**XMC-P2000E-SDI-2IO**

**CHIP-DOWN DESIGN**

**NVIDIA® QUADRO® PASCAL™ GP107, INCLUDES 2 SDI INPUT, 2 SDI OUTPUT**

**PRELIMINARY INFORMATION**

**KEY FEATURES**
- NVIDIA GP107, 2.3 TFLOPS GPGPU Engine
- Chip-down rugged design, MIL-STD-810
- Up to two 3G-SDI inputs and two 3G-SDI outputs
- 4 GB GDDR5 memory with NVIDIA GPUDirect™ DMA
- Operating power default: 25W; configurable hard cap from 20 - 60 Watts

**ADDITIONAL FEATURES**
- Additional inputs: CVBS (STANAG 3350 optional)
- Additional outputs: DisplayPort 1.4, HDMI 2.0b, DVI
- DisplayPort 1.4 digital video outputs:
  - support for High Dynamic Range (HDR) video
  - 4K at 120Hz or 5K at 60Hz with 10-bit color depth
- Pascal GPGPU parallel processing:
  - 768 CUDA® cores
  - CUDA Toolkit 9, CUDA Compute version 6.1
  - OpenCL™ 1.2, DirectX® 12, OpenGL 4.5
  - Vulkan 1.0
- Memory width: 128-bit
- Maximum memory bandwidth: 96 GB/s
- NVENC/NVDEC accelerator for HEVC (H.265) and AVC (H.264) hardware encode/decode
- PCIe x4 Gen3
- Windows and Linux drivers

**OVERVIEW**

WOLF’s versatile Video Processing Unit (VPU) board includes both an advanced NVIDIA Quadro Pascal GPU and WOLF’s Frame Grabber eXtreme (FGX). This board accepts multiple simultaneous inputs, including 3G-SDI, CVBS or STANAG 3350. The video data can be routed to the powerful Pascal GPU for processing or encoding, and then output in several formats, including 3G-SDI, DisplayPort, HDMI or DVI.

The WOLF Frame Grabber eXtreme (FGX) is the engine that provides the board with conversion of video data from one standard to another, with a wide array of video input and output options for both cutting-edge digital I/O and legacy analog I/O. The FGX has direct memory access (DMA) to the Quadro Pascal’s GPU memory for GPU processing and complex analysis. By including both the versatile FGX and a high performance Quadro Pascal GPU on one board WOLF’s I/O and processing solution avoids the SBC data rebroadcast traffic jams that commonly occur with a 2-board solution.

**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
- VITA 46.9 I/O compliant mapping for 3U and 6U VPX configurations
- Front I/O and Rear I/O configurations
- Available with XMC 1.0 or XMC 2.0 configurations

This is preliminary and subject to change.

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XMC-P2000E-SDI-2IO

**XMC-P2000E-SDI-2IO Conduction Cooled**

WOLF FGX Frame Grabber eXtreme

NVIDIA Quadro Pascal GP107 GPU

- **Inputs and Outputs:**
  - SDI Inputs: 2x 3G-SDI/HD-SDI/SD-SDI
  - SDI Outputs: 2x 3G-SDI/HD-SDI/SD-SDI
  - Analog Inputs: 2x CVBS (STANAG 3350 Optional)
  - Additional Digital Outputs: 2x, can be DisplayPort, HDMI, or Single Link DVI

XMC-P2000E-SDI-2IO Air Cooled

WOLF FGX Frame Grabber eXtreme

NVIDIA Quadro Pascal GP107 GPU

- **Inputs and Outputs:**
  - SDI Inputs: 2x 3G-SDI/HD-SDI/SD-SDI: Can be front or rear
  - SDI Outputs: 2x 3G-SDI/HD-SDI/SD-SDI: Can be front or rear
  - Analog Inputs: 2x CVBS: can be 1x front and 1x rear or 2x rear (STANAG 3350 Optional)
  - Additional Digital Outputs: 2x out; can be 1x front and 1x rear or 2x rear
  - DP++ can be configured for DisplayPort, HDMI, or Single Link DVI

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MANUFACTURING AND QUALITY ASSURANCE

WOLF stress tests to MIL-STD-810 (United States Military Standard for Environmental Engineering Considerations and Laboratory Tests) and MIL-HDBK-217 (Reliability Prediction of Electronic Equipment); Alternately will stress test to RTCA DO-160 (Environmental Conditions and Test Procedures for Airborne Equipment) on request.

WOLF products meet the following quality standards:

- ISO 9001:2015 (Quality management systems)
- IPC-A-610 CLASS 3 (Acceptability of Electronic Assemblies)
- IPC 6012 CLASS 3 (Specification for Rigid Printed Boards, Class 3 for High Reliability Electronic Products)
- IPC J-STD-001 Certified (Requirements for Soldered Electrical and Electronic Assemblies)

Boards are manufactured to meet the following standards:

- SAE AS9100D (Quality Management System - Requirements for Aviation, Space and Defense Organizations)
- SAE AS5553 (Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition)

ORDERING CODES FOR XMC-P2000E-SDI-210

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>317021-F00**XMCv10</td>
<td>Air cooled, XMC 1.0, Front IO: 2xSDI In, 2x SDI Out, DP++ out, CVBS In, Rear IO: configurable, see block diagram</td>
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<tr>
<td>317022-F00**XMCv10</td>
<td>Air cooled, XMC 2.0, Front IO: 2xSDI In, 2x SDI Out, DP++ out, CVBS In, Rear IO: configurable, see block diagram</td>
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<td>317031-F00**XMCv10</td>
<td>Conduction cooled, XMC 1.0, Rear IO: 2xSDI In, 2x SDI Out, 2x CVBS In, 2xDDI Out</td>
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<tr>
<td>317032-F00**XMCv10</td>
<td>Conduction cooled, XMC 2.0, Rear IO: 2xSDI In, 2x SDI Out, 2x CVBS In, 2xDDI Out</td>
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</tbody>
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** Contact Sales for full code definition. Code can specify: Conformal Coating, Modified Power Cap, Display Termination, other Part Numbers shown for Standard I/O configuration, contact Sales for additional I/O configuration options.