

DT9835

Low-Cost Digital I/O Board for the USB

Key Features

- 96 digital lines for non-clocked monitoring or control of high channel-count applications 64 I/O and 32 input.
- Software programmable in bi-directional banks of 8.
- Digital outputs capable of driving relays
- Interrupt on bit change detection for monitoring critical signals.
- True plug-and-play:
 - One cable supplies both power and all connections to the USB module.
 - All connections are external so you do not need to open the PC chassis for installation.
- Hot-swapping capability lets you plug and unplug while your PC is on; no rebooting is required.
- 500 V isolation prevents ground loops and protects your computer.
- Fully compatible with USB 2.0 and 1.1.
- Supported by DT Measure Foundry, test and measurement application builder software that lets you easily create complex measurement applications.
- Ships with WDM drivers, ready-to-run applications, DT Measure Foundry evaluation, and much more.



The DT9835 features 96 digital lines, software programmable in banks of 8.

Overview

Ideal for applications requiring control capabilities, the DT9835 includes 96 digital I/O lines.

96 Digital Channels for High Channel-Count Requirements

The DT9835 provides 96 digital lines, 64 I/O and 32 input, grouped into twelve 8-bit ports. Eight ports are either input or output with four ports dedicated as inputs. Digital outputs are capable of driving external solid-state relays (sink 12 mA).

The DT9835 board can generate an interrupt when any of the 8 digital I/O lines corresponding to ports 1 or 2

changes state. This feature is useful when you want to monitor critical signals or when you want to signal the host computer to transfer data to or from the board. You can enable the interrupts on a bit-by-bit basis on this port.

Easy User Connections

All signals are brought out to a dedicated, standard 100-pin connector on the backplate of the DT9835 module. The STP100 screw terminal panel is available to simplify connections.

Features Summary

| Ports | Lines per port | Digital I/O | | Interrupt on Bit Change Detection | SSR Drive |
|-------|-----------------|-----------------|--|-----------------------------------|-----------|
| | | Type | | | |
| 0-7 | 8 bidirectional | Level-sensitive | | Ports 1 & 2 | Yes |

All diodes back EMF protected for inductive loads.

USB 2.0 Compatibility

The DT9800 Series is fully compatible with USB 2.0 and USB 1.1. USB 2.0 is both forward and backward compatible with USB 1.1, resulting in a seamless transition process for the user. In fact, USB 2.0 uses the same cables and connectors as USB 1.1.

Technical Support

As you develop your application, technical support is available when you need it. Extensive information is available 24 hours a day on our web site at www.datatranslation.com, including drivers, example code, pinouts, a searchable KnowledgeBase, and much more.

Support is also available from your point of purchase. Telephone support is free for the first 90 days; you can also request complimentary support via e-mail or fax at any time.

Cross-Series Compatibility Saves Programming Time, Protects Your Investment

Virtually all Data Translation data acquisition boards, including the DT9835, are compatible with the DT-Open Layers software standard. This means that if your application was developed with one of Data Translation's software products, you can easily upgrade to a new Data Translation board, now or in the future. Little or no reprogramming is needed.

DT9835 User's Manual

This manual is provided in electronic (PDF) format on the CD-ROM provided with the board. You can also purchase a hard copy of this manual.

DIN-RAIL Mounting Kit for USB

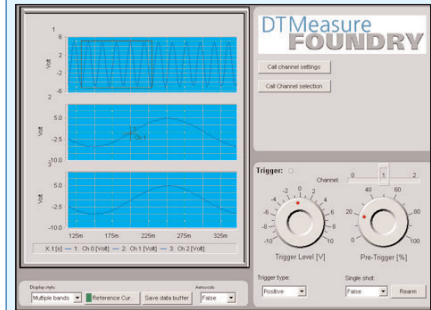
This kit provides a simple, standard method for mounting equipment to walls, cabinets, or machinery. The kit contains everything you need to fit it directly on the back of the USB function module housing.

Easy to Use: Extensive Software Support

DT Measure Foundry – Test and Measurement Application Builder

DT Measure Foundry is a test and measurement application builder designed to give you top performance with ease-of-use development. Drag and drop to create high-performance measurement applications. Just select the panels to create your user interface, select your measurement source, and you're taking measurements in no time!

DT Measure Foundry allows you to create



instrument-like interface applications. This oscilloscope program is just one example of the many types of applications you can create.

DT Measure Foundry was built to give users the ability to create complex measurement applications easily and quickly without being expert software developers.

