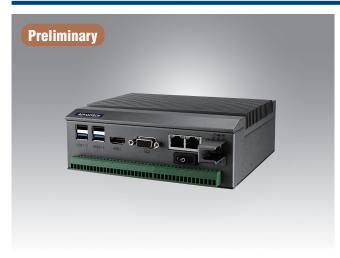# MIC-1816

16-bit, 1MS/s, 16-ch DAQ platform with Core™ i3/ Celeron® processer

Preliminary

Features

- 16 analog inputs, up to 1 MS/s, 16-bit resolution
- 2 analog outputs, up to 3 MS/s, 16-bit resolution
- Support for digital trigger and analog trigger
- 24 programmable digital I/O lines
- Two 32-bit programmable counter/timers
- Onboard FIFO memory (4k 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
- **MIC-1816-S4A1E**
    - Intel Celeron® 1047UE Processer, 1.4GHz
- **MIC-1816-S6A1E**
    - Intel Core™ i3-3217UE Processor 1.6GHz

Introduction

The MIC-1816 is a standalone automation controller with integrated data acquisition module and signal conditioning to provide digital I/O, analog I/O and counter functions. This controller also supports serial communication ports and several other networking interfaces. You can seamlessly integrate your applications into the MIC-1816 series and speed up your system development with these application ready controllers.

Specifications

Analog Input

- **Channels**   Single-ended: 16-ch; Differential: 8-ch
- **Resolution**   16 bits
- **Sample Rate**   Single Channel: 5 MS/s max.;
                        Multi-Channel: 1 MS/s max.

Note: The sampling rate for each channels will be affected by used channel number. For example, if 4 channels of MIC-1816 are used, the sampling rate is 1MS/4 =250KS/s per channel.

- **Trigger Reference** Digital Trigger, Analog Trigger
- **Trigger Mode**   Start trigger, Delay to Start trigger
                         Stop trigger, Delay to Stop trigger
- **FIFO Size**   4k 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	±5	±2.5	±1.25	±0.625
Gain Error (%FSR)	0.1	0.1	0.2	0.2	0.4

Analog Output

- **Channels**   2-ch
- **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

Digital I/O

- **Channels**   24
- **Compatibility**   5 V/TTL
- **Input Voltage**   Logic 0: 0.8 V max.
                       Logic 1: 2.0 V min.
- **Output Voltage**   Logic 0: 0.8 V max.
                       Logic 1: 2.0 V min.
- **Output Capability** Sink: 15 mA @ 0.8 V
                         Source: 15 mA @ 2.0 V

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 D x H)** 165 x 130 x 59 mm
- **Power Consumption**   45 W (Typical)
- **Power Requirements** Single 12V$_{DC}$ power input
- **Weight**   2.4 kg (Typical)
- **OS Support**   Windows 10 and Windows 7

System Hardware

- **CPU**   Intel Celeron® 1047UE Processer 1.4GHz
                  (MIC-1816-S4A1E)
                  Intel Core™ i3-3217UE Processor 1.6GHz
                  (MIC-1816-S6A1E)
- **Memory**   4G DDR3
- **Indicators** LEDs for Power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** USB
- **Storage**   SSD: 1 x 2.5" SSD

Environment

- **Storage Humidity**   5 ~ 95% RH, non-condensing
- **Operating Temperature** 0 ~ 50°C (14 ~140°F) @ 5 ~ 85% RH with 0.7m/s air flow
- **Storage Temperature**   -20 ~ 80°C (-4 ~176°F)

Ordering Information

- **MIC-1816-S4A1E**   Data Acquisition Computer with Intel® Celeron® 1047UE processer
- **MIC-1816-S6A1E**   Data Acquisition Computer with Intel® Core™ i3-3217UE processer

Optional Accessories

- **1700001714**   Power Cord BSMI 3P 7A 125V 18AWG 180CM
- **1702002600**   Power Cord 3P UL/CSA(USA) 125V 10A 1.83M 180D
- **1700023535-01**   Power Cord CCC 3P 16A 250V 183cm
- **1960077844N001** Table Mount (W x L: 130 x 175 mm)