

Giga Probes

Hand Held Probes for Agilent 86100C DCA-J/ 54754A TDR Oscilloscopes 30 GHz 100 Ω Differential & 50 Ω Impedance With Gold Plated Conductive Diamond Probe Tips

Multi-mode TDR/TDT Interconnect Development and Validation Kit



DVT30-1MM GigaProbes™ (patent pending) multi-mode, 100 Ω Differential or 50 Ω Impedance TDR probe, to capture 30 GHz, ODD/EVEN impedance profiles with a typical differential launch discontinuity of <20 mv and a fall-time of 20ps. The probe masks ~ 0.5 mm of the device under test. This small discontinuity mask becomes significant when characterizing IC packages where net lengths are very short.

The DVT30-1MM comes with a set of cushion grips for comfortable hand probing and comes with accessories to easily attach the probes to articulating arms or most probe manipulators.

The Signal-to-Signal probe pitch can be set to 0.8 mm, 1.0 mm or 1.27 mm using the patent pending Pitch Calibration SMA wrench. The pitch can be customized using other tools supplied in the DVT30-1MM GigaProbes™ accessory kit. The wrench also serves to attach SMA-SMA cables to the probes.

Conductive Diamond plating technology place 100's of sharp non oxidizing diamonds in a nickel/gold matrix onto the probe tips. The diamonds do not corrode or dull and allow the user to break through oxide with a probing force of only 10 grams. This creates a temporary solder-like connection for repeatable TDR measurements when probing at any angle

Product Description

DVT30-1MM GigaProbes™ are stored in a durable box also containing probe calibration and support accessories. Each DVT30-1MM GigaProbes™ kit contains:

Qty 2: 30 GHz TDR Probes (patent pending) Convertible to Single 50 ohm or Differential 100 ohm, with gold plated Conductive Diamond probe tips for repeatable high-bandwidth TDR measurements when probing at ANY angle

Qty 2: GPMMA Attaches probe to Articulating arms or any standard micro-positioner (fig. 2)

Qty 1: Stainless Steel 110mm Tweezers for Fine Pitch Probe Adjustments and used to attach ground lead to convert probe to 50 ohms

Qty 1: Desk-Top 5X Macro-Lens Inspection Station

Qty 1: Model 10 SMA Wrench (patent pending) with Quick Calibrator Holes to set probe pitch and planarize probes to 0.8 mm, 1.0 mm, or 1.27 mm (fig. 3)

Qty 2: Hand Held Probe Sleeve Adapters with EZ-Hold Foam Cushions (fig. 1)

Qty 4: Right Angle SMA Elbows for easy routing of TDR of SMA cables (fig. 1)

Qty 1: 50 ohm conversion kit includes 2 SMA shorting caps, ground strap and shrink wrap.

Qty 4: 12" 24GHz" SMA – SMA Cables

Qty 1: Resource CD with application notes, data sheets

Features & Benefits

30 GHz Bandwidth

True Odd Mode 100 ohm Differential Input Impedance

Probe can be converted to 50 ohm input impedance

TDR Launch Discontinuity <20 mv

Fall Time 20 ps or <5 ps Fall Time Degradation

Fully Balanced Differential Signals without Ground Contact

Adjustable Probe Pitch from 0.25 mm to 2.0 mm

Probe Tip diameter 0.254 mm

Probe at any angle with gold plated Conductive Diamond non oxidizing probe tips, improve repeatable measurements with a probe force <10 grams

Universal Probe Design, Use as Hand Probe or Mount in most Probe Station Micro-Positioner

Full Set of Probe Pitch Calibration Accessories

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: <5 ps

Probe Pitch: 0.25 mm to 2 mm (signal tip to signal tip)

Connector Type: SMA

Measured Reflected TDR Fall Time: 20 ps (TDR Specific)

Impedance: 100 Ω differential, 50 Ω common mode,

Max Voltage In: 5.0 V

(Note: numeric values shown are typical).



GigaProbes™ complete TDR/ TDT probing kit
Cables are ordered separately

**DVT30-1MM
GigaProbes™
Complete TDR/TDT
Interconnect Probing
kit**
Cables are ordered
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Create Two Port Insertion and Return loss S-parameters from TDR/T measurement using Agilent 86100C, two 54754A differential modules and the GigaProbes™

GigaProbes™ Hand Held Probes for Agilent TDR Oscilloscopes

The GigaProbes™ accessories kit makes the probe adaptable for almost any TDR probing requirement. **Figure 1** demonstrates how to use GigaProbes accessories to configure the probe for manual use. **Figure 2** use the included GPMMA adapter to mount the probe on a micro-positioner. **Figure 3** shows how the pitch is set for the Signal - Signal probe.

Figure 4 shows the gold plated Conductive Diamonds on the probe tips. This technology is offered by Giga Connections, inc. (www.gigaconnections.com) and plates 100's of sharp diamonds in a nickel/gold matrix on the probe tips. Conductive diamonds do not corrode and serves to break through oxide buildup requiring only 10 grams probing force for repeatable TDR measurements.

