E2696A General Purpose 6 GHz Probing Solution

Data Sheet

InfiniiMax: the Worlds Best High-Speed Probing System

EDN Magazine has awarded Agilent InfiniiMax active probe system the 2002 Innovation of the Year Award

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Introduction

The Agilent E2696A is a general-purpose, wide-band differential probe with power supply and adapters. It is intended for use with instruments such as spectrum analyzers and network analyzers or anywhere that a wide-band, high-impedance voltage probe is needed. The output of the E2696A is a type N connector. In addition to providing power to the probe, the power supply provides DC offset control.

The Agilent E2696A differential probe enables engineers to use network and spectrum analyzers to make high-performance measurements on differential signals without compromising usability. The exceptionally low 320 fF differential input capacitance provides minimal reactive loading and disturbance of signals in the system under test. The probe's variable spacing and Z-axis compliant tips make it easy to probe differential signals on a variety of target configurations. Differential signals are commonly found in differential amplifiers and balanced mixers used in products such as radar, GSM mobile phones, handheld electronics, multimeters and counters.

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The Agilent E2696A enables you to make high-impedance, differential measurements at frequencies up to 6 GHz with an Agilent spectrum analyzer or network analyzer on balanced circuits found in a variety of RF systems.

Variable spacing allows the probe tips to adapt to your circuit layout, with a range from 0.25 – 5.8 mm. Z-axis compliant tips make it easy to keep in touch with your circuit while probing.

The full 6 GHz bandwidth and 320 fF loading capacitance are available at the tips of the E2696A. Performance is not compromised to achieve usability and easy access to your circuits, unlike other competing probing technologies.

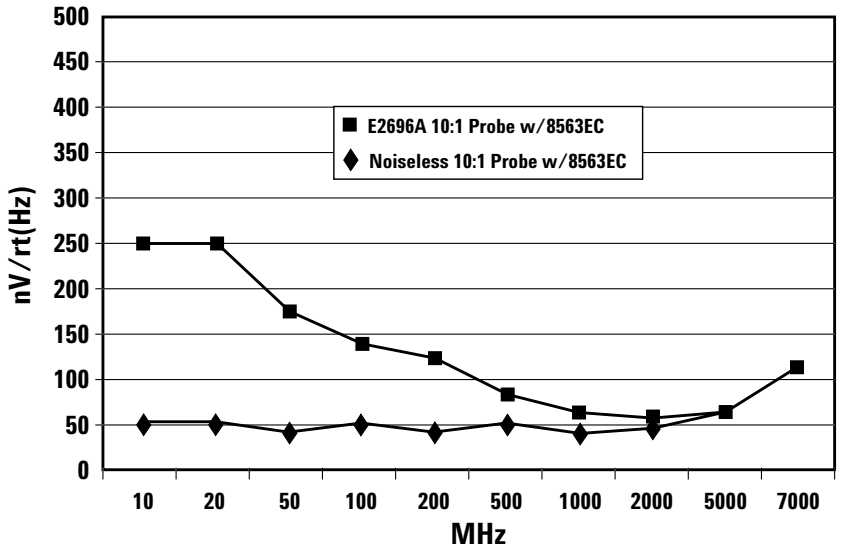
Specifications and characteristics

Bandwidth*	>6 GHz
Input capacitance (differential mode)	320 fF
Input resistance	Differential mode: 50 Kohm +/-1% Single-ended mode: 25 Kohm +/-1%
Input dynamic range	+/2.5V
Input common mode range	DC – 100 Hz: +/-6.75 Vdc >100 Hz: +/-1.25 Vdc
Output Connector	Type N
Maximum input slew rate	18V/ns for a single-ended signal 30 V/ns for a differential signal
DC attenuation	10:1 +/-3%
Zero offset error referred to input	<30 mV
Propagation delay	~6 ns
Maximum input voltage	30V peak, CAT I
ESD tolerance	>8 kV from 100 pF, 300 ohm HBM

Items marked with a * are specifications. All others are characteristics.

Noise Spectral Density

The following chart shows the noise spectral density of a noiseless 10:1 probe and an Agilent E2696A 10:1 probe with an Agilent 8563EC spectrum analyzer.

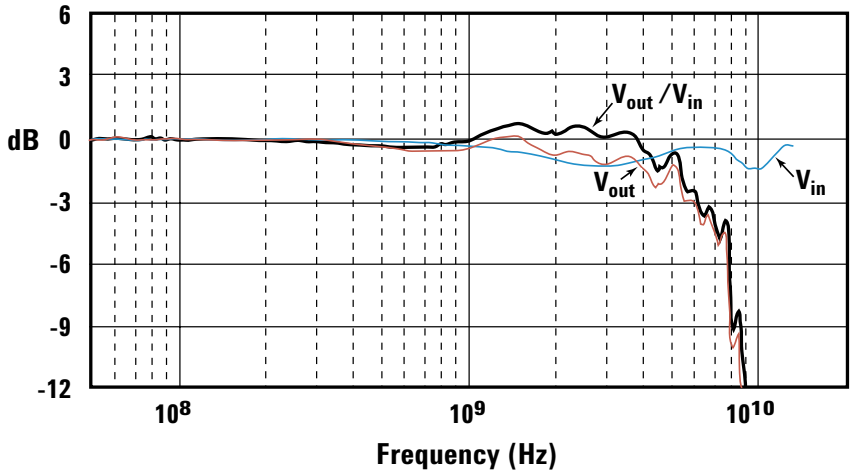


Harmonic Distortion

The following table shows the total harmonic distortion of an Agilent E2696A 10:1 probe with an Agilent 8563EC spectrum analyzer.

Frequency	(MHz) THD (%)	Input (mV)
500	0.011292926	1590
1000	0.011497324	1290
2000	0.082779541	914
3000	0.161948753	605
4000	0.115313527	454
5000	0.006014161	367
6000	0.007825444	306
7000	0.02709614	259

E2696A Frequency Response



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Product specifications and descriptions in this document subject to change without notice.

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