

ULTRAVIEW

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DATA ACQUISITION

Designed to address requirements for the highest-performance data acquisition systems.

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Ultraview Corporation

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PCIe ADC DAQ

AD8-3000

High-Speed Data Acquisition Boards

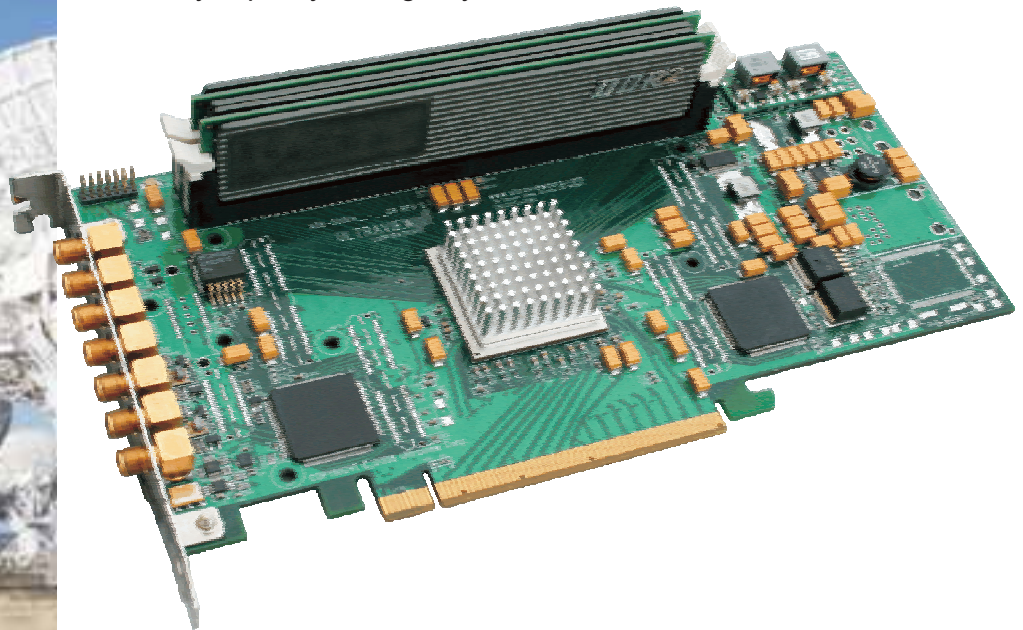
NEW!

- ▶ **Ultra Fast Sampling – Up to 3GSPS**
- ▶ **Ultra Deep Memory – Up to 8GB on-board RAM**
- ▶ **Ultra Customizable – On-board FPGA allows reconfigurable signal processing and ultra-deep recording**
- ▶ **Ultra Fast Data Transfer to Host – Up to 1.4GB/sec**
- ▶ **One or two channels**
- ▶ **8-bit resolution**

The AD8-3000 is Ultraview's flagship series of state-of-the-art PCIe high-speed data acquisition (DAQ) boards. The line features uninterrupted acquisition of one or two concurrent 3GSPS 8-bit A/D channels.

When installed in a PCIe x16 slot, the AD8-3000 acquires data at an aggregate rate of up to 6GB/sec, optionally process it with the on-board FPGA, buffer it into the on-board 8GB RAM, and continuously stream the data to host system RAM at up to 1.4GB/sec for immediate user processing, graphical display, or storage to disk.

The selective recording feature allows acquisition to be dynamically stopped and started in response to a TTL input, increasing effective memory depth by storing only the desired data.



Ultraview's AD8-3000 is the new benchmark with which all other data acquisition boards will be compared.

Rapid development and OEM-customization

Designed for high-speed, low-jitter operation in critical OEM applications, the AD8-3000 allows either straight data acquisition, requiring no user development, or real-time FPGA dataflow processing using the on-board Xilinx Virtex-5™ (XC5VLX50T™ or optionally any 1136-pin Virtex-5 up to XC5VLX155T™).

