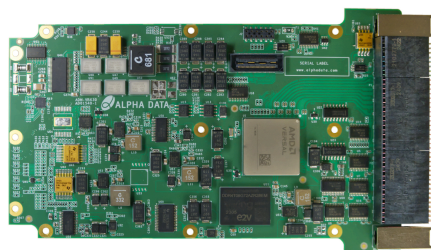


AD-01527



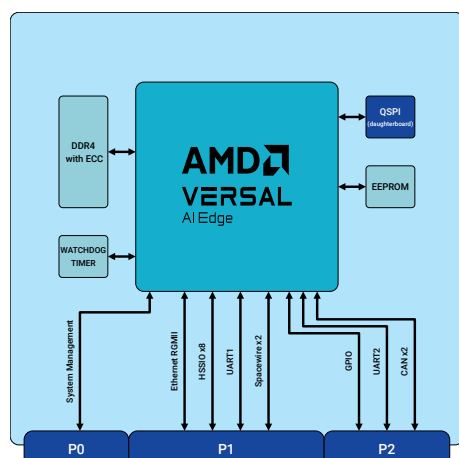
Applications

- COTS Development for Space 2.0
- COTS Deployment for Space 2.0
- In-Orbit Reconfigurable Compute
- High Performance Signal and Image Processing
- Input/Output Intensive Single Board Computer (SBC)
- Advanced Communications
- Machine Learning and AI

Summary

The **ADM-VB630** is a 3U Space VPX platform featuring the AMD Versal AI Edge XQRVE2302 Adaptable SoC for Space 2.0 applications. This FPGA processor card is available in either a 160 mm or 220 mm deep Space VPX form factor, equipped with Space Grade DDR4 Memory modules from Teledyne e2v and a fully radiation-tolerant core power supply developed in collaboration with TI and EPC Space.

The platform is designed to accommodate components suitable for Space 2.0 level missions with limited radiation exposure or mission length, such as LEO applications. The /DEV version is for development purposes and fitted with commercial/ no-flight components. Fully radiation-tolerant and space flight versions are available (contact sales for details.)



Target Devices

AMD Versal AI EDGE
XCVE2302-1MSESFVA784 (development units), XQRVE2302-1MSBVSVA784 (flight units) (option)

FPGA Specification

LUTs = 150K(150K)
DSPs = 464(464)
BRAM = 5.4Mb(5.4Mb)
URAM = 43.6Mb(43.6Mb)
34x AI Engine-ML Tiles
2x ARM Cortex-A72 MPCores™
2x ARM Cortex-R5 MPCores

Application Data Memory

1x 8 GB (1G @ 72 bit wide) DDR4 MCP

Configuration Memory

QSPI MRAM or Flash - on daughter module 2 Gb

Configuration Modes

Via QSPI daughter module, uSD and via JTAG

Board Features

- Fully radiation-tolerant reference design
- Versal VE2302 SoC for Space 2.0
- Reference full radiation-tolerant Power Supply using SEP grade parts from TI and GaN FETs from EPC Space
- 3U Space VPX form factor (160 mm deep or 220 mm deep heat sink)
- 8x 16G HSSIO via P1 Interface
- Teledyne e2v Space Grade DDR4 Memory
- Rad-hard watchdog

Board Format

3U VPX
WxHxD = 100mm x 19.55mm x 160mm
Weight = 470g

Input/Output Interfaces

VPX P0 I2C (VPX Backplane)

1x I2C for System Monitor inside Versal

VPX P1 HSSIO (VPX Backplane)

8x 8x HSSIO up to 16G: for 10/40G Ethernet; SpaceFibre; PCIe; JESD204; Aurora; HSDP etc.

VPX P1 SpaceWire (VPX Backplane)

2x 2x SpaceWire Interfaces

VPX P1 MIO (VPX Backplane)

16x 16 MIO pins for RTM Ethernet PHY or general purpose I/O (GPIO)

VPX P2 GPIO (VPX Backplane)

72x 72 Custom GPIO breakout to backplane (2.5V or 3.3V)

Environmental Specification

Cooling	Operating Temperatures		Storage Temperatures		
	Option	Min	Max	Min	Max
	AC0	0°C	+55°C	-40°C	+85°C

Operating Humidity

Up to 95% (non-condensing)

Ordering Information

Order Code: ADM-VB630(T)

Option	Code	Description of Options
Platform Type	T	/DEV - ADM-VB630/DEV/PB - with XCVE2302 fitted, purchasable as part of ADK-VB630 Development Kit, /FM - build to order with Space Qualified Components, /C(x) - build to order with Customer Specific Modifications