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Application Note
#1900-4

Proper Mate/De-Mate Procedure for DIN 7-16 Connectors

Introduction

Passive IM testing involves many connections to and from the IM Analyzer front panel. Through the use of proper connection techniques, excessive connector wear can be avoided and measurement repeatability can be enhanced.

This application note will detail the proper procedure for the mating and de-mating of the connection to the Passive IM analyzer's front panel DIN 7-16 connector.

Mating 7-16 DIN Connectors

Figure 1 shows the front panel of the PIM analyzer with the proper installation of the factory supplied 7-16 (male-female) connector saver.

Figure 1. Front Panel 7-16 Connector with Connector Saver

If the analyzer does not have the supplied connector savers attached, or they have become worn through normal use, please contact Summitek Instruments for replacements.

With the connector savers attached to the front panel, perform a careful inspection of the connector saver and if necessary, blowout or clean any particulate matter out of the connector.

Next, carefully but firmly push the male 7-16 end of the device or adapter straight into the female 7-16 receptacle of the connector saver.

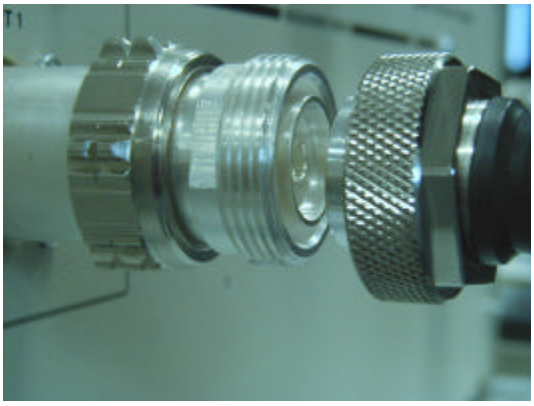

Figure 2. Align Connectors for Interface

Care must be taken to ensure that the connectors are aligned when interfacing or the connector bodies may be damaged. Be sure that the connector is fully seated before tightening the connecting nut of the male 7-16 connector. Once interfaced, hold the body of the device or adapter to be attached, and hand tighten the connecting nut.

Using the two wrenches supplied by Summitek Instruments or similar wrenches, place one wrench (24mm) on the flats of the connector saver body and the other wrench (33mm) on the flats of the nut to be tightened as shown in Figures 3 & 4.

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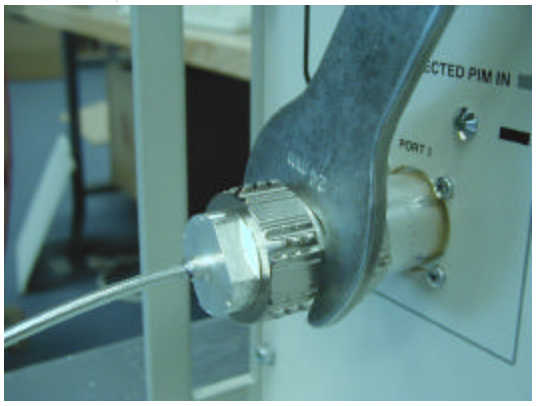

Figure 3. Placement of the Wrench on Connector Saver

While applying an equal and opposite amount of torque to the wrench holding the body on the connector saver, tighten the connecting nut on the device to the manufacturer's specified rating, as shown in Figure 4.

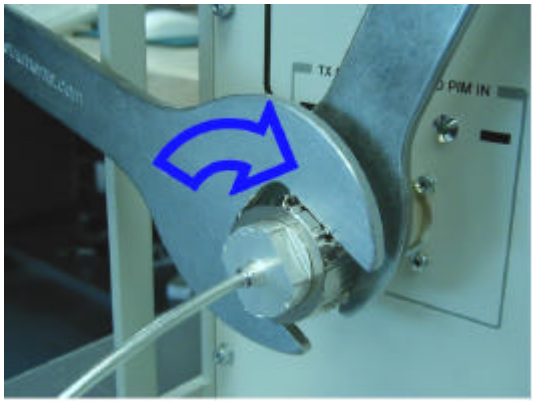

Figure 4. Placement of Wrenches and Tightening of Connector

If the application requires the use of a torque wrench to ensure proper connection, the use of the wrench on the connector saver is still necessary. This technique allows the 7-16 male to female connection to be achieved without allowing the torque to be transmitted to the body of the 7-16 panel mounted connector. DO NOT USE EXCESSIVE FORCE! Use of excessive force, unequal amounts of torque and counter torque or "cranking down" on the connector will damage the connector body and threads.

Testing which lasts longer than 30 seconds may require periodic re-tightening of the connector, as thermal effects may loosen the interface, resulting in inaccurate IM results. In this situation, use the technique mentioned above for re-tightening.

Figure 5. Do Not Use Only One Wrench to Tighten Connectors

De-mating or Removal of 7-16 DIN Connectors

De-mating of the 7-16 connectors can be achieved by utilizing a similar technique as described in the mating portion of this application note. To de-mate the 7-16 interface, place the 24mm wrench on the body of the connector saver, and the 33mm wrench on the connecting nut of the attached device or adapter. Using equal and opposite amounts of torque, loosen the connecting nut on the attached device while keeping the body of the connector saver from rotating. Once the connecting ring is loose, un-tighten the connecting nut and while maintaining connector alignment, gently pull the assemblies apart.

Conclusion

The use of proper mating and de-mating techniques, combined with the use of connector savers, will minimize the torque applied to the front panel connectors. Excessive torque cannot only damage the front panel connectors of the analyzer but may also damage the mating connector, resulting in poor IM performance and inaccurate IM measurements.