

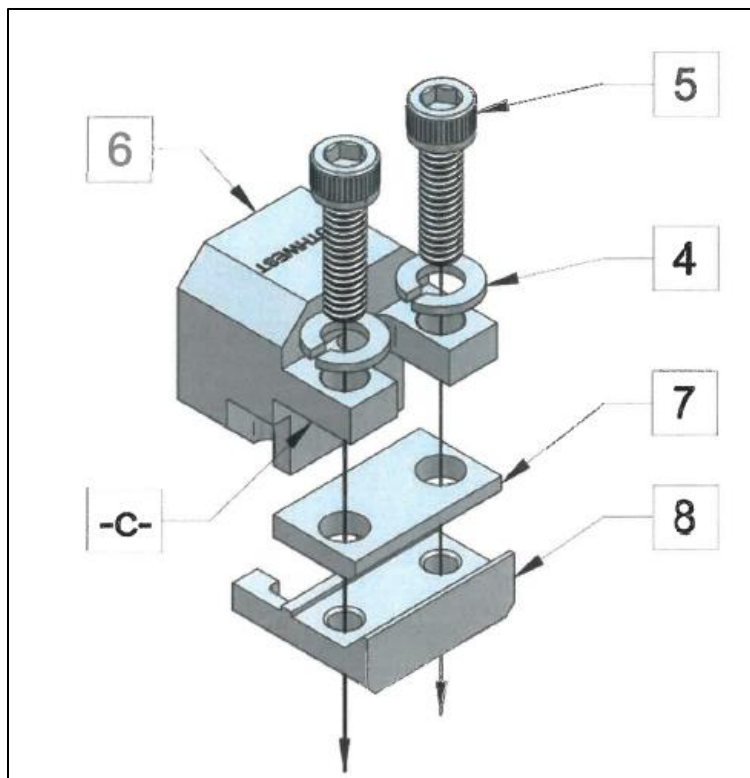


Installation Procedure for End Launch Assemblies

We understand that mounting an End Launch connector to a Test Board may be complicated and aligning the pin to the center trace may present difficulties. To remedy this, Southwest Microwave's installation procedure for End Launches should assist and guide you for proper End Launch-to-Board installation.

Step 1

Ensure to have the proper materials as shown in Figure 1.



- Washers (Item 4)
- 1-72 Mounting Screws (Item 5)
- End Launch Adapter (Item 6)
- Bottom Contact Plate (Item 7)
- Bottom Clamp (Item 8)

Figure 1 – Materials for End Launch-to-Board Installation

Step 2

Mount the End Launch Assembly onto Test Board. Test Board must be between the Bottom Contact Plate (Item 7) and the End Launch Adapter (Item 6).

Use a hex driver to secure the Board in place ensuring to incrementally tighten each screw until snug. See the following pictures for a visual guide on proper Board installation.

