IO60-M410

Data Acquisition Module with ADC, DAC, and 24 GPIO in IO60 form factor

Features

Reliable Data Acquisition for the Industrial IoT

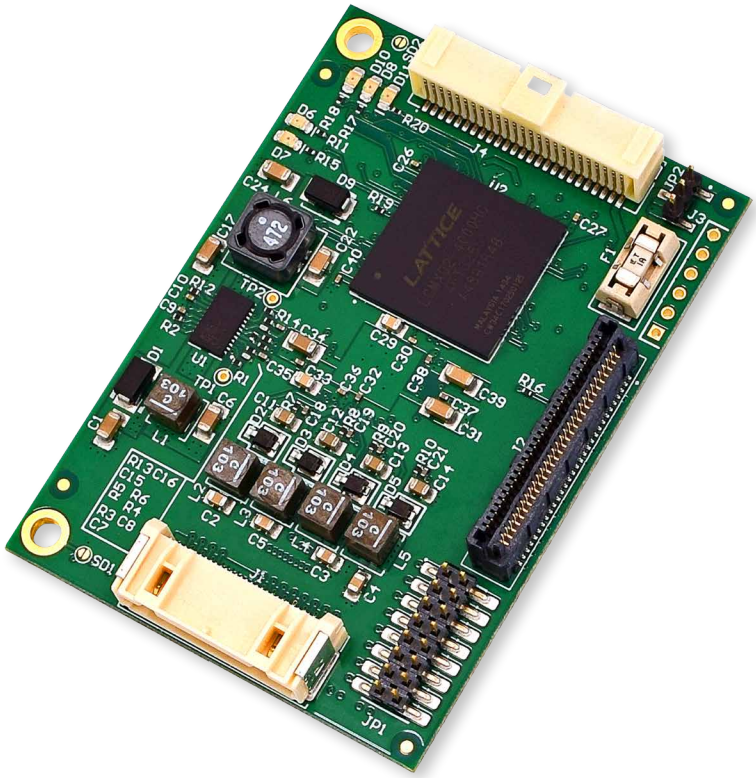
- Analog Input
  - 8 channel, 16-bit Analog to Digital Conversion (ADC)
  - Sample rate to 100ksps
  - Single ended or differential
  - 0 to 5V, 0 to 10V, +/-5V, +/-10V
  - Jumper selectable conversion for 4 mA to 20 mA current loop
- Analog Output
  - 4 channel, 16-bit Digital to Analog Conversion (DAC)
  - 0 to 5V, 0 to 10V, +/-5V, +/-10V
  - Unipolar and bipolar operation
  - Single-ended or differential operation
  - 4 mA to 20 mA current loop output
- 24 channel (GPIO) General Purpose Input-Output
  - Level converters provide support up to 30 VDC
  - Each line programmable for input, output, or event sense
  - Current: 12 mA sink, 5 mA source dependent on the user provided voltage
  - Programmable interrupts

Rugged Design for Demanding Environments

- -40°C to +85°C Operating Temperature Range
- IO60 Small Form Factor
- Shock and Vibration Tested
- Wide Range Power Input

Expansion Options

- For WinSystems single board computers with IO60
- Please contact an Application Engineer for specifics



PARHELIA

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Product Description

The IO60-M410 is a data acquisition module for embedded systems with IO60 expansion featuring 8 ADC (Analog-to-Digital Converter) channels, 4 DAC (Digital-to-Analog Converter) channels, and 24 GPIO (General Purpose Input-Output) tolerant to 30 V DC. Activity LEDs indicate device communication and DAC fault.

The analog inputs utilize the Linear Technology LTC1859 16-bit Analog-to-Digital Converter. The device provides eight single-ended inputs, four differential inputs, or a combination of both. All channels are fault protected to +/-25V. The input spans can be software configured for 0V to 5V, 0V to 10V, +/-5V, +/- 10V. Jumper selectable onboard resistors also provide an easy method to transform 4 mA to 20 mA current loop inputs to 1V to 5V signals for conversion.

