ADM-VA600

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AD-01456

Applications

- COTS Development Platform for Space 2.0
- Prototype for Space Grade Systems

Board Features

- Versal VC1902 Adaptive SoC for Space 2.0
- 6U Space VPX form factor with 20x 10G HSSIO
- 24x 32G HSSIO via FMC+ Interface
- 2x Teledyne e2v Space Grade DDR4 Memory Banks (8GB pre bank; 16GB total)
- Reference Power Supply using radiation-tolerant SEP grade parts from TI (core 0.8V supply limited at commercial grade)
- Reference TI SEP clocking and IO buffering design
- TI MSP430 System Monitoring SEP microcontroller

Summary

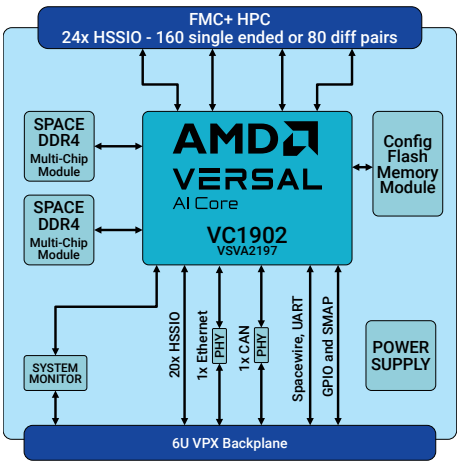
The **ADM-VA600** is a 6U Space VPX reference platform for the AMD Versal AI Core XQRVC1902 Adaptable SoC platform for Space 2.0.

Versal AI Core provides a massive leap forward in reconfigurable and customizable processing performance for Space mission deployment of compute-intensive applications such as Signal Processing and Machine Learning. The platform is designed to accept components suitable for Space 2.0 level missions with limited radiation environment or mission length, such as LEO applications. The standard manufacturing build of this platform is however intended for laboratory prototyping use only with commercial footprint compatible parts and unqualified space parts fitted in most cases.

The primary customers will be using this version for design proving and other prototype-level testing. Custom manufacture of the board with qualified space plastic parts, and possible application-specific customizations is available as an option to customers.

The board features a reference Space Grade power supply co-designed with Texas Instruments, along with many other Space Enhanced Plastic devices covering clocking and system monitoring functionality. The board also features Space Grade DDR4 Memory modules from Teledyne e2v.

See the **ADK-VA600** page for the complete system overview.



Target Device

AMD Versal AI Core
XCVC1902-1MSIVSVA2197 (default) (option)

LUTs = 899K FFs =
DSPs = 1968
BRAM = 34Mb URAM = 130Mb

400x AI Engine Tiles
2x ARM Cortex-A72 MPCore™
2x ARM Cortex-R5 MPCore
4x PCI Express Gen3 cores

Application Data Memory

2x 8GB (1G @ 72bits wide) DDR4

Configuration Memory

QSPI - Flash on Module 2Gb Flash Memory

Configuration Modes

Via QSPI Flash uSD and via JTAG

Deliverables

ADM-VA600 Board
One Year Warranty
One Year Technical Support

Input/Output Interfaces

FMC+ HSSIO
24x HSSIO up to 32G via FMC+ module: Configurable for ESIStream; JESD204B; JESD204C; 10/40/100G Ethernet; SpaceFibre etc.

VPX HSSIO
20x HSSIO up to 10G via VPX Backplane: Configurable for 10/40G Ethernet; SpaceFibre; PCIe; RIO; Aurora; HSDP etc.

VPX I2C
I2C for System Monitor

VPX JTAG
JTAG for System Monitoring

VPX Ethernet
1G Ethernet Interface on VPX for Versal access and management

VPX Low Speed IO
UART and CAN bus access

VPX GPIO
Custom GPIO breakout to backplane

VPX SMAP
SMAP to allow configuration options from an external card in the VPX system

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Board Format

6U VPX (233mm x 160mm x 12.5mm)
WxHxD = 233mm x 12.5mm x 160mm
Weight = TBDg

Environmental Specification

Temperature Ranges

Operating Temperature Range : 0°C to +55°C

Storage Temperature Range : -40°C to +85°C

Operating Humidity : Up to 95% (non-condensing)

EMC Standards

Ordering Information		
Order Code: ADM-VA600(T)		
Option	Code	Description of Options
Platform Type	T	/DEV - ADM-VA600/DEV - with XCVC1902 fitted, purchasable as part of ADK-VA600 Development Kit

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