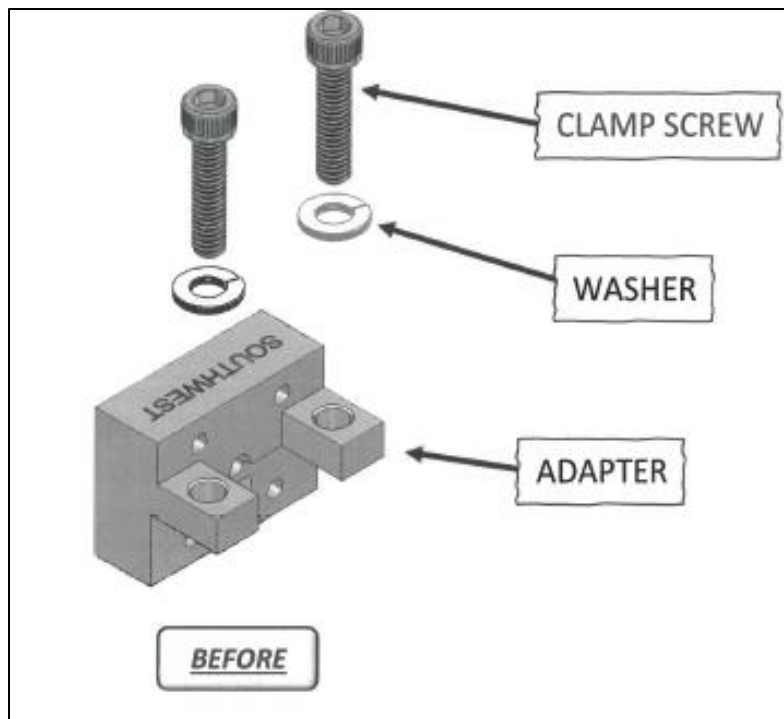


Figure 2 – Installation of Washers and Screws Before Board Installation

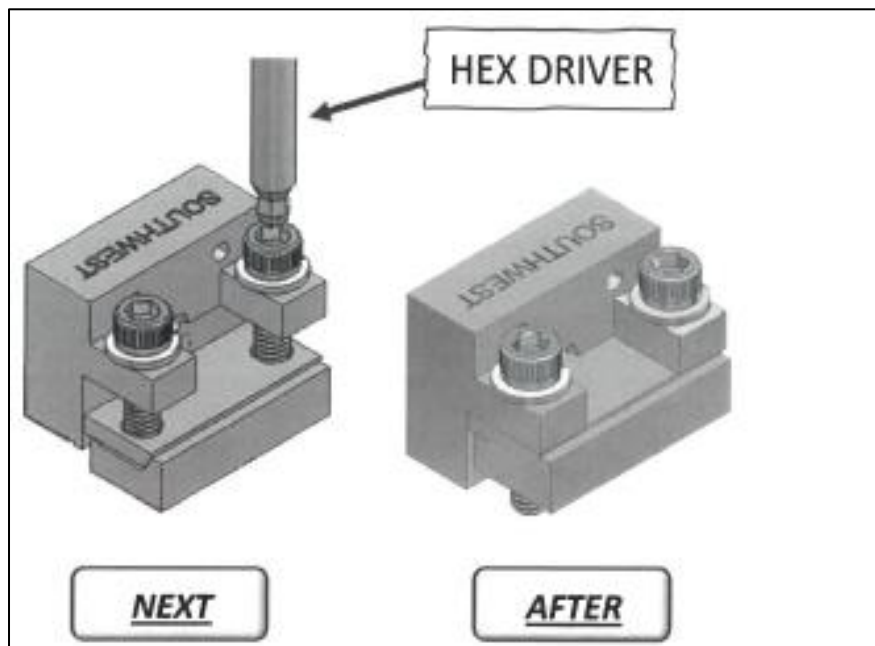
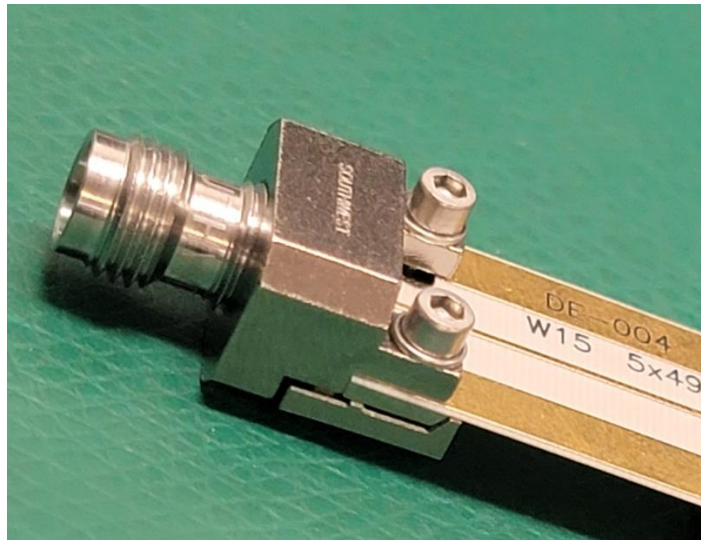


Figure 3 – Installation of Screws onto Clamp/Plate (Board Not Shown)