Figure 5 shows a GigaProbes™ connected directly to a Agilent 86100/54754A driving the PSPL 4022TDT to generate a 30+ GHz differential or single ended TDR pulse. **Figure 6** demonstrates the GigaProbes™ connected to the Agilent 86100/54754A System for a complete interconnect analysis probe station. For more information on the using the Agilent TDR system visit:

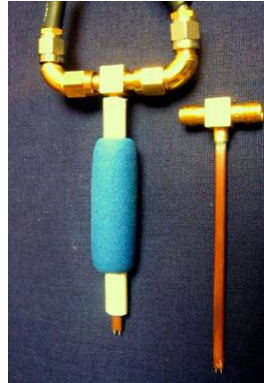
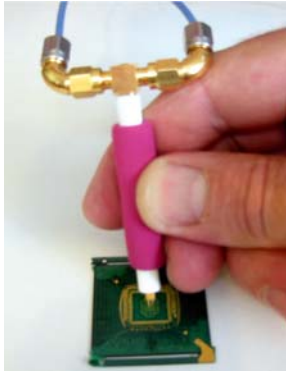


Fig. 1) Comfortable Hand Held probing - Slide on the probe sleeve adapter with EZ-hold foam cushion.



Fig. 4) Gold Plated Conductive Diamond Probe Tips (patent pending) – Hundreds of sharp, non-oxidizing, conductive diamonds on the probe tips break through surface oxide when probing, to create a connection equal to that of lead solder. Conductive Diamond technology improves repeatability of TDR measurements when probing at any angle.

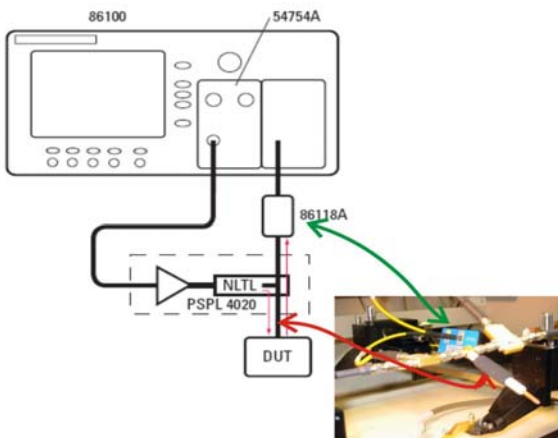


Fig. 5) shows a GigaProbe connected directly to a PSPL 4022TDR driven by the Agilent 86100/54754A to generate a 30+ GHz 100 ohm differential or 50 ohm single ended TDR pulse. This picture shows a differential TDR probe configuration. A micro-positioner can also be used to hold the probe.

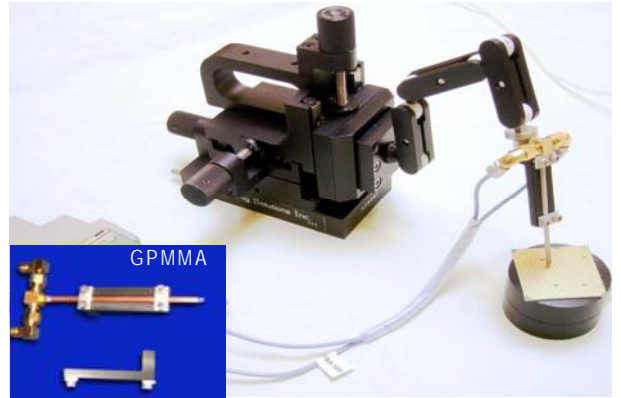


Fig. 2) Attaching GigaProbes™ to Micro-positioner – The GPMMA adapter is a standard accessory that attaches the probe to standard Micro-positioner used with Probe Stations.



Fig. 3) Signal - Signal Pitch Calibration - Place the probe tips in the (patent pending) **Model 10 SMA calibration wrench** to adjust S – S pitch to a fixed 0.8 mm, 1.0 mm. or 1.27 mm spacing. Use the **Desk-Top Macro-lens** Inspection Station to view probe tips and the precision **Stainless Steel Tweezers** for fine pitch adjustments.

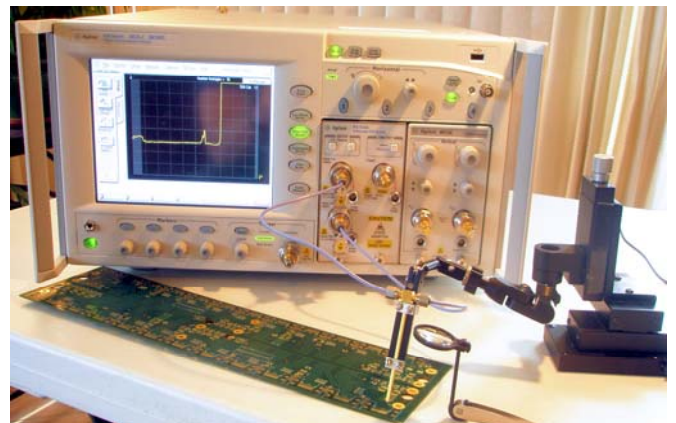


Fig. 6) GigaProbes™ connected to the Agilent 86100C/ 54754A Dual channel TDR System for a complete interconnect analysis probe station. Create TDR/T waveforms to extract insertion and return loss S-parameters.