XMC-FGX2-6IO

4K Video I/O: SDI, ARINC 818, CoaXPress In, DP In, RGsB

Key Features

- WOLF Frame Grabber eXtreme 2 (FGX2) with multiple inputs and outputs
- Up to four SDI inputs and outputs
- Two DisplayPort (MST) inputs, each with up to 2 streams
- Options for ARINC 818 I/O and CoaXPress input
- Option for one RGsB or CVBS input
- Low operating power, 12 to 25W (depending on options)

Additional Features

- Option for direct DP to SDI conversion all in FGX, without sending video to the host
- PCIe Gen3 x4
- NVIDIA GPUDirect RDMA support for low latency data exchange with an NVIDIA GPU
- Optional 8Gb DDR4 RAM for additional application support
- Linux and Windows drivers
- VxWorks RTOS drivers optional
- Extended product lifespan

Specifications

- High level of ruggedization:
  - ☐ Rugged conduction cooled
  - ☐ Operating temperature: -40° to +85°C
  - ☐ Vibration Random: VITA 47.1 Class V3 (5 to 2000Hz)
  - ☐ Vibration Sine: 10g peak (5 to 2000 Hz)
  - ☐ Shock: 40G (MIL-STD-810H, Method 516.8)
- VITA 46.9 I/O compliant mapping for 3U and 6U VPX configurations
- Weight (approx.): 130g
- Dimensions: 143.75 x 74.00 mm

Overview

The WOLF-3185 provides a high data rate, high density video capture and transmit platform with the FGX2, WOLF's second-generation frame grabbing technology. FGX2 is a 4K-capable digital and analog frame grabber with conversion and transmit capability, built on the Xilinx® Kintex® UltraScale+™ series of FPGA devices. It is ideally suited for machine vision or sensor data processing applications deployed in harsh environments where low latency matters and SWaP is at a premium.

This module's ICD aligns with ANSI/VITA 46.9 for 3U and 6U VXP configurations. It provides an excellent upgrade path from the previous generation WOLF-3080 with a compatible hardware ICD and thermal envelope. This module can be paired with a module powered by an NVIDIA GPU to provide extremely low latency peer-to-peer communication that will reduce the host system CPU overhead, which can be critical when processing large amounts of data.

MCOTS options include the ability to change interfaces to other analog or digital video standards. RTOS drivers are optionally available upon request.

This information is subject to change

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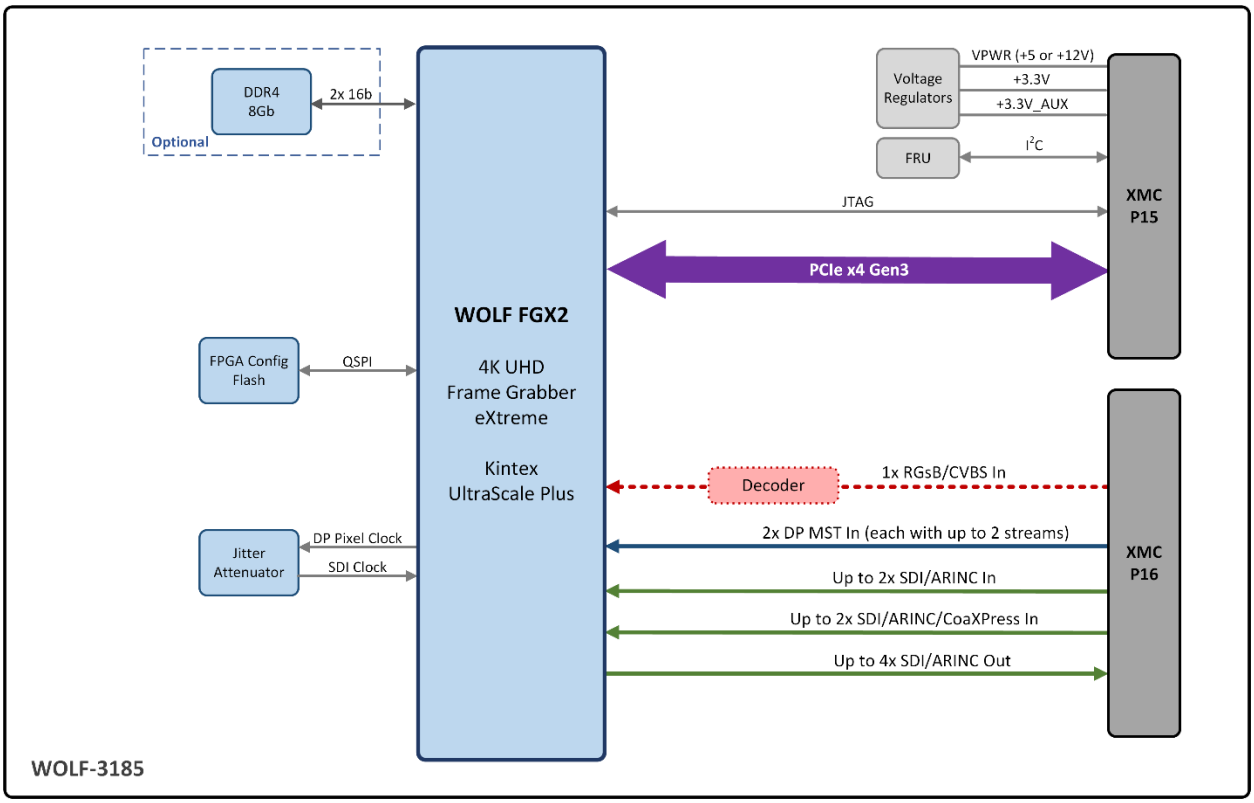

