




Document Version 1.0

Linear Computing Inc.

progressive design

VBB4449 – DAQ Controller Preliminary Specifications

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VBB-4449 is a carrier board for the Toradex Verdin module designed for applications in Automation, Robotics, Test and Measurement, Remote Monitoring and other uses where reliable operation in industrial environments is a must.

Specifications

Power:

- DC 9 to 30V

Current Inputs:

- 4 non-isolated 4-20mA current inputs
- Typical measurement error: $\pm 2\mu\text{A}$ (0.01 % FS) at 25DegC, 1.25sps
- ultra-low temperature coefficient shunt resistors (5ppm/K) and voltage reference (5ppm/K)
- 32 bit ADC, 1.25 to 38400 samples per second

Voltage Inputs:

- 4 single-ended or 2 differential voltage inputs
- Measurement range: -1V to 31V referenced to Gnd pin on input connector
- Automatic Offset Canceling
- 21 Voltage ranges from $\pm 32\text{mV}$ to $\pm 32\text{V}$
- 32 bit ADC, 1.25 to 38400 samples per second
- Typical measurement error on 32V range: $\pm 1.6\text{mV}$ (0.005 % FS) at 25 °C, 1.25sps

Connectivity:

- 1x 10/100/1000 Mbit Ethernet
- 2x USB 2.0

Expansion Connector Signals:

- Power supplies: 5V, 3.3V, 1.8V
- Verdin (1.8V): 1xUART, 1xI2C, 1xSPI, 6xGPIO, 2xAIN, 2xCAN
- Microcontroller (3.3V): 2xUART, 1xI2C, 2xPWM, 2xDAC, 3xGPIO

Multimedia:

- 1x HDMI connected to module DSI port

Other Features:

- Micro SD card holder
- EEPROM 2Kbit
- RTC
- On-board Cortex-M7 microcontroller running at 480MHz
- 400W ESD protection for all field signals
- Screw-locking connectors for field signals
- Internal diagnostics of all power supplies

Mechanical Features:

- Temperature range -40 to 85 DegC
- PCB size 115x100 mm
- Optional plastic enclosure, IP20 class, with DIN rail mount