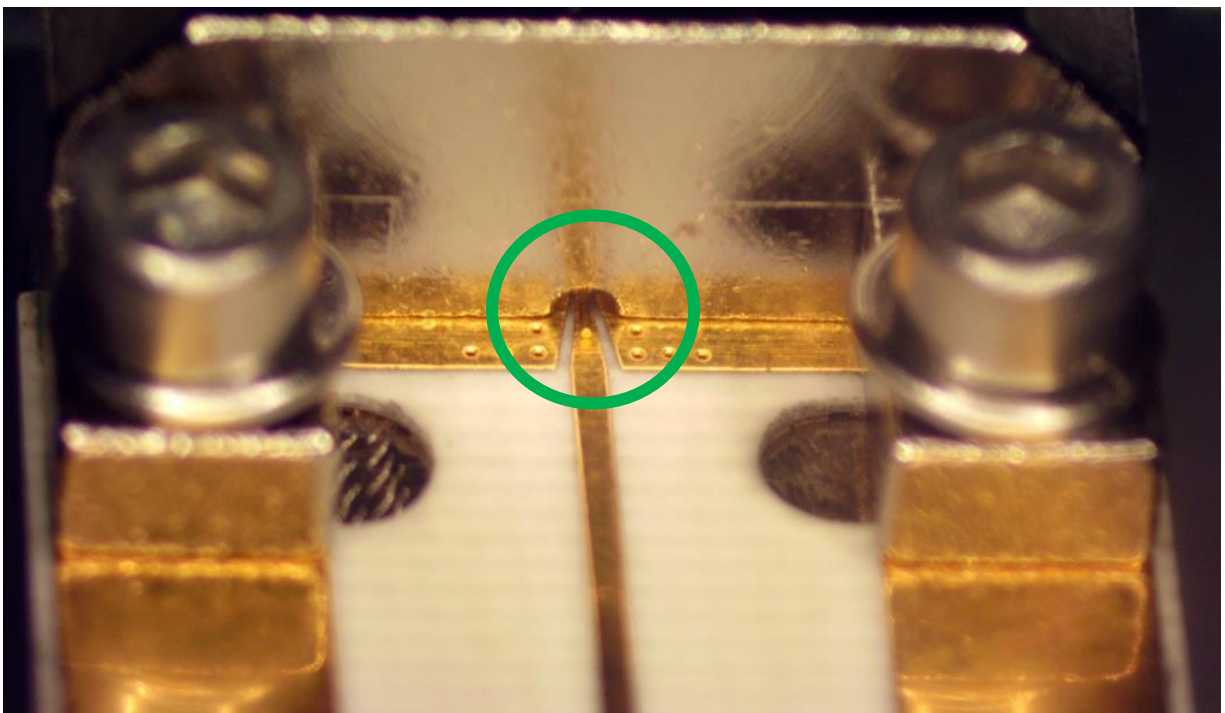
WARNING: Do NOT over tighten the clamp screws. Do not exceed the 2 in-lbs.



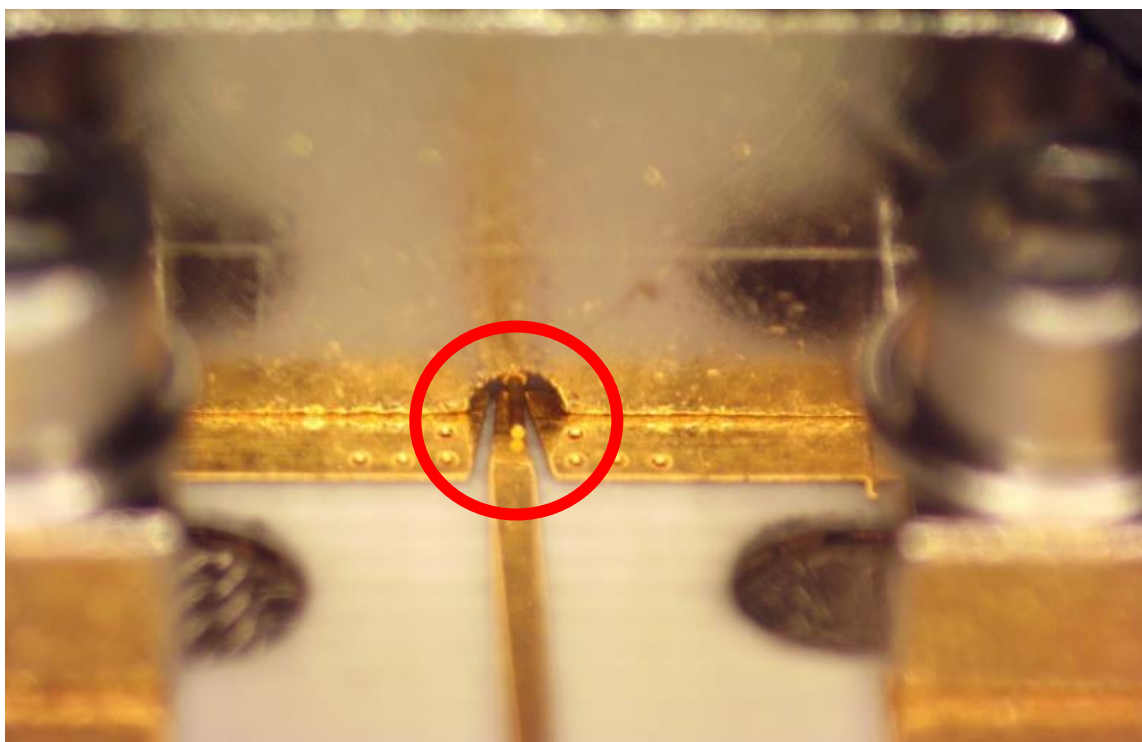
Picture a₁ – Installation of End Launch onto Board

