Pyramid Probes: Parametric PCB Cleaning

(Agilent 4070/4080 Series)

Quick Reference Guide

CascadeMicrotech®

Follow the procedures described in this guide to protect your investment, prevent probing errors and avoid device damage. This guide provides a comprehensive overview of the required materials, as well as a detailed description of the process for cleaning the parametric printed circuit board (PCB). To ensure the best results, follow all the directions thoroughly.

> **CAUTION**
>
> • *Always wear clean gloves when handling parametric boards.*
>
> • *To prevent damage and/or contamination during the cleaning process, always set the PCB on a cleanroom cloth.*
>
> • *Use only methanol, CMOS grade, when cleaning Pyramid parametric PCBs.*

> **NOTE**
>
> *The following operating environment is typical for parametric PCBs:*
>
> • *Temperature: +19°C to +23°C (+67°F to +73°F)*
>
> • *Relative humidity: 30% to 60%*

Required Materials

The following materials are required for the PCB cleaning process:

- Printed circuit board for cleaning
- ITW Texwipe TechniCloth Wipers (TX612) (or similar grade wiper)
- ITW Texwipe Large Flexible Head Foam Swabs (TX710A) (or similar grade swab)
- Methanol, CMOS grade, in a squeeze bottle (not a reservoir)
- Clean, dry air (CDA) or nitrogen (N_2) nozzle
- Cleanroom gloves
- 100°C oven

Cleaning the PCB Tester Side

Remove the Core and PCB Cover

1. If necessary, remove the core from the PCB. See the *Pyramid Probe Core User Guide* for details on installing/uninstalling the core.
2. Carefully place the PCB on top of a cleanroom wipe on a flat surface.

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3. Use a 1/16-inch hex wrench to remove the screws securing the PCB cover to the stiffener.

Cover with standard handles
(12 screws)

Cover with flush mount handles
(8 screws)

Remove screws in the indicated locations
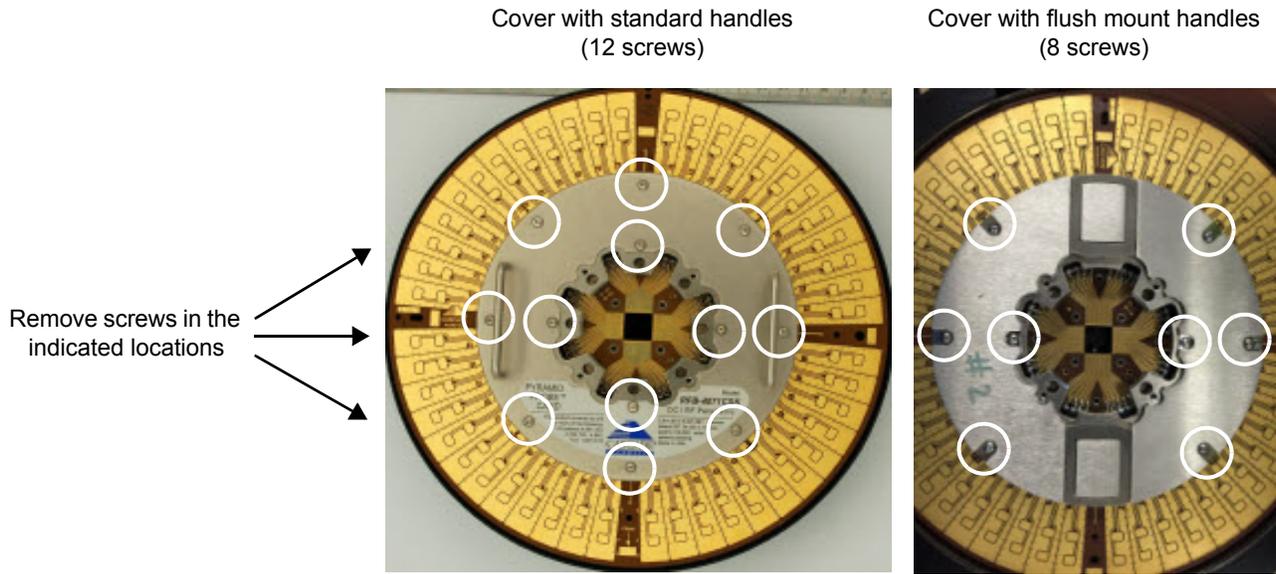
4. Remove the cover. Set the cover and screws aside.

