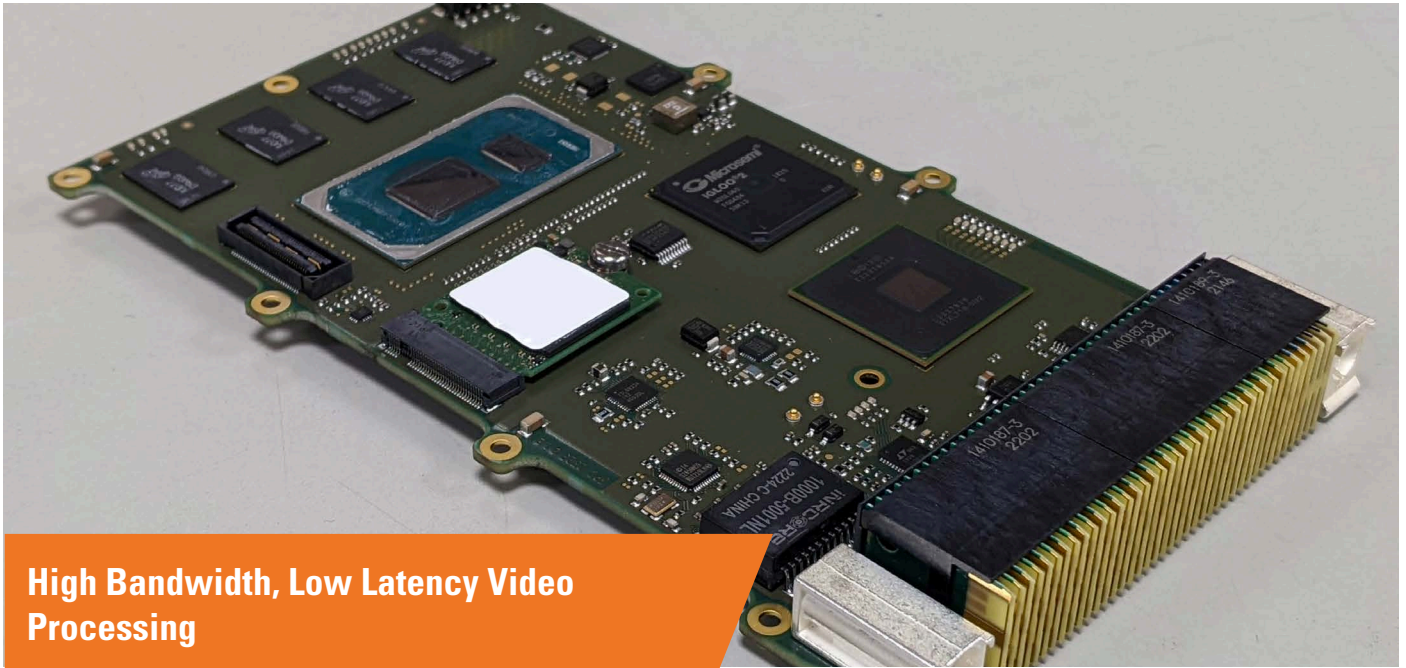


# Digital Video Mixer

## *Multi-Functional Digital I/O Module*



### High Bandwidth, Low Latency Video Processing

*The multi-functional module is designed to compliment General Dynamics Mission Systems—United Kingdom's Mission Computer, Remote Interface Units, and Video Mixer platforms.*

The Digital Video Mixer is a 3U VPX format module that delivers high-end system performance through the integration of XILINX Vertex® Ultrascale+™ FPGA.

The module can handle multiple high speed data interfaces such as 40GbE enabling the system designer to combine functions on to one module.

Key to the Digital Video Mixer is the ability to tailor the module to the system data channels via the VPX backplane.

### Capabilities:

- Low latency video processing
- Multi-channel processing
- Video compression
- Video multiplexing
- Signal concentrator

### Applications:

- Security and surveillance
- Land vehicles
- Tactical processing
- Mission system
- Signal Intelligence
- Radar correlation
- Image processing
- Data centre

# Technical Information

## Characteristics

- VPX 3U format
- -40oC to +85oC operation
- -55oC to +125oC storage
- Conformal coating (Optional)
- Power dissipation, ~30W
- VITA 48.8 forced air convection cooled
- VITA 46.0 conduction cooled

## Environmental

### Temperature and altitude

- RTCA/DO-160G, Section 4.5 (Category B4).
- Operating -40C to +70C
- Storage -55C to +90C
- RTCA/DO-160G, Section 4.6.1 (Category F)

### Humidity

- RTCA/DO-160G, Section 6.3
- Relative humidity of 95%

### Acceleration

- RTCA/DO-160G, Section 7

### Vibration

- RTCA/DO-160G, Section 8

### Abnormal vibration

- RTCA/DO-160G, Section 8.6

### Explosive atmosphere

- RTCA/DO-160G, Section 9

### Fungus resistance

- RTCA/DO-160G, Section 13

## EMC

- Voltage spike conditions of RTCA/DO-160G, Section 17
- Radio Frequency Susceptibility conditions of RTCA/DO-160G, Section 20
- Radio Frequency Emissions do not exceed the levels defined in RTCA/DO-160G, Section 21

## XILINX Virtex® Ultrascale+™ FPGA

- 2835k Logic Cells
- 2592k Flip-Flops
- 1296k LUTs
- 9216 DSPs
- 572 High performance I/O
- 76 GTY Transceivers support up to 32.75 Gb/s
- 270Mb URAM

## Front Interfaces

- SFP+ cage for 10Gb Ethernet or up to 8.5Gb ARINC-818 (Optional)
- RJ45 connector for 1000BASE-T Ethernet (Optional)
- USB I2C and UART interfaces (Optional)
- User LEDs

## VPX Rear Interfaces

- 28 x 10Gb high speed differential links
- 24 x Single Ended I/O signals
- Intelligent Platform Management Buses
- JTAG for programming and test

## On-board

- 4Gb DDR4 RAM with ECC
- 2Gb NOR Flash
- 12 programmable clock generator
- TPM 2.0
- Health Monitor
- PMC Site to ANSI/VITA 20-2005 (Build option)

## Document Set

- Hardware User Guide
- Interface Control
- Certification pack (Optional)

## High speed interfaces can support the following through firmware:

- SGMII,
- 1000BASE-X
- 10GBASE-KR
- 40GBASE-KR4
- 100GBASE-KR4
- ARINC 818
- HD-SDI/3G-SDI
- Display ports
- HDMI
- PCIe Gen 3
- SATA

## Single ended interfaces can support any mix of the following:

- RS232/422/485
- ARINC-429
- CANBUS
- STANAG 3350B
- PAL/NTSC/SECAM
- GPIO
- Custom level discrete & monitors

