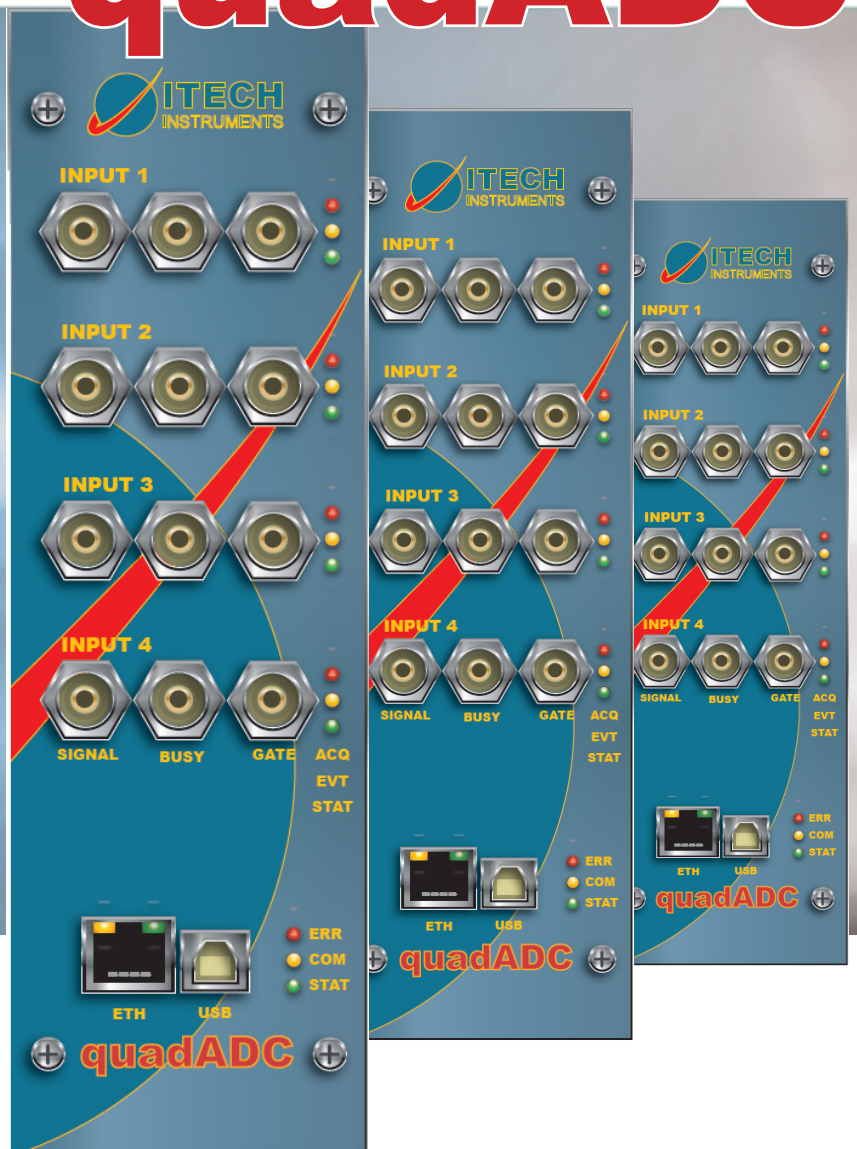
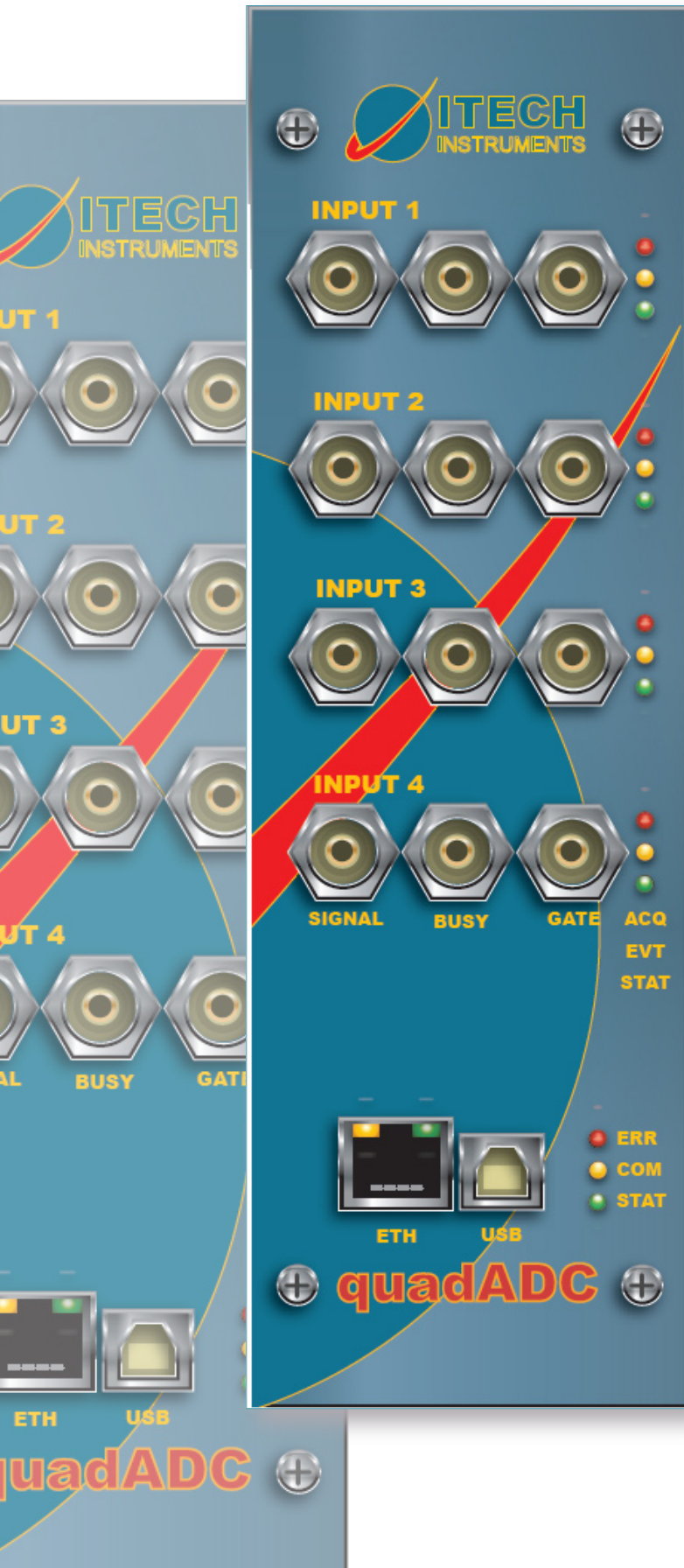