Step 3

Ensure the Launch Pin is centered on the trace as shown in Picture **b₁**, and NOT **b₂**.



Picture b₁ – Proper Board Installation, Launch Pin Centered on Trace

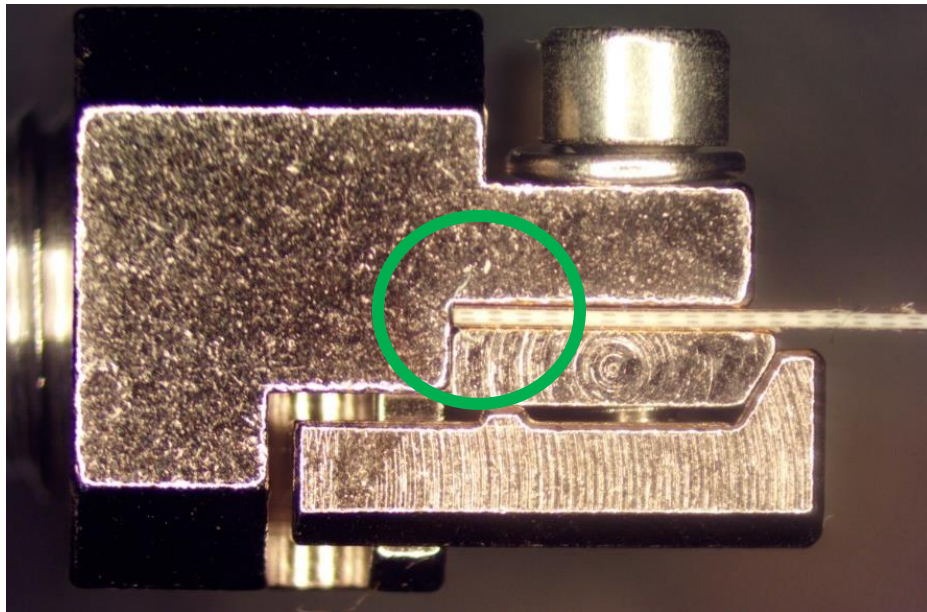


Picture b₂ – Improper Board Installation, Launch Pin NOT Centered on Trace

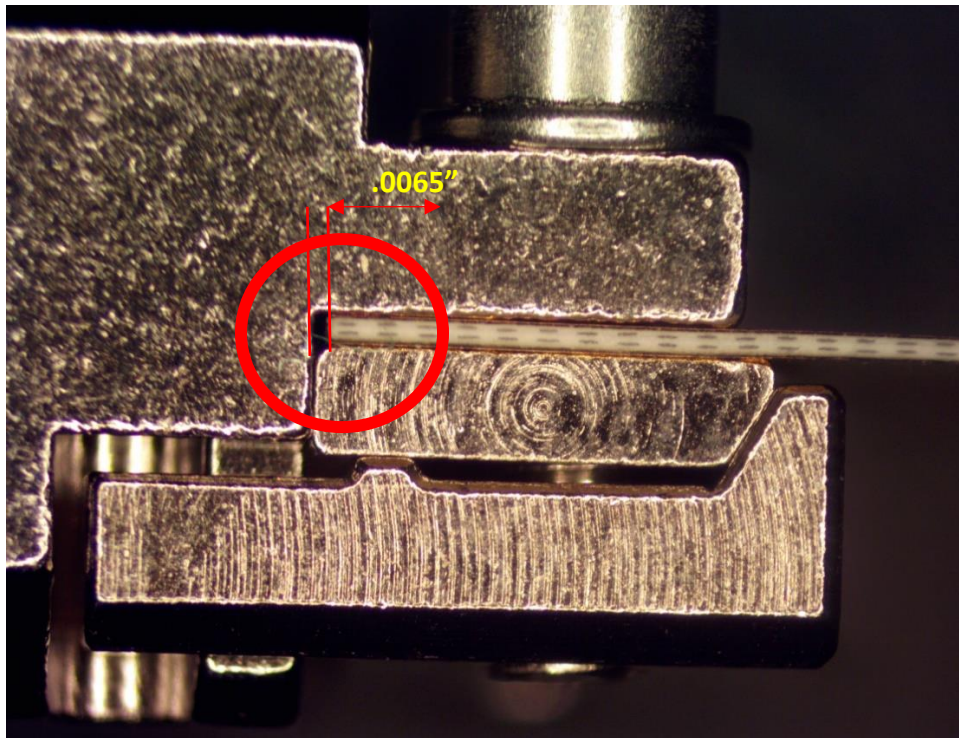
Step 4

Ensure the Board is flush and tight with the bottom side of the End Launch Adapter fastening arms (Surface -C-, see Figure 1) as well as against the End Launch Adapter as shown in Picture **d₁**.

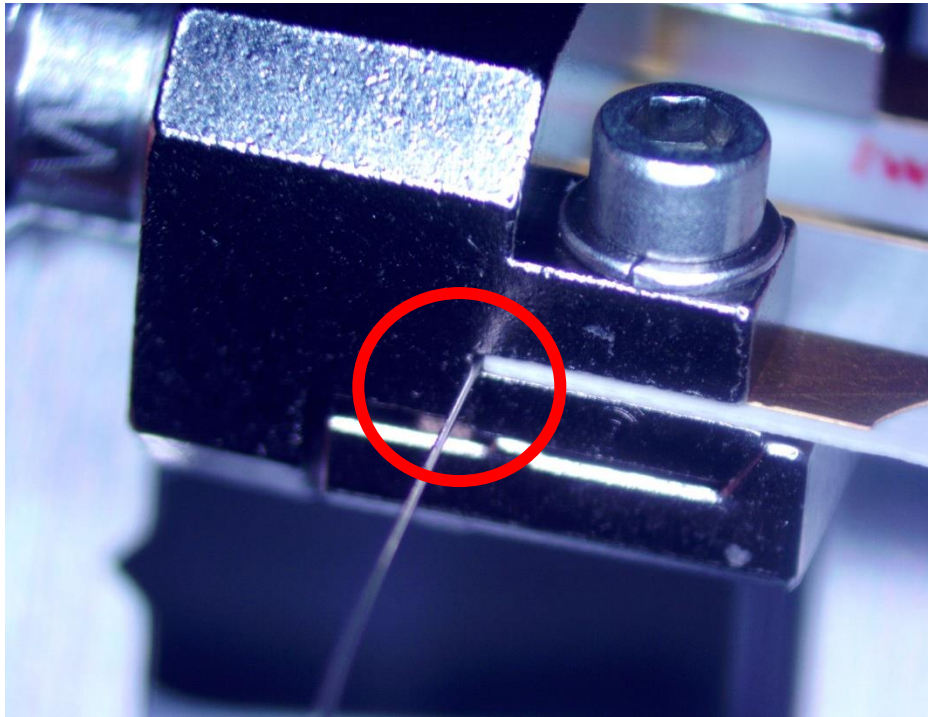
If the Launch Pin does not touch the Board Trace or is not centered, restart the process from Step 2. Improper contact between the Board Trace and Launch Pin will negatively affect electrical performance and may result in discontinuity. A gap between the Test Board and the End Launch Adapter as shown in Picture **d₂** will also have adverse effects on performance and would be prone to induce leakage.



Picture d₁- Proper Board Installation, Board Flush Against Adapter



Picture d₂ – Improper Board Installation, Pin Gage- Gap Between Board and Adapter



Picture d_3 – .0065” Pin Gage- Gap Between Board and Adapter

Picture d_3 is the ISO view representation of picture d_2 .

Optional – Soldering Procedure for Launch Pin

Step 5

Solder launch pin to trace (Note: be sure solder flows throughout the entire length of the launch pin/trace contact area).

