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Find the *RTD Embedded Technologies DM35838HR* at our website: *Click HERE*



DM35838HR

PCIe/104 High-Speed Isolated Digital I/O DAQ Module

*Operating Temperature **-40°** to **+85°**C*

Description

High-Speed DAQ with Advanced Triggering: The DM35838HR is a high-speed digital I/O data module in a PCIe/104 format providing Opto-Isolated Digital Inputs and Outputs to interface with a variety of devices. The Inputs allow for a broad range of input voltages, and are compatible with 5V, 12V, and 24V systems. The high-current Outputs allow for driving LEDs, relays, and solenoids. This module includes many features such as pulse width modulators (PWM), incremental encoders, and advanced interrupts. The PCIe interface provides compatibility with the latest generation of CPUs, and the PCIe lane repopulation allows for virtually limitless system expansion.



DM35838HR High-Speed Isolated Digital I/O DAQ

Key Features

- PC/104 form factor
- PCIe/104 stackable bus structure
  - PCIe universal expansion bus (Type 1 or Type 2)
- PCIe x1 interface
- PCIe link repopulation allowing increased PCI Express stack capacity
- Broad input voltage range
- Onboard 50 MHz clock
- Mating connectors: three standard 0.1 inch spaced 2 x 25
- *Available in stackable, rugged enclosures*
- -40 to +85°C Operation



Technical Details

- PCI Express Bus:
  - PCIe/104 Universal Board
    - Interfaces with Type 1 or Type 2 bus
    - Lane repopulation allows maximum system expansion
  - Provides 2.5 Gbps in each direction
  - In-band interrupts and messages
  - Message Signaled Interrupt (MSI) support
- Isolated inputs:
  - 48 Opto-isolated digital input
  - Two 50 position 0.1” DIL header
  - Two Input Ranges Available
    - +12 V version:
      - Guaranteed On at 4 V
      - Maximum input 15 V
    - +24 V version:
      - Guaranteed On at 18 V
      - Maximum input 32 V
  - Custom settings available
  - Reserve-polarity protection
  - 3000 $V_{AC(RMS)}$ isolation
  - Advanced Interrupts
    - Interrupt on Match, Change or Strobe
  - 4K-Word FIFOs with DMA
  - Maximum input frequency: 10Khz
- Isolated Outputs

    - 16 Opto-isolated open-collector digital outputs
    - One 50 position 0.1” DIL header
    - 4.75K ohm pull-up resistor
    - Maximum output current: 16mA
    - Maximum output voltage: 80 V
    - 3000 $V_{AC(RMS)}$ isolation
    - See hardware manual for possible output pin configurations
- Incremental Encoders
    - Four Incremental Encoder channels
    - Single-ended or Pseudo-differential inputs
    - Variable frequency input filtering
    - 32-bit resolution
    - FIFO with DMA channel available for position sampling
- Pulse Width Modulators
    - 2 – Quad PWM outputs
    - Single-ended or Differential outputs
    - 32-bit resolution
    - FIFO with DMA channel
- External Clocking
    - Provides 6 external clocks that can be configured as inputs or outputs
    - Can be used as external trigger
    - External gate provided for each clock input
- Programmable Clock
    - Four programmable clocks
    - Maximum frequency of 50MHz
    - Can be started or stopped by an interrupt or another clock
    - Continuous or One-Shot Operation
    - Can be cascaded
    - Event Counter
    - Interval Counter based on a 50Mhz Clock
        - Minimal interval: 20ns
        - Maximum interval: 85 seconds
        - FIFO with DMA channel

Connector Interface

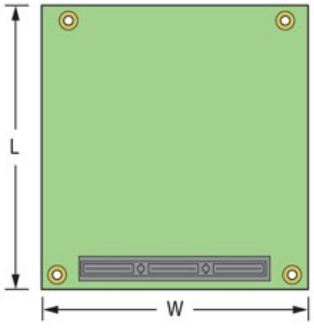
- Stackable Buses
    - PCIe universal expansion bus (Type 1 or Type 2)
- External I/O Connectors
    - Two 50-pin right-angle headers: isolated inputs
    - One 50-pin vertical header: isolated output

Software

- Linux 3.x and 4.x Kernels
- Source code provided for easy porting to other platforms, including RTOSes
- Example programs with source code provide a starting point for developing custom applications

Physical Attributes

- Dimensions
    - Length (L): 3.775 inches (95.89 mm)
    - Width (W): 3.550 inches (90.17 mm)
    - Stand-off Height: 0.600 inches (15.24 mm)
- Weight: Approximately 0.22 lbs. (0.10 Kg)
- Standard Operating Temperature, 90% humidity non-condensing: -40 to +85°C
- Storage Temperature: -55 to +125°C
- MTBF: 763,215 hours
- Input Power Requirements: +5 VDC
- Power Consumption
    - All outputs open: 2.0 W typical
    - All outputs closed: 3.0 W typical



Ordering Information

Part Number	Description
DM35838HR	PCIe/104 64-Ch. High-Speed Isolated Digital I/O DAQ Module for 5V and 12V systems
DM35838HR-24V	PCIe/104 64-Ch. High-Speed Isolated Digital I/O DAQ Module for 24V systems

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