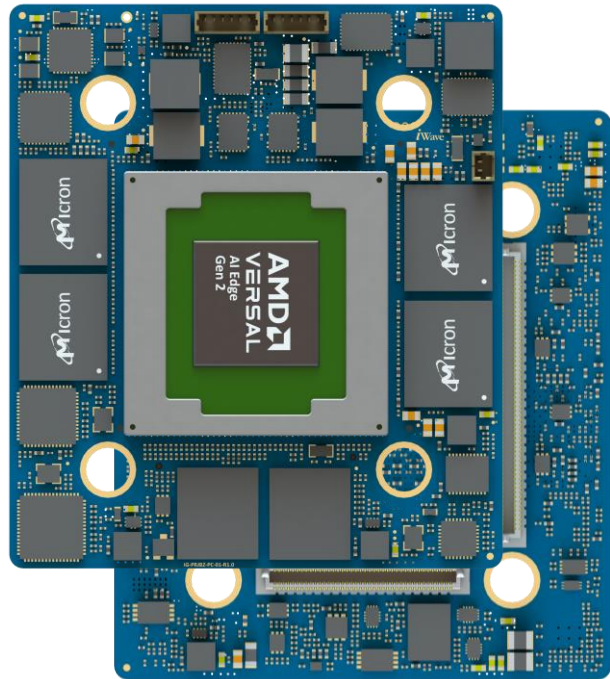


iG-G77M

Versal AI Edge Gen2 SoC System on Module

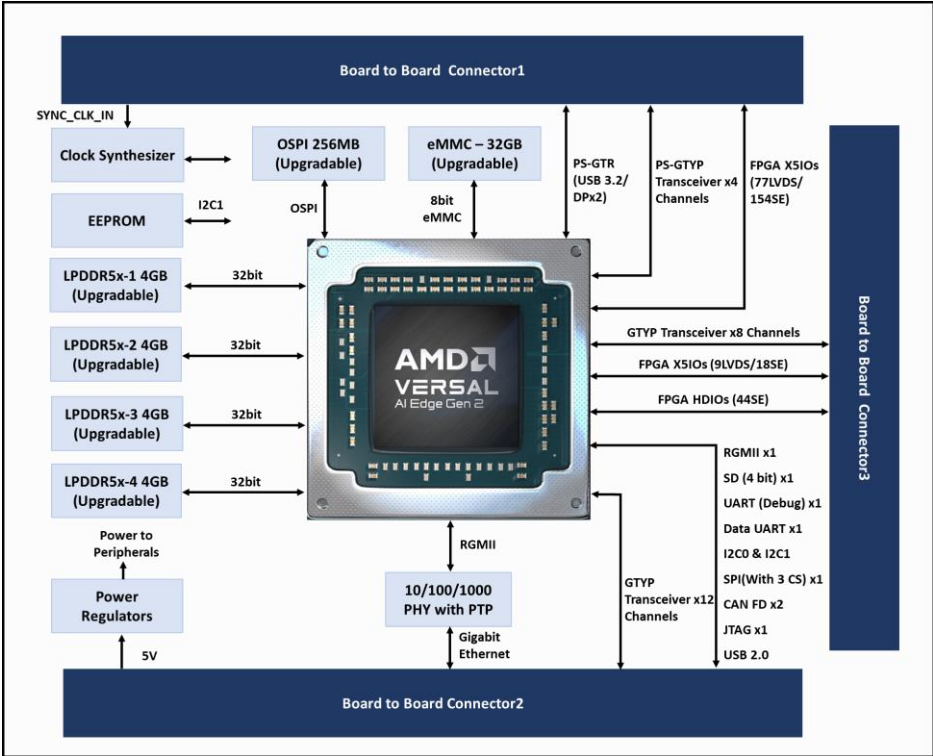
The Versal AI Edge Gen2 SoC system-on-module features Versal AI Edge Gen2 SoC 2VE3858/ 2VE3804/ 2VE3558 / 2VE3504 devices with SSVA2112 package. The Versal AI Edge Gen2 System-on-module supports AIE-ML V2, 8x Arm Cortex-A78AE Application processor (up to 2.2GHz) , 10x Arm Cortex-R52 Real Time Processor (up to 1.05GHz), 4-core Arm Mali-G78AE Graphic Processing Unit (up to 1.05GHz) and programming logic with up to 1.1M Logic cells, all packed into a compact 70mm x 80mm form factor.



Highlights

- ❖ Supports AIE-ML v2
- ❖ 8x Arm Cortex-A78AE Application processor (up to 2.2GHz)
- ❖ 10x Arm Cortex-R52 Real Time Processor (up to 1.05GHz)
- ❖ 4-core Arm Mali-G78AE Graphic Processing Unit (up to 1.05GHz)
- ❖ Support Video Codec Unit and Image Signal Processor for video stream
- ❖ Programming logic with up to 1.1M Logic cells and 543K LUTs
- ❖ Four 32bit 4GB LPDDR5x (Expandable)
- ❖ 256MB OSPI Flash and 32GB eMMC Flash (Expandable)
- ❖ Supports PCIe Gen5 and 100G Multirate Ethernet MAC
- ❖ 10+ Years long term support

Block Diagram



Technical Specifications

SoC/ FPGA	8x Arm Cortex-A78AE Application processor (up to 2.2GHz) 10x Arm Cortex-R52 Real Time Processor (up to 1.05GHz) 4-core Arm Mali-G78AE Graphic Processing Unit (up to 1.05GHz) - Programming logic with up to 1.1M Logic cells and 543K LUTs	Board to Board Connector interfaces	From PS (Processing System): - PS GTYP Transceivers x4 up to 32Gbps - USB3.2 x1 - DP x2 1G Ethernet x1 - RGMII x1 - USB2.0 x1 - SD x1(4-bit) - UART(Debug) x1 - Data UART x1 - I2C x2 - SPI x1 - CAN FD x2 - JTAG x1
Memory	- Four 32bit 4GB LPDDR5x (Expandable) 32GB eMMC Flash (Expandable) 256MB OSPI Flash 2Kbit EEPROM 64GB UFS flash (Optional)	OS Support	Linux 6.6.40 and Vivado 2025.1 or above
On SOM Features	10/100/1000 PHY with PTP - Programmable Clock Synthesizer 32.768KHz crystal for RTC - Fan Header	Operating Temp.	-40°C to +85°C
Board to Board Connector Interfaces	From PL (Programmable Logic): - PL GTYP Transceiver x20 up to 32Gbps 86 LVDS or 172 SE FPGA XSIO Banks 44 SE FPGA IOs from HDIO Bank	Form Factor	70mm x 80mm (REN+)
		Power Input	5V input through B2B Connector
		Environment Spec.	REACH & RoHS3 Compliant

Ordering Information

iG77M-3858E2-4E008G-E032G-IAA

XC2VE3858, -2 Speed Versal Edge AI Gen2 SOM with 4GB PS RAM, Triple 4GB PL RAM, 32GB eMMC, 256MB SPI NOR, Industrial grade SOM

Product accessories



Thermal Solutions

For a High-Power System on Module such as the Versal AI Edge Gen2 based SOM, thermal design is very important factor. iWave Supports Heat Sink Solutions for the 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.

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