For use as a standard DAQ board, the supplied user software and device driver allow users to acquire and view data with only a few minutes required to set up the board. Drivers, user software, and example user source code are supplied for both 64-bit Linux and 32-bit Windows Vista™/XP™. Graphical waveform display software and routines to store data to disk are included with all boards in C-language source and in ready-to-run executable form.

The AD8-3000's host-uploadable firmware feature lets users reconfigure the on-board FPGA through the host system's PCIe bus, without a programming cable. This allows users to quickly, and even remotely, modify the board's supplied data acquisition VHDL firmware to perform advanced application-specific hardware signal processing, including filtering, sub-band tuning, averaging, spectroscopy, SDR, and image processing. This modular VHDL firmware source is available to OEM users.

Modular front-end mezzanines

For OEM applications, user- or Ultraview-designed front-end mezzanines may be attached to the board, including higher resolution A/D and D/A converters, filters, amplifiers, and mixers.

Ultra-fast multi-board, multi-channel data acquisition

Multiple AD8-3000 boards may be ganged to be simultaneously triggered. For example, with four AD8-3000x2-8GBs and an AD8-SPLIT4 clock/trigger splitter, eight A/D channels can be acquired concurrently at 3GSPS each, for a 24GSPS aggregate rate, with 4GB of acquisition depth on each channel.

The boards support external clocks of 500MHz to 1500MHz (sampling rates of 1GSPS to 3GSPS), and also have a 2GSPS internal clock (other frequencies available).

Ordering info

AD8-3000x1-4GB	8-bit ADC, 500MSPS-3000MSPS, one channel, 4GB RAM, XC5VLX50T FPGA
AD8-3000x1-8GB	8-bit ADC, 500MSPS-3000MSPS, one channel, 8GB RAM, XC5VLX50T FPGA
AD8-3000x2-4GB	8-bit ADC, 500MSPS-3000MSPS, two channel, 4GB RAM, XC5VLX50T FPGA
AD8-3000x2-8GB	8-bit ADC, 500MSPS-3000MSPS, two channel, 8GB RAM, XC5VLX50T FPGA
AD8-3000x1-8GB-155T	8-bit ADC, 500MSPS-3000MSPS, one channel, 8GB RAM, XC5VLX155T FPGA
AD8-3000x2-8GB-155T	8-bit ADC, 500MSPS-3000MSPS, two channel, 8GB RAM, XC5VLX155T FPGA

Specifications, configurations, and availability are subject to change without notice.

Specifications

Driver OS support:

- ▶ RedHat Linux WS5.0 64-bit
- ▶ Windows Vista/XP 32-bit

A/D converter resolution: 8-bit

Signal-to-noise ratio: 42dB

Analog input range: -350mV to +350mV (may not exceed 800mV)

Analog input impedance:

50Ω || 2pF

Analog input bandwidth:

DC to 3GHz (-3dB bandwidth)

Sampling rate into on-board

RAM: 3GSPS max, 500MSPS min (200MHz typical)

Optional clock input AC voltage

range: 0.2V peak-to-peak min, 1.0V peak-to-peak max (may not exceed ±5V)

Clock input impedance:

50Ω in series with 0.01μF

Optional external trigger input signal (AC coupled):

Requires rising edge signal with 0.5V to 1.0V amplitude and rise time under 4nsec)

Optional selective recording input and low-speed Xilinx ADC input:

0V-3.0V (may not exceed 3.2V)

Peak DMA transfer rate to host-system RAM:

Up to 1.4GB/sec (depends on system)

On-board RAM:

4GB or 8GB DDR-II

Operating temperature:

0 to 50°C or 32 to 122°F

Storage temperature: -25 to 85°C or -13 to 185°F

Airflow: Minimum 100 lf/minute

Power requirements (board occupies two slots):

- ▶ +3.3V ±5% @ 3.3A max (2.5A typical)
- ▶ +12V ±5% @ 2.0A max for 4GB, 2.5A max for 8GB

Size: 10.7 cm x 21.9 cm or 4.2 in. x 8.625 in.

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