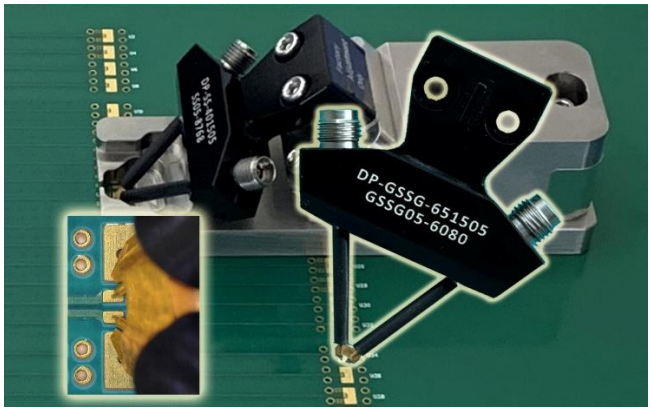
PACKETMICRO
Innovative Benchtop Probing Solutions

D-PROBE DP-GSSG SERIES

RUGGED 65 GHZ GSSG DIFFERENTIAL PROBE

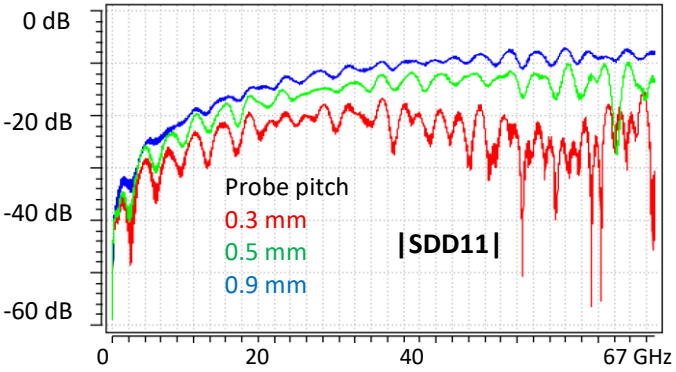


PacketMicro's 65 GHz GSSG probes are engineered specifically for the high-frequency demands of Signal Integrity (SI) and Printed Circuit Board (PCB) characterization, offering a rugged alternative to delicate wafer-level microprobes. Their primary advantage lies in their durable Beryllium Copper (BeCu) tips and robust mechanical design, which allow for reliable direct probing on solder bumps and uneven surfaces that would otherwise damage microprobes. DP-GSSG series probes excel in measuring high-speed differential traces for next-generation standards like PCIe 6.0/7.0 and 800G Ethernet. By combining industrial-strength construction with high-precision S-parameter performance, PacketMicro provides a cost-effective solution for manufacturing and benchtop R&D environments where both repeatability and physical resilience are critical.

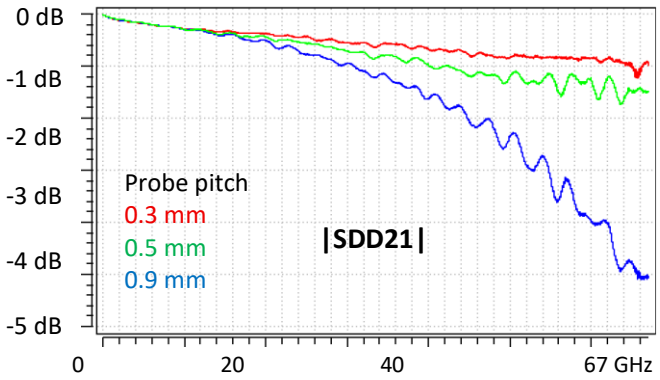
FEATURES:

- **Ultra-Wide Bandwidth:** DC to 65 GHz
- **Low Insertion Loss:** < 3 dB @ 60/65 GHz
- **Rugged Construction**: Designed for direct probing on uneven surface
- **High Repeatability**: No moving parts for consistent, reliable measurements
- **User-Friendly Handheld Fixtures:** Constant-force design ensures stable probe pressure and precise alignment for accurate results
- **Application Ready**: Ideal for PCIe 6.0/7.0 testing, 112G SerDes validation, Delta-L PCB characterization, and other high-speed measurement applications

SPECIFICATIONS	
Bandwidth	65 GHz (0.3/0.4/0.5/0.6 mm pitch) 60 GHz (0.8/0.9 mm pitch)
Insertion Loss	Less than 3 dB @ Bandwidth
Impedance	50±2 Ohm
Connector Type	Female 1.85mm connector
Size/ Weight	51x38 x12 mm (2x1.5x0.5 in.) / 20 gm
Probe Force	50 gm (typical) 150 gm (max w/o damage)



