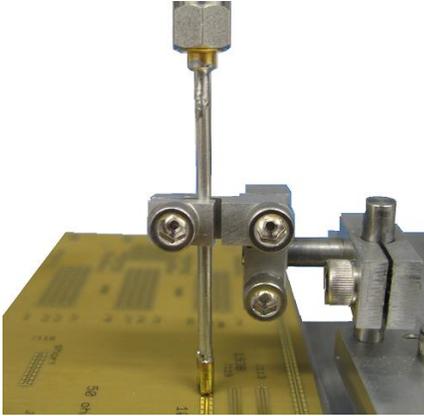


Data Sheet



Robust High Frequency Probe

Omni Probe

High Frequency Coaxial PCB Probe (44 GHz)

For the high frequency PCB impedance characterization or high-speed electrical signal analysis the Omni probe by D-COAX is an excellent and affordable solution. High accuracy measurement obtained by having low contact resistance and impedance control of the probe throughout all transitions.

Using Omni probe in conjunction with D-COAX probe holder, the device under test (DUT) can be tested not just in usual horizontal position, but can be tilted at the any angle or vertical position.

The following are tips on using Omni probe.

- Before making contact with a DUT, rotate the probe to correct position of the ground pins so that the signal will not be shorted to ground, use markings on the probe head for the ground pins.
- For accurate probe X-Y positioning, draw a circle with a sharpie with the aid of size 5/16" circle template around the desired contact location.
- Use microscope at about 45 degree angle to the DUT plane and use a circle as a visual aid to land the probe on the test pad.

The Omni probe uses spring pins for all contacts. The best repeatable height for probe positioning is obtained by the following method: First, over travel the probe until the probe head surface touches the DUT surface, then raise it back 0.020 inches for the best repeatable results.

The use of spring-loaded probe tips makes the probe last longer than conventional probes without losing performance or accuracy. The probe head has gold plated, rugged, crown tips that can be used for smooth or rough surfaces.

Features and Benefits

Durability	Long Life Time
	Anti-crash feature
	Reliable contact quality
Flexibility	Probe rough surface
	Probe at different surface angle
	Symmetry in 4 directions
RF performance	Low insertion loss
	Low contact resistance
	High Bandwidth

Specification

Electrical

Type	Passive, single-ended
Bandwidth	44GHz
Impedance	50 Ohm
Insertion loss	< 1.5dB at 40GHz (Typical) < 1.25dB at 40GHz (Guaranteed)
Return loss	> 13dB at 30GHz, > 12dB at 40GHz, > 5dB at 44GHz (Typical) > 12dB at 30GHz, > 10dB at 40GHz, > 4dB at 44GHz (Guaranteed)
Tip contact resistance	< 50 mili-ohms for signal tip, < 50 mili-ohms for each ground tips, 4 ground tips in parallel
Current capacity	2 amps

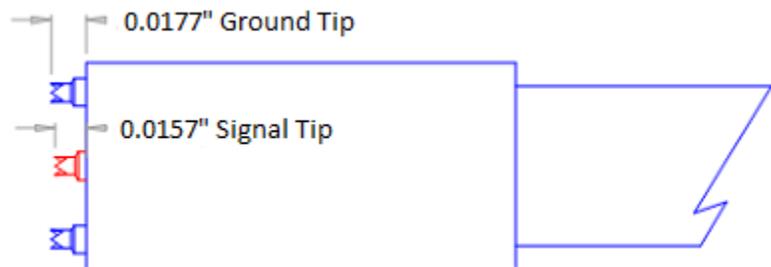
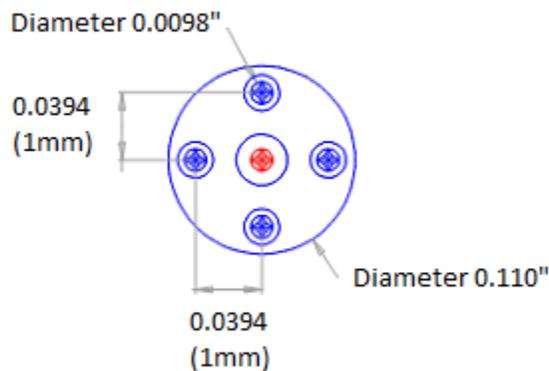
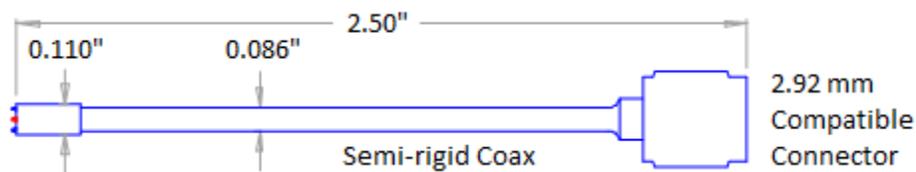
Specification (continued)

Mechanical

Overall Length	2.5 inches
Probe head diameter	0.110 inches
Signal tip quantity	1
Ground tip quantity	4
Signal tip travel	0.0157 inches (Typical) 0.010 inches (Guaranteed)
Ground tip travel	0.0177 inches (Typical) 0.010 inches (Guaranteed)
Probe tip diameter	0.0098 inches
Probe tip plating	gold
Single tip spring force	1.5 oz
Pitch	1mm
Number of touch downs	> 50,000
Configuration	Ground-Signal-Ground
Semi-rigid type	0.086 inch diameter
Connector type	2.92 mm compatible connector

