

# DVT-FPPNN High Fidelity Two Probe Kit

## 40/50/70/110 GHz Wide Pitch True Differential TDR/VNA Probes



Enlarged side view of probe tips

### Part Numbers

- DVT-FPP40, DC-40 GHz Differential Probe
  - DVT-FPP50, DC-50 GHz Differential Probe
  - DVT-FPP70, DC-70 GHz Differential Probe
  - DVT-FPP110, DC-110 GHz Differential Probe
- US Patents 10852322, 11175311 (Other pats pend)*

### Electrical Characteristics

- Differential Probe Connectors/Frequency Ranges: 40 GHz /2.92 mm, 50 GHz /2.4 mm, 70 GHz/1.85 mm and 110 GHz/1.0 mm
- Linear Roll-off Frequency Response
- Tightly Coupled Fully Balanced Differential Probes
- No Ground Contact Probe Tips
- Measures: True Differential S-parameters
- 100 Ohm (nominal) Differential Impedance

### Mechanical Characteristics

- Fixed Pitches: 1 mm (1000 um), .8 mm (800 um), .6 mm (600 um), to 0.35 with offset probing (depending on the diameter of the test pads)
- Rugged Brass/Gold-plated Probe Tips
- Fixed Pitch Signal-to-Signal Probe Tips
- No Ground Pin Required
- Adapters included to mount on Probe Positioners

### Probe De-Embedding

- Probe de-embedding files are included
- Each de-embedding file has the serial number of the associated probe

### Service and Support

- Industry's Only 1 Year Unconditional Warranty
- Replacement Repair Service

*(On right) Raw bandwidth specs for the 40 to 110 GHz differential probes.*

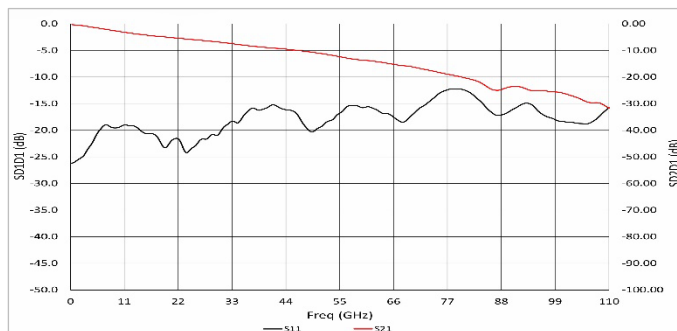
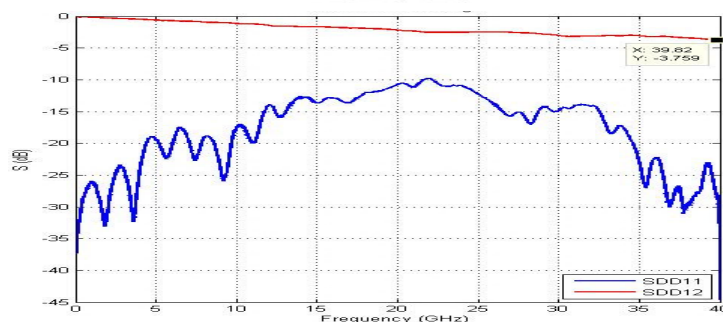
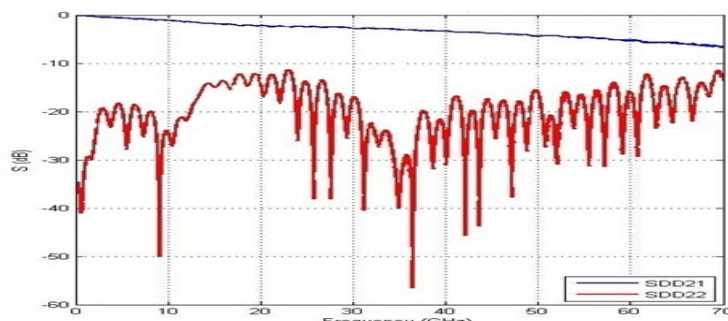
These SDD21/11 differential probe bandwidth plots performance S-parameter plots are generated using actual "thru" measurements with the Signal-Signal probe tips set to 1 mm and no de-embedding applied (110 GHz probe tested at .8 mm pitch).

