

General Description



The HV Series CompactPCI power supply is capable of supplying up to 2 channels of 250 - 5KvDC (configured in negative or positive voltages) in a standard 3U, double-wide chassis. Each channel is computer controlled using an IP Ethernet network and Lab View™ software. The DC power supply requires an input of 40-70mA depending on the output voltage and has an input impedance of 10K ohm. The modules have less than 0.5% peak to peak of ripple and are protected against continuous output short protection.

Control & Monitor

At the heart of the HV series system; for control and monitor is Quicklogic's 32 bit PCI chip running at 33 MHz, with 14 RAM blocks comprising 32,256 RAM bits and 97 I/O pins. The chip is PCI v2.3 compliant with zero wait states to provide up to 264 MBps transfer rates. It also offers full PCI Configuration Space and flexible target addressing. It supports retry, disconnect with/without data transfer and target abort requested by the user programmable logic. Any number of 32 bit BARs may be configured as either memory or I/O space.

The boards also have a CMOS FLASH-based 8-bit microcontroller chip from Microchip which acts as a slave, and assists in controlling and monitoring the feedback voltage.

Features

- System hardware based upon industry standard cPCI
- Modular DC Supplies with the modules supplying an array of voltage ranges
- Current draw in a quiescent state is low (typically < 1mA)
- Individual modules are stable to 5%
- Easy to maintain small robust design
- Current monitoring

Software

To control the power supply cards, LabVIEW from National Instruments was chosen because of its easy to understand graphical interface controls. LabVIEW can be readily deployed and the cards can easily be controlled and monitored over Ethernet.

Applications

- Supply voltage for large detectors
- Photo multiplier tubes
- Ionization and tracking chambers