iDAQ-801

4-ch, 24-bit, 256kS/s/ch, DSA iDAQ Module



Features

- 4-ch simultaneous sampling up to 256kS/s
- 24-bit resolution
- Direct IEPE supply
- Anti-aliasing filter equipped
- High gain up to ±187.5mV input range

Specifications

Analog Input

Channels	4, Differential or pseudo-differential (50 Ω between negative input terminal and chassis ground)
Resolution	24 bits
Input range	±12 V, ±6 V, ±3 V, ±1.5 V, ±0.75 V, ±0.375 V, or ±0.1875 V, software selectable per channel
Input common-mode voltage range	±12 V
Over-voltage protection	±25 V
Input coupling	AC or DC, software configurable per channel
Acquisition type	Instant or buffered, software configurable

Integrated electronic piezoelectric excitation (IEPE) (1)

Current	0 mA or 2 mA, software configurable per channel
Accuracy	±5% max.
Compliance	22 V min.
Fault detection threshold	< 1.5 V (short) and > 22.5 V (open),
Status report	Software polling

Analog low-pass filter

Filter type	4-th order, linear phase
-3 dB bandwidth	1 MHz
Digital low-pass filter	Filter type: Wideband -3 dB bandwidth: 0.433 x sample rate

Absolute accuracy (2)

auto-calibration temperature	±0.01% of full-scale range max.
Over full operating temperature range	±0.05% of full-scale range max.
Common-mode rejection ratio (CMRR)	99.5 dB

DC performance

Idle channel noise	39.3 μVRMS
Effective resolution	24 bits

AC performance

Signal-to-noise ratio (SNR)	110.61 dB
Total harmonic distortion (THD)	-115.24 dB
Total harmonic distortion plus noise (THD+N)	-109.4 dB
Spurious-free dynamic range (SFDR)	117.49 dB
Crosstalk	-104.06 dB

Buffered acquisition

Enabled channel combination	Each channel can be enabled/disabled independently by software
Sample rate	(256 / 2n) kHz, where n = 0 ~ 8, for all channels, simultaneous sampling, software configurable
Internal data buffer (FIFO) size	512 samples

Power Requirement

Power Input	5 V_{DC} through iDAQ chassis
Power Consumption	2 W typ./ 2.6 W max

Mechanical

Module dimensions	100 x 80 x 25 mm (3.94 x 3.15 x 0.98 in)
Weight	200 g

Environment

Operating temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Storage temperature	-40 °C to 70 °C (-40 °F to 158 °F)
Operating humidity	10% to 90% RH, non-condensing
Storage humidity	5% to 95% RH, non-condensing
Vibration	5Grms
Shock	30G
Indoor use only	

Certification

EMC	CE, FCC
Safety	CB, UL

Ordering Information

iDAQ-801-AE	4-ch, 24-bit, 256kS/s/ch, DSA iDAQ Module

Optional Accessories

PCL-1010B-1E	BNC Coax Cable, 1m

(1) Input coupling must be AC and input configuration must be pseudo-differential when IEPE is enabled.
(2) Operating temperature within ±5°C of last

All product specifications are subject to change without notice.
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