### Instrument Compatibility

TDR, VNA and BERT Scope Instruments

### Applications

- Measuring Final PCB Prototype Designs against specs
- Differential Time-Skew, S-Parameter bandwidth and Jitter wide-pitch measurements up to 110 GHz
- 56 GHz Nyquist S-parameter Analysis of PAM4 Designs



## Building a Desktop Dual Time & Frequency Domain Measurement System

To configure a dual desktop probe system

- Connect two DVT-FPPNN probes to the end of the probe arm of each DVT-FP250 Probe Positioner.
- Depending on the size of the board, use one or two DVT-CS-3 or DVT-CS-1 cameras to verify the probes contacting the probe pads (as small as <20 mils in diameter) and to planarize the probe tips to the test pads. Each USB camera probe image is displayed using its utility software on a PC display to verify that both probes are making contact at the same time. Using two cameras vastly reduces setup times compared to using one camera and repositioning the camera each time you move the probes to a different probing location.
- For horizontal probing, use four DVT-SM Holders to secure the corners of your PCB to keep it from moving while probing. You can also remove a segment from two of the holders and place them under the PCB near where it will be probed to keep the board from bowing (At least 6 holders recommended).

For vertical probing, contact us for custom configurations.

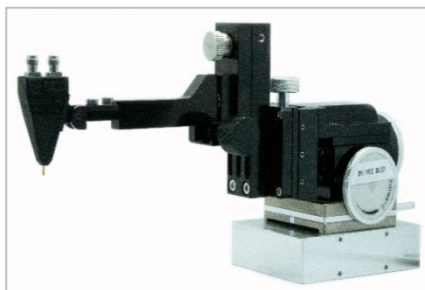
### Probe System Components

#### DVT-FPP70 70 GHz Differential Dual Probe Kit



70 GHz Dual Probe Differential TDR and S-Parameters Probe kit. Contains two fixed differential probes. Includes a copper shorting block for creating probe models.

#### DVT-FP250 Probe Positioner



Rigid arm probe manipulator with XYZ pitch 40 TPI controls & magnetic base. Recommended for probing with DVT40 and DVT-FPPXX probes.

#### DVT-CS-1 Camera System



The Camera System is used for the accurate placement of probe tips on the test pads, probe tip planarization and calibration.

#### DVT-FP100 Magnetic Bases



DVT-FP100-1IN, DVT-FP100-1.5IN and DVT-FP100-2IN Stackable 1", 1.5" and 2" magnetic blocks used to raise the probe and camera positioners to clear the test board.

#### DVT-PB100-24 Probe Bridge



A Versatile bridge with magnetic base for probing applications which extends the probe reach to enable probing of larger boards.

#### DVT-SM Holders



Stackable Magnetic PCB Holders on the corners of a PCB keep it from moving while probing. Also, remove a segment from two holders placing them under the PCB near where it will be probed to keep the board from bowing (6+ holders recommended).

#### 2-Axis Probe Adapter

This adapter, for the DVT-FPPNN probes only, improves ease and efficiency in probing vertical and horizontal PCBs on tight-pitched test pads and when complex angles are required.



DVT-FPPNN Differential 2-Axis Probe Adapter  
9 different configurations (top-down view)



Horizontal Side-by-Side Probing

- Arm is straight
- Probe on right or left side
- Probe straight down



Vertical Vertically fixtured PCBs

- Arm is straight, probe can be placed on the right or left side
- Probe is lifted to contact horizontally oriented test pads



Horizontal Horizontally fixtured PCBs with 45° oriented test pads

- Probe can be on left/right side
- Probe straight down



Vertical Vertically fixtured PCBs with arm at 90° to PCB

- Probe is lifted to contact vertically oriented test pads



Horizontal Horizontally fixtured PCBs with arm at 90° to test pads

- Probe can be on left or right side
- Probe straight down