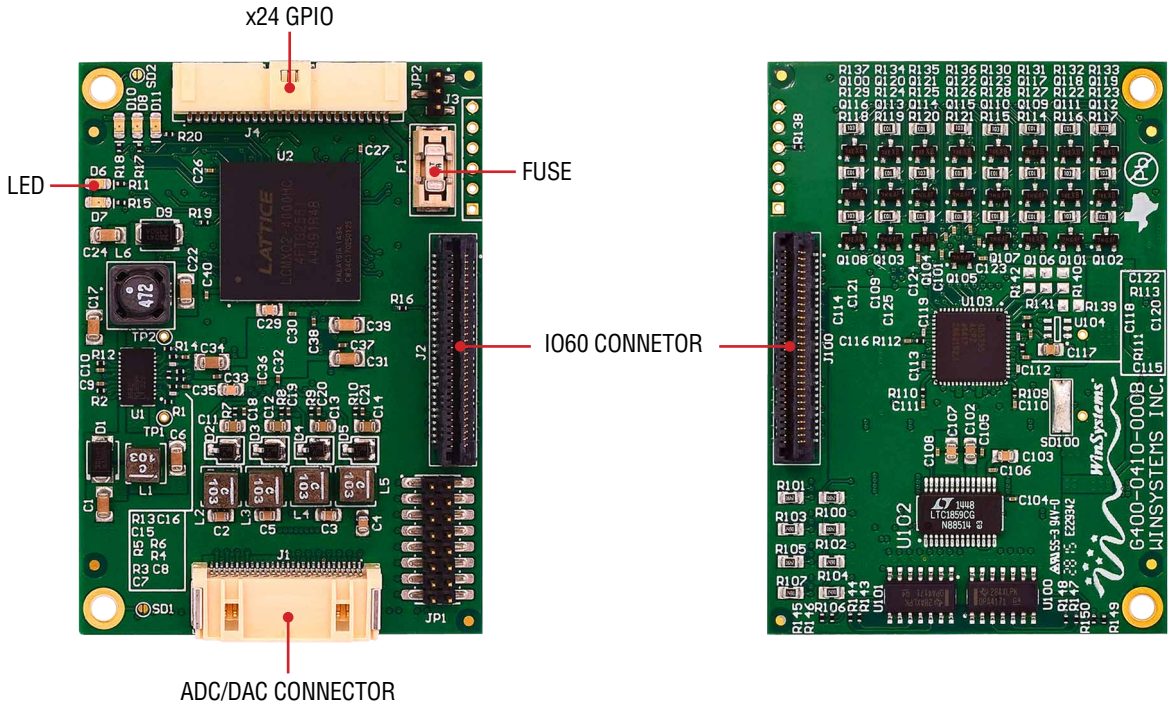
The analog outputs on the IO60-M410 are provided by an Analog Devices AD5755 16-bit Digital-to-Analog Converter. It provides four software configurable single-ended voltage outputs 0V to 5V, 0V to 10V, +/-5V, +/-10V in either single-ended or differential operating modes. The outputs are also configurable for 4 mA to 20 mA current loop through onboard current voltage conversion.

A Lattice MACH XO2 is configured for the 24 lines of General Purpose Input-Outputs. Each bit of each port is implemented as a bi-directional tristate driver. Each bit of each port can also be configured and enabled to detect both rising and/or falling edge events and generate a system interrupt. Level converters provide support up to 30 VDC, when used with offboard reference voltage. Each GPIO is line is capable of sinking 12mA or sourcing 5mA.

The IO60-M410 is a versatile embedded data acquisition module that can be configured and customized for specific requirements. It is a great addition to WinSystems single board computers feature IO60 expansion in Industrial IoT, energy, COTS, industrial control and medical.

IO60-M410

Connectors



Technical Specifications

ELECTRICAL	• ADC Input Voltage: 0 V – 5 V, 0 V – 10 V, ±5 V, ±10 V • DAC Output Voltage: 4 mA – 20 mA, maximum load 250 Ohm • Digital I/O: 3 V to 30 VDC • Vcc: 3.3 V, 250 mA typical • Current: 12 mA sink, 5 mA source per line
MECHANICAL	• Dimensions: 2.83 in L x 1.97 in W (72 mm L x 50 mm W) • Weight: 1.0 oz (29 gm) • PCB Thickness: 0.078 inch (1.98 mm)
ENVIRONMENTAL	• Operational Temp Range: -40 °C to +85 °C • Humidity (RH): 5% to 95% non-condensing • Random Shock Testing: MIL-STD-202G, Method 213B, Condition A, 50g half-sine, 11ms duration per axis, 3 axis • Random Vibration Testing: MIL-STD-202G, Method 214A, Condition D, 01g/Hz (11.95g rms), 20 minutes per axis, 3 axis • RoHS Compliant: Yes
OS SUPPORT	• Windows and Linux (Drivers and sample code are available for single board computers featuring IO60 expansion.)

Order Information

PART NUMBER	**IO60-M410**
ACCESSORIES	• KIT-IO60-STANDOFF-2 – Standoff kit (included). Contains following items: – Standoff: x2 Aluminum, 5 mm HEX,12 mm Long, 3.5 mm THREAD, Male/Female – Nex Nut: x2 Zinc Finish, M3-0.5 DIN – Screww: x2 Stainless Steel, M3 x 0.5 mm x 6 mm PPH

Expansion and Customization Options

WinSystems provides single board computers, cables, expansion cards, power supplies, and solid state drives to complete your embedded computing solution including data acquisition, communications, location, and other features via PC/104, PCIe/104 and M.2 interfaces. Our Application Engineers are available to guide you through product selection and customized options.

Contact an Application Engineer or visit our website for more information.

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