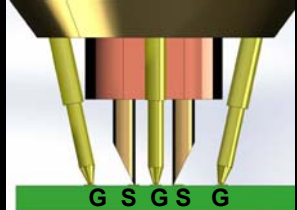


Measure 2 or 4-port
S-parameter Measurements to 40GHz

Instrument Compatibility

- Time Domain Reflectometry (TDR)
- Vector Network Analyzers (VNA)
- Spectrum Analyzers
- Bert Scopes



Configurable Ground Pins



Remove Ground
Collar to Measure
100 or 50 Ohm
Impedance

Features and Key Benefits

- 40 GHz Differential Connector Bandwidth
- True Odd Mode 100 Ω Differential Input Impedance
- Adaptable to 50 Ω Single Ended Input Impedance
- Adjustable Signal Probe Pitch (from 400um to 1.7mm)
- 4-6um Conductive Diamond Plated Probe Tips
- <4.5ps Fall Time Degradation
- Universal Probe Design: use as Hand Probe or Mount in Micro-positioners
- Full Set of Probe Pitch Calibration Accessories
- Fully Balanced Differential Signals without Ground Contact

40 GHz 100 & 50 ohm TDR Hand Probe: the model DVT40 GigaProbes® is a robust balanced 40Ghz 100 Ω differential probe capable of making 50 Ω measurements with <4.5ps TDR Fall Time degradation. The DVT40 is like having two 40 GHz probes in one making it compatible with the fastest TDR modules from Tektronix, Agilent and LeCroy.

Make Accurate Time and Frequency Measurements: to make accurate time and frequency measurements *optional* S2P and S4P S-Parameters are available for each probe and used to de-embed the probe characteristics from the measurements. In addition, the NEW 40 GHz differential Y connector assembly is optimized to significantly reduce reflection and frequency loss up to 40 GHz. Combined, these features improve measurement accuracy and extend the measurement bandwidth range.

Everything you need to Characterize Gb/s Interconnects in the time or frequency domain: the DVT40-1MM kit comes in an elegant wooden box containing two DVT40 40GHz probes for measuring differential 100 ohm Time Domain Reflectometry (TDR) impedance (Z-line) measurements. Once impedance sensitive transmission lines are verified, use the second probe as a TDR receiver, to make Time Domain Transmission (TDT) measurements. Importing these waveforms into S-parameters software, these odd mode differential measurements can be converted into insertion (SDD21) and return loss (SDD21) S-parameters (S2P) to verify differential transmission lines meet bandwidth performance. To measure the full spectrum of S-parameters, attach the *optional* Ground Pin Collar that contain up to three 18mil compliant replaceable pins to form a Signal/Ground configurations (GSGSG, GSS, SSG, SGS, GSSG and SS with a SG pin spacing of 1mm) to meet the physical layout of the pads on your PCB. These TDR/T measures are referenced to physical ground so both common and odd mode S-parameters (S4P) can be extracted. The new DVT40 provides the flexibility to make measurements with or without a ground in order to validate industry design standards such as USB3, PCI/E Gen3, SATA/SAS, 10 G Base-R FEC, etc.

Applications

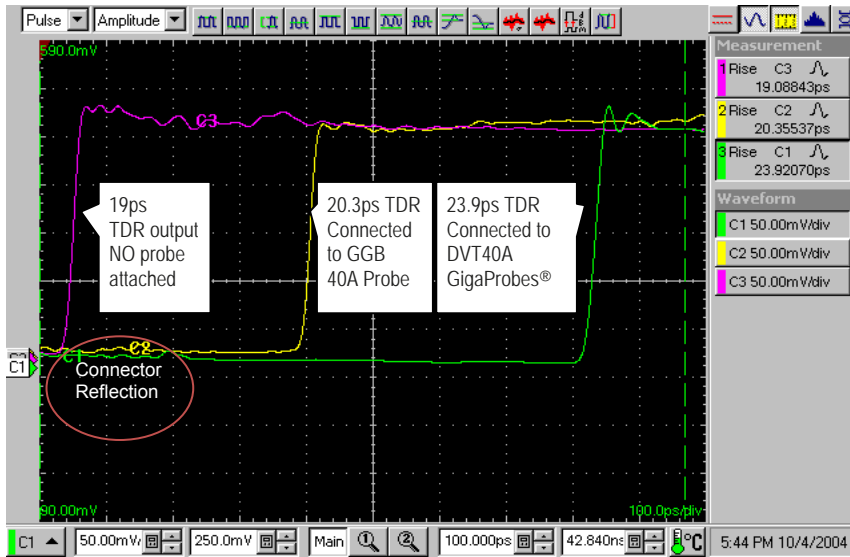
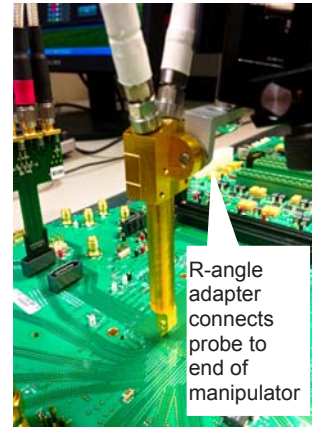
Time Domain Measurements

- 100 Ω Impedance measurements on PCBs, cables, backplanes, daughter-cards and connectors.
- Use 50 Ω mode for high resolution Failure Analysis with ~1mm fault Isolation

