XMC-E9171-CV

WOLF ADVANCED TECHNOLOGY

AMD Radeon E9171, Converted Video Outputs: SDI, DP, DVI, HDMI

PRELIMINARY INFORMATION

KEY FEATURES

- AMD Radeon 1.25 TFLOPS GPU
- Chip-down rugged design, MIL-STD-810
- 2x SDI outputs
- 3x DisplayPort 1.4 outputs
- Dynamic power management (DPM) with real-time operating power control from 20 - 55W (default: 25W)

ADDITIONAL FEATURES

- Optional outputs: HDMI 2.0b, DVI
- DisplayPort 1.4 digital video outputs:
  - ☐ support for High Dynamic Range (HDR) video
  - ☐ 4K at 60Hz with up to 10-bit color depth
- Optional MCOTS outputs: CVBS, VGA, STANAG 3350
- GPGPU parallel processing:
  - ☐ Eight compute units, 512 shaders (Stream Processors)
  - ☐ DirectX® 12, OpenCL™ 1.2, 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
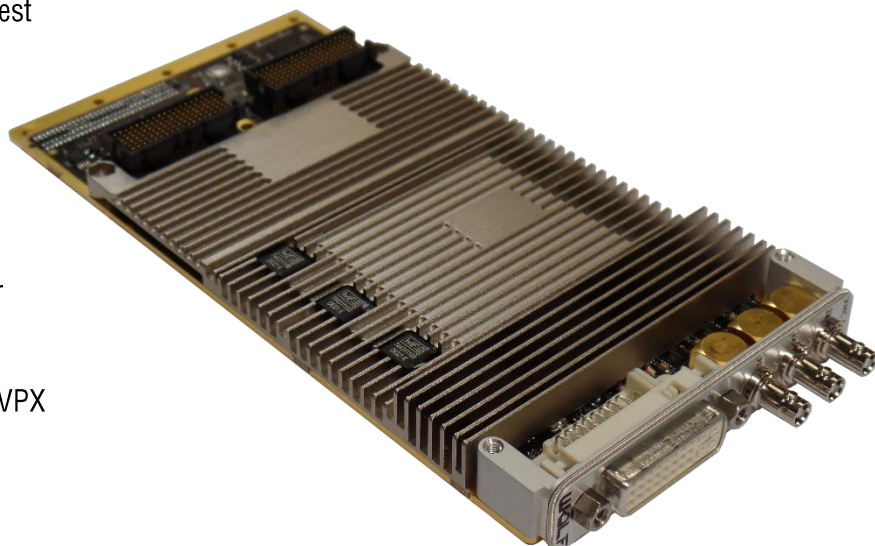- Available with XMC 1.0 or XMC 2.0 connectors

OVERVIEW

WOLF's XMC-E9171-CV board incorporates an AMD Radeon® with a 14nm Polaris architecture to provide a significant performance increase compared to the previous generation of AMD GPUs, with processing at 1.25 TFLOPS and a highly efficient operating power which is dynamically controllable from 15 to 40 Watts.

The XMV-E9171-CV is capable of driving up to five outputs, with up to five 4K displays (4096x2160 @60Hz) and up to two 5K displays (5120x2880 @60Hz). The WOLF FGX provides converted video outputs, with SDI outputs standard and others available as MCOTS options. DisplayPort 1.4 is supported, with High Dynamic Range (HDR) video and up to 12-bit color depth.
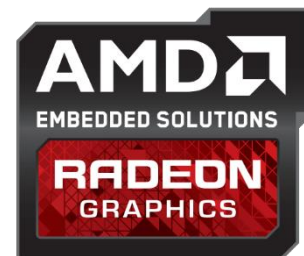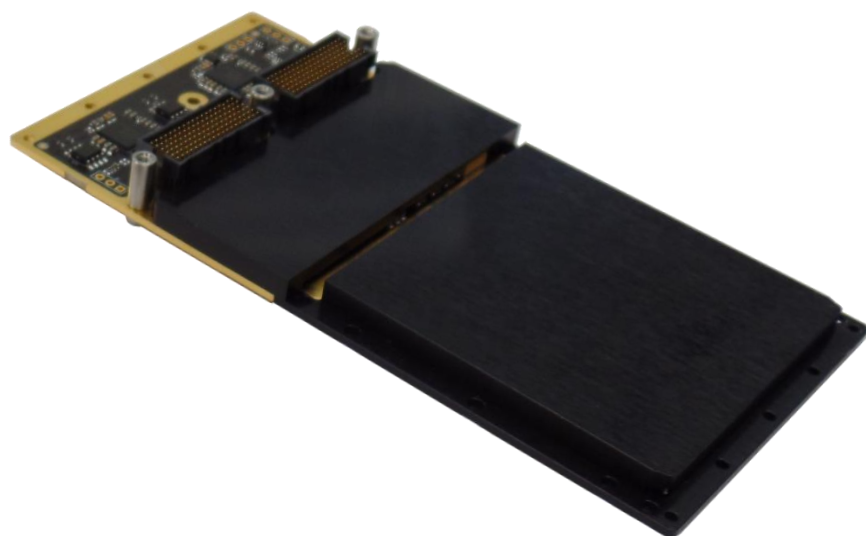
This board can provide 1.25 TFLOPS of single-precision GPGPU parallel processing capability. AMD GPUs are optimized for OpenCL, the open and cross-platform programming standard. For those with existing CUDA code, AMD's HIP Tools can be used to port CUDA code to C++, giving developers a way to reuse code that was previously locked to a proprietary hardware.

