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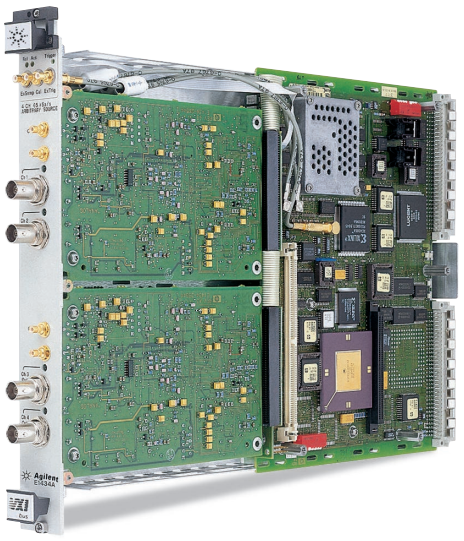
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Find the *Keysight / Agilent E1434A* at our website: ***Click HERE***

Agilent E1434A
4-Channel 65 kSa/sec Arbitrary Source

Data Sheet

- 1-Slot, C-size, register based
- 16-bit resolution with 25.6 kHz bandwidth (4-channel)
- 20-bit resolution with 6.4 kHz bandwidth (2-channel)
- Built-in sine and random waveforms
- Continuous arbitrary waveforms of any length
- Optional 5th source channel available



Agilent E1434A

Description

The Agilent E1434A 4-Channel Arbitrary Source is a **C-size, 1-slot, register-based VXI module.** It provides stimulus for mechanical, acoustical, and electrical testing. This module can be used as four 16-bit sources with 25.6 kHz bandwidth, or as two 20-bit sources with 6.4 kHz bandwidth. The 20-bit mode is useful for applications where the extra headroom allows smooth output level changes over a wide amplitude range. Versatile synchronization and triggering capabilities make this module ideal for use with the E1432A and E1433B Digitizers.

Built-in sine and random noise waveforms save development time, and offload computations and data movement chores from the host computer.

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

Agilent Technologies
Innovating the HP Way

STEP Dionysos Job: 210%XXX2761-0001 5963-9654E Comp: 04-11-00 Time: 12:09 OP: NN

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High-Performance Architecture

Most simple DACs require the host computer to create waveforms and download them to the DAC. By computing its own sine and random noise waveforms the E1434A offloads work from the host computer, preventing it from becoming a system performance bottleneck.

Sine and Noise Waveforms

Sinewaves are one of the most common test waveforms. The E1434A provides four independent channels of sinewave capability, each with its own frequency, phase, and amplitude. Sinewaves can be continuous or burst waveforms, with frequencies from zero to 25.6 kHz.

The E1434A's noise capabilities are exceptional. It provides periodic and pseudo random waveforms, in either continuous or burst mode. Additionally, the E1434A can band-translate the noise to have a non-zero start frequency. This allows you to pinpoint the noise stimulus to frequencies of interest, avoiding troublesome resonances or frequencies that might damage the device under test.

Arbitrary Waveforms

Use arbitrary waveforms to provide almost any stimulus you can imagine. Arbitrary waveforms can be downloaded from the host computer and then output in a repeating loop. Or the host can continuously download new segments of a waveform to be concatenated with previous segments, allowing continuous, glitch-free playback of any length waveform.

Variable Resolutions

The E1434A can be used as four 16-bit sources with 25.6 kHz bandwidth, or as two 20-bit sources with 6.4 kHz bandwidth. The two modes are selectable by software. 20-bit mode is useful for applications where the extra headroom allows smooth output level over a wide amplitude range.

Channels Come in Pairs

The four output channels are grouped in pairs. Both channels of a pair must output the same type of waveform-sine, random, or arbitrary. But each pair of channels is completely independent from the other pair. For example, one channel pair could output two uncorrelated random noise signals while the other channel pair output two different sinewaves. Option 1DM deletes a pair of channels, making the E1434A a two-channel source.

Add a Fifth Channel

Adding Option 1D4 provides an additional arbitrary source that has the same capabilities, waveform types, and specifications as the standard source channels. It can be used as a 20-bit 6.4 kHz source or a 16-bit 25.6 kHz source. A built-in analog summer input allows another signal, possibly from one of the four output channels, to be summed to the fifth channel output.

Safety Features

Since arbitrary sources can drive very expensive devices under test, it is important to provide an orderly shutdown in case of emergency. In addition to programmable ramp-up and ramp-down rates, the E1434A has a smooth ramp-down from ac power failure, or in response to its emergency shutdown input.

For More Information

E1432A, E1433B, E1434A Product Overview, pub. no.: 5968-7086E;
E3242A Product Overview, pub. no.: 5966-3060E;
E3243A Product Overview, pub. no.: 5966-3061E;
E1434A Technical Specifications, pub. no.: 5963-9654E;
E1434A Photo Card, pub. no.: 5964-9073E.

