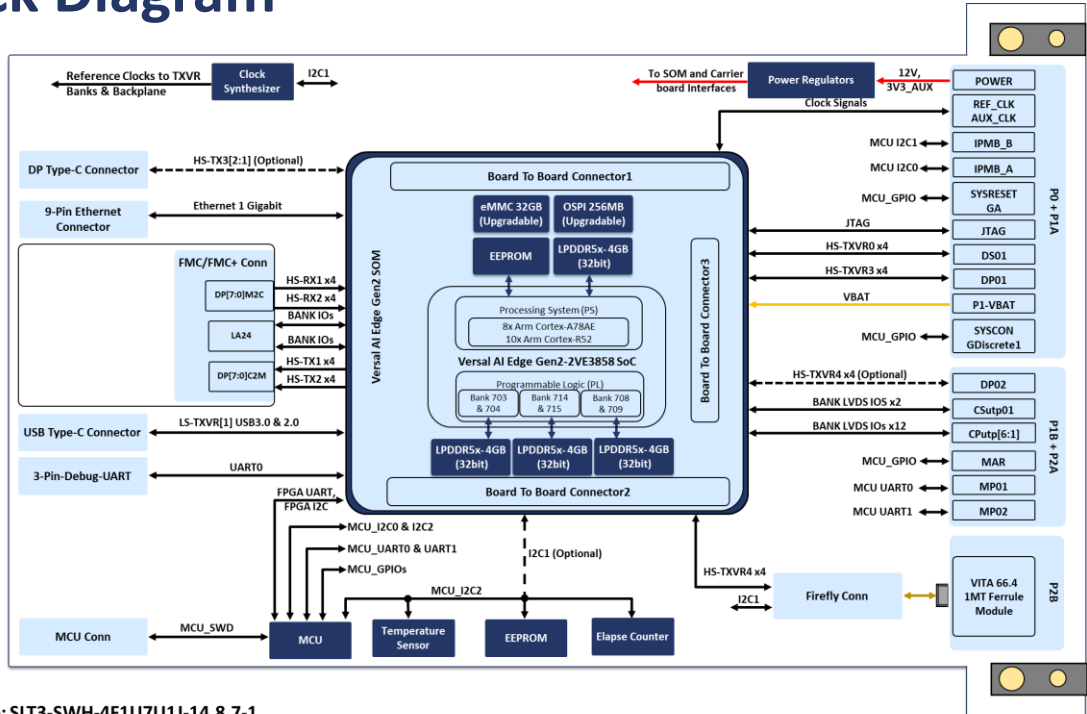
supports LPDDR5x memory, high-speed GTYP transceivers up to 32 Gbps, and multiple high-bandwidth VPX backplane interfaces, enabling efficient data movement and compute acceleration. Built with OpenVPX/SOSA-aligned payload profiles and conduction-cooled architecture, the module is ideal for applications such as AI-enabled radar, electronic warfare, sensor processing, and autonomous defense systems.



Highlights

- ❖ SOSA aligned Versal™ AI Edge Gen2 3U VPX board
- ❖ Compatible with 2VE3858/3804/3558/3504 Devices with SSVA2112 package
- ❖ Four 32-bit, 4GB LPDDR5x
- ❖ Supports SOSA Aligned Payload profiles
- ❖ IPMC with Arm® 32-bit Cortex®-M0+ CPU
- ❖ ADC x4 & DAC x4 with sampling rate up to 1.6GSPS

Block Diagram



Switch Profile: SLT3-SWH-4F1U7U1J-14.8.7-1

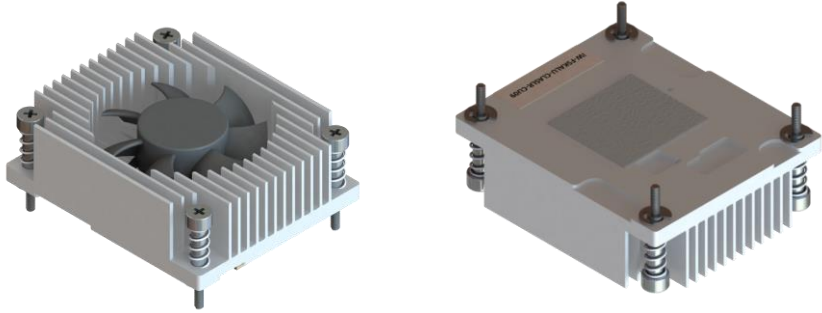
Module Profile as per AMPS: MODA3-16.8.7-1-1-F2C-(2E5-N) (4E2) (14G2) [E12]

