

Two channel
24-bit ADC
Over 130dB
Dynamic Range
10 MSPS
6U VME

The VadaTech VME501 module is a high-speed ADC converter in a single slot 6U VMEbus form factor. Two front panel Triaxial TNC connectors accept the analog RF inputs. The input goes through an RF transformer which presents a 50 ohm input impedance. The transformer offers a low distortion path to the differential inputs of the ADC. The module also has capability for an external sample clock or external trigger.

The VME501 provides a clock to external devices and a trigger output. The digital data is provided over HT (Hyper Transport), VME bus or GE. The VadaTech VME501 is designed specifically for the Mil/Defense/Aerospace market segment.

The VME501 has an on-board high speed/density FPGA. The FPGA has 256MB of high speed DDR-II memory for data packing and formatting as well as doing DSP functions. The board has two high speed ADC converters which are sampling at a rate of 10 MSPS. The module has an on-board PPC for data manipulation as well as data transfer.

KEY FEATURES

- 6U VME form factor
- 10 MSPS ADC
- Hyper Transport Interface
- VME-320 Interface
- Quad GE
- GE in Fiber or Copper
- FPGA at 500MHz
- AGC Switching <60ns
- VxWorks and Monta Vista Linux support



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VME501 Technical Specifications

VME Interface:

- ANSI/VITA 1-1994 VME64 (IEEE STD 1014), ANSI/VITA 1.1-1997 VME64
- Extensions, VITA 1.5-199x 2eSST
- DTB Master: A16, A24, A32, A64; D08-D64, SCT, BLT, MBLT, 2eVME, 2eSST
- DTB Slave: A16, A24, A32, A64; D08-D64, SCT, BLT, MBLT, 2eVME, 2eSST, UAT

Analog to Digital Converter

- Two channel
- 10 MSPS per channel
- SNR 80dBFS at 30MHz f_{in}
- SFDR 90dBc at 30MHz f_{in}

VME501 Multi-Processor Interconnect

- 16 bit Hyper Transport (HT) at 38.4 Gigabits per second transfer rate (full duplex)

CPU

- PPC 8548E
- 1GB DDR-II
- Compact Flash
- Four GE ports
- VxWorks or Linux

Module

- 24-bit output for each channel at 10MSPS
- Hardware digital calibration
- Hardware digital filtering and decimation*
- Frequency range: 14KHz to 160KHz
- AGC: 1 to +59dB with 1dB stepping
- AGC switching time 60ns

- Instantaneous dynamic range: >110dB
- Total dynamic range: > 140dB
- Intermodulation distortion < -82dBc
- Harmonic distortion < -83dBc

I/O Processing

- DSP FPGA at 500MHz
- 256MB of high-speed DDR-II

Physical Characteristics

- Single slot 6U VME

Power/Thermal

- Max 32W
- Operating Temp Range 0° to 55°C
- 5-95% relative humidity (non-condensing)

* Filter can be modified per customer specification

