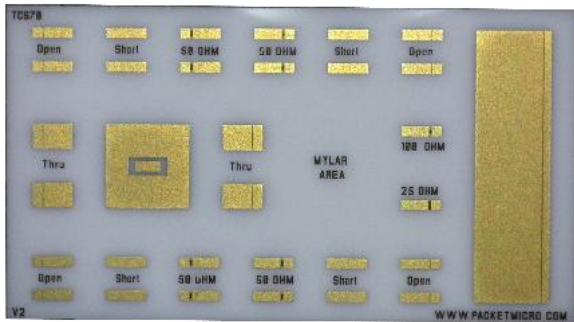


# TCS70 Calibration Substrate

## S-Parameter Calibration and TDR Impedance Validation

TCS70 is a calibration substrate with short, open, load, and thru (SOLT) standards that are designed for S-parameter calibrations and TDR impedance validations. This substrate allows engineers to perform probe-tip calibration and move the measurement reference point to the probe tips.



**TCS70 Calibration Substrate**

### Specifications

- **Configuration:** GND-Signal and Signal-GND
- **Probe Pitch:** 200  $\mu\text{m}$  – 1000  $\mu\text{m}$
- **Frequency:** DC – 30 GHz
- **Structure:** Open, short, thru, 25  $\Omega$ , 50  $\Omega$ , 100  $\Omega$
- **Accuracy:** 25 $\Omega$ , 50  $\Omega$  < 0.5%, 100  $\Omega$  < 1%
- **Substrate:** Polished alumina
- **Contact Material:** Gold
- **Size:** 17.3 x 9.4 x 0.6 mm (0.68 x 0.37 x 0.025 in)
- **Weight:** 1 gm

### Calibration Coefficients

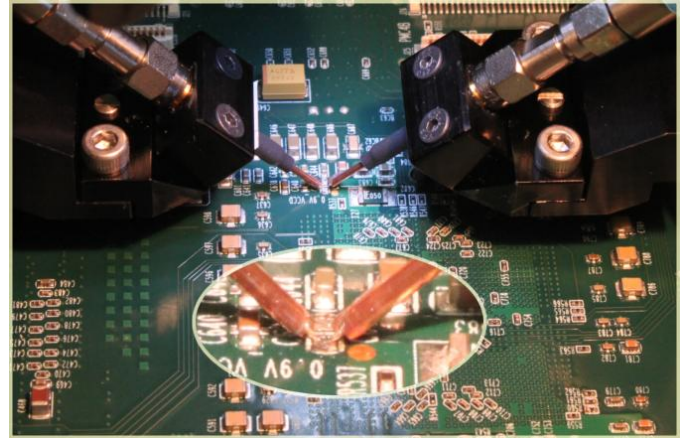
Calibration coefficients are probe-dependent. The following tables list the coefficients that should be entered into the VNA for a specific S-Probe.

Part No.	SP-GR-181510	SP-GR-201505
Probe Pitch	1.0 mm	0.5 mm
Open ( $C_0$ )	36.8 fF	36.8 fF
Short ( $L_0$ )	98.3 pH	43.0 pF
Load ( $L_0$ )	30.5 pH, or Offset $Z_0$ = 500 $\Omega$ with Offset Delay = 0.061 ps	17.5 pH, or Offset $Z_0$ = 500 $\Omega$ with Offset Delay = 0.035 ps
Thru	4.51 ps	4.51 ps

### About PacketMicro

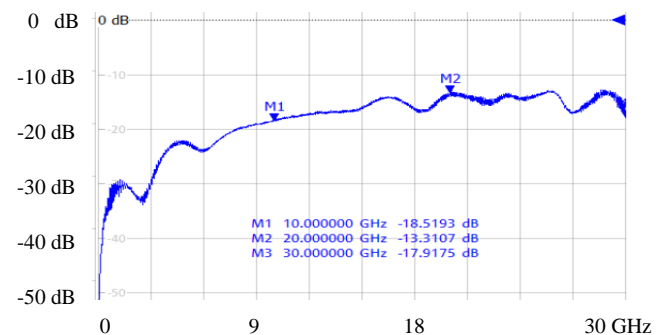
PacketMicro, headquartered in Silicon Valley, provides one-stop shopping for your needs in PCB probing and signal-integrity analysis. Its product offering includes a wide range of rugged RF probes up to 40 GHz, patented probe positioners, DIY bench-top probe stations, flexible phase-stable RF cables, digital microscopes, and AITT signal-integrity analysis tools.

### S-Probe for PCB Testing

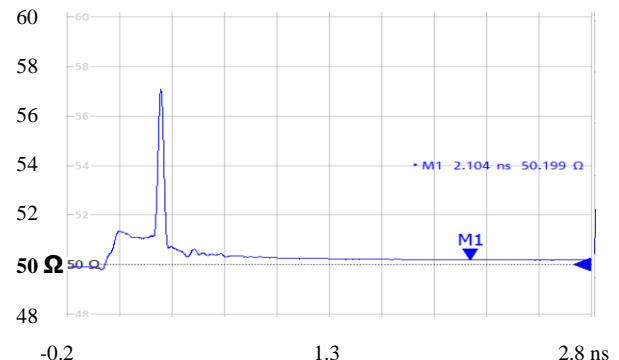


### S-Probe for direct probing on solder pads

S-Probe series is designed for RF, power integrity, and signal integrity testing. Their strong beryllium copper (BeCu) tips are perfect for direct probing of circuit components or devices on live circuit boards.



### Un-calibrated S11 with TCS70 50 $\Omega$ load (30 GHz 0.5mm pitch SP-GR-301505 S-Probe)



### Un-calibrated S-Probe TDR with TCS70 50 $\Omega$ load