ℹ NOTE

Removing the cover allows for better access to the cables and will not affect the board planarity.

Clean the Core Interface Area

1. Apply methanol from a squeeze bottle directly to a foam swab.
2. Use the foam swab to clean around the solder joint.
3. Stroke the swab smoothly along the trace towards the interface opening.
4. Repeat steps for each solder joint and trace, using a clean foam swab for each quadrant.
5. Blow CDA or N_2 across each quadrant, directing the air flow from the solder joint towards the interface opening.

ℹ NOTE

Always use CDA or N_2 to dry the PCB surface. If methanol is allowed to air dry on the PCB surface, re-wipe with a methanol-dampened swab.


Swab direction
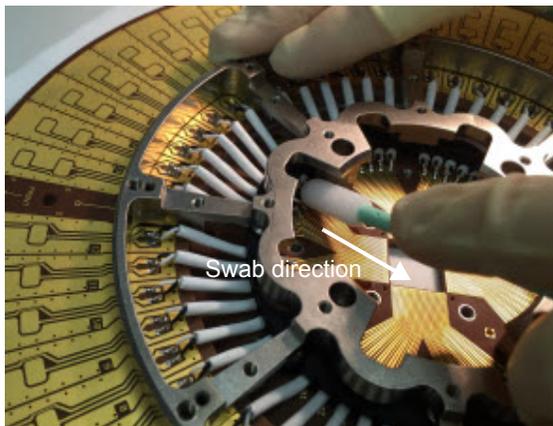
Clean the solder joint and trace

air flow direction
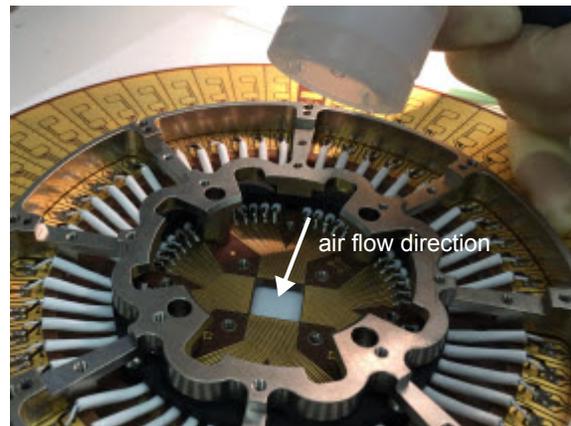
Blow CDA or N_2 towards the interface opening

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Clean the Outer Area of the Upper Board

Solder Joints

1. Apply methanol from a squeeze bottle directly to a foam swab.
2. Stroke the foam swab across one group of solder joints.
3. Blow CDA or N_2 from the solder joints towards the edge of the board.

Clean the solder joint

air flow direction
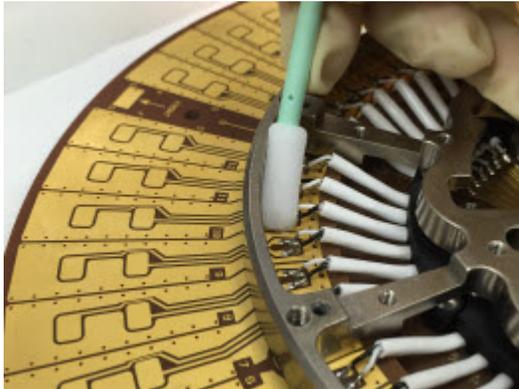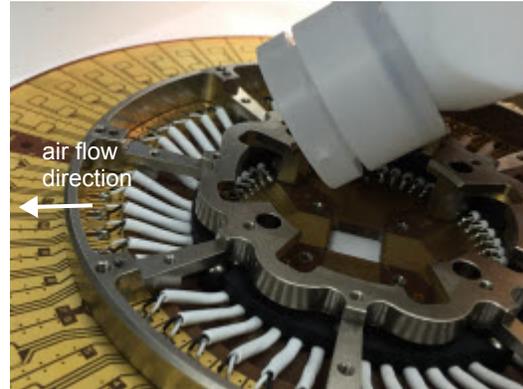
Blow CDA or N_2 towards the board edge

4. Repeat step 2 and step 3 in this section (Solder Joints) for each group of solder joints.

Spring Pin Area

1. Use a Texwipe dampened with methanol to wipe in a single direction around the entire spring pin area.
2. Blow CDA or N_2 from the solder joints towards the edge of the board.

