

D-Probe

Rugged 18-GHz differential probe (signal-signal only)



Features:

- **High Bandwidth:** DC to 18 GHz
- **Low Insertion Loss:** < 3 dB @ 18 GHz
- **Signal-Signal Only:** Accurate S-parameter and TDR measurements without the need of nearby ground pads
- **Ruggedness:** Strong enough for direct probing of uneven solder bumps
- **High Repeatability:** No moving parts

Overview

D-Probe series is designed for signal integrity testing. Its strong beryllium copper (BeCu) tips are perfect for direct probing of test pads on uneven surfaces, such as solder bumps. With only two signal pins, D-Probes can perform accurate measurements without the need of nearby ground pads. For example, many DDR chips do not have enough ground pins around their differential signals; in this case, typical GSSG type probes cannot be used.

Recent advancement in 2X-Thru de-embedding methodology makes the D-Probe ideal for signal-integrity measurements. There is no need to perform 4-port probe-tip calibration that are laborious and time-consuming. A typical 4-port electronic calibration at the SMA connectors can be done in minutes.

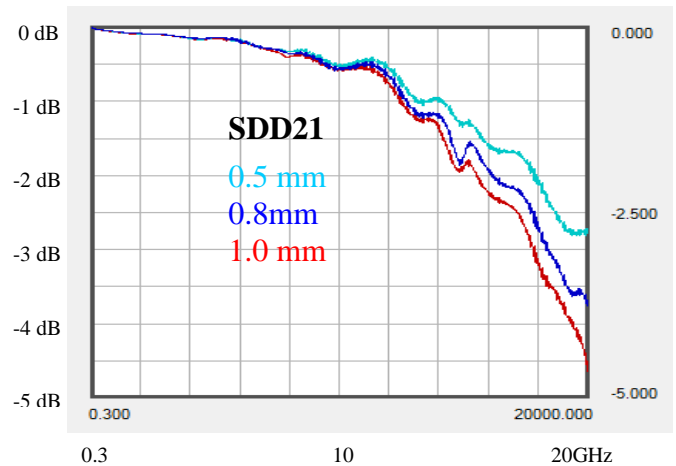
The user experience of D-Probe is similar to that of the microprobe. Precision Positioner TP300 allows an engineer to switch between the D-Probe and microprobe easily.

Specifications

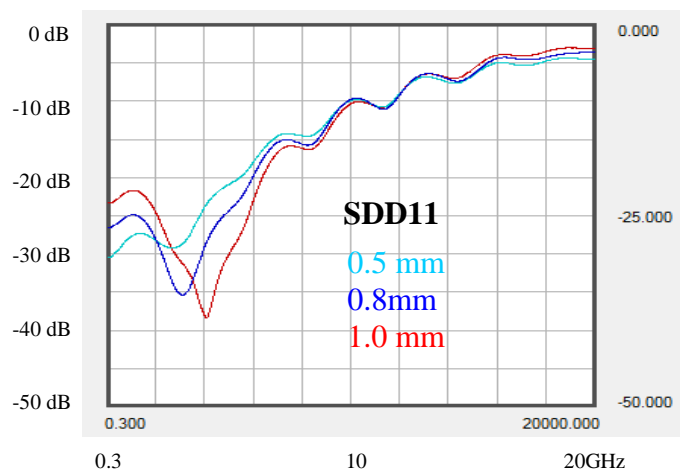
- **Bandwidth:** 18 GHz
- **Insertion Loss:** less than 3 dB
- **Impedance:** 100±3 Ohm
- **Connector Type:** SMA Female
- **Size:** 51 x 38 x 12 mm (2 x 1.5 x 0.5 in)

D-Probe Part No. Information

- **DP-SS-181505** – 18 GHz, 0.5 mm/20 pitch
- **DP-SS-181508** – 18 GHz, 0.8 mm/32 mil pitch
- **DP-SS-181510** – 18 GHz, 1.0 mm/40 mil pitch
- **DP-SS-161512** – 16 GHz, 1.0 mm/40 mil pitch



