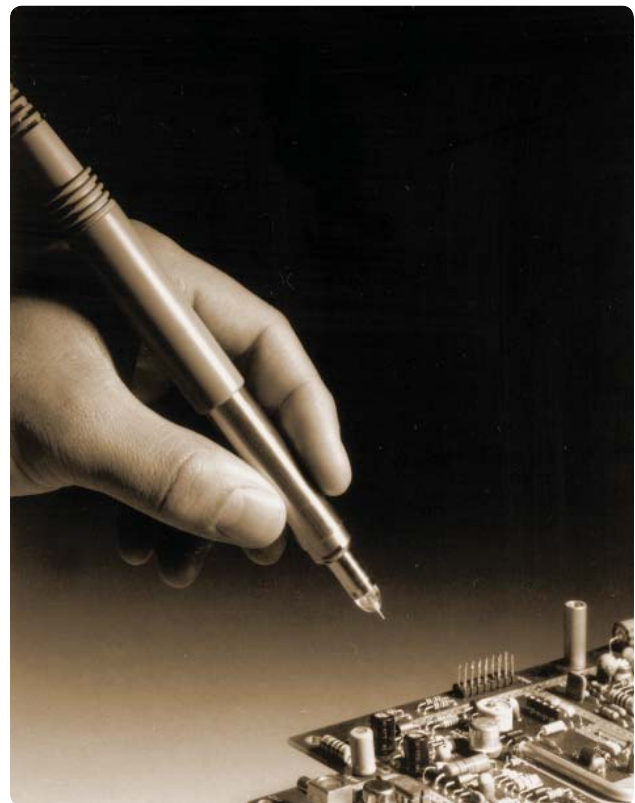
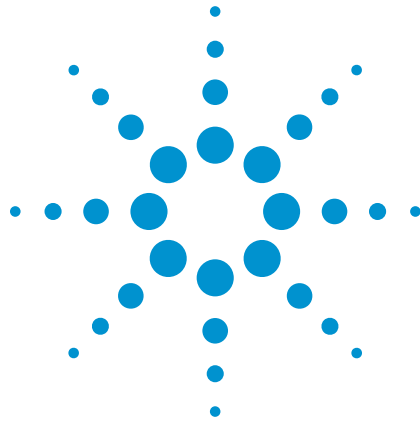


Agilent 85024A
High Frequency Probe
300 kHz to 3 GHz

Technical Overview



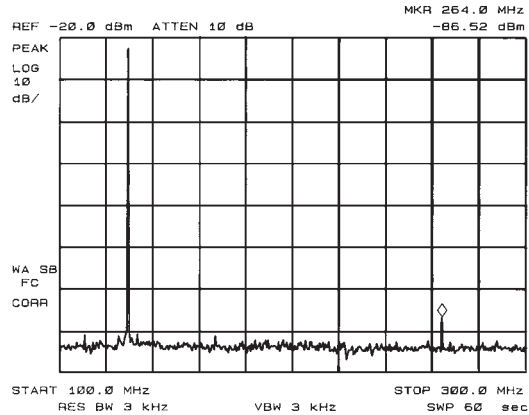
Excellent probing capability for demanding applications



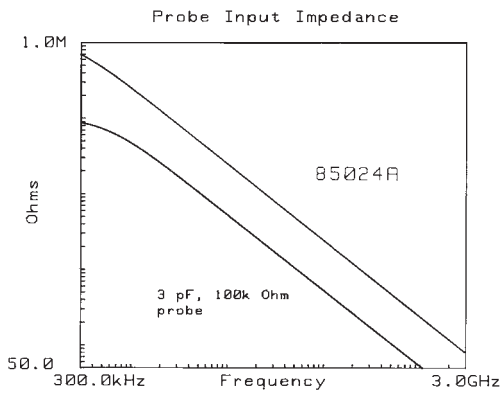
Agilent Technologies

Extend High Frequency Probing Applications

The Agilent Technologies 85024A high frequency probe offers excellent performance. The probe employs a GaAs IC to obtain extremely low input capacitance of only 0.7 pF shunted by 1 MΩ of resistance. Because of this low input capacitance, high frequency probing is possible without adversely loading the circuit under test. Also, the 1 MΩ shunt resistance guarantees minimal circuit loading at lower frequencies. Since the probe has excellent sensitivity, it is well-suited for use with analyzers offering exceptional dynamic range. The 85024A is an excellent accessory for high frequency test equipment, especially Agilent RF network or signal/spectrum analyzers which supply probe power from the front panel.



