

# 800 kSa/s, 4-Channel Digitizer HP E1564A

## Technical Specifications

- 800 kSa/s sample rate with 14 bit resolution
- Input ranges up to 256 V, channel isolation 256 V
- Common mode rejection 113 dB
- Time or event triggering, calibration source
- 4 selectable input filters/ch - 1.5 kHz, 6 kHz, 25 kHz, 100 kHz



HP E1564A

## Description

The HP E1564A digitizer is a **C-size, 1-slot, register-based VXI module**. It is ideal for measurements in electromechanical design characterization, particularly in environments with high levels of electrical noise. Engineers and technicians in product development and engineering research test groups can fully characterize electronic and mechanical transient waveforms with this highly accurate digitizer.

Each channel of the HP E1564A digitizer has its own analog electronics, including four (4) selectable input filters, 800 kSa/s 14 bit A/D converters, and independent channel isolation.

The HP E1564A is configured for PC SIMM memory, scaleable from 4 Mbyte to 64 Mbytes. The large memory can easily capture transients and act as a FIFO to allow continuous digitizing while unloading data with block mode transfers.

Refer to the HP Website for instrument driver availability and downloading instructions, as well as for recent product updates, if applicable.

---

## Time Base and Triggering

All channels sample simultaneously with a single internal or external time base. Triggering can be set up for either time or event modes with programmable pre- and post-trigger reading counts.

## Programming

The HP E1564A has a simple programming model which includes a data FIFO or flat file memory model for the A/D converter, 16 bit integer data corrected for offset and gain errors, and a current value table to retrieve the current sample of data.

## Calibration

The HP E1564A provides a calibration source with flash ROM for holding calibration constants.

## Product Specifications

<b>Number of channels:</b>	4
<b>Bandwidth:</b>	1 MHz
<b>Resolution:</b>	14 bits (including sign)
<b>Sample rates:</b>	1 Sa/s to 800 kSa/s
<b>Built-in DSP:</b>	No
<b>Alias protection:</b>	Oversample
<b>Basic accuracy:</b>	0.1%
<b>Time base resolution:</b>	0.1 $\mu$ s
<b>Low-frequency CMRR:</b>	113 dB
<b>Variable bandwidth:</b>	4 selectable filters, 2-pole linear phase
<b>2 dB Input range headroom:</b>	n/a
<b>Trigger:</b>	Time & Event
<b>Pre-arm capture:</b>	Yes
<b>Memory:</b>	4 Mbyte to 64 Mbyte PC SIMM
<b>Dual-ported memory:</b>	No
<b>Dual-rate sampling:</b>	No
<b>Segmented memory:</b>	No
<b>Selectable input filters (per channel):</b>	1.5 kHz, 6 kHz, 25 kHz, 100 kHz

---

## Environmental Specifications

<b>For indoor use:</b>	Pollution degree 2
<b>Operating altitude:</b>	3000 meters or mainframe altitude specification, whichever is lower
<b>Operating temperature:</b>	0 °C to 55 °C
<b>Relative humidity:</b>	Up to 80% at 31 °C, decreasing to 50% at 40 °C

---

## Integral Non-Linearity Specification

<b>All ranges:</b>	2.5 LSB
--------------------	---------

---

## Accuracy

Range	Zero Offset <sup>1</sup> (with filter OFF)		Zero Offset <sup>1</sup> (with filter ON)		Gain (% of reading)		Noise (3 sigma)
	Specifi- cation <sup>2</sup>	Temperature Coefficient <sup>3</sup>	Specifi- cation <sup>2</sup>	Temperature Coefficient <sup>3</sup>	Specifi- cation <sup>2</sup>	Temperature Coefficient <sup>3</sup>	Specifi- cation <sup>2</sup>
0.0625 V	20 $\mu$ V	1.9 $\mu$ V/°C	28 $\mu$ V	4.3 $\mu$ V/°C	0.034%	0.0061%/°C	57 $\mu$ V
0.25 V	78 $\mu$ V	6 $\mu$ V/°C	110 $\mu$ V	16 $\mu$ V/°C	0.034%	0.0061%/°C	180 $\mu$ V
1 V	300 $\mu$ V	15 $\mu$ V/°C	430 $\mu$ V	63 $\mu$ V/°C	0.034%	0.0061%/°C	720 $\mu$ V
4 V	1.2 mV	60 $\mu$ V/°C	1.7 mV	251 $\mu$ V/°C	0.034%	0.0061%/°C	2.88 mV
16 V	21 mV	1.3 mV/°C	21 mV	1.63 mV/°C	0.034%	0.0061%/°C	14.7 mV
64 V	28 mV	1.65 mV/°C	34 mV	4.24 mV/°C	0.034%	0.0061%/°C	48 mV
256 V	79 mV	4.28 mV/°C	110 mV	16.2 mV/°C	0.034%	0.0061%/°C	189 mV

---

## General Specifications

---

### VXI Characteristics

<b>VXI device type:</b>	Register based
<b>Data transfer bus:</b>	A16, slave only
<b>Size:</b>	C
<b>Slots:</b>	1
<b>Connectors:</b>	P1/2
<b>Shared memory:</b>	None
<b>VXI busses:</b>	TTL

### Instrument Drivers

See the HP Website ([http://www.hp.com/go/inst\\_drivers](http://www.hp.com/go/inst_drivers)) for driver availability and downloading.