The number of simultaneous video I/O possible is constrained by both the number of physical connections available (as shown on the block diagram) and by the total bandwidth of the PCIe connection used to carry the active video data to the host system and back to the FGX2. For this XMC module there is a PCIe Gen3 x4 bandwidth of 31.5 Gbps for data that will be sent to/from the module.

Examples of video I/O configurations for 3185:

Description	DisplayPort In	SDI In	SDI Out	CoaXPress In	ARINC Out
DP and 6G-SDI	2x DP up to 12G	2x up to 6G	4x up to 6G		
DP and 12G-SDI	2x DP up to 6G	2x 12G-SDI	2x 12G-SDI		
Direct Conversion, all in FGX2, not sent to host	2x DP up to 12G		2x up to 12G-SDI		
SDI and ARINC *		2x up to 12G-SDI			2x up to 10G
CoaXPress and SDI *			2x up to 12G-SDI	2x up to 12G	

* When using both SDI and ARINC 818, or SDI and CoaXPress, they must use the same clock.

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Ordering Codes

The following table defines order codes for the XMC-FGX2-6IO module. The asterisks denote characters of the part number that are defined based on configuration options. Some common configuration options for this module are:

- Display Interface Options
- XMC Connector
- Conformal Coatings
- DDR4 Memory
- Variant Locked
- RTOS Drivers

Ordering Number	Description
318532-F***-000XMCvA0	XMC 2.0, Conduction Cooled, WOLF FGX2, 4x 3G-SDI In, 2x DisplayPort (3G) In, 4x 3G-SDI Out
318532-F***-000XMCvA0	XMC 2.0, Conduction Cooled, WOLF FGX2, 2x 12G-SDI In, 2x DP (HD) In, 4x 12G-SDI Out
318532-F***-000XMCvA0	XMC 2.0, Conduction Cooled, WOLF FGX2, 2x DP (12G) In, 2x 12G-SDI Out

* Contact Sales for the latest Ordering Numbers and available options

WOLF makes products that can provide support for a variety of video display interfaces including 12/6/3G-SDI, ARINC 818-2/3, CoaXPress, STANAG-3350 A/B/C, CVBS, RS170, LVDS, DVI, DisplayPort, Camera/Channel Link, and custom formats. Contact WOLF to discuss your specific requirements.

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)

AS9100 • ISO 9001 CERTIFICATION Intertek

ITAR Free

GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM GIDEP

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