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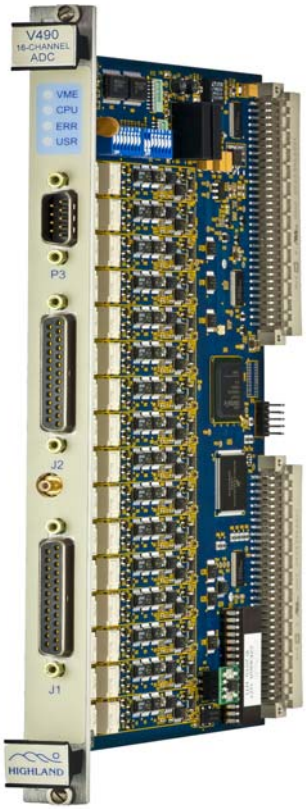
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HIGHLAND TECHNOLOGY

V490 multi-range digitizer

Features



- Sixteen channels of independently programmable differential analog input acquisition
- Input ranges from ±10.24 mV to ±40.96 V with 16-bit resolution
- Sample rate up to 500 Ks/s per channel
- Programmable lowpass filter per channel from 1 Hz to 100 KHz
- Simultaneous sampling, extendable across modules
- Realtime and FIFO-buffered data simultaneously available
- Common-mode rejection 100 dB typical, ±10 V common-mode range
- Overload protected to ±250 volts on all ranges
- Handshake-free dual-port memory
- In-crate calibration check via dedicated test connector
- Optional built-in self-test

The V490 includes 16 independent acquisition channels, each with a programmable-gain differential amplifier, analog anti-aliasing filter, 16-bit analog-to-digital converter, and digital post-processing. With a dedicated A/D converter per channel, the V490 provides true simultaneous sampling, which can be extended across multiple V490s or triggered from an external TTL signal.

Both realtime and FIFO buffered data are simultaneously available, with each path having its own programmable digital filter. FIFO load rates are internally programmable to up to 500 Ks/s, or may be externally triggered. Digital processing allows emulation/replacement of a classic Neff type architecture, namely a preamp and analog lowpass filter feeding a low-aperture-jitter triggerable ADC per channel, while adding the ability to watch the real-time data at any time without disturbing the FIFO acquisition.

The V490 also integrates with Highland's advanced test and calibration architecture, allowing each channel to be relay switched to a dedicated calibration bus. The calibration bus allows one or many modules to be automatically connected to an external DVM, providing traceability with no need to disturb field wiring. Automatic built-in self-test is also available.

650 Potrero Ave San Francisco, CA www.HighlandTechnology.com tel: 415 551-1700 fax: 415 551-5129

Specifications : V490 multi-range digitizer

FUNCTION	16-channel differential analog-to-digital converter
DEVICE TYPE	16-bit VME register-based slave: A24:A16:D16:D32; Implements 256 16-bit registers at switch selectable addresses in the VME 16 or 24 bit addressing spaces
RANGES	Programmable per channel ± 10.24 mV ± 40.96 mV ± 160 mV ± 640 mV ± 2.56 V ± 10.24 V ± 40.96 V
RESOLUTION	16 bits, 0.313 µV on 10.24 mV range
INPUT IMPEDANCE	> 500 K to ground, each differential input
ACCURACY	± 0.05% of range ± 20 µV ± 5 µV/°C
CMRR	100 dB typical on 10 mV range to 60 dB typical on 40 V range CM range ± 10 V, ±140 V on 10 and 40 V ranges
SAMPLE RATE	500 Ks/s FIFO path has programmable trigger rate
BANDWIDTH	-3 dB at 80 KHz typical, 9 KHz on 10 mV range (see manual for extended bandwidth specifications)
FILTERING	Analog, 80 KHz 5-pole pre-ADC lowpass Digital, 1 Hz to 50 KHz, 8-pole Bessel or Butterworth
PROTECTION	± 250 volts either input to ground
OPERATING TEMPERATURE	0 to 60°C; extended MIL/COTS ranges available
CALIBRATION INTERVAL	One year
POWER	Standard VME supplies: + 5 volts, 0.8 amp max +12 volts, 250 mA max -12 volts, 250 mA max
CONNECTORS	Two D25 female, each 8 channels One D9 male analog test One SMB trigger i/o
INDICATORS	LEDs indicate VME access, CPU activity, error conditions Additional LED is user programmable
PACKAGING	6U single-wide VME module
CONFORMANCE	ANSI/VITA 1-1994 (R2002) VMEbus spec; does not support byte writes

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