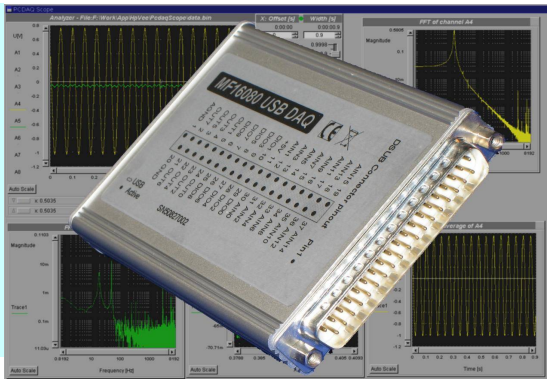
MF16080 USB data acquisition card series

- Designed for Windows® 2000 and Windows® XP operating systems.
- Programming language support: Microsoft® Visual C++® / Visual Basic®, Microsoft® .NET C#, Borland Delphi, TransEra HTBasic, National Instruments LabVIEW, Agilent VEE
- Ready to run data logger / strip chart recorder / oscilloscope application included
- 16 analog inputs, 12 bit resolution, 100kHz sum sample rate
- 8 analog output channels using 8 DACs with 12 bit resolution
- 10 digital I/O ports
- Portable: USB bus powered, small size
- Durable: Lightweight aluminum enclosure



Specification

Analog Inputs

Inputs:	- 16 single ended channels or - 8 differential channels - Software-selectable
Coupling:	DC
Resolution:	12 bits / 4096 steps
Input ranges:	Ranges are software-selectable: MF16081: +10V or +/-5V MF16082: +24V or +/-12V MF16084: +4.096V or +/-2.048V (+/- ranges require differential input setting)
Sample modes:	Continuous Trigger Snapshot (<720 values, no trigger)
Sample rate:	Snapshot: 100kHz (single input) Single channel: 1Hz-30kHz Multi-channel: 1Hz-100kHz sum sample rate (16 channels, 6.25kHz/channel)
Channel capture delay:	10µs +/-1µs at all sample rates
DNL:	1.0 LSB maximum error
INL:	0.5 LSB typ.
T/H acquisition time:	600ns
Gain accuracy:	MF16084: 0.25% at +/-8ppm/K drift All other: 1% at +/-50ppm/K drift
Reference voltage drift:	< 30 ppm/K
Input impedance:	MF16081: 24pF || 25kΩ MF16082: 24pF || 40kΩ MF16084: 24pF || 100kΩ
Trigger:	Trigger source is one of the input channels.
Trigger events:	- Rising (positive) edge - Falling (negative) edge. - Above threshold level. - Below threshold level.
Protection:	All analog inputs are protected against ESD discharge.

Analog Outputs

Outputs and Ranges:	8 x 12 bit DAC with 0..+4.096V voltage outputs (1mV resolution)
Coupling:	DC
Sample rate:	Asynchronous "port like" DAC outputs, low speed only.
Accuracy:	± 0.2%
DNL:	+/-0.5 LSB. typ.
Output impedance:	0.5 Ohm typ.
Output current:	<=2mA each output
Settling time:	2us to 1 LSB, at 30pF load

Digital Port

Input/Output:	10 bits, direction can be set for each bit
Input levels:	Low: <=0.8V, High: >=2.4V High impedance inputs, I=0.01µA typ. Input capacitance 15pF typ.
Output levels:	Low: 0.4V @ Isink= 2mA High: >4.0V @ Isource<= 2mA (6 ports), >3.7V @ Isource<= 15mA (4 ports, connection to 5V reed relays possible)

General

Compliance:	USB 2.0 full speed interface (12MBit) compatible to USB1.1
Environment:	Operating temperature 0...50°C Humidity < 80 % non-condensing
Dimensions:	105mm x 72mm x 16mm (LxBxH) including DSUB connector
Mass:	105g
Case material:	2mm Aluminum
Connectors & lights:	37 pole male DSUB connector for signals Mini USB-B device type connector LED for activity control
Power consumption:	0.125W (5V/25mA) typ.
Sensor power supply:	+5V/50mA max.

Accessories

- Screw clamp terminal (5mm pitch) for DIN rail mounting (Order no: MF16080-SCT)
- Mini spring clamp (2.5mm pitch) terminal, to be plugged directly into card's DSUB connector (Order no: MF16080-MCT)