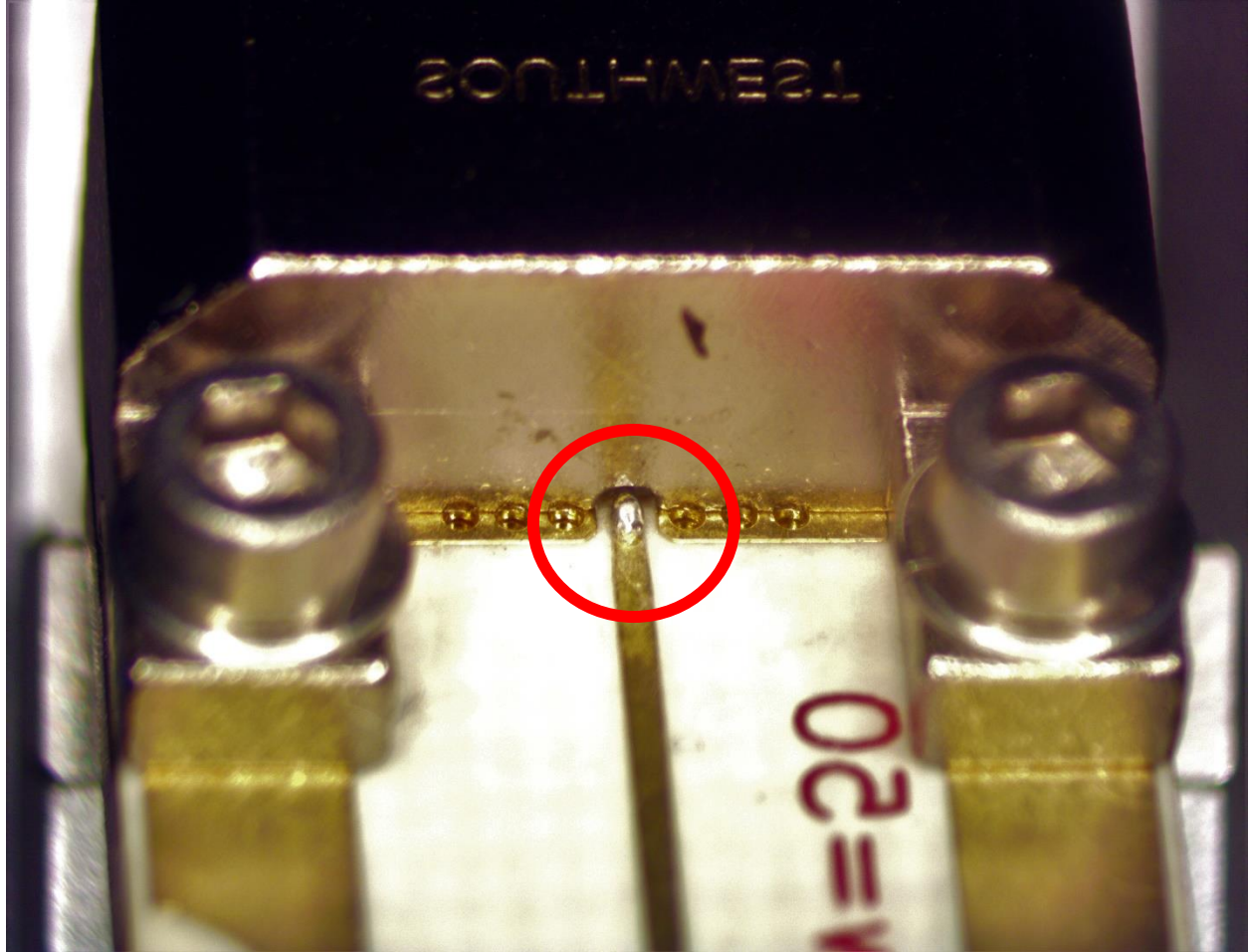
Step 6

Remove any excess solder (Note: Excess solder will affect performance).

Step 7

Clean any flux or other residue from around solder joint.

