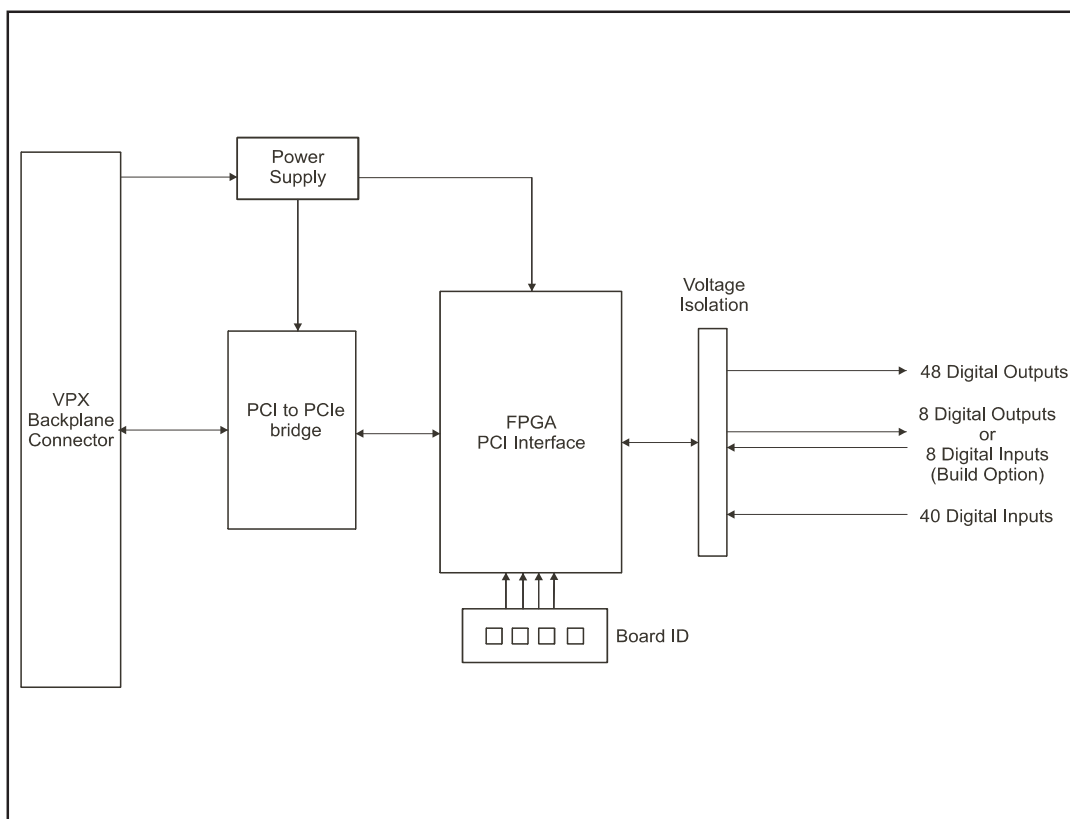


► 3U VPX 96-Channel Isolated Digital I/O Board

The 96-Channel Digital Input / Output (DIO) Board provides up to 96 opto-isolated digital input and output channels on a single 3U VPX board. The DIO Board has 48 digital output channels, 40 digital input channels and another 8 channels that may be configured as either digital inputs or digital outputs. The high current digital output channels can sink up to 600 mA. A Field-Programmable Gate Array (FPGA) and a PCI to PCIe bridge are used to provide access to the digital data over the PCIe bus.

I/O channels to system isolation is 1 500 V RMS.



Block Diagram of the 96-Channel Isolated Digital I/O Board

Architecture

A FPGA is used to control the output channels and read the input channels as well as providing the PCI interface to the PCIe bridge. LED optocouplers on all inputs and outputs provide 1 500 V RMS isolation and the outputs are driven by high-current optical coupled MOS FETs.



► 3U VPX 96-Channel Isolated Digital I/O Board

Features

- board identification switch
- programmable inputs and outputs
- Commercial, Industrial and Ruggedised grades
- high number of digital inputs and digital outputs
- high output sink current (up to 600 mA)
- I/O channel to system voltage isolation

| | | | |
|---|--|---|---|
| Formfactor and Bus Interface | ANSI/VITA 46.0-2007(R2013), VPX Base Standard ANSI/VITA 46.4-2012, PCI Express on VPX Fabric Connector PCI Express Base 1.0a compliant (1 lane, 2,5 GHz) | | |
| Digital Outputs | 48 | Optically isolated CEL PS7206-1A Solid State Relay (optionally IXYS CPC1014N) | |
| Digital Inputs | 40 | Avago Technologies's ACSL-6400 Optocoupler (optionally Vishay ILD205T) | |
| Digital Outputs / Digital Inputs | 8 | Configurable as either Digital Inputs or Digital Outputs, devices as above | |
| Voltage Isolation | 1 500 V RMS (I/O channel to system) | | |
| Power | 3,3 V DC at 0,3 A (1 Watt); 5 V DC at 0,5 A (2,5 Watt) | | |
| Input Resistance | 320 Ohm +/- 5% | | |
| MTBF | Figures according to MIL-HDBK-217F, Parts Stress Method | | |
| | Commercial and Industrial Grades | Ground Benign, Controlled, 25 C | 1 220 000 hours |
| | Ruggedised Grade | Ground, Mobile, 45 C Naval, Sheltered, 40 C Airborne, Inhabited Cargo, 55 C | 210 000 hours 291 000 hours 195 000 hours |
| Software Drivers | Support for Linux. VxWorks, Windows and others are costed options. | | |
| Physical Characteristics | | | |
| Cooling Type | | Air-Cooled | Conduction-Cooled |
| Dimensions | | 100,0 mm x 160,0 mm | 100,0 mm x 160,0 mm |
| Mass | | 300 g +/- 10 g | 350 g +/- 10 g |
| Environmental Specifications | | | |
| Grade | Commercial | Extended Industrial | Ruggedised |
| Temperature | | | |
| - Operating | 0 C to +55 C | -20 C to +75 C | -40 C to + 85 C |
| - Storage | -40 C to +85 C | -40 C to +85 C | -55 C to +125 C |
| Humidity | 0% - 90% | 0% - 95% | 0% - 95% |
| Shock | 10 g peak for 11 ms | 20 g peak for 11 ms | 40 g peak for 11 ms |
| Vibration | | | |
| - Sine | 2 g (peak) at 10 Hz to 100 Hz | 5 g (peak) at 5 Hz to 2 kHz | 10 g (peak) at 5 Hz to 2 kHz |
| - Random | 0,04 g²/Hz at 15 Hz to 2 kHz | 0,06 g²/Hz at 15 Hz to 2 kHz | 0,1 g²/Hz at 15 Hz to 2 kHz |
| Designation | Cooling | Connector | Grade |
| CCII/DIO/3UVPX/96C2/FP/COM | Air | Frontpanel | Commercial |
| CCII/DIO/3UVPX/96C2/FP/IND | Air | Frontpanel | Industrial |
| CCII/DIO/3UVPX/96C2/FP/RGD | Air | Frontpanel | Ruggedised |