VCM DIOS Board™

Features

- Measure bipolar DC voltages and currents
- Measure AC voltages and currents
- Controlled via IEEE-1394 high-speed serial interface
- Filtering options
- Eight independent, parallel, isolated channels per board
- Programmable gain for each channel

Description

The Distributed I/O System (DIOS) supports a family of voltage / current measurement boards. Each board contains a microprocessor to control the eight independent, isolated measurement channels on the board. Each channel has an ADC and a programmable gain capability that are controlled by the microprocessor.

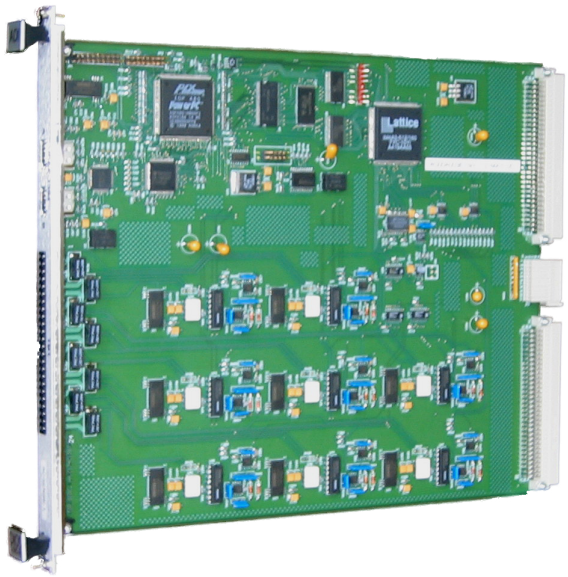
Each channel on the board can be configured for either voltage measurement or current measurement. In the case of voltage measurement, a precision voltage divider is used for measuring signals whose maximum absolute voltage may exceed 150 mV. For current measurements, a precision sense resistor is used to sense the current to be measured.

Each channel can be configured to perform either AC or DC measurements. ADI has three standard configurations:

- Eight channels of AC voltage / current measurement
- Eight channels of DC voltage / current measurement
- Four channels of AC and four channels of DC voltage / current measurement

These voltage / current measurement boards incorporate an IEEE-1394 high-speed, serial interface. Measurement results are passed to model software running in an ADI real-time system (rtX or RTS) via this IEEE-1394 link.

Each Voltage / Current Measurement Board contains two IEEE-1394a compliant ports. This allows for daisy-chaining the 1394 bus to up to 30 additional boards. The IEEE-1394 cable plugs into the Voltage / Current Measurement Board at the front panel. Input signals to be measured also connect to the board at the front panel using pluggable headers.



Specifications

Embedded Processor

- PowerPC-based
- On-chip PCI & Local bus interfaces
- 4MB On-board flash memory
- 8MB On-board SDRAM

DC Measurement[1]

- Voltage: ± 1.0 Volt range
- Current input ranges: 0 to ± 1.0 A
  0 to ± 0.5 A
  0 to ±0.25 A
  0 to ± 0.125 A
- Voltage / Current Resolution: 16 Bits
- Accuracy (calibrated) 4LSB max (each range must be calibrated independently)
- Temperature drift: ± 25ppm/°C max ± 310μA/°C max

AC Measurement[1]

- Voltage: ± 1.0 Volt range
- Current input ranges: 0 to ± 5.0 A
  0 to ± 2.5 A
  0 to ±1.25 A
  0 to ± 0.625 A
- Voltage / Current Resolution: 16 Bits
- Accuracy (calibrated) 4LSB max (each range must be calibrated independently)
- Temperature drift: ± 25ppm/°C max ± 310μA/°C max

IEEE-1394 Interface

- IEEE-1394a-2000 Compliant
- 100/200/400 Mbits/s
- OHCI Compliant

[1] Other voltage and current ranges available upon request

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