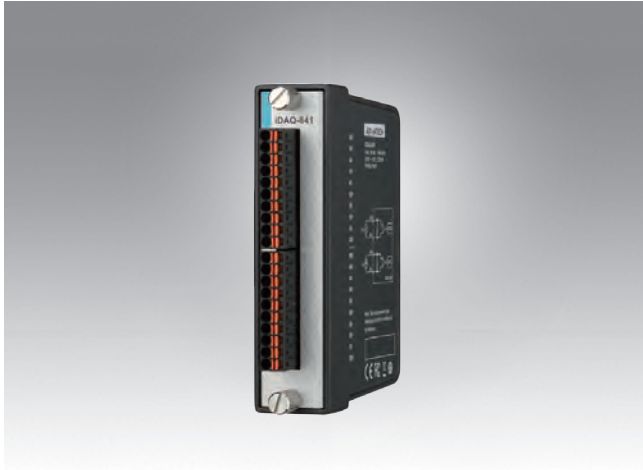


# iDAQ-841

## 8-ch, 16-bit, 1MS/s/ch Analog Input iDAQ Module



### Features

- 8-ch simultaneous sampling up to 1 MS/s
- 16-bit resolution
- Software selectable low-pass filter
- Wide input range up to 40 Vpp ( $\pm 20$  V range)
- Support both voltage and current measurement

### Specifications

#### Analog Input

- **Channels** 8 differential
- **Analog-to-digital converter (ADC) resolution** 16 bits
- **Input range**  $\pm 20$  V,  $\pm 12.5$  V,  $\pm 10$  V,  $\pm 5$  V, or  $\pm 20$  mA, software configurable per channel
- **Maximum input voltage**  $\pm 20$  V
- **Input common-mode voltage range**
  - $\pm 20$  V range  $\pm 10$  V
  - $\pm 12.5$  V range  $\pm 6.25$  V
  - $\pm 10$  V range  $\pm 5$  V
  - $\pm 5$  V range  $\pm 2.5$  V
- **Over-voltage protection**  $\pm 30$  V
- **Input coupling** DC
- **Input impedance**
  - Voltage input 1 M $\Omega$
  - Current input 500  $\Omega$
- **Analog low-pass filter**
  - 3 dB bandwidth 22.5 kHz or 250 kHz, software configurable per channel
- Isolation protection 600 VRMS
- Acquisition type Instant or buffered, software configurable

#### Buffered Acquisition

- **Enabled channel combination** Each channel can be enabled/disabled independently by software
- **Sample rate** 1 MHz max., for all channels<sup>(1)</sup>, simultaneous sampling, software configurable
- **Internal data buffer (FIFO) size** 512 samples

#### Absolute accuracy

- **Voltage input**
  - Operating temperature within  $\pm 5^\circ\text{C}$  of last Auto-calibration temperature  $\pm 0.01\%$  of full-scale range max.
  - Over full operating temperature range  $\pm 0.05\%$  of full-scale range max.
- **Current input**
  - Operating temperature within  $\pm 5^\circ\text{C}$  of last Auto-calibration temperature  $\pm 0.1\%$  of full-scale range max.
  - Over full operating temperature range  $\pm 0.5\%$  of full-scale range max.

#### DC Performance<sup>(2)</sup>

- **Idle channel noise** 336  $\mu\text{Vrms}$
- **ENOB** 16 bits

#### AC Performance<sup>(2)</sup>

- **SNR** 89.21 dB
- **THD** -103.93 dB
- **THD+N** -89.06 dB
- **SFDR** 101.99 dB
- **Dynamic Range** 95.78 dB
- **Crosstalk** -100.88 dB

#### Analog Trigger

- **Channel** 2 (start and stop)
- **Source** One of the analog input channels, software configurable
- **Threshold level** Full scale of analog input range, software configurable
- **Hysteresis** 1/256 of analog input range, software configurable
- **Polarity** Rising edge or falling edge, software configurable

#### Power Requirement

- **Power consumption from chassis** 650 mW typ./ 900 mW max.

#### Mechanical

- **Module dimensions** 100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in.)
- **Weight** 176 g

#### Environment

- **Operating temperature**  $-20^\circ\text{C}$  to  $60^\circ\text{C}$  ( $-4^\circ\text{F}$  to  $140^\circ\text{F}$ )
- **Storage temperature**  $-40^\circ\text{C}$  to  $70^\circ\text{C}$  ( $-40^\circ\text{F}$  to  $158^\circ\text{F}$ )
- **Operating humidity** 10% to 90% RH, non-condensing
- **Storage humidity** 5% to 95% RH, non-condensing
- **Random Vibration** 5Grms, , random, 5-500Hz, 1hr/axis
- **Shock** 30G, half sine, 11ms

#### Certification

- **EMC** CE, FCC
- **Safety** CB, UL

### Ordering Information

- **IDAQ-841-AE** 8-ch, 16-bit, 1MS/s/ch, AI iDAQ module

(1) Maximum 4MS/s in total for all channels. For example, 1MS/s for 4 channels or 500kS/s for 8 channels.

(2) For detailed information, please refer to specification in the user manual.