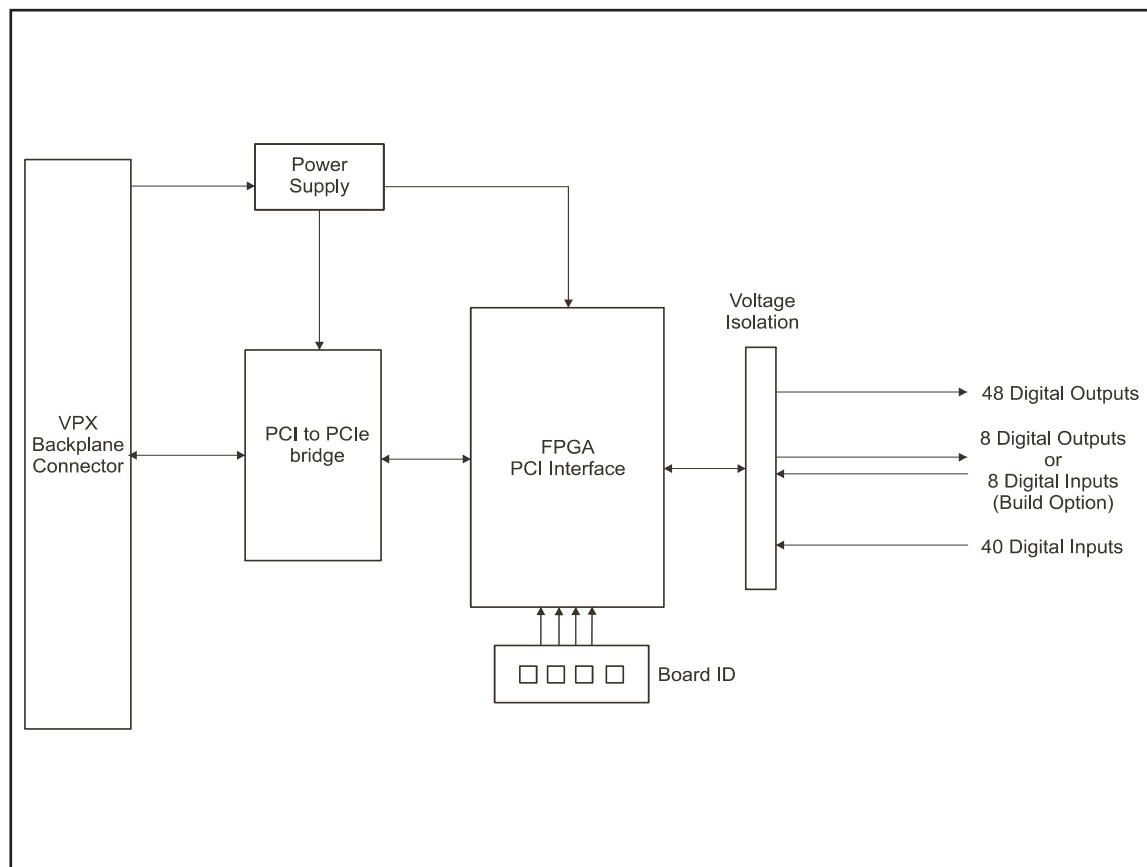


▶ 3U VPX 96-Channel Isolated Digital I/O Board

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

Board-Level 96-Channel Isolated Digital I/O