TeraProbes TP-100-M8025 Performance Specifications:

TeraProbes TP-100-M8025 Probe Station is a high-performance, manually-operated, non-contact, system for the characterization of on-wafer devices and integrated circuits. The unit is intended to interface with high-frequency vector network analyzers and frequency extender modules. The unit includes a 1-inch diameter extended hemispherical lens and an 80× magnification USB3.0 digital microscope. The unit is capable of addressing the following specifications:

- Measurement frequency: 50 GHz – 1.1 THz, and beyond
- Supports scattering (*S*-) parameter measurements, return loss, including insertions loss and amplifier gain measurement.
- No physical connection between wafer and RF modules (VNA or VNA extenders) is required for *S*-parameter characterization. If needed, e.g. for active devices and circuits, DC power must be supplied to the wafer using traditional means (e.g. single-point contact probes or wire bonds, etc.)
- The systems supports ≥ 2 ports for multi-port characterization
- On-wafer calibration is achieved either using available calibration substrates or using user-defined standards. Reference planes are moved to on-wafer positions and potential phase shift errors are avoided by stationary VNA extender boxes
- Worst case 2-port insertion loss is around 20dB, providing a minimum measurement dynamic range is 80 dB (assuming the VNA+extenders are capable of providing 100dB dynamic range, at least for the 50-500 GHz spectrum)
- Supports both single and pure-differential mode *S*-parameter measurements (for at least 2 port devices and circuits) using the proprietary on-chip antenna designs and baluntennas
- The system includes an 80× optical digital microscope with a USB3.0 interface
- The system comes with 2, manual 50mm-travel micro-positioners. Wafer tray or holder can accommodate up to 4-inch diameter wafers
- The unit is self-contained and can be installed and operated on an optical table (footprint on the table is approximately 1.2meters × 0.7meters
- Compatible with the following equipment:
    I. VNA: Keysight PNA/PNAx with Frequency-Extender Interface
    II. VNA frequency extenders (TxRx and Rx):
        - Virginia Diodes Inc. 50 GHz - 1.1 THz extenders