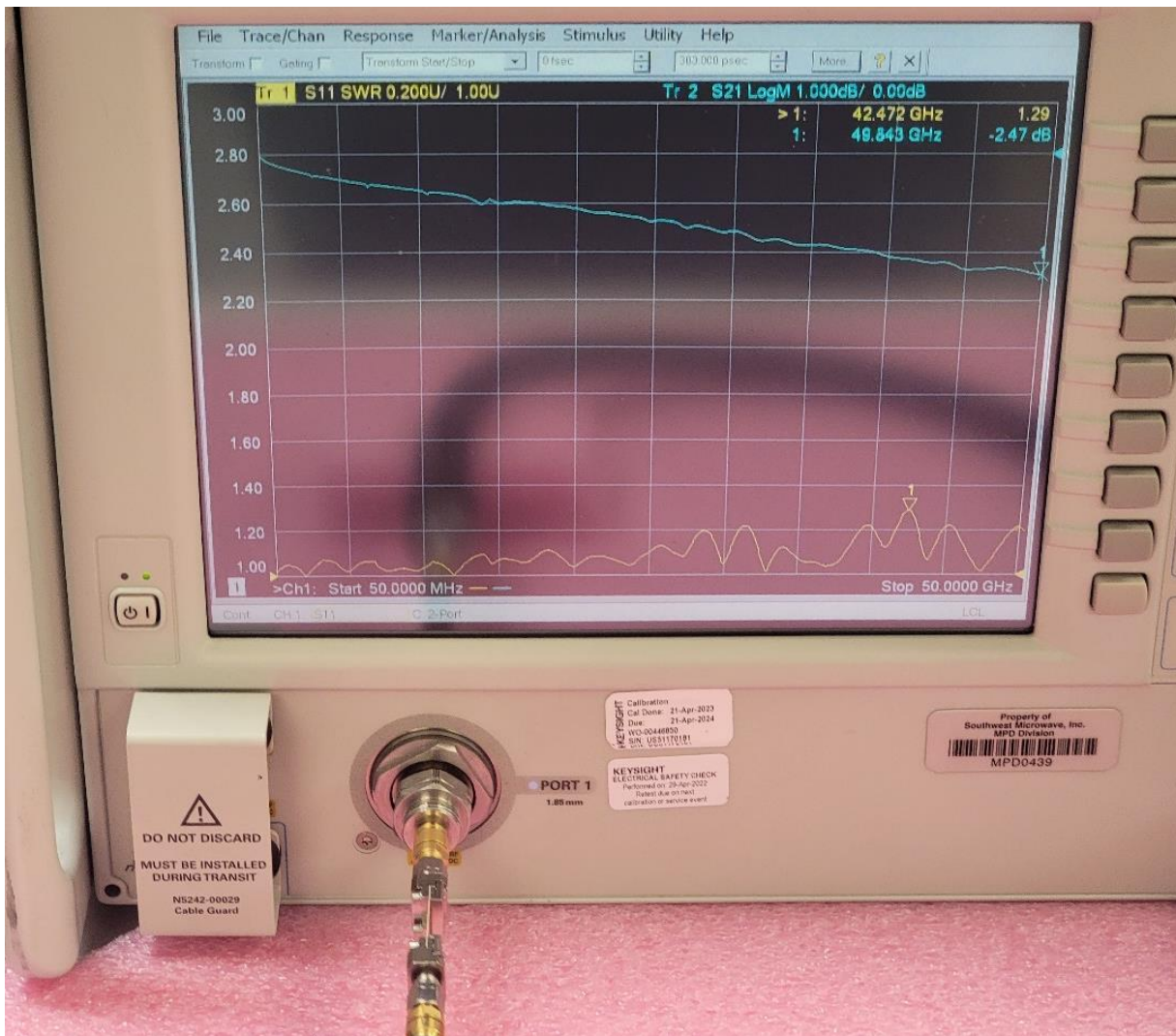
If steps 5 through 7, are not being properly follow, an excess solder condition could develop and produce VSWR spike. As shown in Picture e_1 .



