



30 GHz 100 Ω Differential & 50 Ω Impedance Multi-mode TDR Probe

(Optional) 40 GHz Gold Plated Conductive Diamond Probe Tips

Patent Pending



Features & Benefits

- 30 GHz Bandwidth
- True Odd Mode 100 Ohm Differential Input Impedance
- Adjustable Probe Pitch from .25mm to 2mm
- 10 Mil Diameter Probe Tips
- Gold Plated Conductive Diamond probe tips option: Probing Force 10 grams, Probe at any angle, non oxidizing probe tips, improved repeatable measurements
- Fall Time 20ps, or <5ps Fall Time Degradation
- TDR Launch Discontinuity <20mv
- Universal Probe Design, Use as Hand Probe or Mount in Micro-positioners to be used with Probe Stations
- Full Set of Probe Pitch Calibration Accessories
- Fully Balanced Differential Signals without Ground Contact

Applications

- Loss Tangent Measurements for Differential and Single Ended Transmission Lines
- Failure Analysis of PCB with or without Components Mounted
- (TDR) Impedance Testing of IC Package, Cable, PCB, Backplane

Characteristics

- Attenuation – 1X
 - Probe Only Bandwidth – 30 GHz.
 - TDR Degradation – <5ps
 - Probe Pitch – .25 mm to 2 mm (signal tip to signal tip)
 - Connector Type – SMA
 - Measured Reflected TDR Fall Time 20 ps.
 - Impedance – 100 Ω differential, 50 Ω common mode, 50 Ω Single Ended
 - Max Vin – 5.0 V
- (Note: numeric values shown are typical).

DVT30-1MM GigaProbes™ (patent pending) use multi-mode (100Ω Differential, 50Ω Single Ended) tips for capturing 30GHz, ODD/EVEN impedance profiles. With a typical differential launch discontinuity of <20mv and a fall-time of 20ps, these probes mask only ~20mils of the device under test. This small discontinuity mask is most important when characterizing IC packages where net lengths can be very short.

The DVT30-1MM comes with a set of ergonomic grips for comfortable hand probing and they easily attach to Probe Station micromanipulators; providing a 2 inch, low profile, wide band reach.

The Signal-to-Signal pitch can be set to .5mm, 1mm or 2mm using a custom designed SMA wrench. The pitch can also be customized using other tools supplied in the DVT30-1MM GigaProbes™ accessory kit.

The *optional* Conductive Diamonds Plating place 100's of very sharp diamonds in a nickel/gold solution on the probe tips. These diamonds do not corrode, easily break through oxide when probing reduces probing force to only 10 grams, creating a temporary connection as good as solder. The TDR measurements are repeatable; the probes are more robust and allow probing at any angle.

Ordering Information

DVT30-1MM GigaProbes™ come housed in a quality hardwood box containing probe calibration and support accessories. Each DVT20-1MM GigaProbes™ kit contains:

- Two 30 GHz TDR Probes (Convertible to Single or Differential).
- Stainless Steel 110mm Tweezers for Fine Pitch Adjustments
- Desk-Top Macro-Lens Inspection Station
- Model 10 Anodized SMA Wrench with Quick Calibrators Holes Setting the Probe Pitch to .5mm, 1mm & 2mm and Plainerizing Probe Tips
- Two Hand Held Probe Sleeve Adapters with EZ-Hold Foam Cushions
- Four Right Angle SMA Elbows for Easy Routing Of TDR of SMA Cables
- Two SMA shorting caps and ground straps for 50 ohm probing
- Cable Routing Sleeve to Combine SMA Cables for Easy Cable Management
- Free Application CD showing how to make TDR measurements, S-parameters from TDR measurements, creating Eye diagrams, HSpice models from TDR measurements and more.

For more information: <http://www.gigaprobes.com>
Sales: DVT Solutions Ph (650) 593-7083



GigaProbes™ complete TDR probing kit

The **GigaProbes™** accessories kit makes these probes universally adaptable for almost any TDR probing requirement. Fig. 1– 3) demonstrates how to use these accessories to configure the probes for hand probing or to mount on probe station micro-positioners and calibrate Signal - Signal probe pitch. In Fig. 4) the optional Conductive Diamonds Plating (CDP) from Giga Connections, inc. (www.gigaconnections.com) places 100's of very sharp diamonds in a nickel/gold solution on the probe tips. These very sharp conductive diamonds do not corrode and easily break through oxide and contaminants requiring only 10 grams for probing force for repeatable TDR measurements. The Conductive Diamonds are like little probe tips that plate the entire probe which allows probing at any angle.

Fig. 5) Shows the DVT30-1MM GigaProbes™ directly hooked up the PSPL 4022TDT to generate a 30+ GHZ differential or single ended TDR pulse. Fig 6) demonstrates the TDR rise time performance that exceeds 30 GHz bandwidth. The DVT30-1MM is the fastest TDR probe for hand held probing available for the Lecroy, Tektronix and Agilent TDR scopes.

