

Radar and Sonar Signal Processing
Version 5: February 2026

ALPHA DATA

DESIGN, DEVELOP, DEPLOY

Established in 1993 and with offices in the US and UK, Alpha Data is the leading global supplier of state-of-the-art solutions targeted at compute-intensive applications, including high performance COTS reconfigurable platforms and support software.

A leading provider of AMD Xilinx FPGA-based plug-in acceleration, SoC, RFSoC and embedded computing solutions, Alpha Data caters to deployment in Extreme environments, including the Aerospace and Defense markets.

We support clients worldwide to take projects from the design board to production and deployment, and specialise in solutions for Rugged and Embedded Communications, High-Reliability Development, Digital Signal Processing and High Performance Computing.

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DESIGN, DEVELOP, DEPLOY

ADM-XRC-9R1-B

A high performance Radio Frequency Data Processing System on Module (SOM), specially made for aerospace and defence communication applications, including signal detection and countermeasures, radar applications, Tx & Rx 5G communications, and beamforming.

The ADM-XRC-9R1-B is a low-power single device solution which combines FPGA Fabric, ADC and DAC interfaces and ARM CPU cores.

AMD Zynq Ultrascale+ RFSoC 8x 5GSPS ADCs, 8x 10GSPS DACs, FPGA Fabric and ARM CPUs all in one package

Available in industrial temperature grades with air and conduction cooling

Rugged XMC modular form factor for flexible deployment solutions

Support for LVAUX mode for Single Event Latchup mitigation in XQ grade builds



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ADM-VPX3-9V2

The ideal solution for radar and sonar systems requiring the highest levels of performance and reliability, extremely well suited for high bandwidth switching applications in Radar, Signal processing and Machine Learning.

Aligned with the SOSA™ Technical Standard the ADM-VPX3-9V2 is a reconfigurable 3U OpenVPX format board that takes full advantage of the digital signal processing (DSP) performance found within its VU9P/VU13P Ultrascale+ FPGA devices, allowing the board to operate as a very high bandwidth processing offload accelerator within VPX systems.

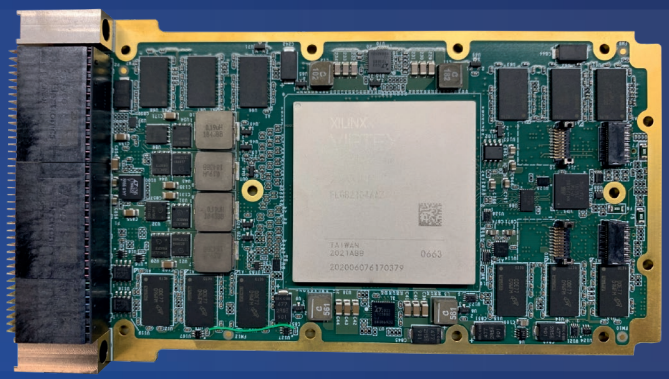
AMD Xilinx Virtex UltraScale+
XCVU9P or XCVU13P-2

3U VPX (OpenVPX Compliant)

SOSA Sensor Open Systems Architecture
Aligned with the SOSA™ Technical Standard

Firefly
HSSIO P1/P2
Serial Comms P1/P2
GPIO P2

Available in industrial temperature grades with air or conduction cooling
-40°C to +85°C (Operating)
-55°C to +100°C (Storage)



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ADM-XA210

A versatile XMC form factor AMD Versal™ Data Processing Unit, designed for high-performance edge computing applications including AI inference, radar/sonar beamforming, ELINT/ISR, machine vision systems, and real-time data encryption for secure communications.

The ADM-XA210 is a powerful single device solution which combines the AMD Versal™ Adaptive SoC technology with extensive I/O capabilities and memory resources.

AMD Versal™ XCVM1802/XCVC1802 with FPGA Fabric, dual-core ARM processors, and AI Engines in one package

VITA 42/88 XMC/XMC+ compliant, ready for desktop, lab, rack mount and fully ruggedized deployment

Flexible modular form factor for migration between PCIe, VPX and standalone carrier platforms

Flexible IO, compatible with a range of Analogue, Digital and Optical XRM2 IO Modules



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ADA-S9303

A standalone fully enclosed RF processing solution with 8-channel high-speed ADC (5 GSPS@14 bit) and 8-channel DAC (10 GSPS@14 bit) capabilities, providing an adaptable platform for advanced RF data conversion and processing applications.

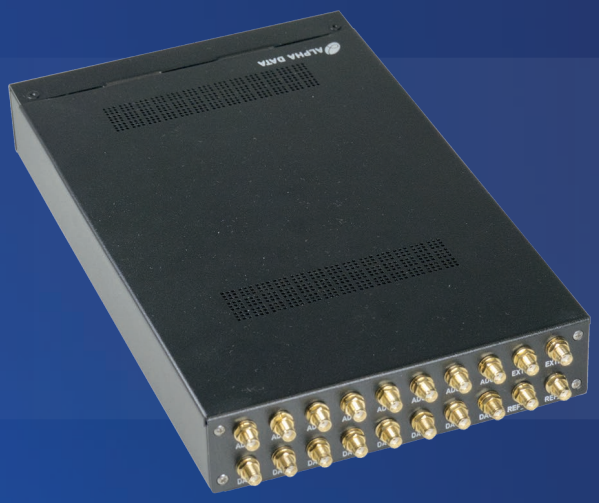
The ADA-S9303 is a deployable platform which integrates AMD RFSoC technology with comprehensive analog and digital interfaces:

AMD Zynq Ultrascale+ RFSoC 8x 5GSPS ADCs, 8x 10GSPS DACs, FPGA Fabric and ARM CPUs all in one package

Multiple digital interfaces including Gigabit Ethernet, USB 3.0, QSFP+, and Serial Communications

Standalone system with all analog I/O accessible via front panel SMA connectors for high-frequency inputs and outputs

Remote power management via USB connection to on-board system management controller



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