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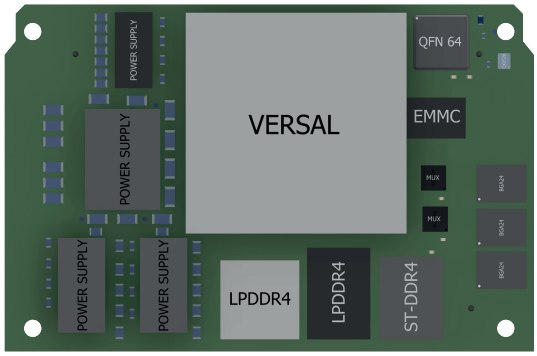
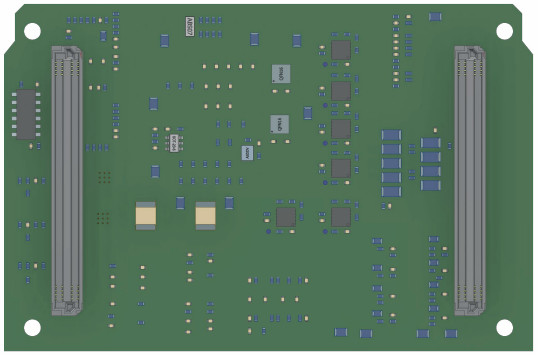
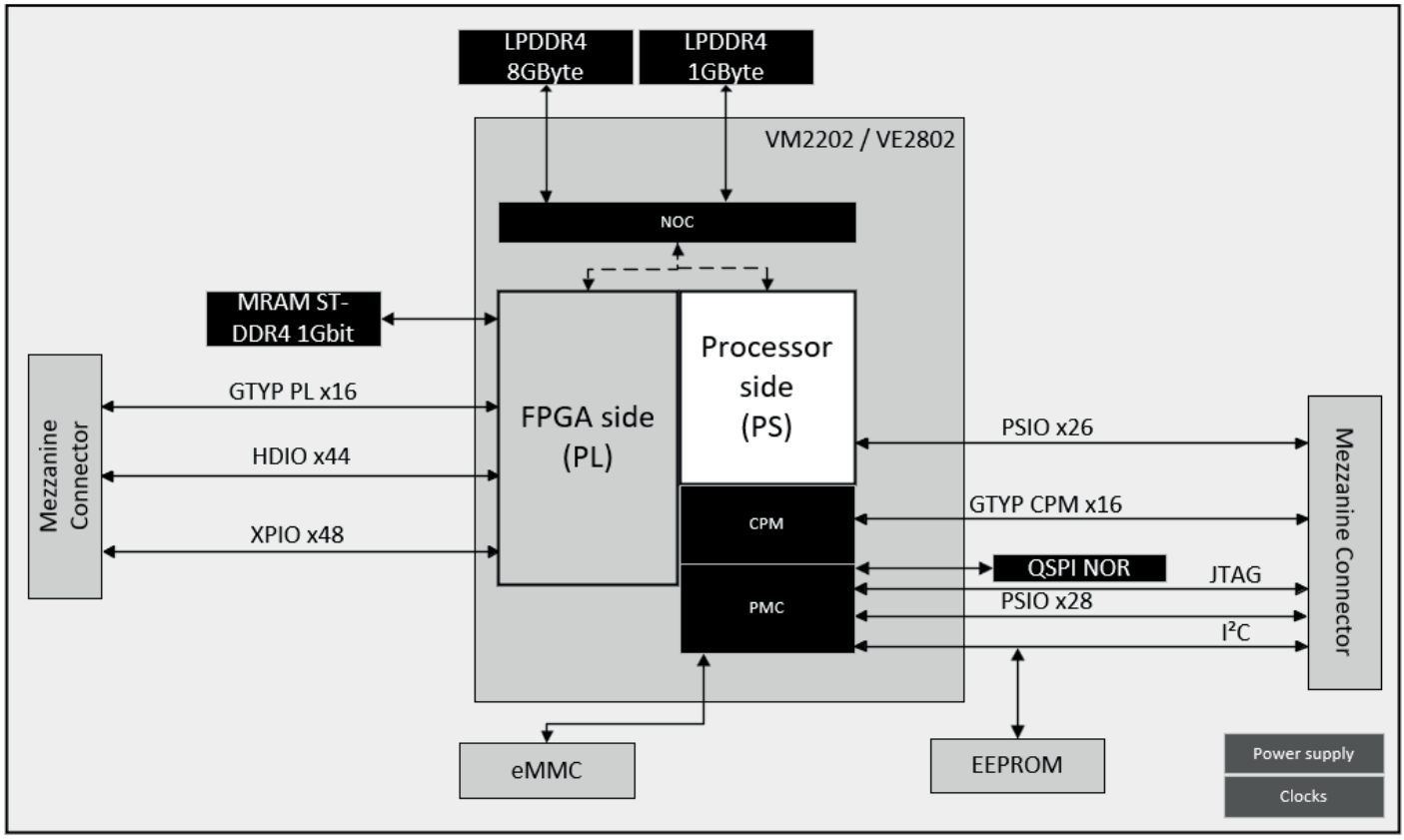
Vulcan Versal™ Prime / AI Edge FPGA SoC System-on-Module