Physical Dimensions

Omni probe dimensions (all dimensions in inches)



Typical Performance

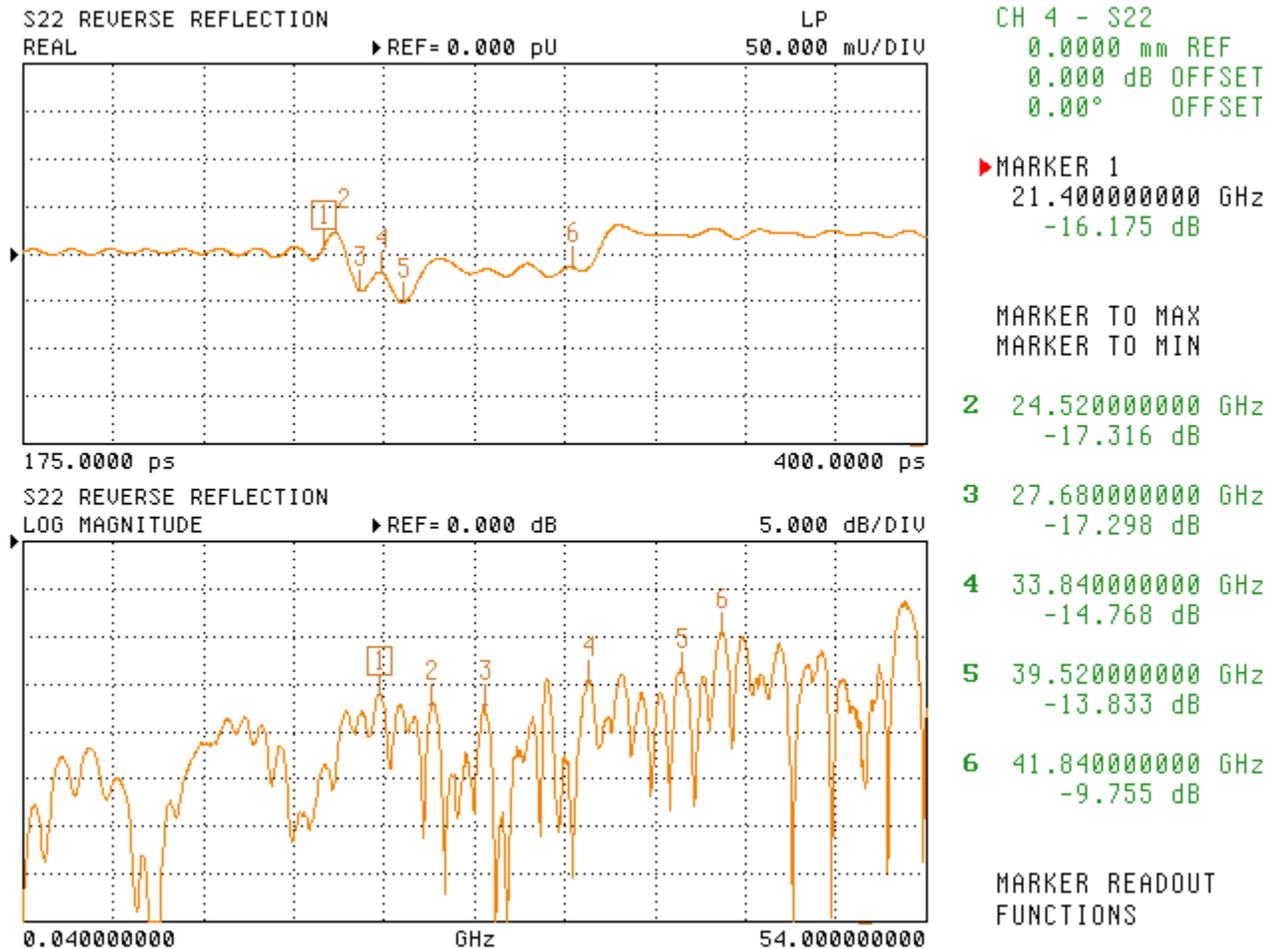
Un-corrected results using an Omni probe connected to a 1.3mm long transmission line and a 52.5 ohm load
On TDR plot:

Probe connector off screen

Probe head between marker 1 and 5

1.3mm long transmission line between marker 5 and 6

52.5 ohm load after marker 6



Available Accessories

65 GHz flexible cable	D-COAX, P/N 600-00030-00, 12 inch, or custom length
65 GHz phase stable flexible cable pair	D-COAX, P/N 600-00173-00, 24 inch pair assembly, skew matched at ≤ 1 ps
40 GHz flexible cable	D-COAX, P/N 600-00029-00, 12 inch, or custom length
40 GHz phase stable flexible cable pair	D-COAX, P/N 600-00169-00, 12 inch pair assembly, skew matched at ≤ 1 ps
40 GHz phase stable flexible cable pair	D-COAX, P/N 600-00170-00, 24 inch pair assembly, skew matched at ≤ 1 ps
40 GHz phase stable flexible cable pair	D-COAX, P/N 600-00171-00, 48 inch pair assembly, skew matched at ≤ 1 ps
Probe holder	D-COAX, P/N 600-00045-00, adjustable probe holder
W2.5 x L6.5 mini probe station	D-COAX, P/N 600-00130-00, manual portable mini probe station

D-COAX, Inc.
Corporate Headquarters
Phone: (503) 922-2436
Email: info@d-coax.com

Omni Probe
www.d-coax.com