<b>Command module firmware:</b>	Downloadable
<b>Command module firmware rev:</b>	A.01.00
<b>I-SCPI Win 3.1:</b>	No
<b>I-SCPI Series 700:</b>	No
<b>C-SCPI LynxOS:</b>	No
<b>C-SCPI Series 700:</b>	No
<b>HP Panel Drivers:</b>	No
<b>VXI plug&amp;play Win Framework:</b>	No
<b>VXI plug&amp;play Win 95/NT Framework:</b>	Yes
<b>VXI plug&amp;play HP-UX Framework:</b>	10.2 planned 1998

*Note: The HP VEE application can use VXI plug&play drivers or HP panel drivers.*

### Cooling/Slot

<b>Watts/slot:</b>	37.4
<b><math>\Delta P</math> mm H<sub>2</sub>O:</b>	0.18
<b>Air flow liter/s:</b>	2.8

---

### Module Current

---

	<b>I<sub>PM</sub> (A)</b>	<b>I<sub>DM</sub> (A)</b>
<b>+5 V:</b>	1.1	0.5
<b>+12 V:</b>	1.2	0.1
<b>-12 V:</b>	1.2	0.1
<b>+24 V:</b>	0.05	0.01
<b>-24 V:</b>	0.05	0.01
<b>-5.2 V:</b>	0.01	0.01
<b>-2 V:</b>	0.01	0.01

---

### Ordering Information

---

<b>Description</b>	<b>Product No.</b>
800 kHz, 4-Channel VXI Digitizer	HP E1564A
Convert Standard Warranty to On-site	HP E1564A W01

---

**Related Literature**

*1998 Test System and VXI Products Data Book*,  
HP Pub. No. 5966-2812E

*1998 Test System and VXI Products Catalog*,  
HP Pub. No. 5966-2815

---

**Warranty**

Standard Hewlett-Packard VXIbus hardware products are warranted against defects in materials and workmanship for a period of three years unless otherwise noted. HP software and firmware products that are designated by HP for use with a hardware product, when properly installed on that hardware product, are warranted not to fail to execute their programming instructions due to defects in materials and workmanship.

For a complete and detailed warranty statement please see the *HP Test System and VXI Products Data Book* or visit the HP Website at <http://www.hp.com/go/vxi>.

---

**HP Website Directory**

Main HP Website  
<http://www.hp.com>

HP Test and Measurement  
<http://www.hp.com/go/tmdir>

HP VXI Product Information  
<http://www.hp.com/go/vxi>

HP VXI Channel Partners  
<http://www.hp.com/go/vxichanpart>

HP VEE Application Website  
<http://www.hp.com/go/hpvee>

Data Acquisition and Control Website  
[http://www.hp.com/go/data\\_acq](http://www.hp.com/go/data_acq)

HP Instrument Driver Downloads  
[http://www.hp.com/go/inst\\_drivers](http://www.hp.com/go/inst_drivers)

**For more information about Hewlett-Packard test & measurement products, applications, services, and for a current sales office listing, visit our website, <http://www.hp.com/go/tmdir>. You can also contact one of the following centers and ask for a test and measurement sales representative.**

**United States:**

Hewlett-Packard Company  
Test and Measurement Call Center  
P.O. Box 4026  
Englewood, CO 80155-4026  
1 800 452 4844

**Canada:**

Hewlett-Packard Canada Ltd.  
5150 Spectrum Way  
Mississauga, Ontario L4W 5G1  
(905) 206 4725

**Europe:**

Hewlett-Packard  
European Marketing Centre  
P.O. Box 999  
1180 AZ Amstelveen  
The Netherlands  
(31 20) 547 9900

**Japan:**

Hewlett-Packard Japan Ltd.  
Measurement Assistance Center  
9-1, Takakura-Cho, Hachioji-Shi,  
Tokyo 192, Japan  
Tel: (81) 426 56 7832  
Fax: (81) 426 56 7840

**Latin America:**

Hewlett-Packard  
Latin American Region Headquarters  
5200 Blue Lagoon Drive, 9th Floor  
Miami, Florida 33126  
U.S.A.  
Tel: (305) 267-4245  
(305) 267-4220  
Fax: (305) 267-4288

**Australia/New Zealand:**

Hewlett-Packard Australia Ltd.  
31-41 Joseph Street  
Blackburn, Victoria 3130  
Australia  
1 800 629 485

**Asia Pacific:**

Hewlett-Packard Asia Pacific Ltd.  
17-21/F Shell Tower, Times Square,  
1 Matheson Street, Causeway Bay,  
Hong Kong  
Tel: (852) 2599 7777  
Fax: (852) 2506 9285

Data Subject to Change  
Copyright © May 1998  
Hewlett-Packard Company  
HP Publication No.: 5965-8822E