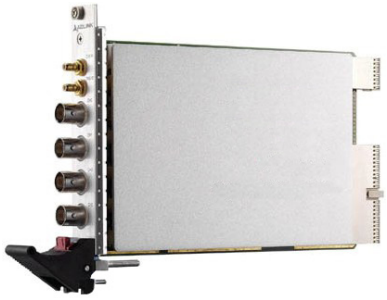
DATA SHEET



# PXI-9846D

4 CHANNEL, 16-BIT, 40 MS/S, PXI-H DIGITIZER WITH 512 MB MEMORY

## FEATURES

8-CH, 16-bit, 40 MSa/s simultaneous sampling analog outputs

512 MB deep on-board memory

Software selectable 50Ω or 1 MΩ input impedance

±0.2V and ±1V input ranges

External clock support

Extensive analog and digital triggering

Fully auto calibration

Driver and SDK support for Windows and Linux, and for third-party applications including Visual Studio, LabVIEW and MATLAB

VTI Instruments
www.vtiinstruments.com

# OVERVIEW

The PXI-9846D is a 40 MS/s, 16-bit, 4 channel digitizer designed for digitizing high frequency and wide dynamic range signals with input frequencies up to 20 MHz. The analog input range can be programmed via software to ±1 V or ±0.2 V.  The 512 MB deep onboard acquisition memory enables the recording of waveforms for extended periods of time.

The PXI-9846D is equipped with four high linearity 16-bit A/D converters ideal for demanding applications with a high dynamic range such as radar, ultrasound, and software-defined radio.

Software drivers and SDK support are provided for Windows and Linux environments. Wide range of application development environments including Visual Studio, Labview, Matlab and VEE are supported.

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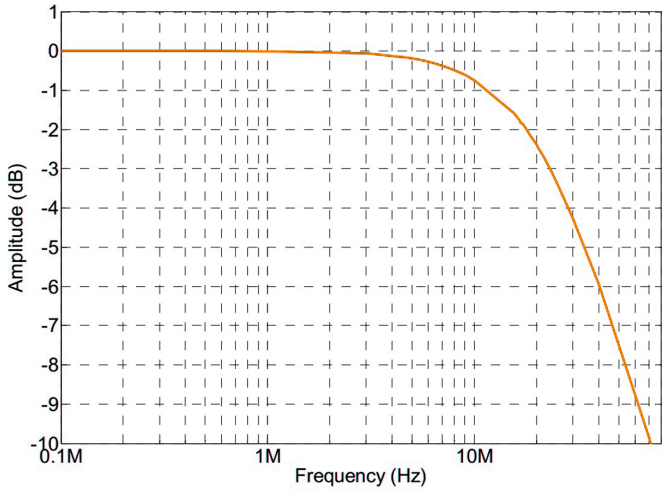
# Detailed Specifications