Technical Specifications

SoC	- Versal™ AI Edge Gen2 - Compatible with 2VE3858/3804/3558/3504 8x Arm Cortex- A78AE and 10x Cortex R52 - Supports AIE-ML v2 up to 144 Tiles - Up to 1188K Logic cells and 543K LUTs	VPX On board features	- On Board Clock Generators - Temperature Sensor x1 - Elapse Counter x1 - EEPROM x1
Memory	32bit, 4GB LPDDR5x from PS (Upgradable) - Three 32bit, 4GB LPDDR5x from PL (Upgradable) 256MB OSPI Flash and 32GB eMMC Flash	3U VPX Backplane: Connector – P0	Utility Plane - System Control Signals (GA[0:4], P, SYSRESET, NVMRO) - System Reference Clocks (REF_CLK, AUX_CLK) - IPMB-A, B & JTAG - Power Input (12V VDC, 3.3V_AUX)
IPMC	- Arm® 32-bit Cortex®-M0+ CPU up to 80 MHz - On chip 64KB of flash and 4KB of SRAM - One 12-bit 1.68-MSPS analog-to-digital converter (ADC)	3U VPX Backplane: Connector – P1A +P1B	Data Plane Port-01 - DP01[3:0] – 40G Ethernet Data Plane Port - DPutp01 – 10G Ethernet Control Plane Port - CPutp01 – 10G Ethernet Expansion Plane Port - EP[0:3] – PCIe Gen3 x1 - EP[4:7] – 40G Ethernet System Control Signals (Maskable Reset, SysCON, GDiscrete) - Maintenance Port MP01 & MP02 - Power Input (VBAT)
VPX Front Panel features	- Gigabit Ethernet Header - USB3.0 Type-C, Display Port 3-pin Debug UART Header - ADC x4 & DAC x4; Sampling rate up to 1.6GSPS¹	3U VPX Backplane: Connector – P2A	User defined Port EP[8:15] – GPLVDS 8 lanes

3U VPX Backplane: Aperture Pattern J – P2B	MT Ferrule Module – MM12F – 12 Fibre ports NanoRF -10 ADC x4 & DAC x4; Sampling rate up to 1.6GSPS¹	Profile Spec.	Module Profile as per AMPS: MODA3p-16.6.13-1-4-F2C-(E8-E7) (P3F – N, 16G2) (E7) (N-G2) [E12]
Profile Spec.	Profile: SLT3-PAY-1F1U1S1S1U1U4F1J-14.6.13-4	Slot Pitch	1 inch Conduction Cooled
		BSP Support	Linux
		Environment Specification	RoHS & REACH Compliant

Product accessories



Thermal Solutions

For any highly integrated System on Modules, thermal design is very important factor.
iWave Supports Fan Sink solution for Versal AI Edge Gen2 SoM

Applications

- Industrial :**
 - AI in Smart Factory
 - Smart Factory Automation
 - Sensors/motors/connectivity, functional safety, and security
 - I/O modules and IoT devices
 - Tiny PLC and Edge AI
- Video Processing**
 - Connectivity and video processing
 - Video over IP
 - Consumer electronics (AR/VR, Drones, Gaming)
- Medical**
 - Diagnostic imaging & video
 - Patient monitoring

A Global Leader in Embedded Systems Engineering and Solutions

Since 1999, we have pioneered leadership in embedded systems technology, establishing ourselves as a strategic embedded technology partner for advanced solutions. Our comprehensive portfolio encompasses ARM and FPGA System on Modules, COTS FPGA solutions, and ODM solutions which include Telematics, Gateways & HMI Solutions.

Beyond our robust product ecosystem, we provide comprehensive ODM support with specialized custom design and manufacturing capabilities, enabling customers to accelerate and optimize their product development roadmaps. With a strategic focus on industrial, automotive, medical, and avionics markets, we deliver innovative technology solutions to global clients.

mktg@iwave-global.com

iWave Global

Bangalore, India

iWave USA

Campbell, California

iWave Global East Coast LLC

New Jersey, USA

iWave Global

Ras Al Khaimah, UAE

iWave Global GmbH

Ratingen, Germany

iWave Europe

Rotterdam, Netherlands

iWave APAC

Taipei City, Taiwan

iWave Korea

Gyeonggi,-do, Korea

iWave Japan

Yokohama, Kanagawa

**iWave
Global**