Valuable Software Bundle Ships with all USB and PCI Data Acquisition Boards



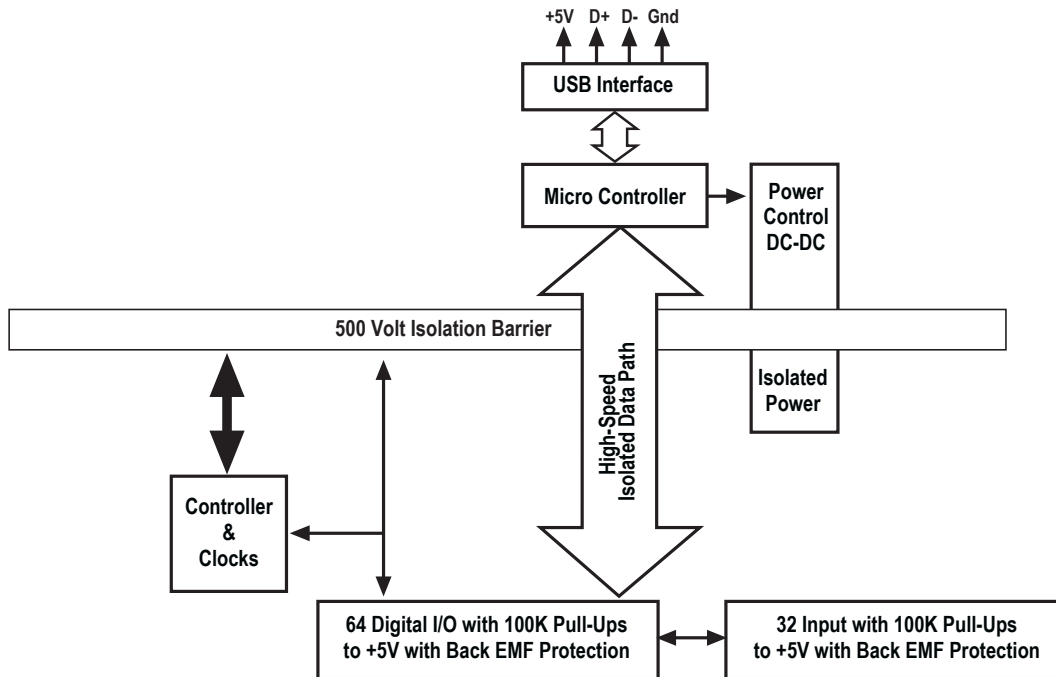
With any USB or PCI data acquisition board from Data Translation, you will receive a Data Acquisition Omni CD. You can use the ready-to-run applications straight out of the box and be up and running in no time.

- Ready-to-run Scope instrument interface application provides a multi-channel oscilloscope together with real-time FFT and a 16-channel strip chart
- Evaluation of DT Measure Foundry
- Quick DataAcq ready-to-run application lets you collect A/D data, display to screen and save to disk
- Latest 32-bit WDM drivers
- DataAcq Software Development Kit
- Many applications include Visual Basic and Visual C++ source code
- Complete documentation

Free Software Downloads

Data Translation now offers free downloads on the Web for:

- DT-LV Link to access the power of our boards through LabVIEW.
- DTx-EZ to access visual programming tools for Microsoft Visual Basic and Visual C++.



DT9835 Block Diagram

Digital I/O

| | Ports 0 – 7 | Ports 8 – 11 |
|-----------------------------|---------------------------------|---------------------|
| Number of lines | 8 bidirectional per port | 8 input per port |
| | Inputs | |
| Input type: | Level-sensitive | Level-sensitive |
| High-level input voltage: | 2.0 V minimum | 2.0 V minimum |
| Low-level input voltage: | 0.8 V maximum | 0.8 V maximum |
| Minimum pulse width: | 66 ns high and low* | 66 ns high and low* |
| | Outputs | |
| Output driver high voltage: | 2.4 V minimum (IOH = -15 mA) | - |
| Output driver low voltage: | 0.5 V maximum (IOL = 12 mA) | - |

*The minimum pulse width applies only to interrupt-on-change detection for ports 1 and 2. Pulses less than the minimum may not be detected as a change.
All diodes back EMF protected for inductive loads.

Power, Physical, and Environmental Specifications



| | |
|--|-----------------------|
| Power | |
| +5 V standby | 0.5 mA maximum |
| +5 V enumeration | 100 mA maximum |
| +5 V power on | 500 mA maximum |
| Physical | |
| Dimensions: | 150 mm X 100 mm |
| Weight: | 9 oz. |
| I/O connector: | USB |
| Certification and compliance | |
| FCC Part 15 Class B verified; will not compromise FCC compliance of host computer CE | |
| Environmental | |
| Operating temperature range: | 0°C to 50°C |
| Storage temperature range: | -25°C to 85°C |
| Relative humidity: | To 95%, noncondensing |

