

DT9835

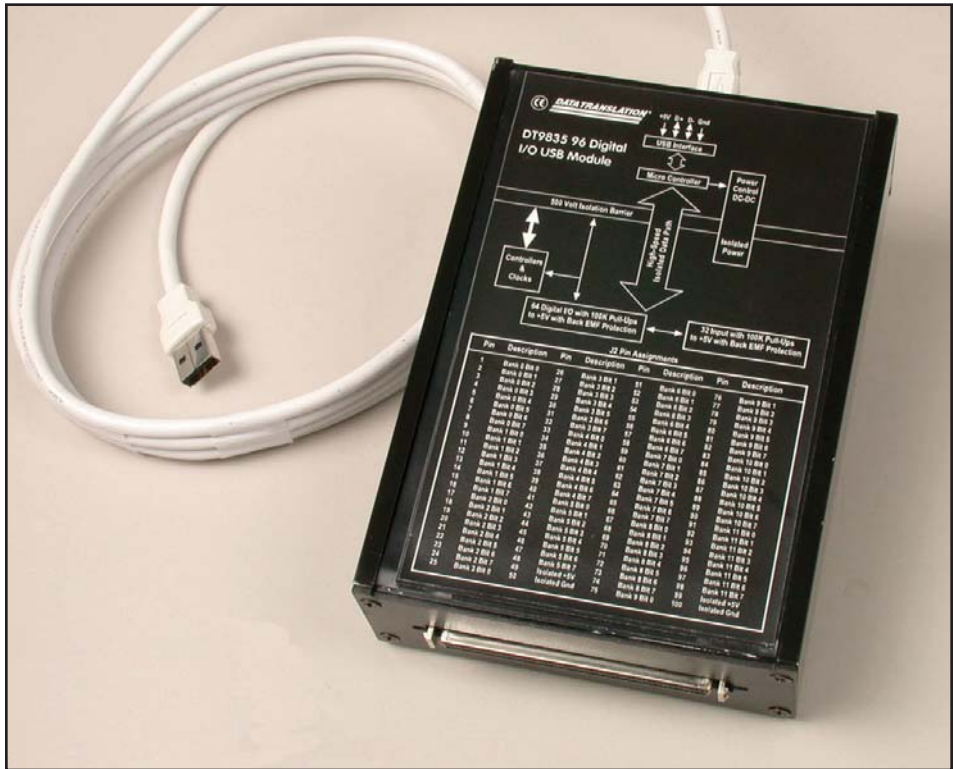
Low Cost Digital I/O Board

DT9835

Type: Low Cost Digital I/O Bus: 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.
- 500V isolation prevents ground loops and protects your computer
- 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.
- Fully compatible with USB 2.0 and 1.1.
- Supported by Measure Foundry, test and measurement application builder software that lets you easily create complex measurement applications.
- Ships with WDM drivers, ready-to-run applications, Measure Foundry evaluation, and much more.



The DT9835 features 96 digital lines, software programmable in banks of 8, and is fully isolated to 500V.

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 banks 10 and 11 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 these banks.

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

Banks	Lines per bank	Digital I/O		
		Type	Interrupt on Bit Change Detection	SSR Drive
0-7	8 bidirectional	Level-sensitive	—	Yes
8-11	8 input	Level-sensitive	Banks 10 & 11	—

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 Knowledge Base, 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

