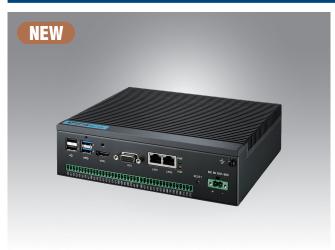
MIC-1816

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



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 (4) ((C) FC (E ROHS)







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 applicationready 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 Start, Delayed Start Trigger Mode Stop, Delayed Stop FIFO Size 4,096 samples

Overvoltage Protection Input Impedance

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 Resolution 16 bits 3 MS/s max. Sample Rate Output Range Software programmable

	Internal Reference	0V~5V, 0V~10V, ±5V, ±10V		
Output Range	External Reference	Reference Input	Maximum Range	
	Unipolar	-10V ≤ x ≤ 10V	0 ~ x V	
	Dipolar	-10V ≧ X ≧ 10V	v.V. v.V.	

Isolated Digital Input

Channels

Input Voltage Logic 0: 3 V max.

Logic 1: 10 V min. (30 V max.)

Interrupt Capable Ch. 2 (ĬDIO & IDI8) Isolation Protection 2,500 V DC Opto-Isolator Response 100 µs 3.2 kΩ @ 1 W Input Resistance

Isolated Digital Output

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

General

200 x 58 x 156 mm (7.87" x 2.28" x 6.14") Typ.: 12.24W @ 24V, Max.: 50W @ 24V $10 \sim 36 \ V_{DC}$ Dimensions (W x H x D) Power Consumption **Power Requirements**

Weight 2.4 kg (typical) **OS Support** Up to Windows 10 / Linux

System Hardware

CPU Intel® Celeron® 3955U processer, 2.0 GHz

Memory

Intel® Core™ i3-6100U processor, 2.3 GHz (MIC-1816-U0A1E) Intel® Core™ i3-6100U processor, 2.3 GHz (MIC-1816-U3A1E*) 4G DDR3 (Max. 16GB expansion available) LEDs for Power, IDE and LAN (Active, Status) Indicators

USB 2.0 *2, USB 3.0 *2

1 x 2.5" HDD/SSD, installation subject to ordered configuration Storage

Expansion Mini PCle full size *1 (iDoor)

Environment

Storage Humidity

 $5\sim95\%$ RH, non-condensing $-20\sim60$ °C (-4 ~140 °F) @ $5\sim85\%$ RH with 0.7m/s air flow **Operating Temperature** -20 ~ 80 °C (-4 ~ 176 °F) Storage Temperature

Ordering Information

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

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.