User Connections

| Pin | Description | Pin | Description | Pin | Description | Pin | Description |
|-----|--------------|-----|--------------|-----|--------------|-----|---------------|
| 1 | Bank 0 Bit 0 | 26 | Bank 3 Bit 0 | 51 | Bank 6 Bit 0 | 76 | Bank 9 Bit 0 |
| 2 | Bank 0 Bit 1 | 27 | Bank 3 Bit 1 | 52 | Bank 6 Bit 1 | 77 | Bank 9 Bit 1 |
| 3 | Bank 0 Bit 2 | 28 | Bank 3 Bit 2 | 53 | Bank 6 Bit 2 | 78 | Bank 9 Bit 2 |
| 4 | Bank 0 Bit 3 | 29 | Bank 3 Bit 3 | 54 | Bank 6 Bit 3 | 79 | Bank 9 Bit 3 |
| 5 | Bank 0 Bit 4 | 30 | Bank 3 Bit 4 | 55 | Bank 6 Bit 4 | 80 | Bank 9 Bit 4 |
| 6 | Bank 0 Bit 5 | 31 | Bank 3 Bit 5 | 56 | Bank 6 Bit 5 | 81 | Bank 9 Bit 5 |
| 7 | Bank 0 Bit 6 | 32 | Bank 3 Bit 6 | 57 | Bank 6 Bit 6 | 82 | Bank 9 Bit 6 |
| 8 | Bank 0 Bit 7 | 33 | Bank 3 Bit 7 | 58 | Bank 6 Bit 7 | 83 | Bank 9 Bit 7 |
| 9 | Bank 1 Bit 0 | 34 | Bank 4 Bit 0 | 59 | Bank 7 Bit 0 | 84 | Bank 10 Bit 0 |
| 10 | Bank 1 Bit 1 | 35 | Bank 4 Bit 1 | 60 | Bank 7 Bit 1 | 85 | Bank 10 Bit 1 |
| 11 | Bank 1 Bit 2 | 36 | Bank 4 Bit 2 | 61 | Bank 7 Bit 2 | 86 | Bank 10 Bit 2 |
| 12 | Bank 1 Bit 3 | 37 | Bank 4 Bit 3 | 62 | Bank 7 Bit 3 | 87 | Bank 10 Bit 3 |
| 13 | Bank 1 Bit 4 | 38 | Bank 4 Bit 4 | 63 | Bank 7 Bit 4 | 88 | Bank 10 Bit 4 |
| 14 | Bank 1 Bit 5 | 39 | Bank 4 Bit 5 | 64 | Bank 7 Bit 5 | 89 | Bank 10 Bit 5 |
| 15 | Bank 1 Bit 6 | 40 | Bank 4 Bit 6 | 65 | Bank 7 Bit 6 | 90 | Bank 10 Bit 6 |
| 16 | Bank 1 Bit 7 | 41 | Bank 4 Bit 7 | 66 | Bank 7 Bit 7 | 91 | Bank 10 Bit 7 |
| 17 | Bank 2 Bit 0 | 42 | Bank 5 Bit 0 | 67 | Bank 8 Bit 0 | 92 | Bank 11 Bit 0 |
| 18 | Bank 2 Bit 1 | 43 | Bank 5 Bit 1 | 68 | Bank 8 Bit 1 | 93 | Bank 11 Bit 1 |
| 19 | Bank 2 Bit 2 | 44 | Bank 5 Bit 2 | 69 | Bank 8 Bit 2 | 94 | Bank 11 Bit 2 |
| 20 | Bank 2 Bit 3 | 45 | Bank 5 Bit 3 | 70 | Bank 8 Bit 3 | 95 | Bank 11 Bit 3 |
| 21 | Bank 2 Bit 4 | 46 | Bank 5 Bit 4 | 71 | Bank 8 Bit 4 | 96 | Bank 11 Bit 4 |
| 22 | Bank 2 Bit 5 | 47 | Bank 5 Bit 5 | 72 | Bank 8 Bit 5 | 97 | Bank 11 Bit 5 |
| 23 | Bank 2 Bit 6 | 48 | Bank 5 Bit 6 | 73 | Bank 8 Bit 6 | 98 | Bank 11 Bit 6 |
| 24 | Bank 2 Bit 7 | 49 | Bank 5 Bit 7 | 74 | Bank 8 Bit 7 | 24 | Bank 11 Bit 7 |
| 25 | Isolated Gnd | 50 | Isolated Gnd | 75 | Isolated Gnd | 100 | Isolated +5V |

Ordering Summary

All Data Translation hardware products are covered by a 1-year warranty. For pricing information, see a current price list, visit our web site, or contact your local reseller.

DT9835

Each DT9835 board is shipped with the Data Acquisition Omni CD, which includes DT-Open Layers-compliant drivers for Microsoft Windows 2000/XP, ready-to-run software, and a comprehensive user's manual in PDF format. Manuals are available in hard-copy form for an additional charge.

- DT9835 Digital I/O board

Accessories

- STP100 — Screw terminal panel
- EP331 — 100-pin cable
- DT9835 manual set in hard-copy form
- DIN Mount Kit

Software

The following products include a copy of the software, a single-user license, and a user manual. All software is supplied on CD-ROM, except as noted.

- DT Measure Foundry test and measurement application builder for Windows 2000/XP SPI300-CD

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