



μDAQ-Lite: Low Cost Data Acquisition

* general description

The μDAQ-Lite is a low cost USB data acquisition device that incorporates A/D, D/A, digital I/O and counter-timer functions. It supports 8 analog input channels, 2 analog output channels, 8 input and 8 output digital I/O and 1 counter-timer channel. The analog inputs support a channel list for streaming up to 49 KHz.



* features

- USB Bus 1.1 & 2.0 Compliant (Full Speed)
- USB Bus Powered with full power management.
- 8 singled ended or 4 differential inputs.
- 2 analog outputs
- 8 digital outputs and 8 digital inputs
- 1 user counter-timer channel with external clock in and gate function
- Analog input streaming via configurable channel list and master/slave option to sync multiple units

* ordering information

Device	Tempe Range	Bus Type
MicroDAQ Lite	0°C-70°C	USB 1.1

*** absolute maximum ratings**

Parameter	Symbol	Condition	Rating	Unit
Digital Input Voltage	Vdi	Ta = 25°C with respect to ground	-0.5 to 5.0	V
Digital Output Voltage	Vdo		-0.5 to 5.0	V
Digital Output Current	Vdoc		±20.0	mA
Analog Input Voltage	Vai		±35	V
Analog Output Voltage	Vao		±10	V
Analog Output Current	Vao		±2.0	mA
Storage Temperature	Tstg	-	-50 to 150	°C
Operating Temperature	Tstg	-	0 to 70	°C
Power Dissipation	Pd	Ta = 25°C	10.0	W

*** digital I/O characteristics**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Input High	Vih	Ta = 25°C with respect to ground	2.0			V
Input Low	Vil				0.8	V
Output High	Voh		4.9	5.0		V
Output Low	Vol			0.0	0.1	V
Output Source/Sink Current	Io				20.0	mA
Input Source/Sink Current	Ii				2.0	mA

*** counter characteristics**

Parameter	Condition	Min.	Max.	Spec	Unit	
Input High	Ta = 25°C with respect to ground	2.0	5.25		V	
Input Low		-0.5	0.8		V	
Output High		2.4			V	
Output Low			0.8		V	
Clock Source				2	50% duty cycle	MHz
Resolution					16 (up counter)	bit