Un-calibrated SDD11 of 0.3/0.5/0.9 mm pitch



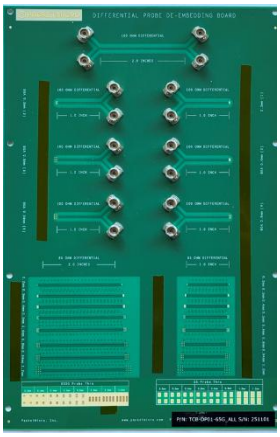
Un-calibrated SDD21 of 0.3/0.5/0.9 mm pitch, including loss of BGA probe launch

65 GHz PART NO.	BW (GHz)	PROBE PITCH
DP-GSSG-651503	65 GHz	0.3 mm / 12 mil
DP-GSSG-651504	65 GHz	0.4 mm / 16 mil
DP-GSSG-651505	65 GHz	0.5 mm / 20 mil
DP-GSSG-651506	65 GHz	0.6 mm / 24 mil

60 GHz PART NO.	BW (GHz)	PROBE PITCH
DP-GSSG-601508	60 GHz	0.8 mm / 32 mil
DP-GSSG-601509	60 GHz	0.9 mm / 36 mil

TCB-DP01 Probe-De-embedding Board

TCB-DP01 is designed to extract probe-specific S-parameters for accurate de-embedding. This enables users to effectively remove probe-induced insertion loss and phase delay, shifting the VNA measurement reference plane directly to the probe tips for precise and reliable measurements.



TCB-DP01-65G

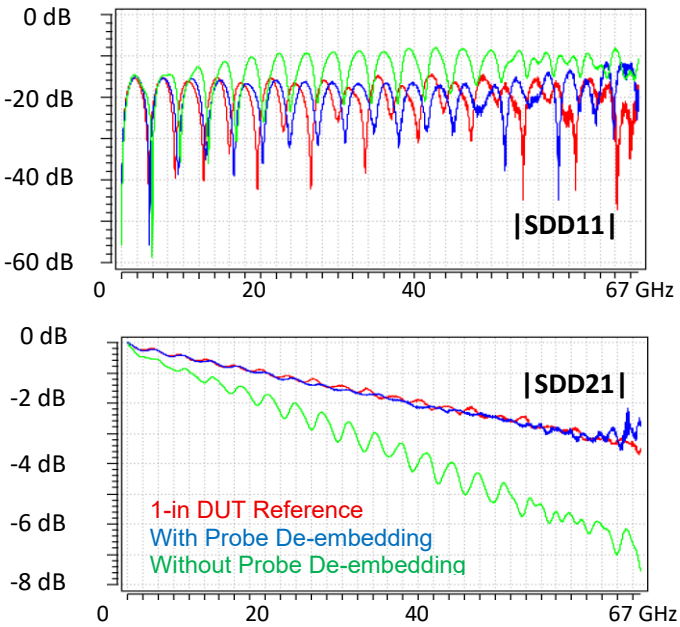
- Frequency: 0 – 65 GHz
- Connectors: 1.85 mm (F)
- Probe Pitches: 0.3mm (1), 0.4mm (2), 0.5mm (3), 0.6mm (4), 0.8mm (5), 0.94mm (6)
- P/N: TCB-DP01-65G_356 (0.5, 0.8, 0.94 mm, 3 pitches mounted)

TCB-DP01-40G

- Frequency: 0 – 40 GHz
- Connectors: 2.92 mm (F)

De-embedding Accuracy

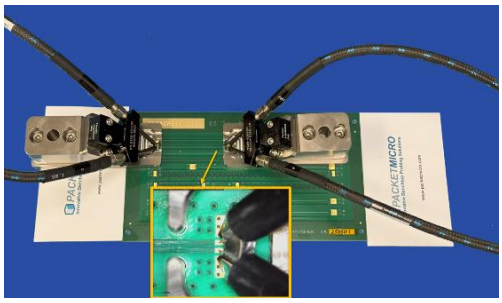
To demonstrate measurement accuracy, a 2X Thru method is used to establish a reference baseline for comparison with results obtained by using probe de-embedding.



1-in DUT Reference (0.5 mm Probe Pitch)
Total = Porbe#1 + 2-in trace + Probe#2
2X Thru = Porbe#1 + 1-in trace + Probe#2

65 GHz Delta-L Handheld Probe

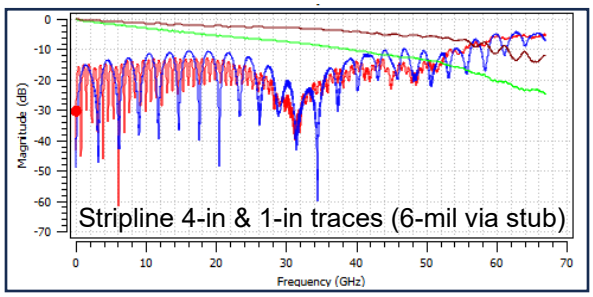
The DP-GSSG-651505DL probe extends Delta-L 4.0 measurement capability from the current 40 GHz limit to 65 GHz, enabling higher frequency characterization with enhanced performance and accuracy.

