

TITAN™ RF Probe Quick Setup Guide

To ensure accurate measurements and long TITAN™ probe lifetime, we recommend following the instructions below.

Mounting probe to positioner arm

Use care when handling RF probes. Never touch the tip and avoid touching cable connector with bare hands.

TITAN™ probes use industry standard bolt holes and will work with standard RF positioner arms. Mount probe on positioner arm and tighten bolts to the manufacturer’s specifications.

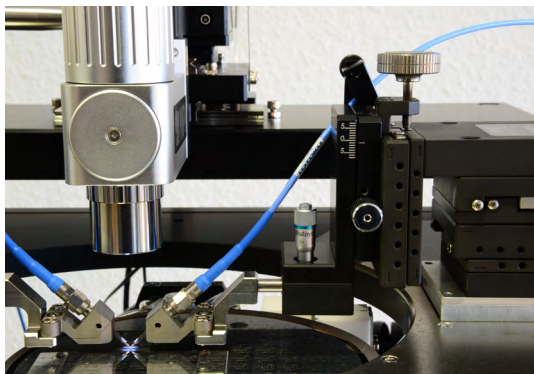


Figure 1. TITAN™ Probes mounted on the RF MicroPositioner arm.



Connect the RF cable to the probe prior to planarization, as tightening of the nut can impact probe planarity.

Touchdown and planarization

MPI TITAN™ RF probes deliver excellent and real time visibility of the tip contacts, due to the unique protrusion tip design. Accurate positioning of the RF probe on calibration standards or DUT pads is now even possible for unexperienced operators.

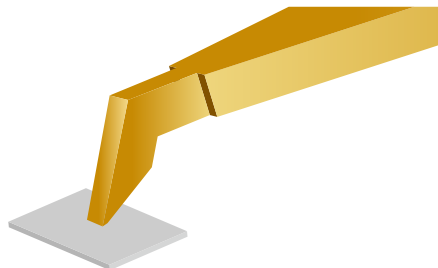


Figure 2. Unique TITAN™ Probe tip profile provides excellent visibility of the contact point. (only the signal tip is shown)

TITAN™ probes are very robust; however, excessive over travel can damage them. Use care when lowering probe.

To planarize the probe, we recommend using the bare gold area of the calibration substrate (e.g. P/N AC2) or the dedicated contact substrate PN TCS-1 (Figure 3).

While monitoring the probe under a high resolution microscope, adjust the Z height to bring the probe into contact with the surface. The probe is in contact with surface when the probe tips begin to skate forward. After contacting the surface, raise the probe and check the probe marks. If the probe tips are parallel to surface, you should see a uniform probe mark for each tip (Figure 4). If the probe tips are not parallel to surface (Figure 5), rotate planarity knob on positioner and recheck probe marks (Figure 6). This may take several attempts.



Figure 3. TITAN™ Probe contact substrate TCS-1.

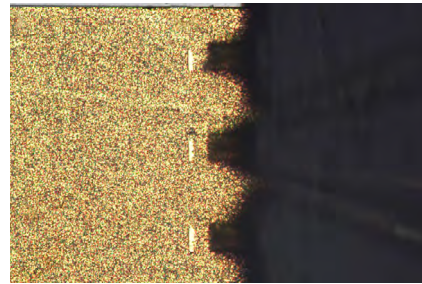


Figure 4. Image of probe marks of Planarized probe.

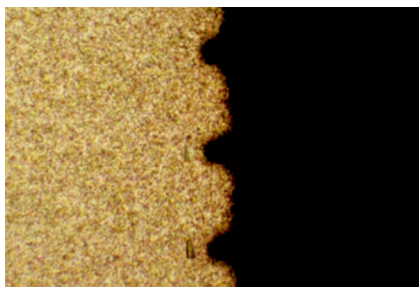


Figure 5. Image of probe that is not parallel to surface.

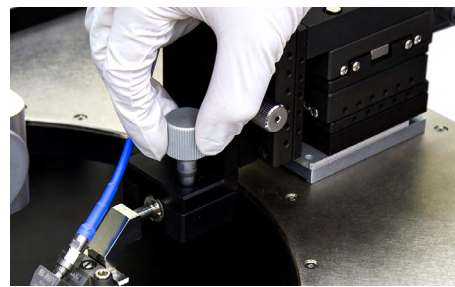


Figure 6. Planarization of TITAN™ Probes.