Picture e₁ –Excess Solder Joint, without precision soldering

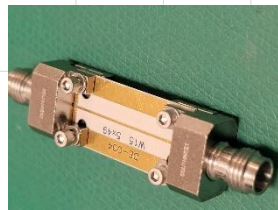
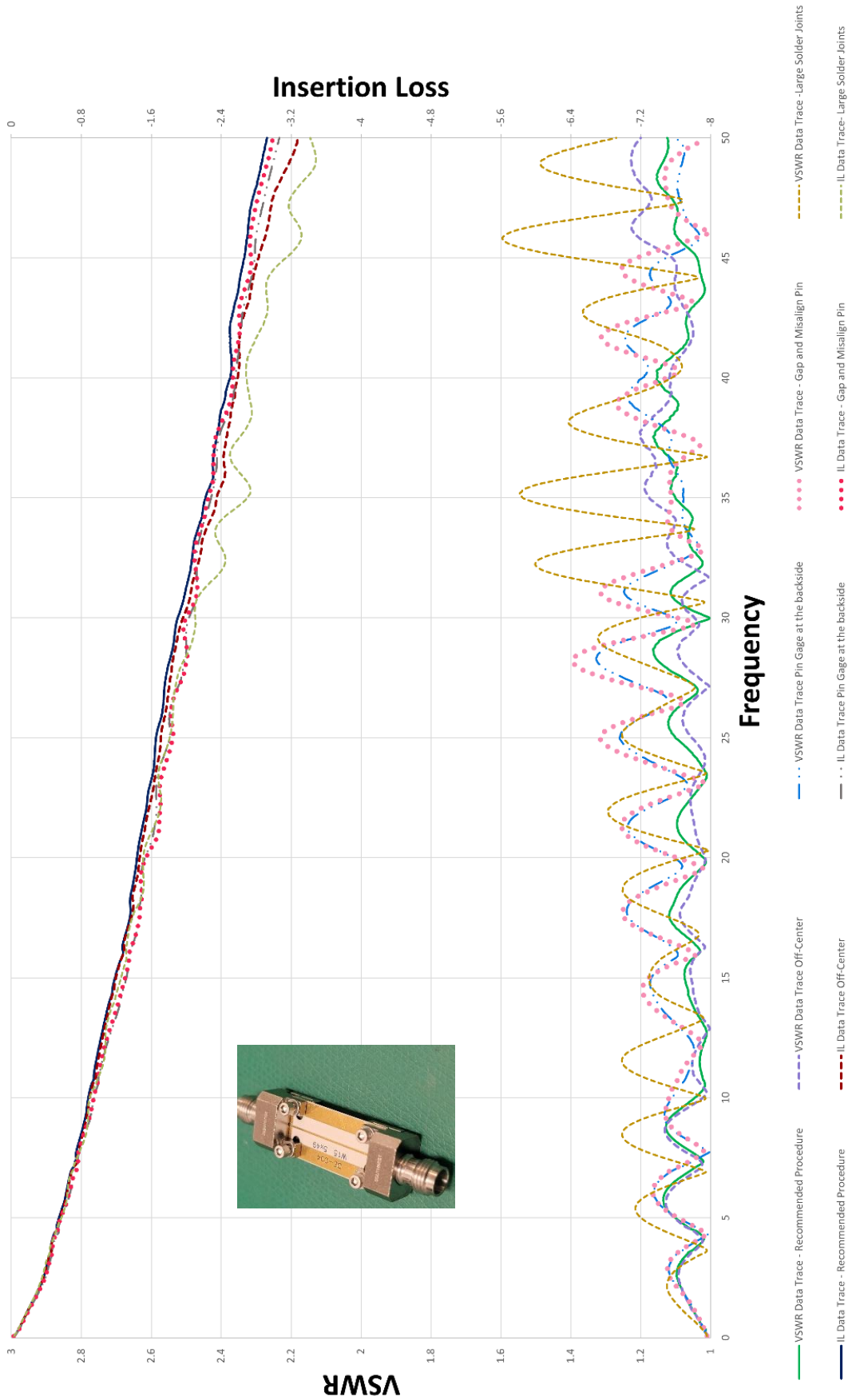
Testing Results

Below are the testing results that were obtained, for two End Launch Connectors. Note that favorable testing results are due to proper Board installation, and the subpar results are due to not following the recommended fixture. Picture f_2 displays the performance for each condition, showing what optimal performance looks like versus the performance degradation of each condition.



Picture f- Setup for Testing DUT

Test Data 1492-04A-12



Picture f₂- Test Results

The Data Trace with Recommended Procedure is shown in picture **b₁** & **c₁**.

The Data Trace Off-Center is shown in picture **b₂**.

The Data Trace with Pin Gage at the backside, is shown in picture **d₂**.

The Data Trace with Gap and Misalign Pin, is shown in picture **d₃**.

The Data Trace for Large Solder Joints is shown in picture **e₁**.

As long you follow the recommended installation procedure, you will only get optimal performance. Otherwise, performance degradation will be shown.