VPX3U-E9171-SDI-4IO

AMD Radeon E9171 Module, 4 SDI In/Out, Analog In/Out, DP/HDMI/DVI

PRELIMINARY INFORMATION

KEY FEATURES

- AMD Radeon 1.25 TFLOPS GPU
- Up to four 3G-SDI input and four 3G-SDI outputs
- DisplayPort 1.4 outputs, HDMI and DVI options
- Analog inputs and outputs
- 4 GB GDDR5 memory
- Operating power from 40 - 60W

ADDITIONAL FEATURES

- 5 DisplayPort 1.4 digital video outputs:
  - Support for High Dynamic Range (HDR) video
  - Up to 12-bit color depth
  - Up to 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. 726g; with default air-cooled plates: approx. 934g
- +12V or +5V power source options
- ANSI/VITA 48 (VPX REDI), 65 (OpenVPX)

OVERVIEW

WOLF's VPX3U-E9171-SDI-4IO module uses both an AMD GPU and a WOLF Frame Grabber eXtreme (FGX). This module accepts up to four simultaneous 3G-SDI inputs and analog inputs. The video data can be routed to the GPU for processing or encoding, and then output in several formats, including up to four 3G-SDI, analog, and DisplayPort 1.4, HDMI 2.0b or DVI.

The AMD GPU's 14nm Polaris architecture 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.

WOLF's Frame Grabber eXtreme (FGX) connects digital and analog interfaces for video capture, process, encode and display functions. It also acts as a means to convert the GPU output directly to a digital or analog format such as SDI or CVBS. The device is very configurable and can be modified to meet your exact input / output requirements.

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

This datasheet is preliminary and is subject to change

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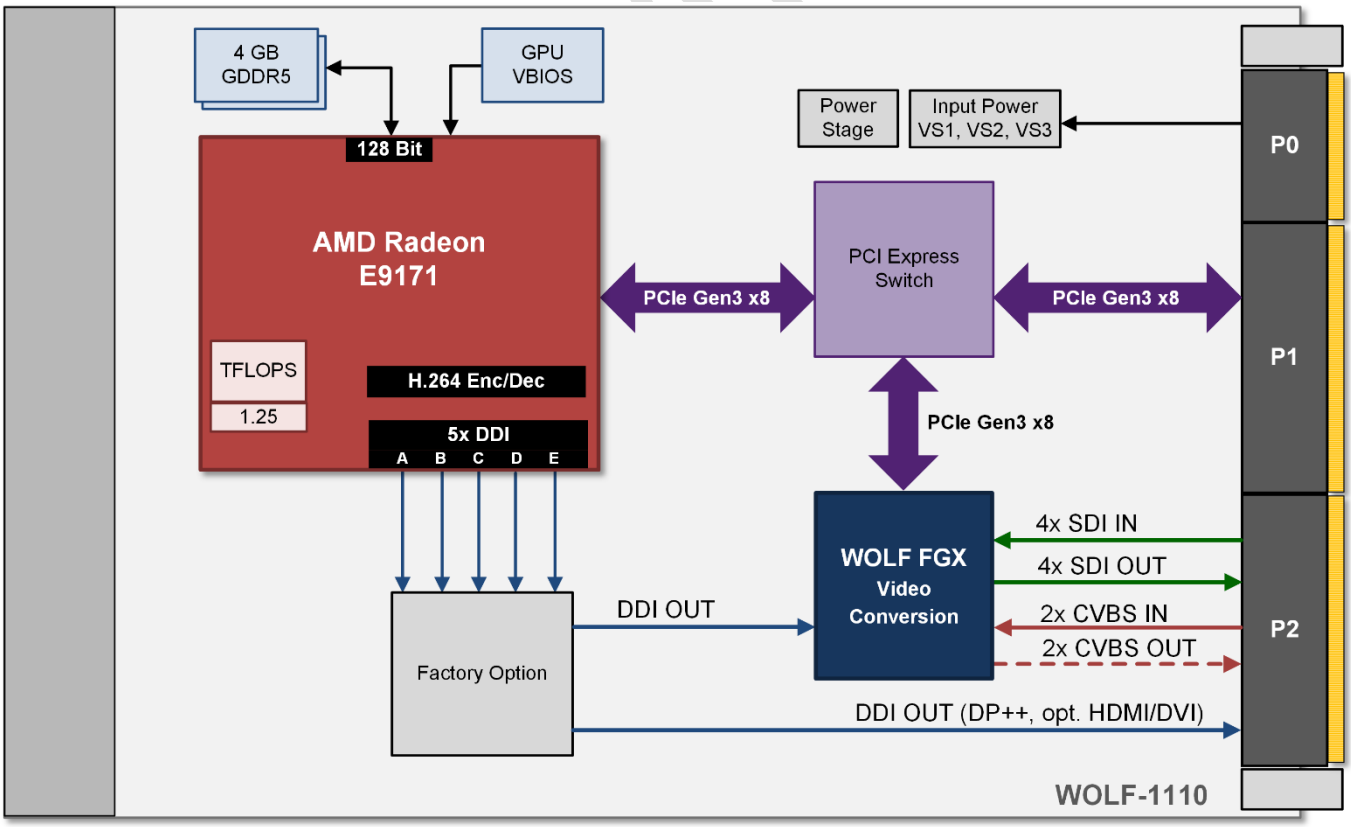
DESIGNED FOR SYSTEM INTEGRATION

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).

The WOLF-1110 comes with a PCI Express switch which is reconfigurable. This allows system integrators to use this module in a Daisy Chain or Star topology, compliant with OpenVPX VITA 65. It is also possible to configure the switch with a non-transparent port or virtual switch for fail safe or joining multiple SBCs together eliminating the need for a separate switch card.



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PRELIMINARY INFORMATION

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	
	111023-F9**VPX3v10	3U VPX, Air Cooled, 1", AMD E9171, WOLF FGX
	111033-F9**VPX3v10	3U VPX, Conduction Cooled, 1", AMD E9171, WOLF FGX

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

ITAR Free

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM GIDEP

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