Cleaning of probe tips using TITAN™ cleaning pad P/N TCP-01

In general, the amount of debris generated during probing will determine the frequency of the cleaning operations.



Figure 7. TCP-1, TITAN™ cleaning pad

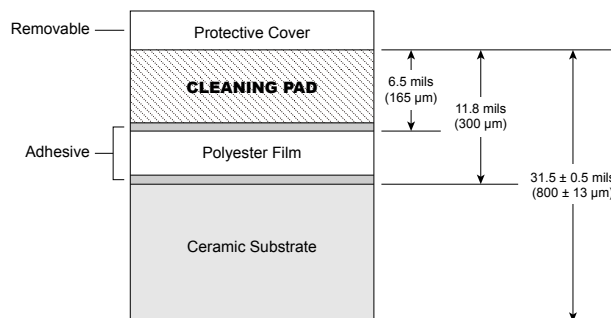



Figure 8. Cross-section of the TITAN™ cleaning pad TCP-1.

 Never touch probe tips and do not use any chemicals or liquids to clean them.

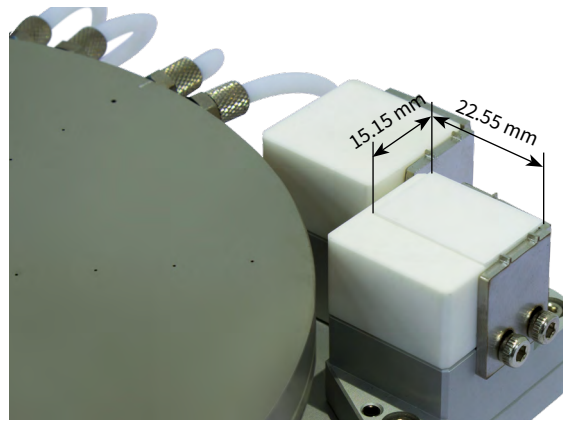


Figure 9. Dimension of the TITAN™ cleaning pad TCP-1.

Overdrive the probe tips into the cleaning material ~4 mils (~100 μm) to penetrate into the polymer layer. Overdrive should not exceed 5 mils (~125 μm). Raise the probes, move to a new location, and repeat. As a start, perform 10 insertions at a new location for each cleaning cycle. For stubborn debris, pull the probe backwards over the cleaning pad as the polymer is penetrated (Figure. 10-11).

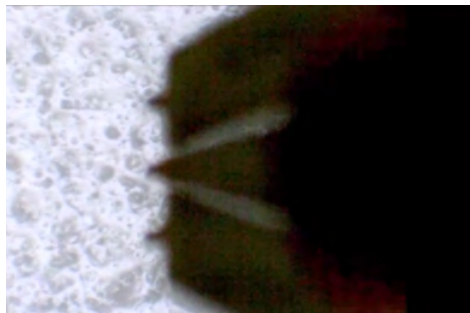


Figure 10. Image of probe tips above surface of TCP-0 1 cleaning pad.

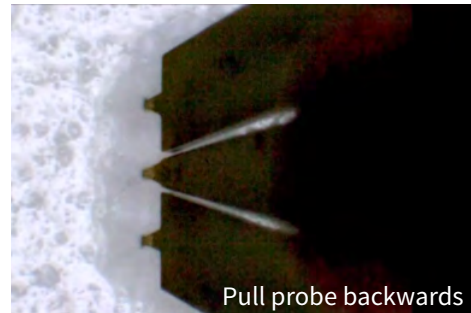


Figure 11. Image of probe tips in contact with cleaning pad.

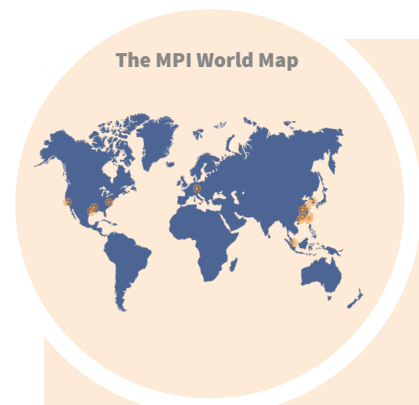
Recommended and maximal overtravel

Gold pad metallization	5 μm...7 μm
Aluminum pad metallization	20 μm ... 30 μm
Maximal overtravel	100 μm

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