

# XMC-E9171-VO

CHIP-DOWN DESIGN

AMD RADEON® E9171, 1.25 TFLOPS WITH FIVE 4K VIDEO OUTPUTS

## KEY FEATURES

- AMD Radeon 1.25 TFLOPS GPU
- Chip-down rugged design, MIL-STD-810
- 5 independent DisplayPort 1.4 outputs
- 4 GB GDDR5 memory
- Dynamic power management (DPM) with real-time operating power control from 15 - 50W (default: 25W)

## ADDITIONAL FEATURES

- 5 DisplayPort 1.4 digital video outputs:
  - Support for High Dynamic Range (HDR) video
  - 4K at 60Hz with 12-bit color depth
- 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 x8 Gen3
- Windows and Linux drivers
- Optional RTOS drivers: VxWorks, others on request

## SPECIFICATIONS

- High level of ruggedization:
  - Rugged air-cooled or conduction-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
- Front I/O and Rear I/O configurations
- VITA 46.9 I/O compliant mapping for 3U and 6U VPX configurations
- Available as XMC 1.0 or XMC 2.0 configurations

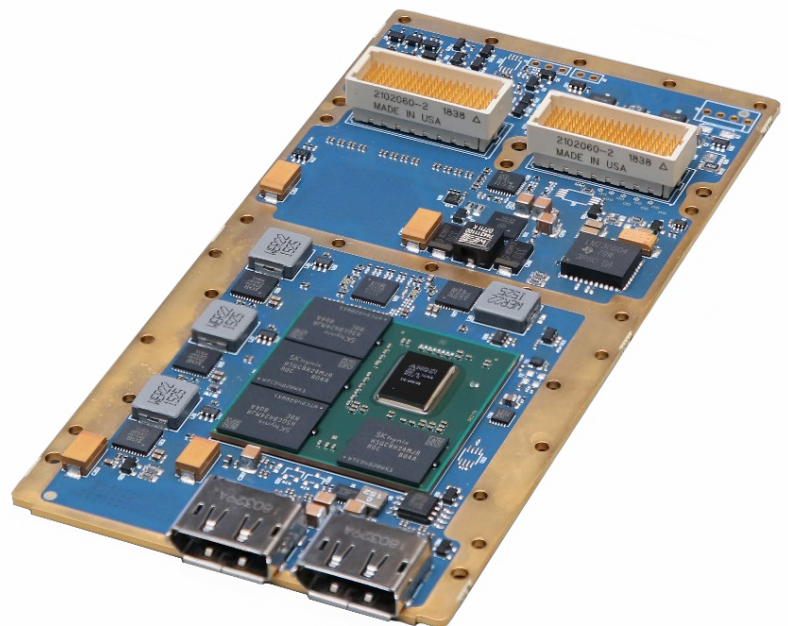
## OVERVIEW

WOLF's XMC-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.

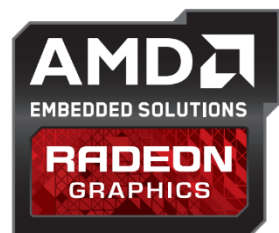
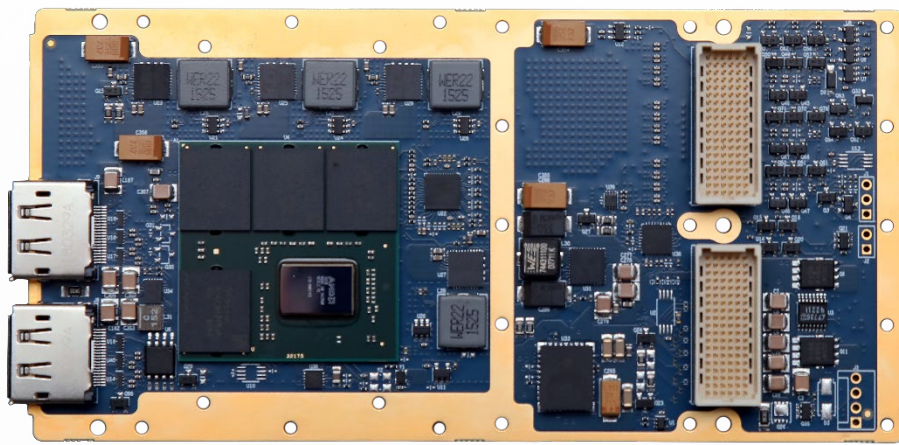
The XMC-E9171-VO is capable of driving up to five 4K displays (4096x2160 @60Hz, 17:9). DisplayPort 1.4 is supported, with High Dynamic Range (HDR) video and 12-bit color depth.

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.

