NEW PRODUCT	DIGILENT A National Instruments Company	*Release Year* 2021	*Released Quarter* Q4
Digilent Part Number 6069-410-014 (MCC USB-1808X)		*Category* DAQ and Data Logging	

OVERVIEW

Product Name: MCC USB-1808X High-Speed, High-Precision, Simultaneous USB DAQ Device

Product Subtitle: 18-bit multifunction DAQ device for high-speed data acquisition applications

Product Description: The Measurement Computing USB-1808X is a USB-based DAQ device with eight high-precision, simultaneous analog inputs, 18-bit resolution, 200 kS/s/ch sample rate, two analog outputs, 4 digital I/O, two counters, and two quadrature encoder inputs. This device is USB powered and requires no external power.

The USB-1808X offers voltage inputs ranges of ±10 V, ±5 V, 0 V to 10 V, and 0 V to 5 V. This device incudes two 16-bit analog outputs. The DACs can be updated at a rate of 500 kS/s per channel. The output range is fixed at ±10 V.

Four digital I/O lines are individually configurable for input or output. The DIO terminals can detect the state of any TTL-level input. Users can configure for pull-up (+5 V) or pull-down (0 V) with an onboard jumper.

The USB-1808X has two 32-bit general-purpose counter inputs that can be read asynchronously under program control, or synchronously as part of a digital scan group. Each counter can accept frequency inputs up to 50 MHz and supports the following software-selectable counter input modes; totalize, period measurement, and pulse-width measurement.

The USB-1808X can simultaneously decode signals from up to two quadrature encoders. Encoders with a 50 MHz maximum pulse frequency and X1, X2, and X4 count modes are supported. Each device provides A, B, and Z inputs for each connected encoder. A typical encoder generates the A and B signals at a 90° phase shift with respect to each other. These signals are used to determine system position (counts), velocity (counts per second), and direction of travel or rotation.

Two timers can generate pulse rates of up to 50 MHz each, with programmable pulse widths down to 10 ns. Timer output operations can be paced by the internal clock or by an external clock and can be initiated by a digital trigger.

The USB-1808X can read analog, digital, counter, and encoder inputs, and generate up to two analog outputs and one digital pattern output at the same time. Digital, counter, and encoder inputs do not affect the overall A/D rate because these inputs use no time slot in the scanning sequencer. For example, one analog input channel can be scanned at the maximum A/D rate along with digital, counter, and encoder input channels. Each analog channel can have a different gain, and digital, counter, and encoder channels do not need additional scanning bandwidth as long as there is at least one analog channel in the scan group. Digital input channel sampling is done during the dead time of the scan period when no analog sampling is being done.

The device provides two external clock inputs – one for pacing input scan and the other to pace output scans. Also included are two clock outputs – one to output the internal or external clock used for input scans, and the other to output the internal or external clock used for output scans.

The USB-1808X supports digital triggering and pattern triggering. The trigger mode is software-selectable for edge or level sensitive, rising or falling edge, high or low level.

Software support includes DAQami, an optional out-of-the-box application for data logging, visualization, and signal generation. Data can be viewed in real-time or post-acquisition on user-configurable displays. Drivers are included

for the most popular applications and programming languages including Visual C++®, Visual C#®, Visual Basic®.NET, DASYLab®, LabVIEW™, MATLAB®, and Python™.

Key Search Terms: Measurement Computing, DAQ, data acquisition, USB DAQ, high-speed DAQ, high-precision DAQ, multifunction, simultaneous DAQ, simultaneous sampling, synchronous DAQ, C++, C#, Visual Basic.NET, DASYLab, LabVIEW, MATLAB, and Python, analog, quadrature encoders

Video Link: N/A

Datasheet: https://www.mccdaq.com/GetPDF.aspx?t=/PDFs/specs/DS-USB-1808-Series.pdf

Demo / Project Links:

- MCC Software Overview
- MCC Software Downloads
- MCC example programs
- USB-1808X Manual

Features

- 8 SE/8 DIFF simultaneous analog inputs
- 18-bit resolution
- 200 kS/s/ch sample rate
- ±10 V, ±5 V, 0-10 V, 0-5 V input ranges
- Two 16-bit analog outputs
- Four digital I/O
- Two counter inputs
- Two quadrature encoder inputs
- Two timer outputs
- No external power required. USB cable is included

Product Image

Image Links:

- https://drive.google.com/file/d/1ISgcY9CsxNKCU6n4FgZ8bbvxyFkI2tD5/view?usp=sharing
- https://drive.google.com/file/d/1Nzr6TtUsL1gypYlhhyaKUlepmb2R28nc/view?usp=sharing
- https://drive.google.com/file/d/1NNhjy7hNMmgM71Vybveckfj-ugdJOLd2/view?usp=sharing

3 Target Applications

- NA

Related Products

- MCC USB-1608FS-Plus(PN: *6069-410-015)*