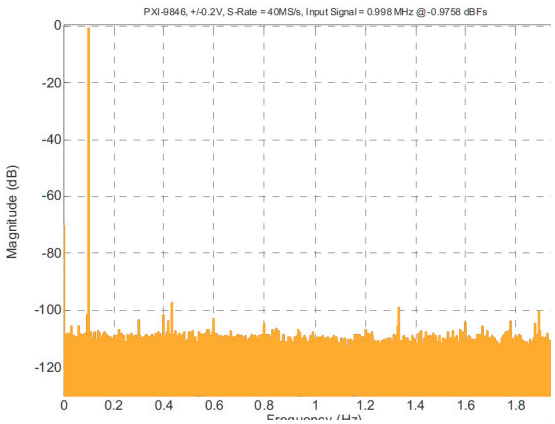
## ANALOG SPECIFICATIONS

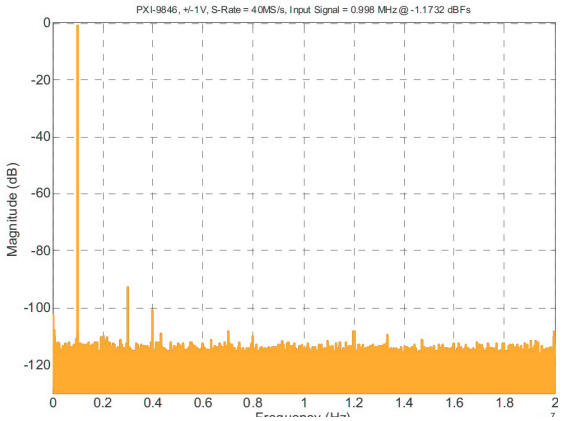
| | |
|---|---|
| NUMBER OF CHANNELS | 4 single-ended |
| INPUT IMPEDANCE | 50 Ω or 1 MΩ software selectable |
| INPUT COUPLING | DC |
| INPUT RANGE | ±0.2 V, ±1 V |
| ADC RESOLUTION | 16-bits |
| CROSSTALK | <-80 dB from DC to 1 MHz, all input ranges |
| SYSTEM NOISE, LSBRMS | ±0.2 V range: 8.0 |
| | ±1 V range: 5.0 |
| OFFSET ERROR | ±0.2 mV |
| GAIN ERROR | ±0.2 V range: ±0.1% |
| | ±1 V range: ±0.05% |
| -3 DB BANDWIDTH TYPICAL | 20 MHz |




| SPECTRAL CHARACTERISTICS | ±1 V | ±0.2 V |
|---|---|---|
| SIGNAL TO NOISE AND DISTORTION (SINAD), TYPICAL | 76.06 DBC | 71.97 DBC |
| SIGNAL TO NOISE RATIO (SNR), TYPICAL | 76.17 DBC | 71.98 DBC |
| TOTAL HARMONIC DISTORTION (THD), TYPICAL | -90.65 DBC | -95.78 DBC |
| SPURIOUS FREE DYNAMIC RANGE (SFDR), TYPICAL | 91.62 DBC | 96.15 DBC |
| EFFECTIVE NUMBER OF BITS (ENOB), TYPICAL | 12.34-BIT | 11.66-BIT |

# Detailed Specifications




## TIMEBASE

| | |
|---|---|
| SAMPLE CLOCK SOURCE | Internal: on-board oscillator<br>External: CLK IN (front panel SMB connector), PXI Trigger Bus (0..7), PXI 10 MHz, PXI Star |
| TIMEBASE FREQUENCY RANGE | 1 MHz to 40 MHz |

## DEDICATED EXTERNAL CLOCK INPUT FROM FRONT PANEL

| | |
|---|---|
| CONNECTOR TYPE | SMB |
| CLOCK TYPE | Sine or Square wave |
| INPUT IMPEDANCE | 50 Ω |
| INPUT COUPLING | AC |
| INPUT RANGE | 1 Vpp to 2 Vpp |
| OVERVOLTAGE PROTECTION | 2.5 Vpp |

## TRIGGERING

| | |
|---|---|
| TRIGGER SOURCES | Software, TRG IO (front panel SMB connector), Analog trigger all channels, PXI Star, PXI Trigger Bus |
| TRIGGER MODES | Pre-trigger, post-trigger, middle trigger, delay-trigger |

## DATA STORAGE AND TRANSFER

| | |
|---|---|
| ON-BOARD MEMORY | 512 MB shared |
| DATA TRANSFER | Scatter-gather DMA |

# Detailed Specifications

## GENERAL SPECIFICATIONS

| | |
|---|---|
| I/O CONNECTOR | BNC x4 for analog inputs<br>SMB x2 for external digital trigger and external timebase input |
| OPERATING TEMPERATURE | 0°C to 55°C |
| RELATIVE HUMIDITY: | 10% to 90% non-condensing |
| POWER REQUIREMENT | 3.3V: 0.8A<br>5V: 2A<br>12V: 0.3A |
| CERTIFICATIONS | EMC/EMI: CE, FCC Class A |

Notes:

1) All specifications are typical unless otherwise stated as a minimum or maximum.
2) All specifications subject to change without notice.
3) All specifications assume within 24 hours and 5°C of self-calibration temperature unless otherwise specified
4) Distributed product. These products are manufactured and supported by other leading vendors

# Ordering Information

| | |
|---|---|
| PXI-9846D | 4 Channel, 16-bit, 40 MS/s, PXI Hybrid Digitizer with 512 MB Memory |
| **RELATED PRODUCTS** | |
| EMX-4350 | 4-Channel, 625k Sa/s Smart Dynamic Signal Analyzer |
| EMX-4250 | 16-Channel, 200k Sa/s Smart Dynamic Signal Analyzer |
| CMX09 | 9-slot, 3U PXI Express Chassis |
| CMX18 | 18-slot 3U PXI Express Chassis |