MIC-1816

16-Bit, 1MS/s, 16-Ch DAQ Platform with Intel® Core™ i3*/Celeron® Processer

NEW

Features

- 16 x Analog inputs, up to 1 MS/s, 16-bit resolution
- 2 x Analog outputs, up to 3 MS/s, 16-bit resolution
- Supports digital and analog triggers
- 16 x Isolated digital input, 8 isolated digital output
- 2 x 32-bit programmable counter/timers
- Onboard FIFO memory (4,096 samples)
- 2 x RS-232 ports
- 2 x 10/100/1000 Base-T RJ-45 LAN ports
- 2 x USB 2.0 and 2 x USB 3.0 ports
- iDoor expansion supported

DAQNavi (UL) (CCC) FC C€ RoHS COMPLIANT 2002/95/EC

Introduction

MIC-1816 is a stand-alone automation controller featuring an integrated DAQ module and signal conditioning to provide digital I/O, analog I/O, and counter functions. This application-ready controller also supports serial communication ports and several other networking interfaces to enable seamless integration and rapid system development.

Specifications

Analog Input

- **Channels** — 16-ch single ended, 8-ch differential
- **Resolution** — 16 bits
- **Sample Rate** — Single channel: 5 MS/s max.; Multiple channels: 1 MS/s max.

Note: The sampling rate of each channel is influenced by the number of used channels. For example, if 4 channels are used, the sampling rate will be 1MS/4 = 250 kS/s per channel.

- **Trigger Reference** — Digital and analog triggers
- **Trigger Mode** — Start, Delayed Start, Stop, Delayed Stop
- **FIFO Size** — 4,096 samples
- **Overvoltage Protection** — 30 Vp-p
- **Input Impedance** — 1 GΩ
- **Sampling Modes** — Software and external clock
- **Input Range** — Software programmable

Gain	0.5	1	2	4	8
Unipolar	NA	0~10	0~5	0~2.5	0~1.25
Bipolar	±10, 0~20mA, 4~20mA	±5	±2.5	±1.25	±0.625
Gain Error (%FSR)	Voltage: 0.0075 Current: 0.03	0.0075	0.01	0.02	0.03

Analog Output

- **Channels** — 2
- **Resolution** — 16 bits
- **Sample Rate** — 3 MS/s max.
- **Output Range** — Software programmable

Output Range	Internal Reference	0V~5V, 0V~10V, ±5V, ±10V	
	External Reference	Reference Input	Maximum Range
	Unipolar	-10V ≦ x ≦ 10V	0 ~ x V
	Bipolar		-x V ~ x V

Isolated Digital Input

- **Channels** — 16
- **Input Voltage** — Logic 0: 3 V max. / Logic 1: 10 V min. (30 V max.)
- **Interrupt Capable Ch.** — 2 (IDI0 & IDI8)
- **Isolation Protection** — 2,500 V DC
- **Opto-Isolator Response** — 100 µs
- **Input Resistance** — 3.2 kΩ @ 1 W

Isolated Digital Output

- **Channels** — 8
- **Output Type** — Sink (NPN)
- **Output Voltage** — 5 ~ 40V_{DC}
- **Sink Current** — 350mA max./channel @ 25°C, 250mA max./channel @ 60°C
- **Isolation Protection** — 2,500 V DC
- **Opto-Isolator Response** — 100 µs

Counter

- **Channels** — 2
- **Resolution** — 32 bits
- **Compatibility** — 5 V/TTL
- **Max. Input Frequency** — 10 MHz
- **Pulse Generation** — Yes
- **Timebase Stability** — 50 ppm

General

- **Dimensions (W x H x D)** — 200 x 58 x 156 mm (7.87" x 2.28" x 6.14")
- **Power Consumption** — Typ.: 12.24W @ 24V, Max.: 50W @ 24V
- **Power Requirements** — 10 ~ 36 V_{DC}
- **Weight** — 2.4 kg (typical)
- **OS Support** — Up to Windows 10 / Linux

System Hardware

- **CPU** — Intel® Celeron® 3955U processer, 2.0 GHz (MIC-1816-U0A1E) / Intel® Core™ i3-6100U processor, 2.3 GHz (MIC-1816-U3A1E*)
- **Memory** — 4G DDR3 (Max. 16GB expansion available)
- **Indicators** — LEDs for Power, IDE and LAN (Active, Status)
- **USB** — USB 2.0 *2, USB 3.0 *2
- **Storage** — 1 x 2.5" HDD/SSD, installation subject to ordered configuration
- **Expansion** — Mini PCIe full size *1 (iDoor)

Environment

- **Storage Humidity** — 5 ~ 95% RH, non-condensing
- **Operating Temperature** — -20 ~ 60 °C (-4 ~140 °F) @ 5 ~ 85% RH with 0.7m/s air flow
- **Storage Temperature** — -20 ~ 80 °C (-4 ~ 176 °F)

Ordering Information

- **MIC-1816-U0A1E** — DAQ platform with Intel® Celeron® 3955U processer
- **MIC-1816-U3A1E*** — DAQ platform with Intel® Core™ i3-6100U processer

Optional Accessories

- **1960099348N001** — Table mount (220 x 156 mm)
- **PSD-A60W24** — DIN Rail AC to DC 100-240V 60W 24V

* Supported by request; please contact Advantech if this is needed.

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All product specifications are subject to change without notice.   Last updated: 13-Oct-2021