

iG-G83M[®]

Versal[™] AI Core

System on Module

The Versal AI Core System on Module (SoM) integrates an AMD Versal AI Core SoC (compatible with VC1502/VC1702/VC1802/VC1902 devices) in a compact, industrial-grade form factor, delivering a powerful edge AI platform. It features a dual-core Arm Cortex-A72 application processor alongside a dual-core Arm Cortex-R5F real-time processor for responsive control and system tasks. The SoM includes up to 4GB of 64-bit LPDDR4 memory with expandable

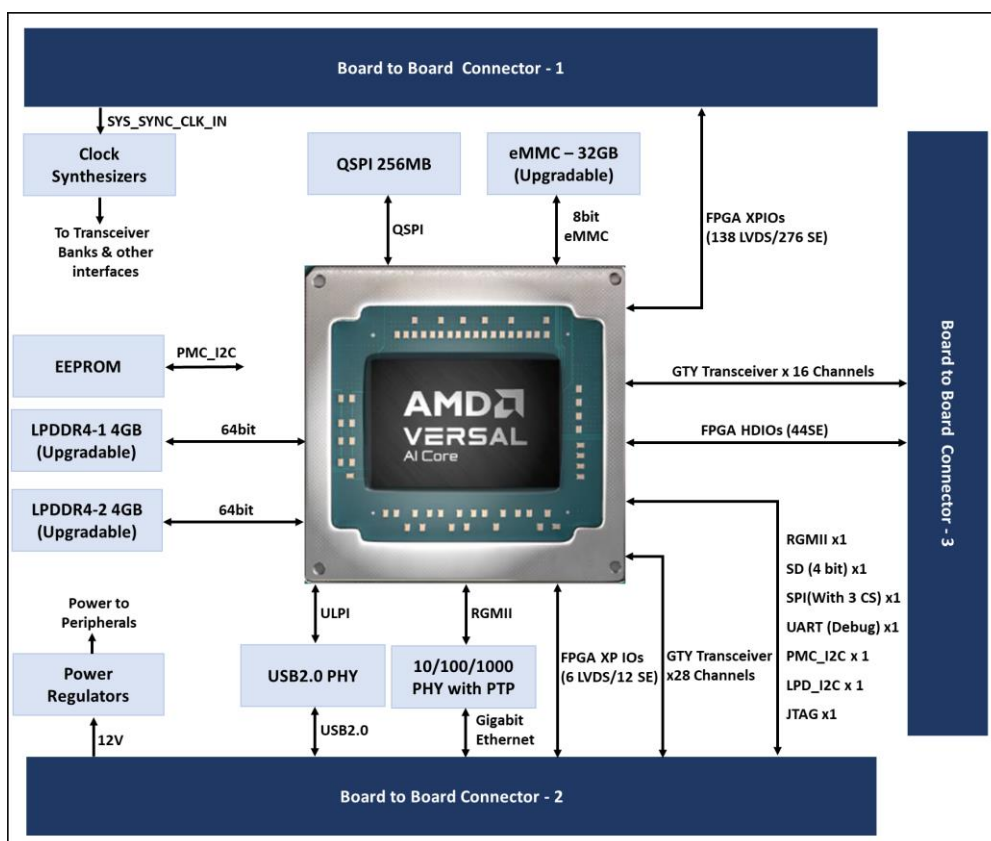
options, 256MB QSPI flash, and 32GB expandable eMMC storage, providing ample memory and storage for AI/ML workloads and embedded applications. With 44 channels of high-speed GTY transceivers supporting data rates up to 28.21 Gbps and extensive FPGA I/O (138 LVDS Pairs/276 SE XPIOs), the module is well-suited for high-bandwidth, compute-intensive use cases like AI inference, real-time vision, robotics, and autonomous systems. Additional features include 10/100/1000 Ethernet, USB 2.0, industrial-grade operating temperature support, and multiple board-to-board connectors for rich peripheral and interface flexibility.



Highlights

- ❖ Compatible with Versal AI Core SoC devices: VC1502, VC1702, VC1802, VC1902
- ❖ 1,968K Logic cells & 899.84K LUTs for high-performance AI and FPGA workloads
- ❖ 144 LVDS Pairs/288 SE FPGA XPIOs, 44 SE FPGA HDIOs
- ❖ 44 GTY channels up to 28.21Gbps for fast data transfer
- ❖ Form Factor: 82mm x 110mm

Block Diagram



Technical Specifications

CPU	- Versal AI Core SoC compatible with VC1502, VC1702, VC1802, and VC1902 devices - Dual-core Arm Cortex-A72 and Cortex R5F 144 LVDS Pairs/288 SE FPGA XPIOs 44 SE FPGA HDIOs 44 channels of GTY transceivers up to 28.21Gbps	Board to Board Connector2 Interfaces (400pin) 6 LVDS pairs/12 SE XPIOs - USB2.0 x 1 1G Ethernet x 1 - RGMII x 1 - SD (4-bit) x 1 - SPI (with 3-CS) x 1 - I2C x 2 - CAN FD x 1 (Optional) - Debug UART x 1 - JTAG x1 - GTy Channels x 28³
Memory & Storage	- Two 64bit, 4GB LPDDR4 (Expandable)¹ 256MB QSPI Flash 32GB eMMC Flash, EEPROM	Board to Board Connector3 Interfaces (400pin) 44 SE FPGA HDIOs - GTy Channels x 16
Other Features	10/100/1000 Ethernet PHY with PTP - USB2.0 PHY - Clock Generator	Operating Temp. -40°C to +85°C (Industrial Grade)
Board to Board Connector1	138 LVDS Pairs/276 SE XPIOs	Form Factor 82mm x 110mm
		Power Input 12V through B2B Connector 2
		Environment Spec. REACH & RoHS3 Compliant

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**