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Product Specifications

Output Characteristics

General

Sample rate:	65 kSa/s per channel
Resolution:	20 bits (2 channels) 16 bits (4 channels)
Amplitude:	10 Vpk max.
Full scale output ranges:	80 mVpk to 10 Vpk *(0.375 dB steps)*
Output impedance:	0.5 Ω
Maximum output current:	100 mA
Maximum load capacitance:	0.01 µF
Amplitude ramp-down time:	0 to 30 seconds *(programmable)*

Emergency Shutdown

Shutdown input:	TTL
Shutdown time:	<5 s
AC failure shutdown:	<4 ms

Sine frequency:

Frequency range:	0 to 25.6 kHz
Frequency resolution:	
Sine freq. ≤1 kHz:	244 µHz
1 kHz <sine freq. ≤10 kHz:	2.384 mHz
10 kHz <sine freq. ≤25.6 kHz:	6.1 mHz
Amplitude accuracy (ac) 1 kHz sine wave:	± 2.3% (± 0.2 dB) [10 to 0.158 Vp, 1 kHz]
Amplitude accuracy (low level):	± 4.7% (± 0.4 dB) [152 to 80 mVpk, 1 kHz]
Amplitude accuracy (dc):	Not specified
Flatness relative to 1 kHz:	± 5.5% (± 0.5 dB)
Standard waveforms:	Sine Burst sine

Noise Output Mode

Noise output types:

Pseudo random:	Burst and mooz*
Periodic random:	Burst and mooz

Mooz is band-translated noise, i.e. noise with a non-zero start frequency.

Selectable noise bandwidth:	
Frequency spans:	25.6 kHz to 0.4 Hz
Mooz spans:	2 kHz to 156 mHz
Max mooz center frequency:	< 4 kHz

(spans and center frequencies match the E1432A/33B)

Arbitrary Output Mode:

Arbitrary waveform function:	Yes
Arbitrary output modes:	Continuous Loop
Maximum signal bandwidth:	
20 bits (2 channels only):	6.4 kHz
16 bits (4 channels):	25.6 kHz
Dual-RAM buffer size:	40,960 samples/buffer

Constant Level Output

Output level:	1 Vpk
Output impedance:	1.2 kΩ (typical)
Flatness:	
5 Hz to 20 kHz, amplitude scale factor 0.1 to 1.0:	1.13 Vp to 0.88 Vp (± 1 dB) typ.
5 Hz to 20 kHz, amplitude scale factor 0.01 to 1.0:	1.13 Vp to 0.44 Vp (+ 10, –7 dB) typ.
Residual dc offset:	<5 mV (typ)

Triggering/Synchronization

Triggering types:	E1432A/33B input, external, source, TTL TRG, software
Synchronization:	E1432A, E1433B, and E1434A sample rates and triggering can be synchronized across multiple modules and mainframes.

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Amount of RAM

DRAM:

(none required for sine, noise, or continuous arbitrary source output mode)

Standard:	0 MB
Optional:	4 MB, 32 MB

General Specifications

VXI Characteristics

VXI device type:	Register based
Data transfer bus:	A16, A32, D32 slave only
Size:	C
Slots:	1
Connectors:	P1
Shared memory:	No
VXI busses:	Local Bus A, C; TTL Trigger Bus
C-size compatibility:	n/a

Instrument Drivers

See the Agilent Technologies Website (http://www.agilent.com/find/inst_drivers) for driver availability and downloading

Command module firmware:	No
Command module firmware rev:	n/a
I-SCPI Win 3.1:	No
I-SCPI Series 700:	n/a
C-SCPI LynxOS:	No
C-SCPI Series 700:	C Libraries
Panel Drivers:	No
VXI*plug&play* Win Framework:	No
VXI*plug&play* Win 95/NT Framework:	Yes
VXI*plug&play* HP-UX Framework:	Yes

Module Current

E1434A	**I_{PM}**	**I_{DM}**
+5 V:	4.9	0.03
+12 V:	0.6	0.04
–12 V:	0.55	0.05
+24 V:	0.02	0.01
–24 V:	0.025	0.01
–5.2 V:	0.6	0.03
–2 V:	0.03	0.01
E1434 Opt 1D4	**I_{PM}**	**I_{DM}**
+5 V:	0.6	0
+12 V:	0.19	0
–12 V:	0.18	0
+24 V:	0.03	0
–24 V:	0.03	0
–5.2 V:	0	0
–2 V:	0	0

Cooling/Slot

Watts/slot:	52.28
ΔP mm H_2O:	0.32
Air Flow liter/s:	4.3

Ordering Information

Description	**Product No.**
4-Channel 65 kSa/s Arbitrary Source	E1434A
Delete Manual Set	E1434A 0B0
Add Manual Set	E1434A 0B1
Mil Std 45662A Calibration w/Test Data	E1434A 1BP
Arbitrary Source	E1434A 1D4
Delete 2 Output Channels	E1434A 1DM
32 MB Total RAM	E1434A ANC
4 MB Total RAM	E1434A ANM
Add Local Bus Interface	E1434A UGV
Commercial Cal. Certificate w/Test Data	E1434A UK6
3 yr. Retn. to Agilent to 1 yr. OnSite Warr.	E1434A W01

Data Subject to Change
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Printed in the U.S.A. 04/2000
Publication No.: 5963-9654E

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