- AMD Xilinx® Versal™ Prime FPGA or AI Edge
- VM2202 / VE2802
- 2x PCIe Gen4 x8 End Point or Root Port
- Dual Core ARM Cortex A-72 and Dual Core ARM Cortex RSF

- 2x PCIe Gen4 x8 interface
- 44x HDIO + 48x XPIO
- 2x LP-DDR4, 1x MRAM ST-DDR4
- Industrial Temp Grade
- Long Term Supply

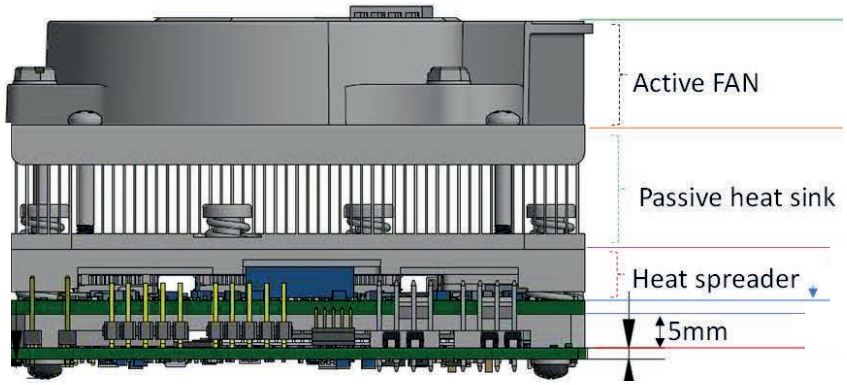
- Bioscience & Instrumentation
- Quantum Computing
- AI Vision Analytics
- Embedded Airborne Systems
- Radar Systems
- Electronic Warfare

Full specifications

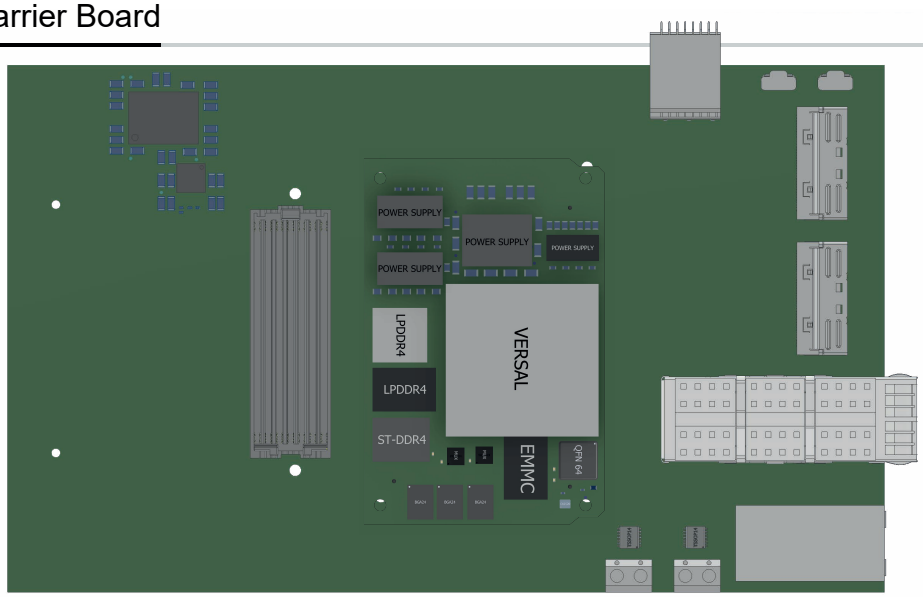
Features	Vulcan System-on-Module	
Ordering Information	RXCVM2202PH35-SOM00I **Availability: Q3-2025** using Versal™ Prime VM2202	RXCVE2802PH35-SOM00I **Availability: Q4-2025** using Versal™ AI Edge VE2802
FPGA SoC	Versal™ Prime VM2202: 1140 KLC, UltraRAM 74Mbit, 1312 DSP Engines Dual Core Arm Cortex-A72, Dual Core Arm Cortex-R5F Speed grade 1, Industrial temp grade	Versal™ AI Edge VE2802: 304 AI-Engines, 1140 KLC, UltraRAM 74Mbit, 1312 DSP Engines Dual Core Arm Cortex-A72, Dual Core Arm Cortex-R5F Speed grade 1, Industrial temp grade
External Memory	Connected to the NOC = 1x LPDDR4 x64bit, 8GByte, @2400MT/s 1x LPDDR4 x32bit, 1GByte, @2400MT/s Connected to the PL = 1 bank MRAM 1Gbit	
Mezzanine Connectors	16 transceivers GTYP @25Gbps + 16 transceivers GTYP CPM PCIe Gen4 44 HDIO maximum 48 XPIO maximum	
FPGA Configuration	2Gbit Quad SPI Flash	
Software Configuration	128Gbyte NAND Flash eMMC (Stores U-Boot, Linux Kernel, and RootFS)	
PS Communication & Networking	128GByte eMMC 2Mbit EEPROM Min 1520Mb QSPI NOR Flash 54 PSIO (PMC and PS)	
Mechanical & Environmental Specification	EMI immunity : TBD; EMI emission : TBD, Vibration : TBD; Shock :TBD 5V +/- 10% Industrial temperature grade -40°C to +85°C UL 94-V0 compliant components	
Power & Dissipation	Max W : TBD, active heatsink (heat spreader + heatsink + fan)	
Board Management Controller (via Versal PMC)	Communication with Carrier board: I2C, JTAG Communication with FPGA : UART to FPGA Monitoring : Current, voltages, temperature, ID information Programming : Clock Control: Power, temperature protection, Fan	
Module dimensions	84mm x 55mm (3.3 x 2.2 inches)	
Compliance	RoHS/REACH compliant	
Deliverables	• Vulcan module & its active cooling system • Board Support Package (to download from our online technical support) after purchase of a module and its carrier board: Starter Guide, module and carrier board Reference Manuals, Interconnect pinout file Mechanical drawings, assembly files FPGA test design (vivado 2024.x version) BMC Software : TBD HPS Software: -Build with: TBD -U-boot bootloader • 1-year technical support and warranty • Online support at support.reflexces.com (after purchase of a kit)	
MOTS = Modified version (on request)	• Conformal coating • Custom heatsink system • Contact sales for customization	

