ADK-VA601

Datasheet Revision: 1.2
1st November 2023

Applications

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

Board Features

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Summary

The **ADK-VA601** is a 6U Space VPX reference platform for the AMD Versal AI Core XQRVC1902 Adaptable SoC platform for Space 2.0.
AMD 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 **ADK-VA601** contains the following hardware modules:

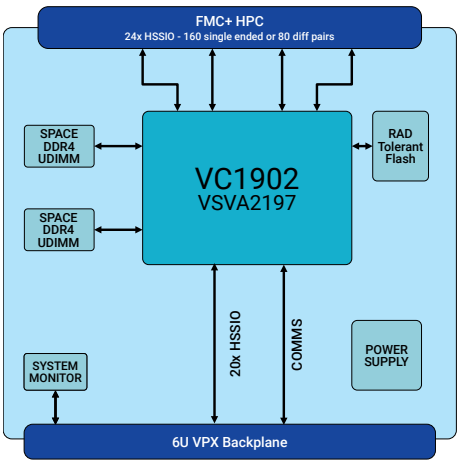
ADM-VA601, **ADM-VA600-RTM** and **ADM-SDEV-FL1** as well as the **RD-VA600** Reference Designs.

The **ADM-VA601** development 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. The platform 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 platform also features Space Grade DDR4 Memory modules from Teledyne-e2v and QSPI configuration flash from Infineon Technologies.

The **ADM-VA600-RTM** is a 6U, VPX, Rear Transition Module (RTM) designed to interface with the Alpha Data ADM-VA601 AMD Versal AI Core XQRVC1902 Adaptable SoC platform. The RTM provides an on board AMD Zynq ZU4EG for application development configuration control, system monitoring and debug. It also provides connectivity for all the ADM-VA601 backplane IO with Dual FireFly interfaces, Dual SFF-8644 Interfaces, Space Wire, CAN, Gigabit Ethernet and RS232 communications interfaces.

The **ADM-VA601** supports a variety of plug in memory modules for configuring the Adaptable SoC platform. Included in the kit is the ADM-SDEV-FL1 module fitted with 2x1Gbit Micron MT25QL01GBBB8E12 devices for lab developement.

The **RD-VA600** contains a suite of example designs for the ADK-VA601, containing both the firmware and software to run the applications. The examples are the recommended starting point for user application development.



Deliverables

ADK-VA601 Board
One Year Warranty
One Year Technical Support

Host Interface

Input/Output Interfaces

HSSIO
24x HSSIO up to 32G via FMC+ module

I2C
I2C for System Monitor

JTAG
JTAG for System Monitoring

Comms
SFF-8644 HSSIO

Gigabit Ethernet
Gigabit Ethernet Interfaces

FireFly
FireFly HSSIO

CAN Communications
CAN Interface

Space Wire I/O
Space Wire

Comms

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Deliverables

ADM-VA601 - AMD Versal AI Core FPGA board

ADM-VA600-RTM - Rear transition module

ADM-SDEV-FL1 - Flash Memory Module

ADM-VA601 User Manual

ADM-VA600-RTM User Manual

ADM-VA601 Schematics (PDF)

ADM-VA600-RTM Schematics (PDF)

ADM-VA601 Bill of Materials (EXCEL format)

See RD-VA600 for software resources

RD-VA600 Reference Designs for the ADK-VA600/ADK-VA601

Board Format

ADM-VA601 - 6U VPX (233mm x 160mm x 12.5mm), ADM-VA600-RTM - VPX 6U Rear Transition Module

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

Ordering Information	
Order Code: The ADK-VA601 is made up of the following products	
Component Parts	ADM-VA601/DEV - 6U Space VPX platform for the AMD Versal AI Core XQRVC1902 Adaptable SoC Platform for Space 2.0 ADM-VA600-RTM - 6U VPX Rear Transition Module ADM-SDEV-FL1 - Flash Memory Module RD-VA600 - ADK-VA600/ADK-VA601 Reference Designs
note	Please contact the factory for other options

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