VXI Technology™

800 kSa/s, 2- and 4-channel Digitizers

Overview

The VXI Technology VT1563A and VT1564A digitizers are C-size, single slot, register-based VXI modules. They are ideal for measurements in electronic production test and electromechanical design characterization, particularly in environments with high levels of electrical noise. Engineers and technicians in manufacturing test, product development, and engineering research test groups can fully characterize electronic and mechanical transient waveforms with these highly accurate digitizers.

Each channel of the digitizers has its own analog electronics, including 800 kSample/s 14-bit A/D converters and independent channel isolation. The VT1563A channels have switchable 25 kHz input filters and the VT1564A channels have four (4) selectable input filters.

The digitizers are configured for PC SIMM memory, scaleable from 4 MB to 128 MB. The large memory can easily capture transients and act as a FIFO to allow continuous digitizing while unloading data with block mode transfers.

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 VT1563A and VT1564A both have 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 VT1564A provides a calibration source with flash ROM for holding calibration constants.

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

Features

- 800 kSample/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 with Selectable Reading Counts
- Switchable 25 kHz Input Filter/Channel (VT1563A)
- Four Selectable Input Filters/ Channel-1.5 kHz, 6 kHz, 25 kHz, 100 kHz (VT1564A)

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Product Specifications

Number of channels:	2 (VT1563A) 4 (VT1564A)
Bandwidth:	1 MHz
Resolution:	14 bits (including sign)
Sample rates:	1 Sample/s to 800 kSa/s
Built-in DSP:	No
Alias protection:	Oversample
Basic accuracy:	0.1%
Time Base resolution:	0.1 µs
Low-frequency CMRR:	113 dB
Variable bandwidth:	VT1563A: 25 kHz switchable filter VT1564A: 4 selectable filters, 2-pole linear phase
2 dB Input range headroom:	n/a
Trigger:	Time & Event
Pre-arm capture:	Yes
Memory:	4 MB to 128 MB PC SIMM
Dual-ported memory:	Yes
Dual-rate sampling:	No
Segmented memory:	No
VT1564A selectable input (per channel):	1.5 kHz, 6 kHz, filters 25 kHz, 100 kHz

Accuracy

Zero Offset[1] (with filter OFF)

Range:	Specfication[2]	Temperature Coefficient[3]
0.0625 V	20 µV	1.9 µV/°C
0.25 V	78 µV	6 µV/°C
1V	300 µV	15 µV/°C
4V	1.2 mV	60 µV/°C
16 V	21 mV	1.3 mV/°C
64 V	28 mV	1.65 mV/°C
256 V	79 mV	4.28 mV/°C

Zero Offset[1] (with filter ON)

Range:	Specfication[2]	Temperature Coefficient[3]
0.0625 V	28 µV	4.3 µV/°C
0.25 V	110 µV	16 µV/°C
1 V	430 µV	63 µV/°C
4 V	1.7 mV	251 µV/°C
16 V	21 mV	1.63 mV/°C
64 V	34 mV	4.24 mV/°C
256 V	110 mV	16.2 mV/°C

Gain (% of reading)

Range:	Specfication[2]	Temperature Coefficient[3]
0.0625 V	0.034%	0.0061%/°C
0.25 V	0.034%	0.0061%/°C
1 V	0.034%	0.0061%/°C
4 V	0.034%	0.0061%/°C
16 V	0.034%	0.0061%/°C
64 V	0.034%	0.0061%/°C
256 V	0.034%	0.0061%/°C

Noise (3 sigma)

Range:	Specfication[2]
0.0625 V	57 µV
0.25 V	180 µV
1 V	720 µV
4 V	2.88 mV
16 V	14.7 mV
64 V	48 mV
256 V	189 mV

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[1]Valid within the range of 0 °C to 55 °C. A zero offset calibration for all channels must be performed if the instrument experiences a temperature <0 °C or >55 °C for these specifications to remain valid.

[2]Specification is valid when tested at a temperature within ±5 °C of the calibration temperature.

[3]Amount of error that must be added for each °C outside of ±5 °C of the calibration temperature.

Integral Nonlinearity Specification

All ranges: 2.5 LSB

Environmental Specifications

For indoor use: Pollution degree 2

Operating altitude: 3000 meters or mainfarme altitude specification, whichever is lower

Operating temperature: 0 °C to 55 °C

Relative humidity: Up to 80% at 31 °C, decreasing to 50% at 40 °C

General Specifications

VXI device type: Register based

Data transfer bus: A16, slave only

Size: C

Slots: 1
Connectors: P1/2

Shared memory: None

VXI buses: TTL

Instrument Drivers - See the VXI Technology Website www.vxitech.com for driver availability and downloading.

Cooling/Slot VT1563A: 20.6 W
VT1564A: 37.4 W

ΔP mm H_2O: 0.18

Air flow liter/s: 2.8

Module Current

	VT1563A I_{PM} (A)	VT1563A I_{DM} (A)	VT1564A I_{PM} (A)	VT1564A I_{DM} (A)
+5 V:	1.1	0.5	1.1	0.5
+12 V:	0.6	0.1	1.2	0.1
-12 V:	0.6	0.1	1.2	0.1
+24 V:	0	0.01	0.05	0.01
-24 V:	0	0.01	0.05	0.01
-5.2 V:	0.1	0.01	0.01	0.01
-2 V:	0.1	0.01	0.01	0.01

Ordering Information

VT1563A	800 kSa/s 2-channel VXI Digitizer
VT1564A	800 kSa/s 4-channel VXI Digitizer