Optional RTOS drivers are available for this board, including VxWorks, Integrity, LynxOS, and others on request. Windows and Linux drivers are also available.
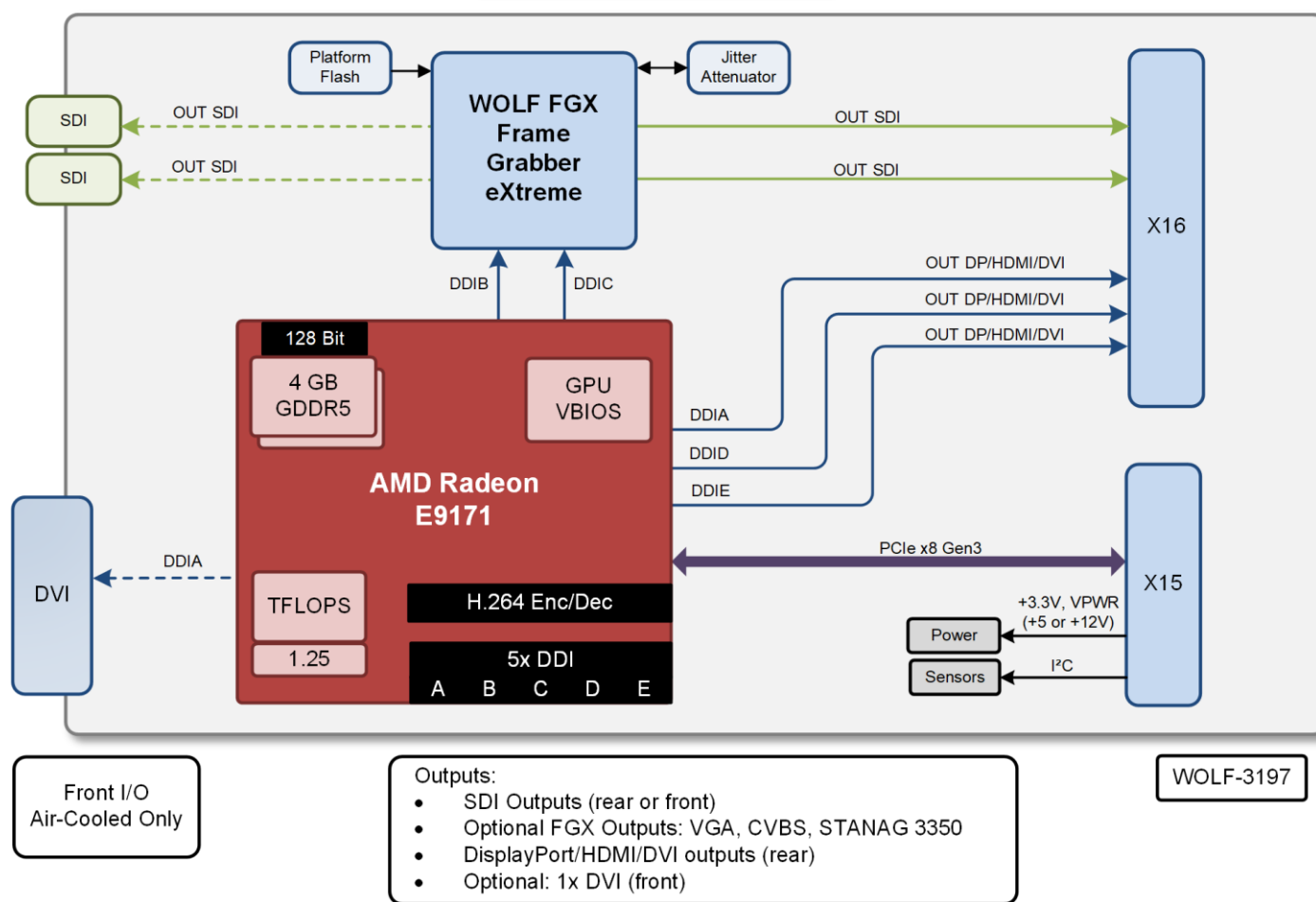
This is preliminary and subject to change.

AMD
EMBEDDED SOLUTIONS
RADEON GRAPHICS

XMC-E9171-CV

Platform Flash

Jitter Attenuator

WOLF FGX Frame Grabber eXtreme

SDI — OUT SDI
SDI — OUT SDI
OUT SDI
OUT SDI

X16

OUT DP/HDMI/DVI
OUT DP/HDMI/DVI
OUT DP/HDMI/DVI

DDIB   DDIC

128 Bit
4 GB GDDR5

GPU VBIOS

DDIA
DDID
DDIE

AMD Radeon E9171

DVI — DDIA

TFLOPS   H.264 Enc/Dec
1.25   5x DDI
A B C D E

PCIe x8 Gen3   X15

+3.3V, VPWR (+5 or +12V)
Power
I²C
Sensors

WOLF-3197

Front I/O
Air-Cooled Only

Outputs:
- SDI Outputs (rear or front)
- Optional FGX Outputs: VGA, CVBS, STANAG 3350
- DisplayPort/HDMI/DVI outputs (rear)
- Optional: 1x DVI (front)

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XMC-E9171-CV

ORDERING CODES

The following table defines series of common order codes for the XMC-E9171-CV 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
XMC-E9171-CV Configurations	
319722-F7**XMCv10	XMC, Air Cooled, XMC 2.0, AMD E9171
319732-F7**XMCv10	XMC, Conduction Cooled, XMC 2.0, AMD E9171

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 quality management systems:

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

ITAR Free

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