quadADC



High performance network ADC



The **quadADC** is an Embedded Linux based high performance ADC and multi-channel analyzer. It connects to the 0-10 V unipolar signal coming from the main amplifier, analyzes the signal using a 1 μ s sliding-scale ADC and stores the events in a pulse-height spectrum with up to 65536 channels.

The **quadADC** connects to the PC using Ethernet (TCP/IP) and USB. Due to the TCP/IP protocol used the **quadADC** can be connected locally but also over the Intranet or Internet allowing an arbitrary distance between PC and detector.

The **quadADC** also features external start/stop inputs, several sample changer inputs and outputs (TTL), USB-Host and RS-232 interfaces for external instruments control and supports several trigger signals.

The **quadADC** not only offers PHA acquisition but also list and multi spectrum scaling modes. In list mode, the data includes a time stamp (0.5 μ s timer resolution) which can be used to detect coincidences between several detectors when analyzing the data.

The list-mode based architecture also makes it possible to acquire spectra for gate/PUR anti-coincidence and gate/PUR coincidence simultaneously.

TECHNICAL DATA

Housing

- ▶ 2U wide NIM module, 221.3 x 68.7 mm
- ▶ Power supply over NIM rack

Front panel connectors and LED's For each input

- ▶ Signal input (0-10 V, positive)
- ▶ Busy input for dead time correction (3.3 V TTL, 5 V tolerant)
- ▶ Gate / Pile-up rejector input (3.3 V TTL, 5 V tolerant)
- ▶ Green LED indicating correct functioning
- ▶ Yellow LED blinking shortly for each event detected
- ▶ Red LED indicating a running acquisition

Common for all inputs

- ▶ PC Connection
- ▶ USB client (USB-B) and Ethernet (RJ45) interface

Back panel

D-SUB37 connector containing

- ▶ 4 Trigger inputs (status changes of these inputs will be inserted into the data stream)
- ▶ 4 secondary gate inputs
- ▶ 8 Sample changer outputs
- ▶ 8 Sample changer inputs
- ▶ serial interface (RS-232) for debugging purposes
- ▶ an additional serial interface reserved for

special applications

- ▶ USB host connector (USB-A) useable for HV control, amplifier control or for special applications. (e.g. spectrum storage on an USB stick)
- ▶ Standard NIM power connector

Acquisition modes

- ▶ PHA acquisition, external start/stop available, spectrum size 256-65536 channels software selectable
- ▶ Spectrum multiscaling : Starting from an external signal the spectrum will be acquired in time slices defined by the user. The length of the time slices can be set by the user in multiples of microseconds. Up to 256 time slices with 16384 channels can be used. This mode is useful for decay studies.
- ▶ List mode: The raw channel data will be stored. Each event will have the real time associated. The timer resolution is 0.5 μ s.

Conversion time

- ▶ 1 μ s

Maximum data rate

- ▶ > 100000 counts/sec per inputs, > 250000 cumulated

Software compatibility

- ▶ Compatible with **InterWinner/WINNER** nuclear spectroscopy software
- ▶ Example programs and drivers available for Windows and Linux

Power consumption

- ▶ 500 mA at +6 V
- ▶ 200 mA at +12 V
- ▶ 200 mA at -12 V
- ▶ 50 mA at +24 V

Ordering information

Model number	Description
quadADC-1	quadADC with one input
quadADC-2	quadADC with two inputs
quadADC-3	quadADC with three inputs
quadADC-4	quadADC with four inputs
quadADC-1U	Upgrade kit to add one input to quadADC-1
quadADC-2U	Upgrade kit to add one input to quadADC-2
quadADC-3U	Upgrade kit to add one input to quadADC-3
quadADC-1N	quadADC with one input for NAI/ALPHA (only 2048 channels)
quadADC-2N	quadADC with two input for NAI/ALPHA (only 2048 channels)
quadADC-3N	quadADC with three input for NAI/ALPHA (only 2048 channels)
quadADC-4N	quadADC with four input for NAI/ALPHA (only 2048 channels)
quadADC-1NU	Upgrade kit to add one input to quadADC-1N
quadADC-2NU	Upgrade kit to add one input to quadADC-2N
quadADC-3NU	Upgrade kit to add one input to quadADC-3N

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