✱ analog input characteristics

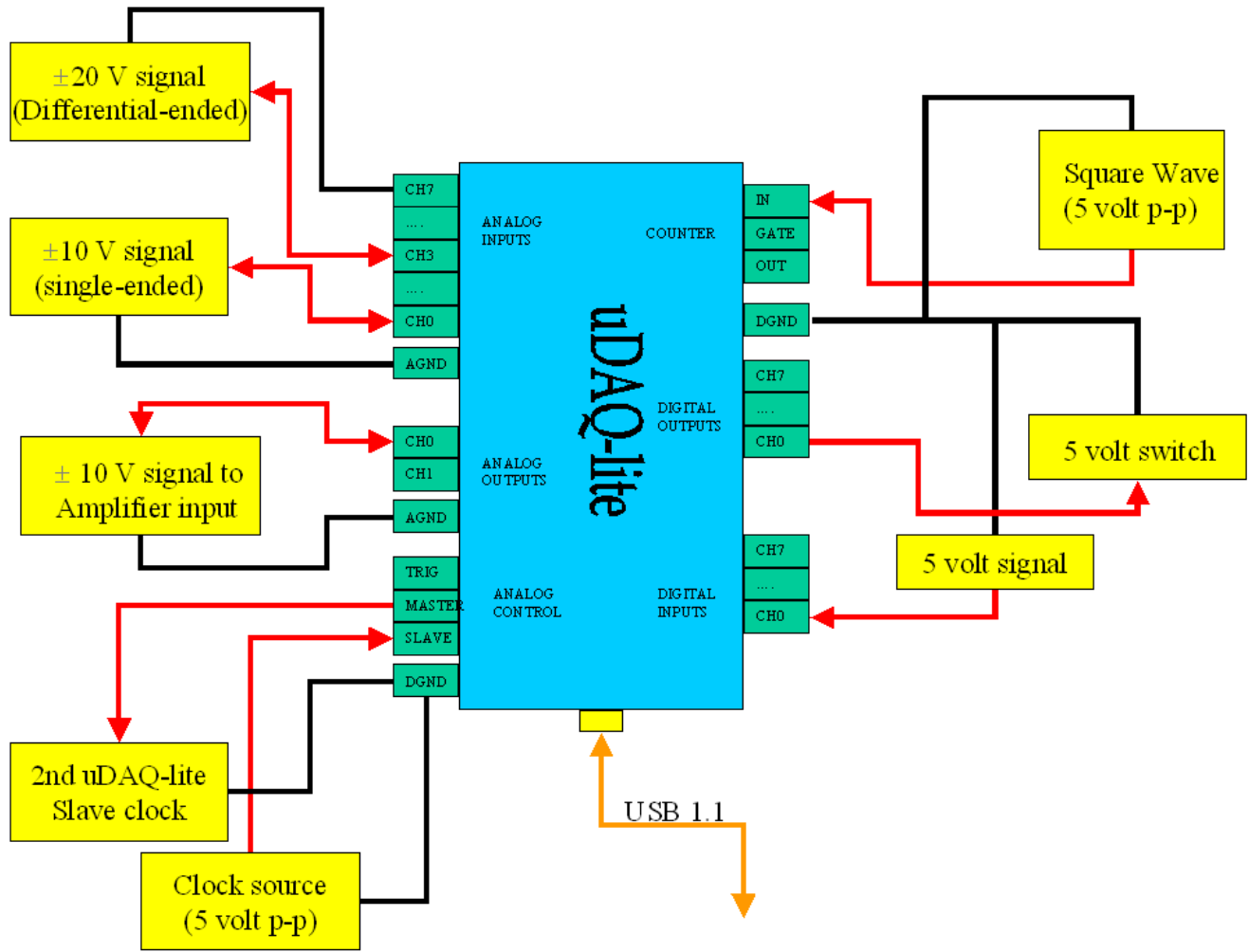
Parameter	Condition	Spec	Unit
Number of channels	Ta = 25°C with respect to analog ground	8 single-ended, 4 differential-ended	-
Acquisition speed		49	KHz
Resolution		12-bit	Bits
Input range, single-ended		±10	V
Input range, differential-ended		±20, ±10, ±5, ±4, ±2.5, ±2, ±1.25, ±1	V
Input impedance		2	MΩ
Trigger source		Software or external	
Clock source		Internal or external (master or slave configuration)	-

✱ analog output characteristics

Parameter	Condition	Spec	Unit
Number of channels	Ta = 25°C with respect to analog ground	2	-
Resolution		12	Bits
Maximum Output		+10	V
Minimum Output		-10	V
Output current		±5	mA
Zero offset error		2	mV
Full scale error		30	mV

*** operation**

The block diagram below shows a typical configuration of how the μDAQ-Lite can be used. Communication and control is done via USB and the user makes use of the screw terminals to interface to the unit. The screw terminals provide access for digital and analog connections.



* software support

The μDAQ-Lite is supported by the EDR Enhanced Software Development Kit and has operating system drivers for Windows and Linux. The EDR Enhanced SDK provides many examples for all popular programming environments.

Development support

- C++
- Borland Delphi
- Borland C++ builder
- Visual Studio .NET
- Testpoint
- Labview
- Agilent VEE



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*** document history**

The table below lists the document history. A minor revision change will indicate document errors that are edited. A major revision change will indicate an update or change to the document contents or structure.

Revision	Date	Comments
1.3	09/11/2005	Wording change
1.2	02/11/2005	Changes to Analog input characteristics
1.1	31/10/2005	Add counter characteristics
1.0	07/10/2005	Original Release.

*** disclaimer**

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