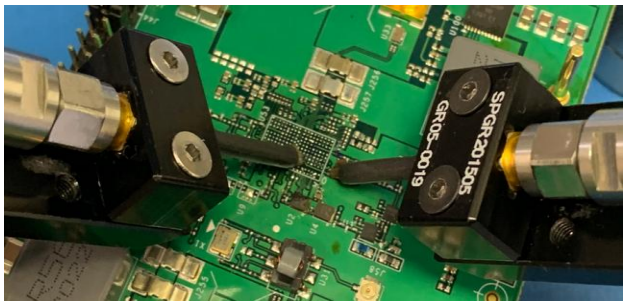
S-PROBE SP-GR 30/20 GHz SERIES

RUGGED, SINGLE-ENDED 30/20 GHZ PROBE CAPABLE OF PROBING ON UNEVEN SOLDER BUMPS



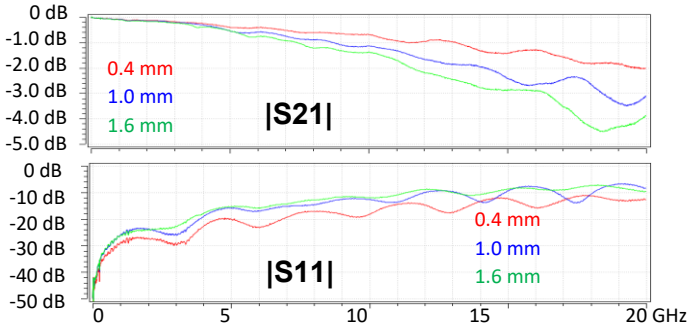
FEATURES:

- **High Bandwidth:** DC to 30/20 GHz
- **Low Insertion Loss:** < 3 dB @ 30 GHz for probe pitch ≤ 0.5 mm
- **High Repeatability**: No moving parts
- **Strong beryllium copper (BeCu) tips:** perfect for direct probing of uneven surfaces, such as solder pads & components.
- **Probe-tip Calibration**: accurate measurements without the need of soldering semi-rigid RF cables

S-Probe series is designed for RF, signal integrity, and power integrity testing of printed-circuit boards. Microprobes are not suitable for this type of measurements due to their fragility. Constant shrinking size of circuit components makes soldering semi-rigid RF cables to test gigahertz circuits impractical. The rugged S-Probe and its calibration substrate (TCS70) allow engineers to perform probe-tip calibration for accurate, repetitive measurements.

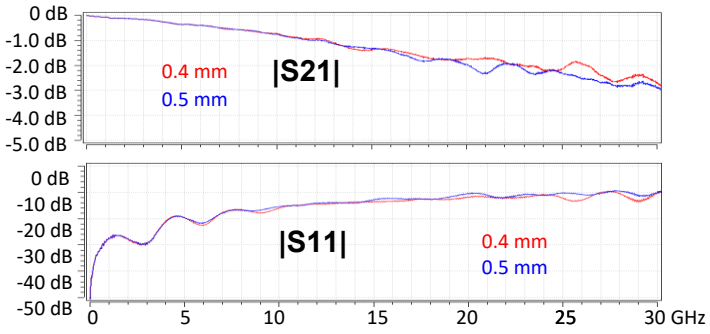
SPECIFICATIONS	
Bandwidth	30/20 GHz (0.25/0.4/0.5 mm pitch) 18 GHz (0.8/1.0 mm pitch) 16 GHz (1.2/1.4/1.6 mm pitch)
Insertion Loss	Less than 3 dB @ bandwidth
Impedance	50±2 Ohm
Connector Type	Female 2.92mm/30GHz, SMA/20GHz
Size/ Weight	38x20 x12 mm (1.5x0.8x0.5") / 8 gm
Probe Force	30 gm (typical) 100 gm (max w/o damage)

20 GHz S-Probes



Un-calibrated S21/S11 of 0.4/1.0/1.6 mm pitch

30 GHz S-Probes



Un-calibrated S21/S11 of 0.4/0.5 mm pitch

20 GHz PART NO.	BW (GHz)	PITCH
SP-GR-2015025	20 GHz	0.25 mm / 10 mil
SP-GR-201504	20 GHz	0.4 mm / 16 mil
SP-GR-201505	20 GHz	0.5 mm / 20 mil
SP-GR-181508	18 GHz	0.8 mm / 32 mil
SP-GR-181510	18 GHz	1.0 mm / 40 mil
SP-GR-161512	16 GHz	1.2 mm / 48 mil
SP-GR-161514	16 GHz	1.4 mm / 56 mil
SP-GR-161516	16 GHz	1.6 mm / 64 mil