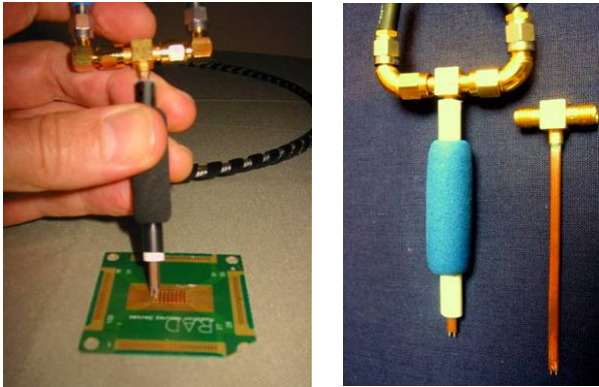


Fig. 1) Comfortable Hand Held Probing - Slip on the probe sleeve adapters with EZ-hold foam cushions.

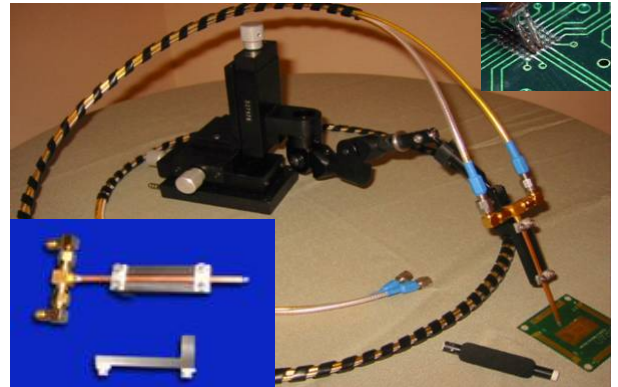


Fig. 2) Attaching GigaProbes™ to Micro-positioners - Purchase the (optional) probe holder adapters for use with Probe Stations



Fig. 4) Gold Plated Conductive Diamond Probe Tips (patent pending) – Hundreds of very sharp, non-oxidizing, conductive diamonds on the probe tips easily break through surface oxide when probing, creating a connection as good as solder, and ultimately allowing for repeatable TDR measurements and probing at any angle.

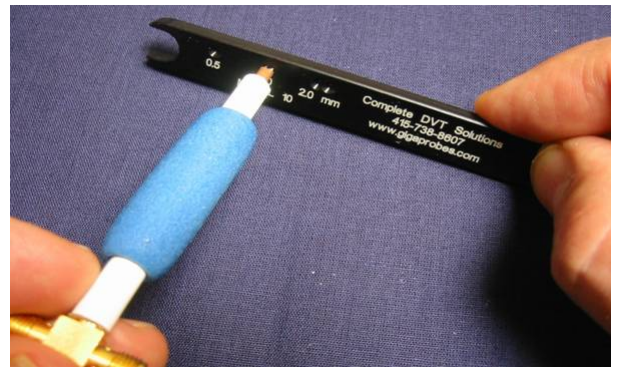


Fig. 3) Signal - Signal Pitch Calibration (patent pending) - Place the probe tips in the model 10 SMA calibration wrench to adjust S - S pitch to a fixed .5mm, 1mm, or 2mm spacing. Use the **Desk-Top Macro-lenses Inspection Station** to view probe tips and the precision **Stainless Steel Tweezers** for fine pitch adjustments.

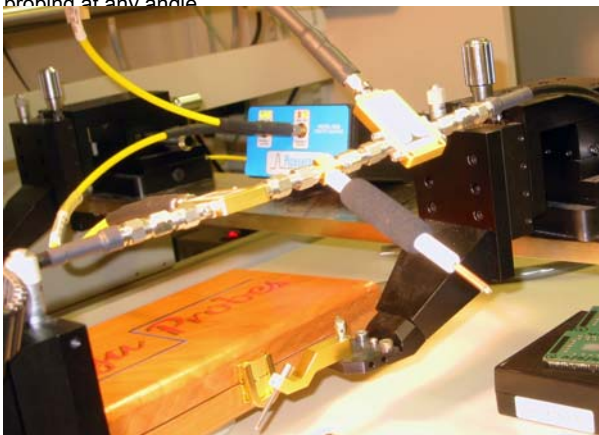


Fig. 5) Shows the DVT30-1MM GigaProbes™ directly hooked up the PSPL 4022TDT to generate a 30+ GHZ differential or single ended TDR pulse. This picture shows a differential TDR probing configuration. A micromanipulator can be used to hold the probe. The steel probe tips are very rugged and resist damage.

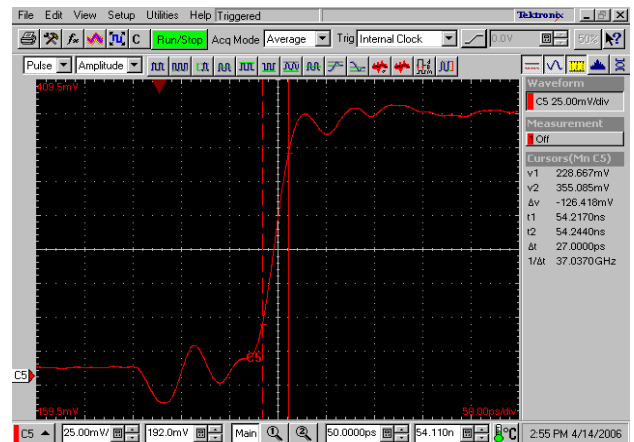


Fig. 6) Differential rise time - Using a 50 GHz TDR sampling system driving a PSPL 4022 TDR 9ps TDR pulser, the measured bandwidth exceeds 30 GHz.