ADM-VA600

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14th September 2023

AD-01456

Applications

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

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 Space Grade DDR4 Memory Banks (8GB)
- Reference Power Supply using radiation tolerant SEP grade parts from TI
- Reference clocking and IO buffering radiation tolerant SEP design using TI parts
- Reference TI MSP430 System Monitoring SEP uC

Summary

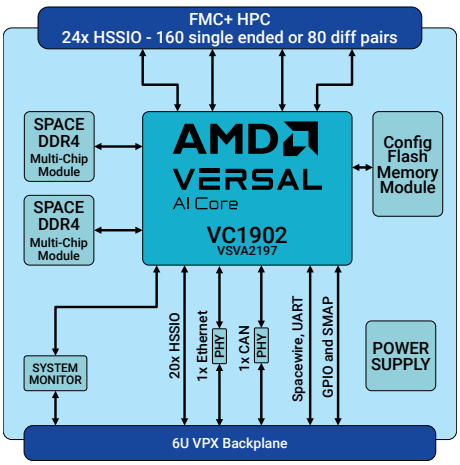
The **ADM-VA600** is a 6U Space VPX reference platform for the AMD Versal AI Core XQRVC1902 Adaptable SoC platform for Space 2.0.

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 Devices

AMD Versal AI Core
XCVC1902-1MSIVSVA2197 (default),
XQRVC1902-1MSBVSVA2197 (flight units) (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 - on a daughter module - upgradeable to RAD Tolerant Flash

Configuration Modes

Via QSPI Flash (or other RAD Tolerant options) on daughter module, uSD and via JTAG

Deliverables

ADM-VA600 Board
One Year Warranty
One Year Technical Support

Input/Output Interfaces

HSSIO
24x HSSIO up to 32G via FMC+ module|
Configurable for JESD204B

I2C
I2C for System Monitor

JTAG
JTAG for System Monitoring

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Board Format

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

Environmental Specification

Cooling Option	Operating Temperatures		Storage Temperatures	
	Min	Max	Min	Max
AC1	-40°C	+70°C	-55°C	+100°C

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

EMC Standards

FCC 47CFR Part 2
EN55022:2010 Equipment ClassB

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, /CC4 - build to order with Space Qualified Components, /C(x) - build to order with Customer Specific Modifications

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