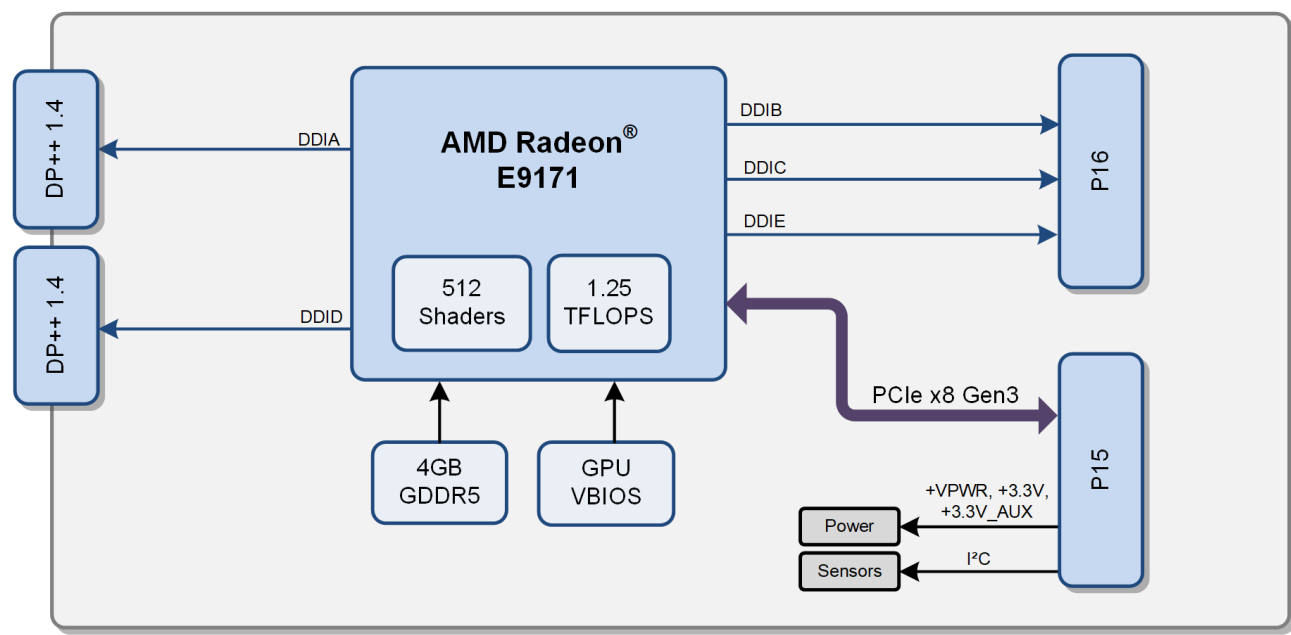
Optional RTOS drivers are available for this board, including VxWorks, Integrity, LynxOS, and others on request. Windows and Linux drivers are also available.



**WOLF- 3196 XMC Module**



## XMC-E9171-VO



Front I/O  
Air Cooled Only

- Outputs:
- 2 front DP++ Outputs; 3 rear DP++ outputs
  - Additional supported outputs: HDMI, Single Link DVI

WOLF-3196

## DESIGNED FOR SYSTEM INTEGRATION

The XMC architecture is diverse, spanning custom carrier cards, VPX platforms and differing input / output methodologies. That is precisely why WOLF modules come with factory configuration options to solve virtually all system integration challenges. Typical options include PMC or XMC rear connectors, thermal dissipation threshold, module coating, to name a few.



This module supports VPWR of +5V or +12V, comes with configurable power control options, is configurable for ANSI VITA 42 (XMC 1.0) or ANSI VITA 61 (XMC 2.0), and can be configured for outputs to front and/or rear ports.

Further options are possible, such as pin mapping changes, PMC rear connector, enhanced cooling technologies and alternate video interfaces.

## 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

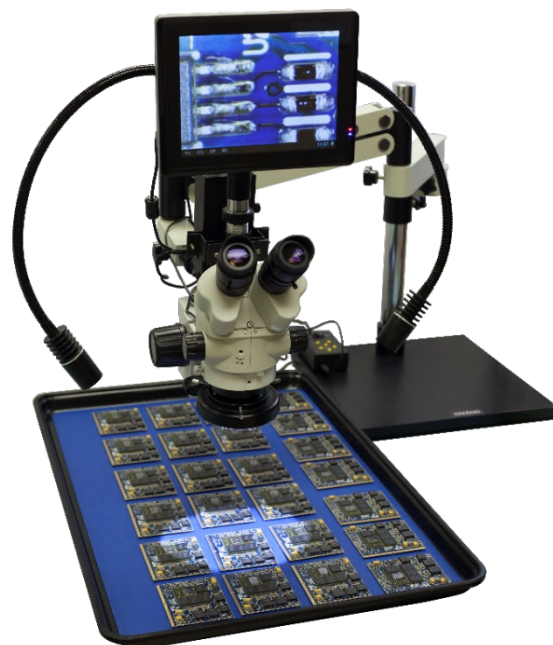
WOLF complies with the following quality management systems:

- ISO 9001:2015: Quality management systems (certified)
- SAE AS5553: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition (compliant)
- SAE AS9100D: Quality Management System - Requirements for Aviation, Space and Defense Organizations (preparing for certification in 2019)

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.



**WOLF- 3196 XMC Module**