VPX3U-E9171-VO

AMD Radeon E9171 Module with 5 digital outputs, 4K or 5K resolution

PRELIMINARY INFORMATION

KEY FEATURES

- AMD Radeon 1.25 TFLOPS GPU
- 5 independent DisplayPort 1.4 outputs
- 4 GB GDDR5 memory
- Operating power from 15 - 50W

ADDITIONAL FEATURES

- 5 DisplayPort 1.4 digital video outputs:
  - Support for High Dynamic Range (HDR) video
  - Up to 12-bit color depth
  - 5K or 4K at 60Hz
- Support for HDMI 2.0b, single link DVI, dual link DVI
- GPGPU parallel processing:
  - Eight compute units, 512 shaders (Stream Processors)
  - DirectX® 12, OpenCL™ 2.0, OpenGL 4.5, Vulkan
  - AMD's HIP Tools for NVIDIA® CUDA™ code reuse
- 4 GB GDDR5 memory, width: 128-bit
- Memory clock 1500 MHz, bandwidth: 48 GB/s
- Support for HEVC (H.265) and AVC (H.264) hardware encode/decode, 4K at 60Hz
- PCIe Gen3 x8/x4
- Windows and Linux drivers
- Optional RTOS drivers: VxWorks, others on request

SPECIFICATIONS

- High level of ruggedization:
  - Rugged Conduction-cooled or Air-cooled
  - Operating temperature: -40° to +85°C
  - Vibration (sine wave): 10G peak, 5 - 2000Hz
  - Shock: 30G peak for air-cooled, 40G peak for conduction-cooled
- Dimensions: 160mm x 100mm x 25.4mm
- Weight: with default conduction-cooled plates: approx. 728g; with default air-cooled plates: approx. 936g
- +12V or +5V power source options
- ANSI/VITA 48 (VPX REDI), 65 (OpenVPX)

OVERVIEW

WOLF's VPX3U-E9171-VO board incorporates AMD's latest 14nm Polaris architecture to provide a significant performance increase compared to the previous generation AMD GPUs, with processing at 1.25 TFLOPS and highly efficient operating power which is dynamically controllable from 15 to 50 Watts.

The VPX3U-E9171-VO is capable of driving up to five outputs, with up to five 4K displays (4096x2160 @60Hz) and up to two 5K displays (5120x2880 @60Hz). DisplayPort 1.4 is supported, with High Dynamic Range (HDR) video and up to 12-bit color depth.

This board can provide 1.25 TFLOPS of single-precision GPGPU parallel processing capability. AMD GPUs are optimized for OpenCL, the open and cross-platform programming standard. For those with existing CUDA code, AMD's HIP Tools can be used to port CUDA code to C++, giving developers a way to reuse code that was previously locked to a proprietary hardware.

Windows and Linux drivers are available. Optional RTOS drivers are also available for this board, including VxWorks, Integrity, LynxOS, and others on request.

