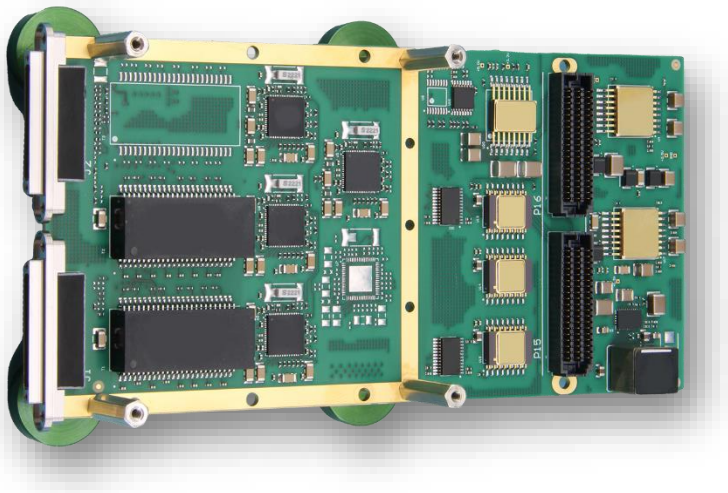
Version 1.0.3

12/24/2024



Introduction

The Frontgrade Input Output XMC Mezzanine (IOM-PS) provides an easy way for an FPGA or Processor to extend their IO to the outside world. The IOM-PS uses space rated components to convert internal signals levels to external I/O. The Mezzanine complies to the XMC physical form factor and translates signals from the P15/P16 connectors to Glenair Nano-D front panel connectors. The IOM is specially designed to plug directly onto Frontgrade's SpaceVPX Reconfigurable Processing Module (RPM-PS).

Input Output XMC Mezzanine : IOM

Features

Data Rates / Connectivity

- Five 100Base-TX/1000Base-T PHY's, with RGMII presented to the base card
- Four SpaceWire level translators of up to 200 Mbps per port, with single ended I/O presented to the base card
- Three RS422 input level translators, with single ended I/O presented to the base card
- One RS422 Output level translator, with single ended I/O from the base card
- Discrete IOs:
  - 3 LVDS input level translators, with single ended I/O presented to the base card
  - 1 LVDS output level translator, with single ended I/O from the base card
  - 1 LVTTL/LVCMOS input level translator, with 1.5V I/O presented to the base card
  - 4 LVTTL/LVCMOS output level translators, with 1.5V I/O from the base card

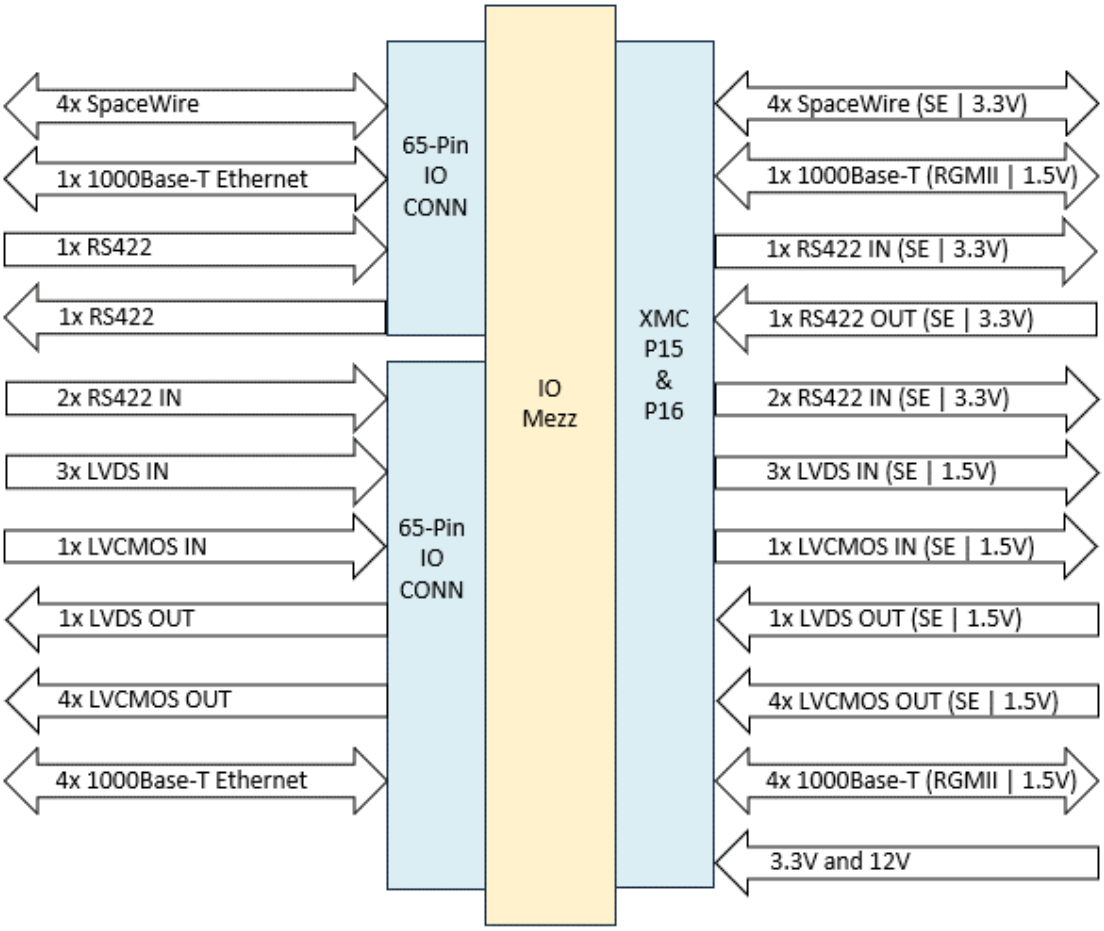
Mass / Volume / Thermal

- Mass: less than 125 grams (estimated), standard XMC form factor
- Maximum Component operating temperature: 125°C
- Maximum power consumption: 7W

Operational Life / Reliability And Performance

- MTBF Per MIL-HDBK-217F Notice 2 is 2,404,814 hours at 55°C at card edge
- System SEU rate: No more than one per year for typical LEO Missions
- TID of 25 krads (Si) or 100 krads (Si) optional assuming 100 mils of shielding with 6061-T6 Aluminum
- NASA PEM-INST-001 Level-2 parts pedigree available

Distribution Statement A: Approved for public release. Distribution is unlimited



Frontgrade IO XMC Mezzanine and Front Panel Connections