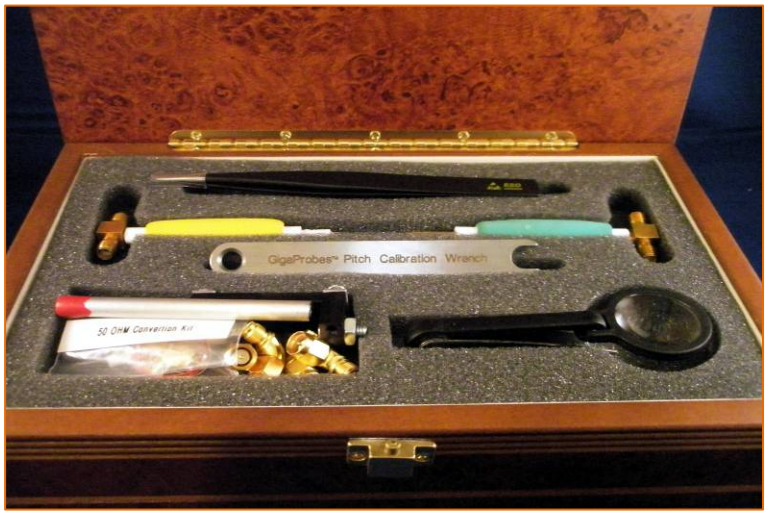
Hand Held Probes for Tektronix TDR Oscilloscopes

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 the Tektronix PP100 or PPM203B 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 though 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 Tektronix PPM100, PPM203B 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: Cable 24GHz SMA-SMA Cables

Qty 1: Resource CD with IConnect® application notes, data sheets

*** Free Tektronix IConnect® Video Downloadable Training Course on www.gigaprobestek.com**

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

Gold Plated Conductive Diamond non oxidizing probe tips for repeatable TDR measurements

Low probing force <10 grams

***Four probes in one:* Use as a 100 ohm, 50 ohm, as a Hand Probe or Mount in a probe articulating arm for hands free probing.**

Full Set of Probe Pitch Calibration Accessories Included

Characteristics

Attenuation: 1X

Probe Only Bandwidth: 30 GHz

TDR Degradation: <5 ps

Probe Pitch: 0.25 mm to 2.0 mm (signal tip to signal tip)

Connector Type: SMA

Measured Reflected TDR Fall Time: 20 ps

Impedance: 100 Ω differential, 50 Ω common mode,

Max Voltage In: 5.0 V

(Note: numeric values shown are typical).

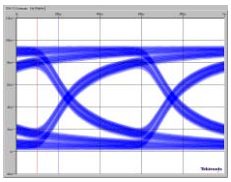
Applications

Create - Single Ended, Differential Insertion, Return Loss S-parameters from TDR/ TDT Measurements for determining interconnect bandwidth performance using Tektronix DSA8200 TDR and IConnect®

Impedance Testing - Use IConnect® for precision impedance analysis of IC Packages, Cables, PCB's and Backplane Testing

Failure Analysis of Device Packages - Locate failure modes

DVT30-1MM GigaProbes® Complete TDR/TDT Interconnect Probing kit
Cables are ordered separately



For more information contact: http://www.gigaprobestek.com

The GigaProbes® accessories kit makes the probe adaptable for almost any TDR/TDT probing requirement. **Figure 1** demonstrates how to use GigaProbes™ accessories to configure the probe for manual use. **Figure 2**; use the GPMMA to mount the GigaProbes® on a Tektronix PPM100 articulating arm for hands free one or two port measurements. For the fastest multi-mode TDR measurement, directly connect the GigaProbes™ to the Tektronix TDR module. **Figure 3** shows how the Signal - Signal probe pitch can be set to 0.8 mm, 1.0 mm, 1.27 mm using the model 10 Pitch Setting SMA wrench included with the GigaProbes™ interconnect accessory kit.

Figure 4 illustrates the Gold Plated Conductive Diamonds applied on each of the GigaProbes® probe tips. This plating 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 though oxide buildup requiring only 10 grams probing force for repeatable TDR measurements.

Figure 5 shows a complete DSA8200 TDR interconnect development station. **Figure 6** demonstrates the GigaProbes™ TDR rise time performance exceeding a bandwidth of 30 GHz.