Wipe spring pin area in a single direction

air flow direction
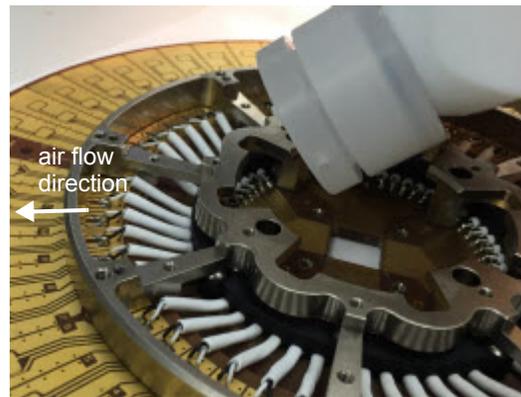
Blow CDA or N_2 towards the board edge

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Cleaning the Wafer Side

Clean the Upper and Lower Board

1. Use a Texwipe dampened with methanol to wipe in one direction around the entire upper board.
2. Blow CDA or N_2 in the same direction that you wiped the board.
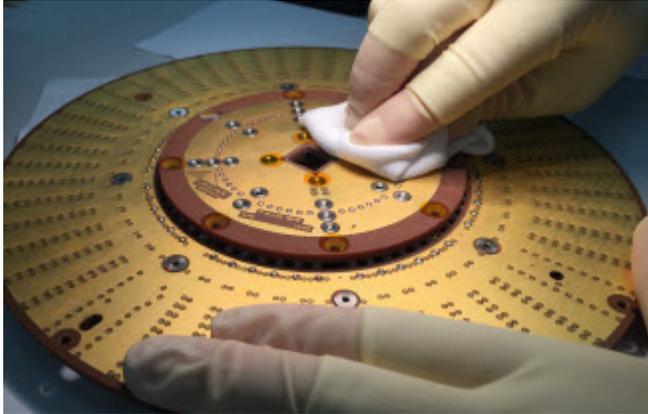

Wipe upper board in a single direction

Blow CDA or N_2 in the same direction

3. Repeat step 1 and step 2 in this section (Clean the Upper and Lower Board) for the lower board. Be sure to clean the solder joints adequately.
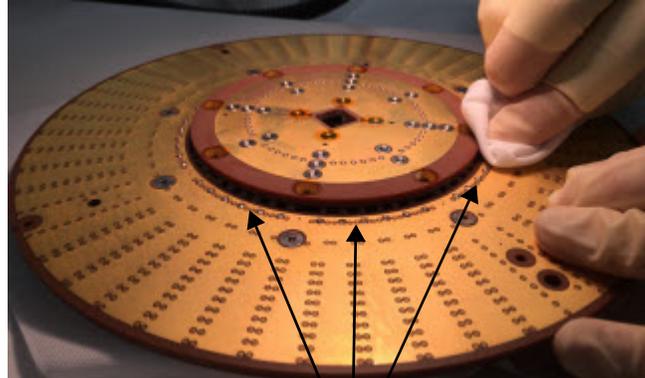
Solder joints

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Baking and Reassembling the PCB

1. Bake the PCB in a 100°C oven for 1 hour.

⚠️ **CAUTION**

- *To prevent damage and/or contamination, set the PCB on a smooth, clean, stainless surface.*
- *The PCB will be hot when removed from the oven.*

2. Carefully remove the PCB from the oven and set it on a flat, clean stainless steel surface. Allow it to cool to room temperature.
3. Re-install the PCB cover by reversing the steps described under Remove the Core and PCB Cover on page 1, including replacing the core in the PCB, and retest.

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