RTD Embedded Technologies, Inc.

An AS9100 and ISO 9001 Certified Company

DM35425HR

32 channel 12-bit Analog I/O

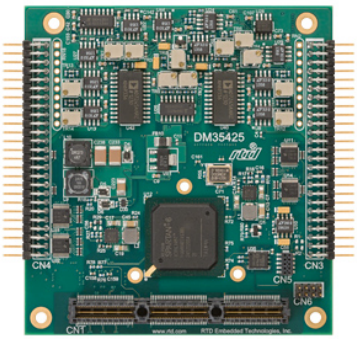
*Operating Temperature **-40°** to **+85°**C*

Description

The DM35425HR is a software-configurable high-speed 12-bit data acquisition module in the PCIe/104 format. External connectors provide 16 differential or 32 single-ended analog input channels with programmable gain and input ranges, four 12-bit high-speed analog outputs, and 32 bit-programmable digital I/O with advanced digital interrupts and DMA.

The multiplexed A/D input channels permit a maximum sampling rate of 1.25 MSPS, and include optional software-configurable delays as a mechanism to reduce crosstalk between channels during sampling.

The board is enhanced with an external clocking function block with six direction-configurable clocks, which may be used as sample clocks or triggers to start and stop sampling.



DM35425 dataModule

Rugged IDAN configurations available

Key Features

- PC/104 form factor
- PCIe/104 stackable bus structure
  - PCIe universal expansion bus (Type 1 or Type 2)
- PCIe x1 interface
- High-speed Analog Inputs
  - 16 differential or 32 single-ended analog input channels
  - Programmable input range per channel: ±5, ±10, 0 to +10V
  - Programmable gain per channel: 1,2 ,4 & 8
  - Programmable single ended or differential inputs per channels
  - 1.25 MSPS maximum input sampling rate (multiplexed)
  - 12-bit resolution
  - Threshold detection can generate an interrupt, or be used as a start or stop trigger
  - Configurable IIR filter on each channel
- Analog outputs
  - 4 high-speed channels
  - 12-bit D/A converters
  - ±5, +5, ±10, & +10V output ranges
  - 7 µs full-scale settling time
  - 5mA output drive current
- Digital I/O
  - 32-bit port of digital I/O
  - Bit programmable direction
  - Advanced digital interrupts and DMA
  - -12/+12mA output drive current
  - Parallel Bus Mode
- External Clocking
  - Provides 6 external clock pins that can be used as input or output
  - Provides external triggering
  - External Gate for each clock pin
- Mating Connectors
  - Two Standard 50-pin 0.1" DIL headers
- Available in *stackable, rugged enclosures*
- Requires only +5 VDC for operation

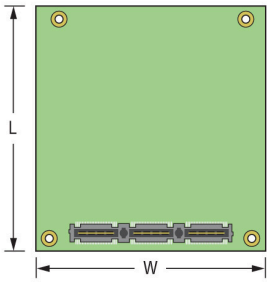
Software & Example Programs

- Includes software packages for the following Operating Systems:
  - Supports from 4.x to 6.5 Kernels Versions (Contact RTD for other versions)

    - Windows 7 (32-bit and 64-bit)
- Source code provided for easy porting to other platforms, including RTOSes.
- Example programs with source code provide a starting point for developing custom applications.

Recommended Accessories

- XT50: 3 foot, 50-pin, twisted-pair cable
- TB50: 50-pin screw terminal board
- XB50: 50-pin screw terminal board with prototyping area



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 0.18 lbs. (0.08 Kg)
- Standard Operating Temperature, 90% humidity non-condensing: -40 to +85°C
- Storage Temperature: -55 to +125°C
- MTBF: 1,505,499 hours
- Power Consumption: 4.35 W @ 5 V