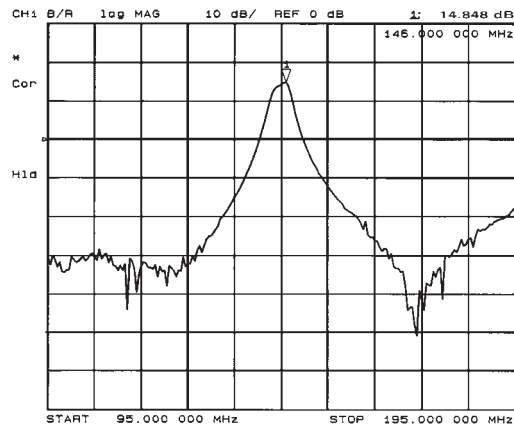
Troubleshoot IF paths for low level spurious responses.



Probe with less error due to higher input impedance. For example, in a 50 Ω system at 500 MHz, the 85024A presents 455 Ω which produces a 10% signal loss from loading effects, while a 3 pF, 100 kΩ probe presents 106 Ω causing a 32% signal loss.

Signal/Spectrum Analysis

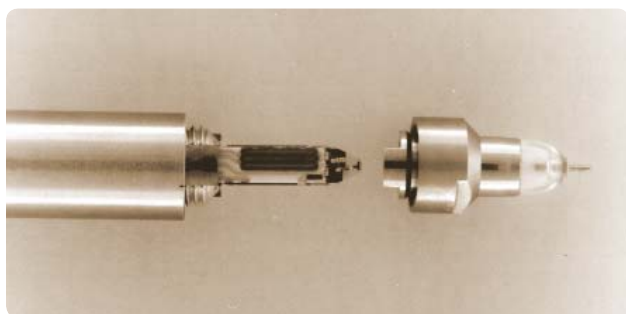
Troubleshooting RF and IF signal paths to identify problem areas in a system is convenient and accurate with an 85024A and a signal/spectrum analyzer. Measurements of frequency, power, modulation, distortion, conversion loss, and spectral purity are possible within a circuit. High sensitivity and low distortion levels ensure the probe's ability to detect small signals or search for spurious responses. In fact, the sensitivity of most 85024A applications is limited only by the noise floor of the spectrum analyzer itself. Add a tracking generator to easily perform swept in-circuit measurements.



Excellent flatness maintains accuracy in swept measurements.

Advanced Design

Simplicity and reliability are inherent in the design of the 85024A. The front end was designed using a custom GaAs IC to provide low input capacitance. A retractable metal sleeve protects the probe from physical damage to the tip when not in use and, more importantly, from electrostatic discharge (ESD) damage to the probe. By retracting the metal sleeve, the user establishes himself at the same potential as the high frequency probe. Thus, it may be handled with less possibility of electrostatic damage. Finally, the entire probe front end is easily disassembled for quick replacement in the field.



A replaceable state-of-the-art GaAs IC provides high performance and extends the lifetime of the 85024A.

Compatible with Many Agilent Instruments

Direct compatibility with many RF analyzers further leverages the performance and flexibility of the 85024A high frequency probe. Signal/spectrum analyzers that supply probe power from the front panel include the Agilent E444xA PSA Series high performance spectrum analyzers, N9020A MXA mid-range signal analyzers, N9010A EXA economy signal analyzers, E44xxB ESA Series portable spectrum analyzers, and 8560 Series, as well as the 8590 and 71100 Series. Network analyzers such as the 4395, 871x, 875x, 872x, E5071C ENA, and certain PNA-L models are also directly compatible. In addition, utilize the high frequency probe with other instruments by making use of an external power supply, such as the Agilent E3620A dual-output or E3630A triple-output with an adapter cable (order the 85024A-001 for the adapter cable).

Specifications

(Terminated with 11880-60001 type-N adapter)

Specifications describe the warranted performance over the temperature range of 25 °C, ±5 °C (except where noted). **Supplemental characteristics** are intended to provide information useful in applying the instrument by giving unwarranted performance parameters. These are denoted as “typical,” “nominal,” or “approximate.”