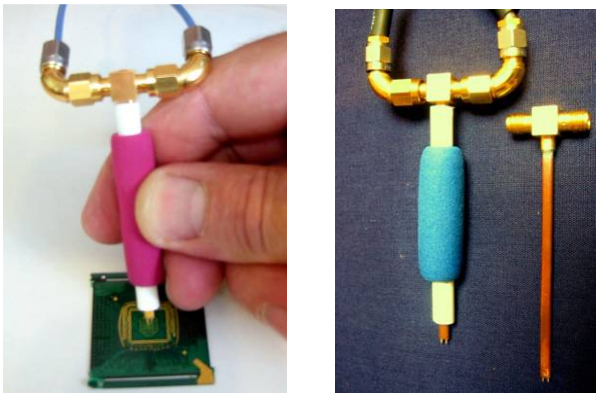


Fig. 1) Comfortable Hand Held probing - Slide on the EZ-hold foam cushion probe sleeve adapters.

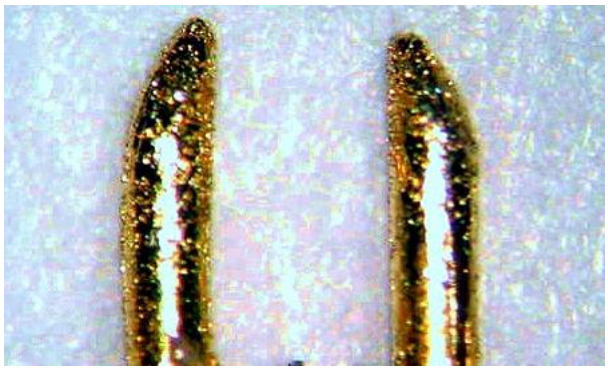


Fig. 4) Gold Plated Conductive Diamond Probe Tips (patent pending) **–** Hundreds of sharp, non-oxidizing, conductive diamonds on the probe tips break through surface oxide when probing, to create a connection equal to that of lead solder. Conductive Diamond technology improves repeatability of TDR measurements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

Fig. 5) DSA8200 TDR System - The GigaProbes® can directly connect to the 80E10, 80E08 or 80E04 TDR module supported by the PPM100 Articulating arm. Figure 5 System components: DVT30-1mm GigaProbes®, DSA8200, IConnect® and MeasureXtractor™ Signal Integrity (SI) Software, two 80EXX TDR modules, PPM100 articulating arm, external LCD monitor to view/control SI software.

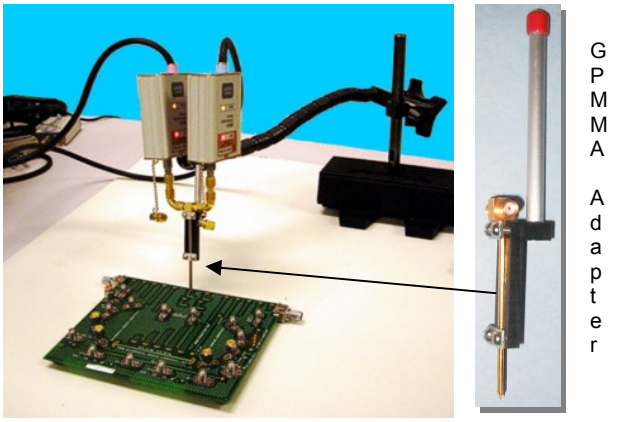


Fig. 2) Direct Connect the GigaProbes® to the Tektronix PPM100 Articulating Arm – The GPMMA adapter is a standard accessory that provides the fastest TDR performance when used with the DSA8200 TDR modules.

Fig. 3) Signal - Signal Pitch Calibration (patent pending) **-** Place the probe tips in the M**odel 10 SMA stainless steel calibration wrench** adjusts 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, probing location and the precision **Stainless Steel Tweezers** for *fine pitch adjustments*.

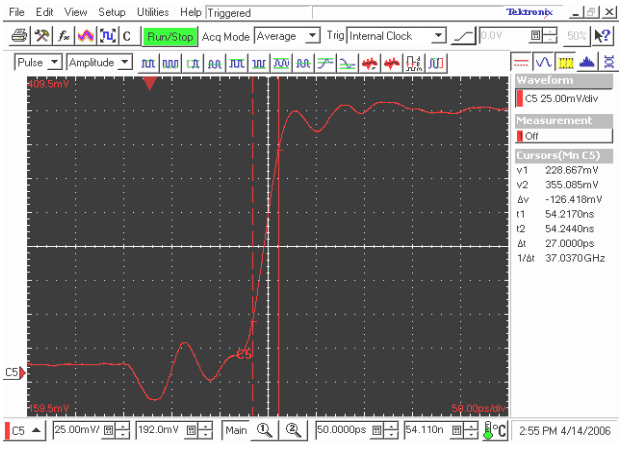


Fig. 6) Differential rise time - Using a DSA8200 50 GHz TDR sampling system being driving by a 9 ps TDR pulser, the measured GigaProbes® rise time bandwidth exceeds 30 GHz.