

KEYSIGHT TECHNOLOGIES (AGILENT HP)

E1439C

The Keysight Technologies (formerly Agilent / HP) E1439C is a high-performance, single-channel 12-bit digitizer VXI module operating at sample rates up to 95 MSa/s. Specifically designed for RF communication, radar, and IF digitizing applications, it features a 70 MHz IF input, integrated analog signal conditioning, anti-alias protection, and digital decimation filtering with a tunable center frequency. Complete with up to 1.2 GB of onboard capture FIFO memory, the E1439C provides exceptional spurious-free dynamic range and high-precision signal analysis in a single-slot C-size VXI form factor.

SPECIFICATIONS

General

Interfaces	VXIbus
Warm-Up Time	30 minutes

Physical

Power Supply	Powered by VXI backplane (+5 V, -5.2 V, -2 V, +12 V, -12 V)
Operating Temperature	0 to +55 °C °C
Dimensions (W×H×D)	30.5 mm × 233.4 mm × 340 mm mm

Analog Input Characteristics

Number of Input Channels	1
IF Input Center Frequency	70 MHz
Baseband Bandwidth	0 to 36 MHz
IF Bandwidth	36 MHz
Input Impedance	50 Ω
Signal Conditioning	Integrated

Analog-to-Digital Conversion (ADC)

ADC Resolution	12-bit
Maximum Sampling Rate	95 MSa/s
Noise Density	-132 dBfs/Hz
Residual Spurious Signal Contamination	at least -90 dBfs
Spurious-Free Dynamic Range (SFDR)	-90 dBfs (residual)
Distortion (Full-Scale Inputs)	<-62 dBc
Distortion (Lower Input Levels)	<-70 dBc
Anti-Aliasing Filter	Integrated

Onboard Memory & DSP

Onboard Memory Type	RAM FIFO
Standard Memory Size	144 MB
Maximum Expandable Memory	1.2 GB
Digital Downconversion (DDC)	Supported
Digital Decimation Filters	Supported (with tunable center frequency)

Bus & System Interface

System Bus Interface Type	VXIbus
VXI Form Factor	C-size
VXI Slots Occupied	1 slot
Local Bus Support	No (E1439D only)
Optical Front Panel Data Port	Yes

Triggering & Synchronization

Multi-channel Synchronization	Compatible
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Software & Standards Compliance

Driver Software Support	VXIplug&play compatible
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Analog Input

Input Coupling	AC or DC
Full-scale Input Range	-24 dBm to +20 dBm in 2 dB steps
Maximum Safe Input Voltage	±10 V (DC + peak AC)

Sampling and Clock

External Clock Input Frequency	10 MHz to 95 MHz
Reference Clock Input	10 MHz

Digital Filters and Decimation

Output Formats	16-bit real, 16-bit complex (I/Q), 32-bit complex (I/Q)
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Triggering

Trigger Modes	Free run, External, Bus, Signal level
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VXI Interface

VXI Device Type	Register-based
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Signal Inputs

Analog Input Bandwidth	90 MHz
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Clocking & Synchronization

External Clock Input Level	0 dBm to +10 dBm
External Clock Input Impedance	50 Ω

Environmental

Operating Altitude	Up to 4,600 m
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TECHNOLOGY

Analog-to-Digital Conversion & DSP

APPLICATIONS

RF Communication, Radar, and IF Digitizing

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