AMD EMBEDDED SOLUTIONS RADEON GRAPHICS

This datasheet is preliminary and is subject to change

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PRELIMINARY INFORMATION

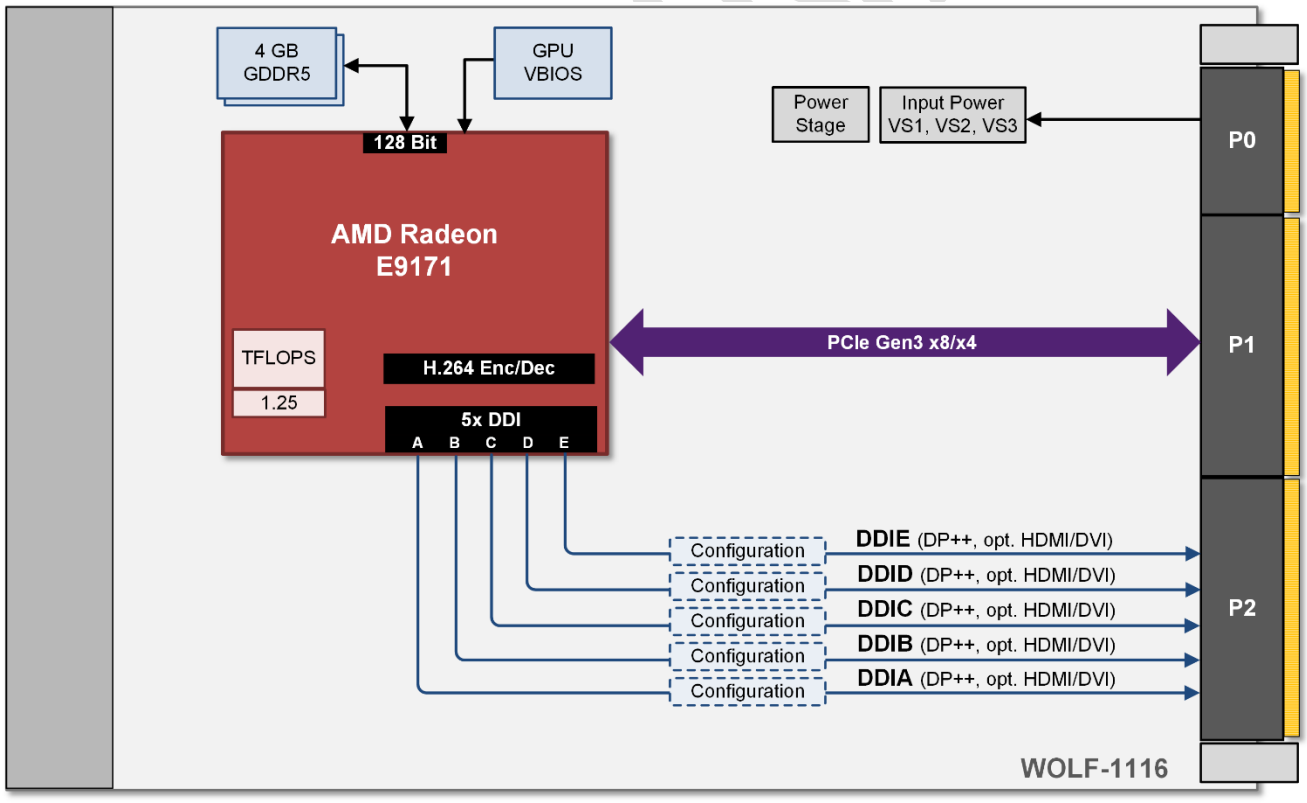
DESIGNED FOR SYSTEM INTEGRATION

The VPX architecture is diverse, spanning custom backplanes, complex system specifications, and differing input and output methodologies. That is precisely why WOLF modules come with factory configuration options to solve virtually all system integration challenges.

VITA 46 is the VPX base standard which specifies the original electrical and mechanical requirements for 3U and 6U modules. The VPX specification was extended in VITA 48 (VITA REDI, Ruggedized Enhanced Design Implementation) to support the increased operating power of high-density electronic modules by defining the mechanical design requirements needed to support enhanced cooling methods. VPX REDI also sets standards for the use of ESD covers on both sides of boards.

OpenVPX (VITA 65) is a system-level VPX specification designed to address interoperability between VPX boards and backplanes from multiple vendors.

This module has been designed to comply with VPX REDI (VITA 48) and OpenVPX (VITA 65).



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ORDERING CODES

The following table defines series of common order codes for the VPX3U-E8860-VO module. The asterisks denote characters of the part number that are defined based on common configuration options. Some common configuration options for this module are:

- Display Interfaces
- Conformal Coating Type
- Default Power Threshold
- +12V / +5V Main Power
- Cooling Architecture
- RTOS options
- COTS, MCOTS or Variant Locked

	Ordering Number	Description
	3U VPX AMD E9171 Single Slot Configurations	
	119623-F9**VPX3v10	3U VPX, Air Cooled, 1”, AMD E9176
	119633-F9**VPX3v10	3U VPX, Conduction Cooled, 1”, AMD E9176

Contact Sales for the latest Ordering Numbers and available options

MANUFACTURING AND QUALITY ASSURANCE

WOLF designs modules to pass the following environmental standards:

- MIL-STD-810 (United States Military Standard for Environmental Engineering Considerations and Laboratory Tests)
- MIL-HDBK-217 (Reliability Prediction of Electronic Equipment)
- RTCA DO-160 (Environmental Conditions and Test Procedures for Airborne Equipment) on request

WOLF complies with the following management systems:

- AS9100D: Quality Management System - Requirements for Aviation, Space and Defense Organizations (certified)
- ISO 9001:2015: Quality management systems (certified)
- AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition (compliant)
- NIST SP 800-171: Protecting Controlled Unclassified Information in Nonfederal Systems (compliant)

Boards are manufactured to meet the following standards:

- IPC-A-610 CLASS 3 (Acceptability of Electronic Assemblies)
- IPC 6012 CLASS 3 (Qualification and Performance Specification for Rigid Printed Boards, Class 3 for High Reliability Electronic Products)
- IPC J-STD-001 (Requirements for Soldered Electrical and Electronic Assemblies)

Caveat: integrated third party modules may not meet the same standards as WOLF manufactured modules.

AS9100 • ISO 9001 CERTIFICATION Intertek

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GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM GIDEP

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