Frequency Domain Measurements

- Two-Port Differential TDR/TDT Measurements for Creating SDD11/21 Return-Loss and Insertion-Loss S-Parameters.
- Four-Port Multi-Mode S-Parameters (when used with configurable 3-pin ground collar adapter).
 - 1mm Ground/Signal pin Configurations: GSGSG, GSSG, SGS,GSS, SSG
 - *Optional* S-Parameters for de-embedding probe from measurements

Adapters are provided to install the DVT40 in low cost probe manipulators, eliminating the need for expensive probe stations for high bandwidth hands-free probing. This capability frees the Signal Integrity Engineer to operate test instrument and to manipulate enhanced impedance and S-parameter software to accurately characterize differential impedances on the Gigabit: PCB's, device test boards, backplanes, connectors, and cables.



Rise-Time comparison of the DVT40 GigaProbes® to the GGB 40A Pico Probe both connected to a 19ps pulse. Also, a measurement of the discontinuity in the connector assembly shows nearly no impedance reflection.

Characteristics

- Attenuation: 1X
- Connector Only Bandwidth: 40 GHz. @ -3db
- Probe Measured Insertion Loss: 40GHz @ -3.5db
- TDR Fall time Degradation: <4.5ps
- Probe Pitch: .400um to 1.7 mm (Signal tip to Signal tip)
- Connector Type: 40 GHz 2.92mm K-Connector.
- Differential impedance: 100 ohm
- Single impedance: 50 ohm (using conversion kit)
- Max Voltage-in – 5.0 V



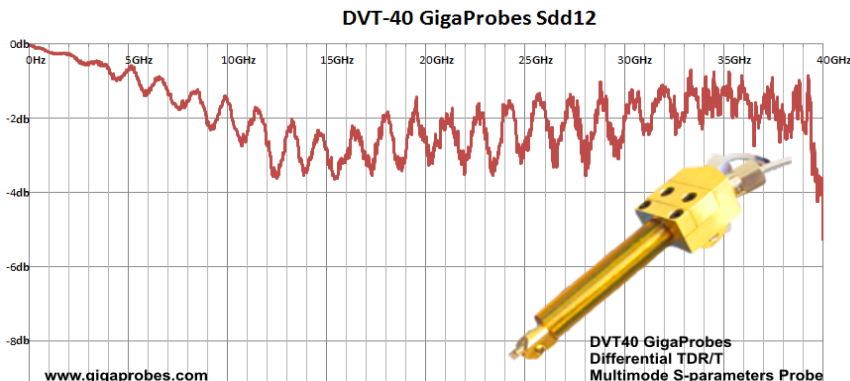
Part number: DVT40-1MM

Standard Accessories Contained in Kit

- 2ea) **73TA-DVTS-Y10A** Differential Multimode TDR / TDT S-Parameter Probe - 40GHz 2.92mm K differential connector assembly in a Y formation
 - Gold-plated probe body and differential connector assembly
 - Gold plated conductive diamond (4-6um) adjustable probe tips
- 2ea) **73TA-DVTS-YUM-1** Custom Mount Anodized Right Angle Adapter
 - Connects DVT40 to articulating arms using a #10 screw mount.
 - 2.5" dowel adapter connects probe to manipulators with compression holders
- 2ea) **73TA-DVTS-UHM-1** Ultem® Hand Mount Adapter designed for GigaProbes® DVT40 probes. Converts DVT40 to a precise, ergonomic hand probe
- 2ea) **DVT-3052969** Stainless Steel Tweezers for fine 110mm pitch adjustments.
- 1ea) **Wrench Model 10PSW** Steel Wrench with precision pitch indentations.
- 1ea) **DVT-2910375** Desktop Macro-lens Inspection Station (5x magnification)
- 2ea) **DVT-50Ohm** 50 ohm Conversion Kit: 1 SMA short cap, 5ea 20 gauge wire and 5ea pre-cut shrink-wrap.

Part Number: DVT40-SPRAM

DVT40 De-embedding and S-parameters Option



Contains two ground collars with 3 compliant 18mil ground pins. The ground collar allows measurements referenced to a ground pin. 4 port and 2 port measurement are made possible. Each of the two DVT40 (**73TA-DVTS-Y10A**) probes in the kit will have its own serialized S-parameters in a *.touchtone format and contained on a CD. *It is recommend that this option is ordered at the same time the DVT40-1MM kit is ordered but can be ordered separately.*

- 2ea) **73TA-DVTS-GPA-A/1M** Ground Collar Adapter for DVT40
 - 3ea) 18mil compliant ground probes
 - GS configurations (GSGSG, GSS, SSG, GSSG, SGS, SS) 1mm pitch
 - DVT40-S2P** Measured S2P S-parameters to 40 GHz
 - DVT40-S4P** Measured S4p S-parameters to 40 GHz

DVT40-GC-1MM One 1mm pitch Ground Collar with 3 springs loaded ground probes

DVT40-GC-1.27MM One 1.27mm pitch Ground Collar with 3 springs loaded ground probes

S4P S-Parameters Multi-mode 4 port 2 port S-Parameters for TWO DVT40 probes with either DVT40-GC-1.27MM or DVT40-GC-1MM