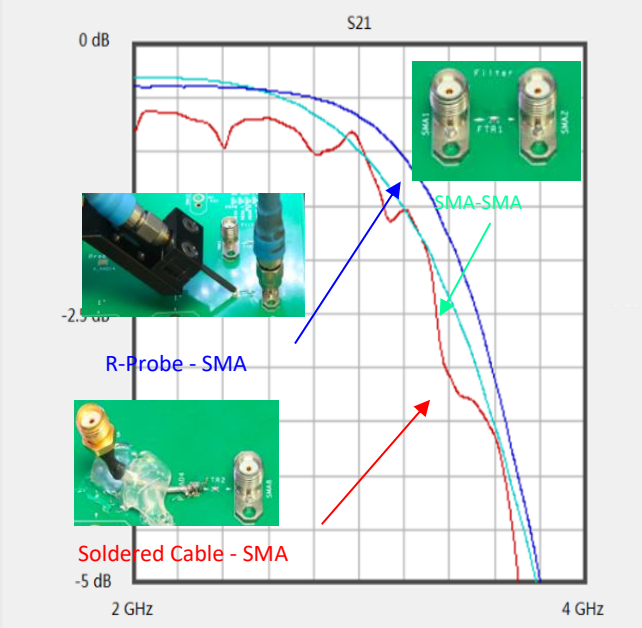
30 GHz PART NO.	BW (GHz)	PITCH
SP-GR-3015025	30 GHz	0.25 mm / 10 mil
SP-GR-301504	30 GHz	0.4 mm / 16 mil
SP-GR-301505	30 GHz	0.5 mm / 20 mil

PROBE PITCH VS. COMPONENT SIZE	
PROBE PART NO.	SIZE
SP-GR-2015025	01005
SP-GR-201505	0201
SP-GR-181510	0402
SP-GR-161514	0603

MEASUREMENTS

RF Measurement

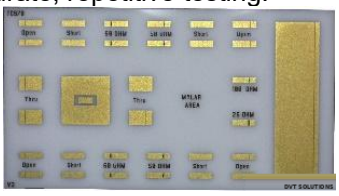
The following S21 measurement of a TDK 2.45 GHz low pass filter (P/N: DEA102500LT-6307A1, Size 0402) shows that S-Probe performance is better than that of soldering a coaxial cable.



TCS70 CALIBRATION SUBSTRATE

Calibration Substrate

S-Probe product family includes a TCS70 calibration substrate with short, open, load, and thru (SOLT) standards for S-parameter calibrations. This substrate enables a user to move the measurement reference point directly to the probe tips for accurate, repetitive testing.

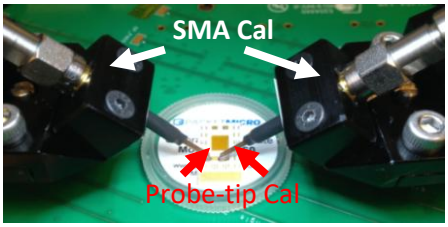


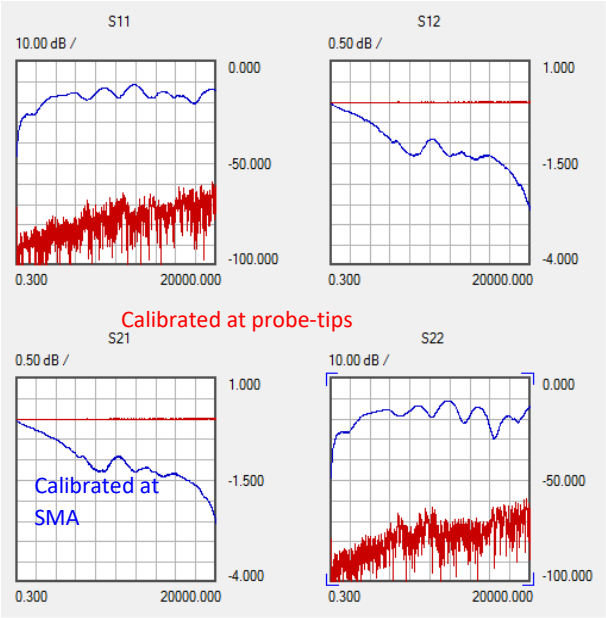
SPECIFICATIONS

SOLT Standards: Open, short, thru, and 50 Ω
Frequency**:** 30 GHz
Probe Pitch: 0.2 mm – 1.0 mm
Substrate: Polished alumina
Contact Material: Gold
Accuracy: < 0.5% (25 Ω, 50 Ω)
Size/Weight: 17.3 x 9.4 x 0.6 mm (0.68 x 0.37 x 0.025 in) / 1 gm

2-Port Probe-Tip Calibration

Probe-tip calibration allows accurate, repetitive S-Parameter measurements.

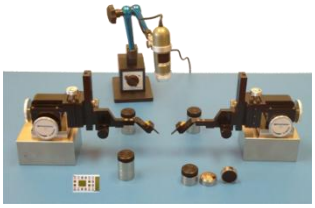




ACCESSORIES

- DVT-FP250 (xyzθ) Precision Positioner
- DVT-FP100 (xyzθ) Precision Positioner
- DVT-SM Holder
- DVT-FP80
- Dino-Lite Digital Microscope

S-probe on DVT-FP250



Typical Probing Setup

Dino-Lite Microscope