

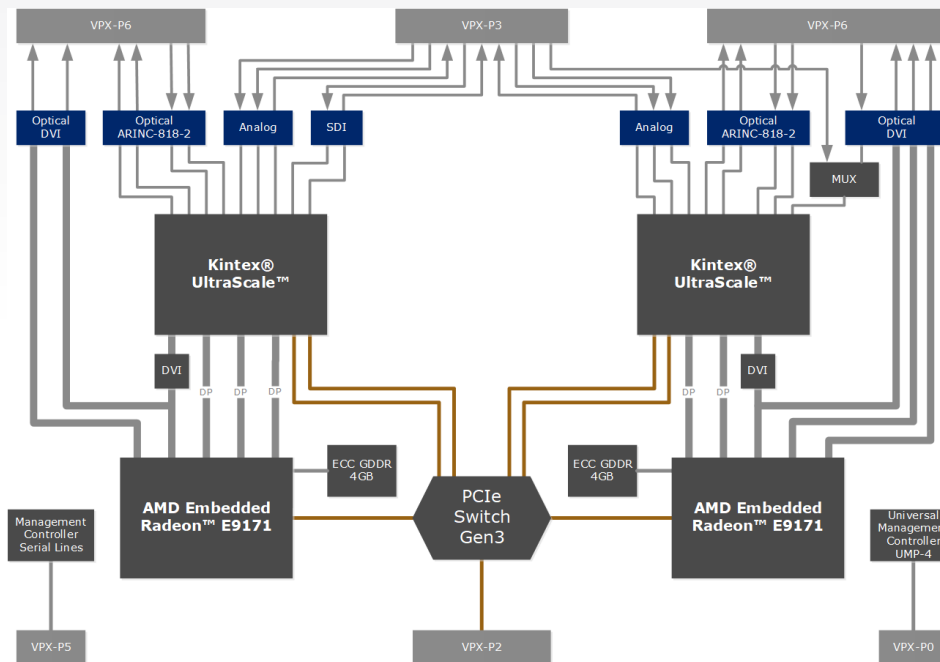
# BuiltSAFE™ VGP-8177

6U OpenVPX Video Graphic Processor (VGP)

- Dual AMD Radeon™ E9171 embedded graphics processors
- Extended range Air-Flow-By cooling technology [-40°C to 85°C]
- 6U OpenVPX form factor
- Optical interconnect
- Up to 10 video inputs and 12 video outputs with analog support
- 2D and 3D graphics generation
- Capture, encode and decode



Mercury's BuiltSAFE™ products bring the highest level of flight safety assurance to aerospace and defense applications. Our proven, reusable Design Assurance Level (DAL) certified artifacts for mission computing, avionics, networking and datalink comms processing save time and cost while decreasing risk.



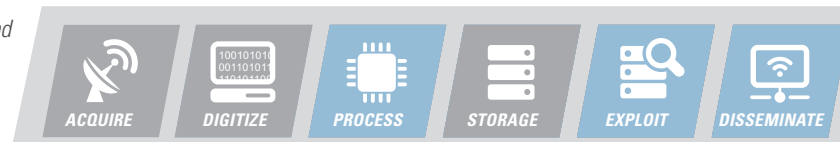
The VGP-8177 is a 6U OpenVPX high-performance embedded double GPU board offering up to 2.4 TeraFLOPS of processing, driven through a VPX PCIe Gen 3 bus.

The VGP-8177 offers high-speed fiber optics digital video inputs and outputs, supporting ARINC-818-2, DVI and SDI up to 1080p60, and legacy RGB and CVBS analog inputs and outputs.

With up to 10 inputs and 12 outputs overall, all multiplexable, the VGP-8177 covers all major cases of video processing scenario such as capture, encoding and decoding and switching.

VGP-8177 functional block diagram

Mercury Systems is a leading commercial provider of secure sensor and mission processing subsystems. Optimized for customer and mission success, Mercury's solutions power a wide variety of critical defense and intelligence programs.



## BuiltSAFE for Avionics

Mercury's expertise and experience in safety certifiable solutions has been built on successful execution of dozens of programs over three decades. This domain knowledge is the foundation of our BuiltSAFE portfolio of open architecture modules, systems and software for avionics, communications, video servers, and mission computing.

## Technical Specifications

### Compliance

6U OpenVPX (VITA 65)  
 VPX REDI (VITA 48)  
 Cooling technology (VITA 48.7)  
 Optical interconnect (VITA 66.1)  
 SMPTE-424

### Power Consumption

minimum	typical	maximum	units
-	80-100	160-180	Watts

### Graphics Processors

2x AMD Radeon™ E9171 MCM GPU  
 8x compute units (8x64 shaders) 1.2 TFLOPS  
 4GB GDDR5 memory 128-bit wide  
 Graphics clock 1124 MHz or 1219 MHz  
 Memory clock 1500 MHz

### Memory

6x 1GB DDR3 dedicated video memory

### FPGA

2x Xilinx Kintex® UltraScale™ XCKU060

### PCIe

2x PCIe Gen3 x8 interfaces per FPGA to the switch

### Video Inputs<sup>(1)</sup>

2x DVI (XGA 60 Hz)  
 4x ARINC-818-2 (XGA 60 Hz, SXGA+ 60 Hz)  
 1x 3G SDI (1080p60)  
 4x analog video: RGB, CVBS

### Video Outputs<sup>(1)</sup>

5x DVI (XGA 60 Hz)  
 4x ARINC-818-2 (XGA 60 Hz, SXGA+ 60 Hz, HD 1080 60 Hz)  
 1x 3G SDI (1080p60)  
 2x analog video: RGB, CVBS

(1) Depends on configuration. Please consult factory.

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## Software

TBD

## Product Ordering

VGP-8177AA30LN 6U OpenVPX Dual Graphic Processor AMD E9171 and Video I/O, with ARINC-818, DVI and 3G SDI Video In/Out Interfaces, Conduction-Cooled 1" pitch, Aluminium Frame

VGP-8177AA40LC 6U OpenVPX Dual Graphic Processor AMD E9171 and Video I/O, with ARINC-818, DVI and 3G SDI Video In/Out Interfaces, Conduction-Cooled 1" pitch, Extended Temperature Range

## Ruggedization Levels

Level	Description	Cooling Type	Operating Temperature	Vibration (1 hour per axis)	Operating Shocks
C4	Extended range CC	Conduction	-40°C to 85°C [CC4]	5-100 Hz: increase at 3 dB/octave, 100-1000 Hz: 0.1 g <sup>2</sup> /Hz, 1000-2000 Hz: decrease at 6 dB/octave	40g, 11ms saw-tooth, three axes

## Environmental Specifications

Condition	Limits, standards	Comments
Non-operating temperature	-55°C to 105°C [C4]	
Humidity	95%	
Altitude	-1,500 to 60,000 feet	May require conformal coating
Fungus resistance	No nutrient materials	
Workmanship	IPC-A-610 class 3	
Soldering	IPC-J-STD-001 class 3	
PCB Manufacturing	IPC-A-600 class 3	
Conformal coating	IPC-CC-830	Optional
Materials	REACH compliant	RoHS variants as an option
Flammability	UL 94 Class V-0	
Quality	EN 9100:2008	



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