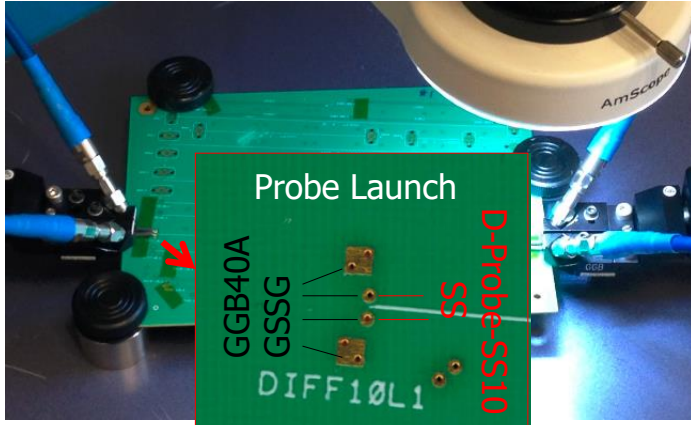
SDD21 for 0.5/0.8/1.0 mm pitch



SDD11 for 0.5/0.8/1.0 mm pitch

S-Parameter Measurement

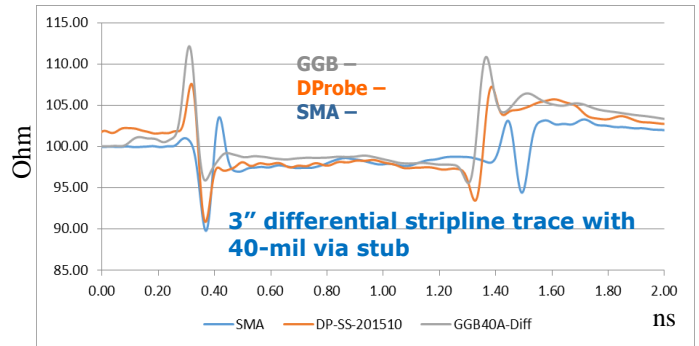
With de-embedding tools, such as EMStar SFD, SS D-Probes and GSSG microprobes provide comparable accuracy. Measurement data of a Megtron-6 PCB with various differential striplines and via stubs are used for the comparison among D-Probes, GGB40A-GSSG probes, and 26-GHz SMA connectors. Special probe launch is designed to allow both D-Probes and GGB microprobes to probe the identical traces.



PCB Transmission Line Measurements

TDR Measurement

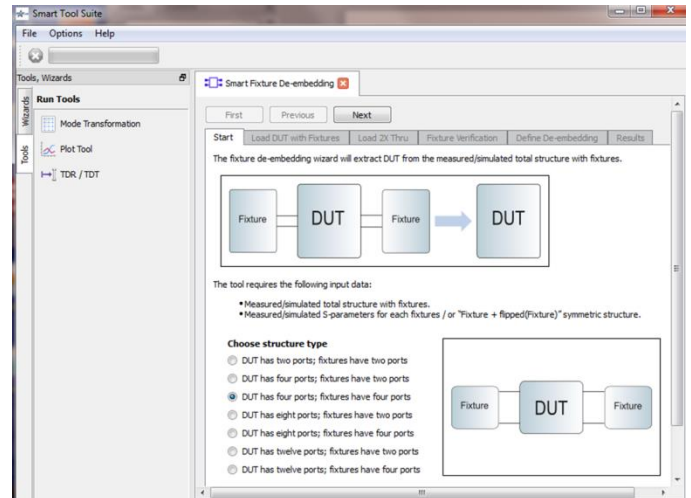
D-Probe can also be used for TDR measurements that are essential to the development of high-speed FPGA and CPU boards.



Comparison of TDR measurements

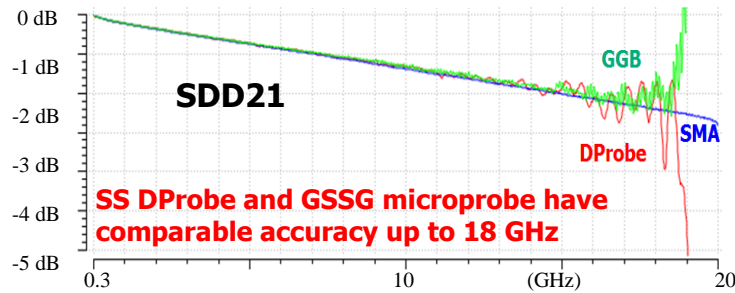
EMStar SFD De-embedding Tool

EMStar Smart Fixture De-embedding (SFD) tool is a user-friendly tool that allows engineers to simplify test-fixture designs and perform fast, accurate S-parameter measurements. SFD tool is developed by the renowned research team, led by Professor Drewniak and Professor Fan, at Missouri EMC Lab.

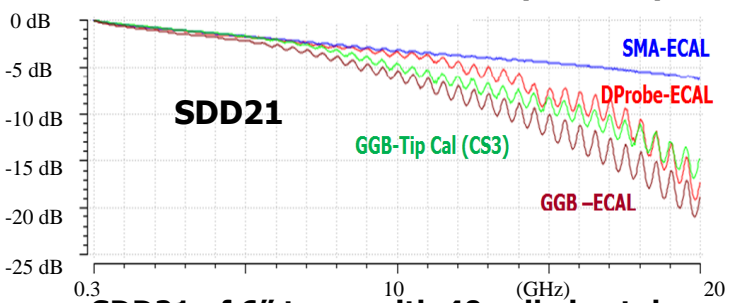


Accessories

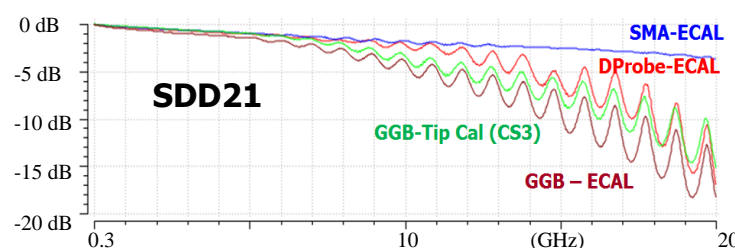
- Flex Probe Station
- TP300 4D (xyzθ) Precision Positioner
- TP250 4D (xyzθ) Precision Positioner
- TP150 4D (xyzθ) Precision Positioner
- FP160 4D (xyzθ) Flex Positioner
- VPH100 Vertical PCB Holder
- Dino-Lite Digital Microscope



De-embedded SDD21: 6" - 3" (2X-Thru)



SDD21 of 6" trace with 40-mil via stub



SDD21 of 3" trace with 40-mil via stub