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
- 24 x Programmable digital I/O lines
- 2 x 32-bit programmable counter/timers
- Onboard FIFO memory (4,000 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, 1.4 GHz

MIC-1816-S6A1E

- Intel® Core™ i3-3217UE processor 1.6 GHz

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** 4,000 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
- **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 H x D)** 165 x 59 x 130 mm (6.49" x 2.32" x 5.11")
- **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, 1.4 GHz (MIC-1816-S4A1E); Intel® Core™ i3-3217UE processor, 1.6 GHz (MIC-1816-S6A1E)
- **Memory** 4G DDR3
- **Indicators** LEDs for Power, IDE and LAN (Active, Status)
- **Keyboard/Mouse** USB
- **Storage** 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** DAQ platform with Intel® Celeron® 1047UE processer
- **MIC-1816-S6A1E** DAQ platform with Intel® Core™ i3-3217UE processer
- **2070015202** img WES7P MIC-1816 64bit 1701 10MUI

Optional Accessories

- **1700001714** Power cord (BSMI) 3P, 7A, 125V, 18AWG, 180 cm
- **1702002600** Power cord UL/CSA (USA) 3P, 10A, 125V, 1.83 m, 180 D
- **1700023535-01** Power cord (CCC) 3P, 16A, 250V, 183 cm
- **1960077844N001** Table mount (130 x 175 mm)