Input capacitance (at 500 MHz)	< 0.7 pF (nominal)
Input resistance	1 M Ω (nominal)
Bandwidth	300 kHz to 3 GHz (nominal) Usable to 100 kHz
Average gain	0 dB \pm 1.25 dB

Average gain is defined as the average of the maximum and minimum gains over the frequency range of 300 kHz to 1 GHz (maximum gain + minimum gain)/2.

Frequency response (relative to average gain):

300 kHz to 1 GHz	\pm 1.25 dB
1 GHz to 3 GHz	\pm 2.5 dB

Average noise level < 1 mV, 10 Hz to 10 MHz

Input voltage for < 1 dB compression 0.3 V

Supplemental Characteristics

Noise figure

Below 100 MHz	< 50 dB
100 MHz to 3 GHz	< 25 dB

Pulse transition time

200 psec

Distortion (at 0.3 V)

< -30 dBc

Maximum safe input

Probe alone \pm 1.5 V peak RF, \pm 50 V DC

Probe with 10:1 divider \pm 15 V peak RF, \pm 200 V DC

10:1 divider characteristics

Input capacitance < 0.7 pF

Input resistance 1 M Ω

Input voltage for 1 dB compression 3 V

Power

Supplied by certain Agilent instruments +15 V/130 mA

or Agilent power supply (E3620A, E3630A, or E3631A, 85024A-001 required) -12.6 V/45 mA

Weight

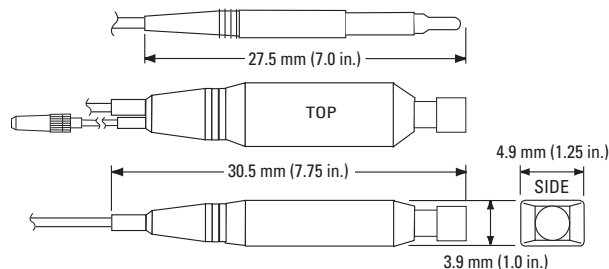
Net 0.255 kg (0.563 lb),

Shipping 1.49 kg (3.3 lb)

Dimensions

Probe assembly length

1245 mm (49 in.)



Accessories Furnished with the 85024A

11880-60001	Type-N male adapter
11881-60001	10:1 divider
01123-61302	2.5-inch ground lead
5060-0549	Spanner tip assembly
8710-1806	Probe tip nut driver
10229A	Hook tip
	30 mil spare probe tips
	12 mil spare probe tips



Agilent Email Updates

www.agilent.com/find/emailupdates

Get the latest information on the products and applications you select.

Agilent Direct

www.agilent.com/find/agilentdirect

Quickly choose and use your test equipment solutions with confidence.

Agilent Open

www.agilent.com/find/open

Agilent Open simplifies the process of connecting and programming test systems to help engineers design, validate and manufacture electronic products. Agilent offers open connectivity for a broad range of system-ready instruments, open industry software, PC-standard I/O and global support, which are combined to more easily integrate test system development.

www.agilent.com

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

www.agilent.com/find/contactus

Americas

Canada	(877) 894-4414
Latin America	305 269 7500
United States	(800) 829-4444

Asia Pacific

Australia	1 800 629 485
China	800 810 0189
Hong Kong	800 938 693
India	1 800 112 929
Japan	0120 (421) 345
Korea	080 769 0800
Malaysia	1 800 888 848
Singapore	1 800 375 8100
Taiwan	0800 047 866
Thailand	1 800 226 008

Europe & Middle East

Austria	01 36027 71571
Belgium	32 (0) 2 404 93 40
Denmark	45 70 13 15 15
Finland	358 (0) 10 855 2100
France	0825 010 700*
	*0.125 €/minute
Germany	07031 464 6333
Ireland	1890 924 204
Israel	972-3-9288-504/544
Italy	39 02 92 60 8484
Netherlands	31 (0) 20 547 2111
Spain	34 (91) 631 3300
Sweden	0200-88 22 55
Switzerland	0800 80 53 53
United Kingdom	44 (0) 118 9276201
Other European Countries:	www.agilent.com/find/contactus

Revised: March 24, 2009

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

© Agilent Technologies, Inc. 2009
Printed in USA, May 20, 2009
5968-2101E



Agilent Technologies