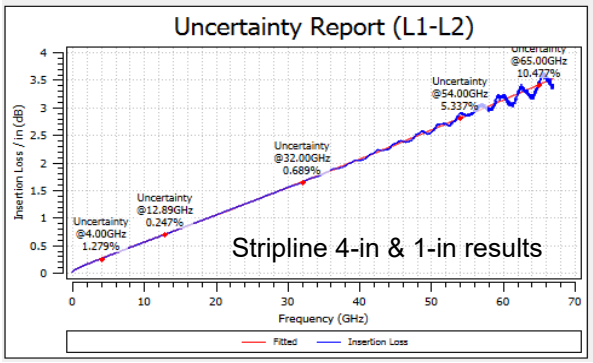


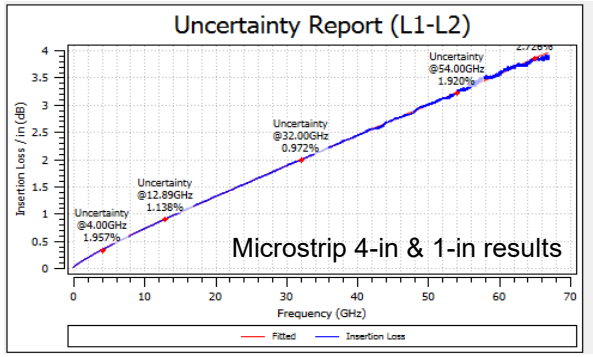
65 GHz Delta-L Setup with TCB-DL03

TCB-DL03 Delta-L Demo Board

The TCB-DL03 board features multiple microstrip and stripline traces of varying lengths, enabling comprehensive analysis and validation of Delta-L measurements.

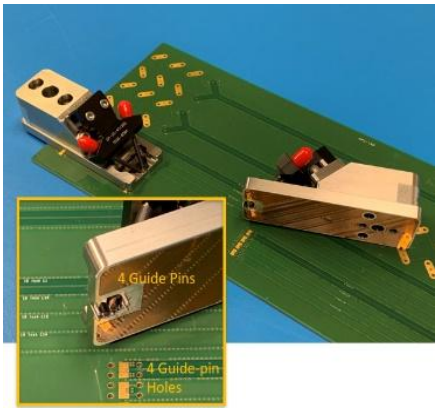




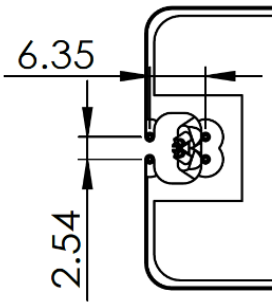


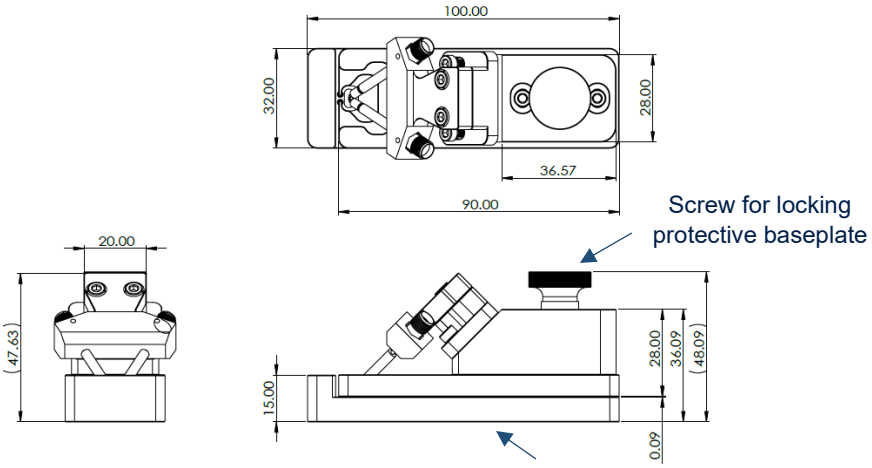
HANDHELD FIXTURE DIMENSIONS

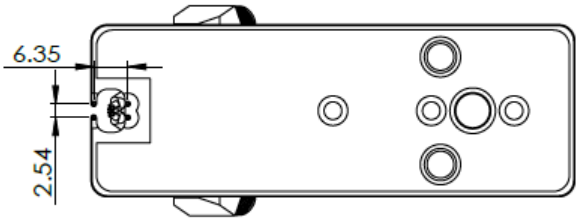
DP-GSSG-651505DL Dimensions (mm)



400 grams without baseplate
500 grams with baseplate







Bottom view without protective baseplate

NOTES:

- DP-GSSG-651505DL handheld probe is specifically designed for Intel Delta-L+ methodology. User should refer to the Intel document for the detail probing pad footprint in PCB layout design.
- Any adjustment of the DP-GSSG-651505DL should be sent back to PacketMicro or its authorized distributors for services. Please do not remove the DProbe from its DP-hand02 fixture.