Thermal dissipation

Module dimension: 84mm x 55mm (3.3 x 2.2 inches)



Related product: Carrier Board



The Vulcan Carrier board is sold separately

Ordering information: RXCVER-CBD0SA

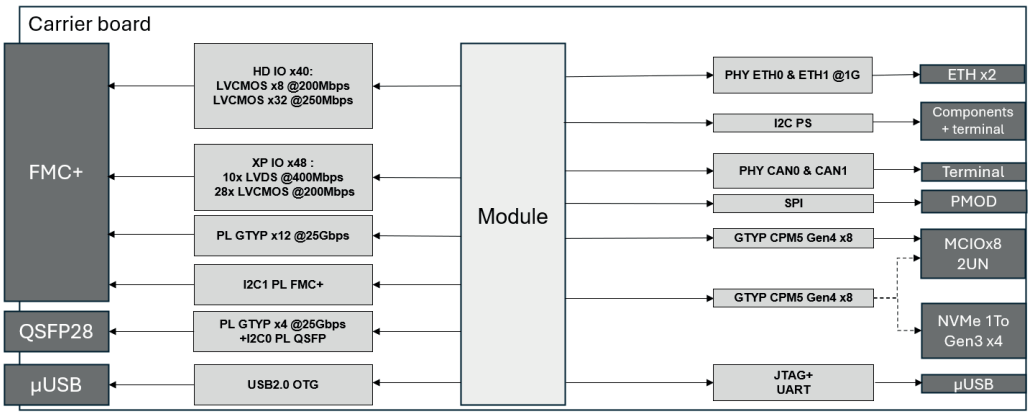
PL interfaces

FMC+ HPC connector:

- 12x transceivers @25Gbps
- 10x LVDS
- 68x LVCMOS
- 1x I²C

QSFP:

- 4x transceivers @25Gbps
- 1x I²C



PS, PMC and CPM interfaces

- 1x USB for USB 2.0 OTG
- 2x RJ45 for 2x Ethernet @1Gbps
- 1x header for I²C PMC
- 2x headers for 2x CAN 2.0B
- 1x PMOD connector for SPI
- 2x MCIO for 2x PCIe Gen4 x8
- 1x USB for JTAG and UART
- 1 NVMe linked to 1 one of PCIe CPM

Operating temperature : - 40°C / + 85°C

Board dimensions : TBD

Compliance

- Fully compatible with Vulcan module
- RoHS/REACH compliant, UL compliant, ISO9001 facility