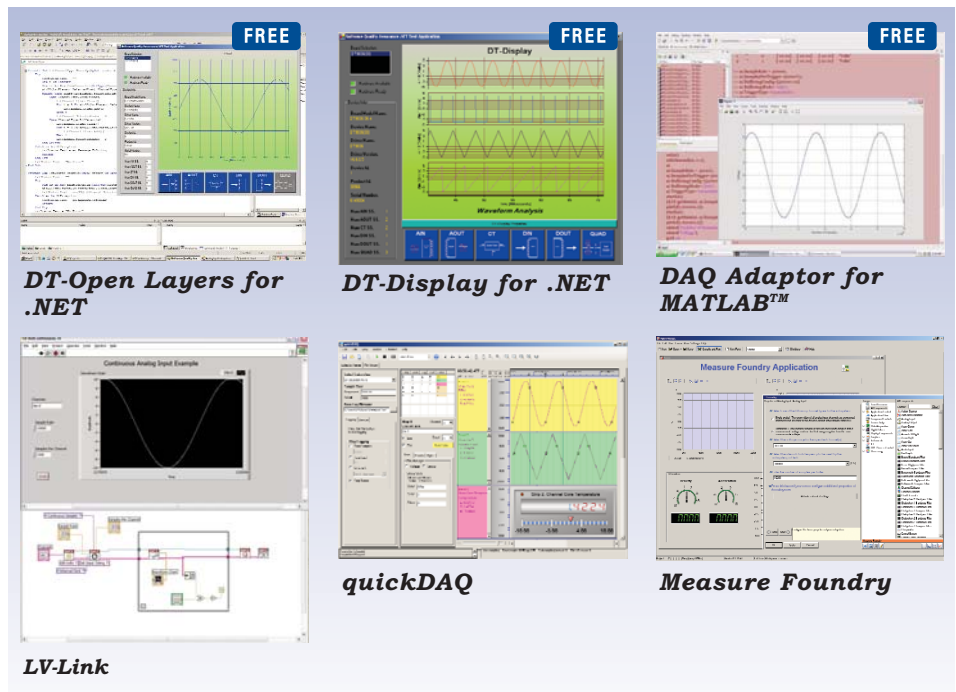
This manual is provided in electronic (PDF) format on the CD-ROM provided with the board. You can also purchase a hard copy of this manual.

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

Software Options

There are many software choices available for application development. Each option offers development capability at different levels. Choose from ready-to-measure applications to full graphical programming with Measure Foundry.



All boards ship with the **Omni CD** that includes the following software:

■ DT-Open Layers for .NET:

The DT-Open Layers for .NET Class Library is a collection of classes, methods, properties, and events that provides a programming interface for DT-Open Layers-compatible hardware devices. It can be used from any language that conforms to the Common Language Specification (CLS), including Visual Basic.NET, Visual C#, Visual C++.NET with managed extensions, and Visual J#.NET.

■ DT-Display for .NET:

DT-Display for .NET is a control for plotting data to a Windows form. It provides a powerful and user-friendly interface for rendering data.

■ DT-Open Layers for Win32:

DT-Open Layers for Win32 consists of the DataAcq SDK.

The **DataAcq SDK** consists of the necessary header files, libraries, example programs, and documentation to develop your own DT-Open Layers data acquisition and control applications. It is intended for use with non .NET languages, such as ANSI C, Visual C++ 6.0, and Visual Basic 6.0.

■ Drivers:

The 32-bit WDM device drivers make your application cross-platform compatible. These drivers support Data Translation USB and PCI boards using Windows 2000/XP.

You can choose to install demo versions of the following software from the CD:

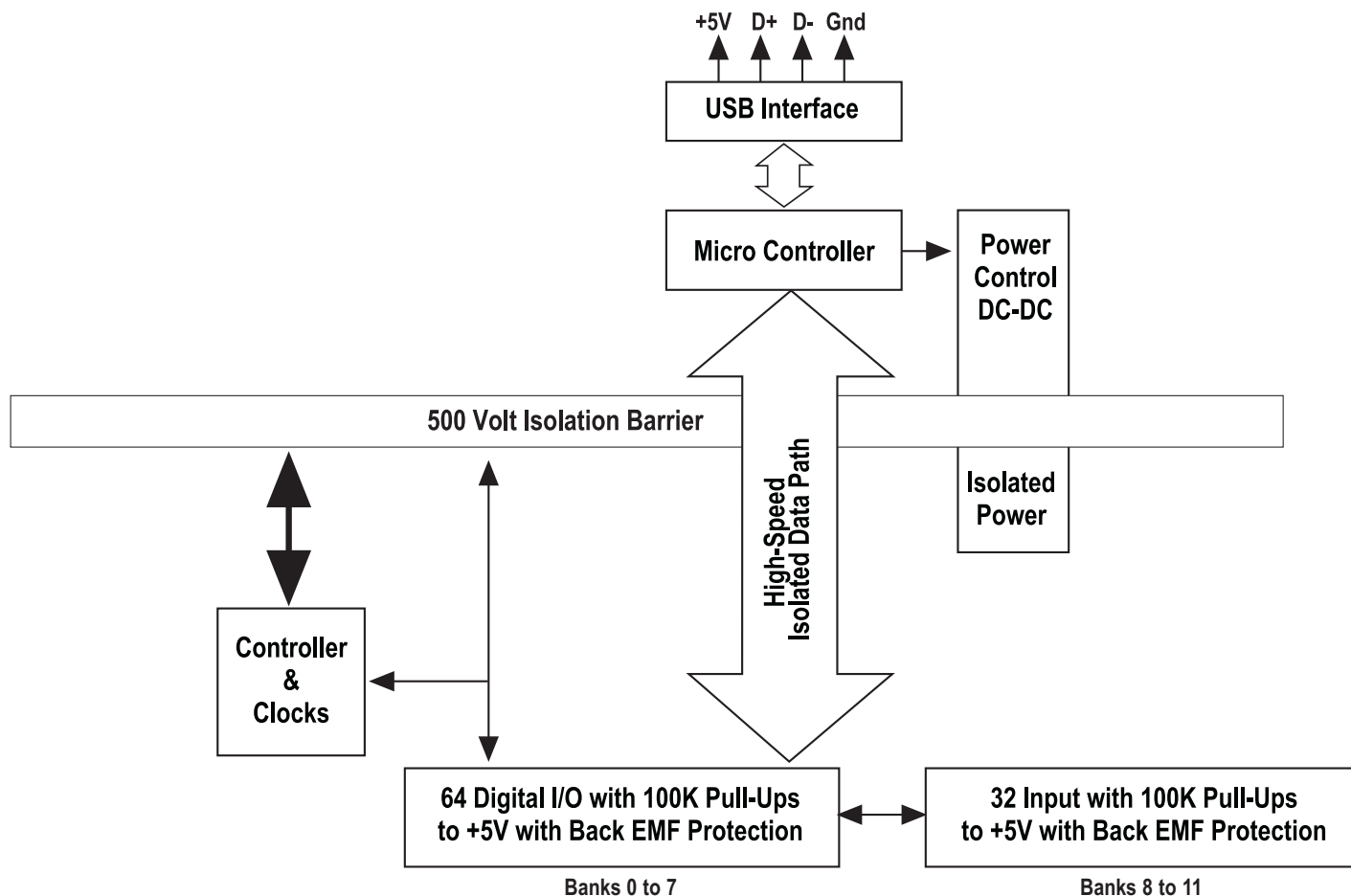
■ **Measure Foundry** is an open, powerful application builder for test and measurement systems. No programming is required!

■ **quickDAQ** is a high performance, ready-to-run application that lets you acquire, plot, analyze, and save data to disc at 2MHz per channel without writing any code. quickDAQ supports applications from temperature measurement to high-speed testing and analysis.

■ **LV-Link** contains all necessary VIs, examples, and documentation to use Data Translation hardware in LabVIEW 8.0 and greater.

The following software is available as a free download from our web site.

■ **DAQ Adaptor for MATLAB** to access the visualization and analysis capabilities of MATLAB from the MathWorks™ function module housing.



DT9835 Block Diagram

Digital I/O

	Banks 0 – 7	Banks 8 – 11
Number of lines	8 bidirectional per bank	8 input per bank*
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)	-

*Banks 10 and 11 support interrupt-on-change detection.

**The minimum pulse width applies only to interrupt-on-change detection for banks 10 and 11.

Pulses less than the minimum may not be detected as a change.

All diodes back EMF protected for inductive loads.

**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 A 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

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

DT9835 Digital I/O Board

- **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.

Accessories

- STP100 – Screw terminal panel
- EP331 – 100-pin cable
- DT9835 manual 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.

- **Measure Foundry** – Test and measurement application builder for Windows XP/Vista. SP1300-CD.

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++®.

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