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ARDENT CONCEPTS

Application Note

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TR Multicoax Series Integrating to Instrumentation

Purpose: This application note provides detailed information on integrating your TR Multicoax series with instrumentation.

PERMISSIBLE COAX CONNECTION HARDWARE INSTRUMENTS

Prepare Torque Wrench Instruments

- 5/16” 8 in-lb. (0.90 Nm) Open Ended Torque Wrench

Prepare Open Ended Wrench Instruments and Ardent Tools

- Ardent Hardware Tools
- 5/32” Open Ended Wrench
- 5/16” Open Ended Wrench
- 7 mm Open Ended Wrench

CAUTION: Do not use other tools like pliers and Vise-Grips as they can damage the high precision connectors.

Figure 10: Recommended Permissible Hardware Instruments

PROCEDURE FOR CONNECTING TR MULTICOAX CONNECTOR TO INSTRUMENTATION

CAUTION: Care must be considered when assembling connections. Misalignment will significantly damage the fingers or plug of the coax connector. Time must be taken for proper alignment to ensure correct measurements. It is best to tighten the connectors as far as possible by hand before using tools.

- Minimize the variable parameters of the cable geometry assembly by supporting and handling it with care. Do not pull, rotate, or place the cable assembly under tension.
- Verify that calibration ports are gauged, concentric, and set to the right pin depth.
- Carefully align the coax connector to the calibration reference port.
- While holding the cable assembly and adapter port stationary, rotate the coupling nut by hand.
- Hand tighten the connection first.
- Do not force the connection if the coupling nut is not threading smoothly.
- To couple the connection to a repeatable pin depth, grip the base of the female coax connector by hand or with an open ended wrench.
- Insert the Torque Wrench onto the coupling nut such that it forms an angle less than 90° with the hand grip or the stationary wrench.
- While holding the coax cables and connectors stationary, apply a moment force with the torque wrench at the coupling nut into the decreasing angle direction. Hold the torque wrench from the end (See Figure 11).

- Keep the coax cables and connectors stationary while gently applying the moment force at the coupling nut just until the torque wrench begins to yield slightly.
- CAUTION: Ensure the coax cables and connectors remain stationary at all times during the connection to prevent connector wear and measurement error.
- CAUTION: Do not exceed a torque of 8 in-lb (0.90 Nm) at the coupling nut to avoid damage and measurement error.
- CAUTION: Inspect the connector coax metal surface for scratches that may contain metal particles due to open ended wrench wear. Clean to prevent measurement error contamination.
- NOTE: The applied moment force is only at the coupling nut.
- NOTE: The function of the coupling nut is to bring and hold the center conductors to a repeatable depth.

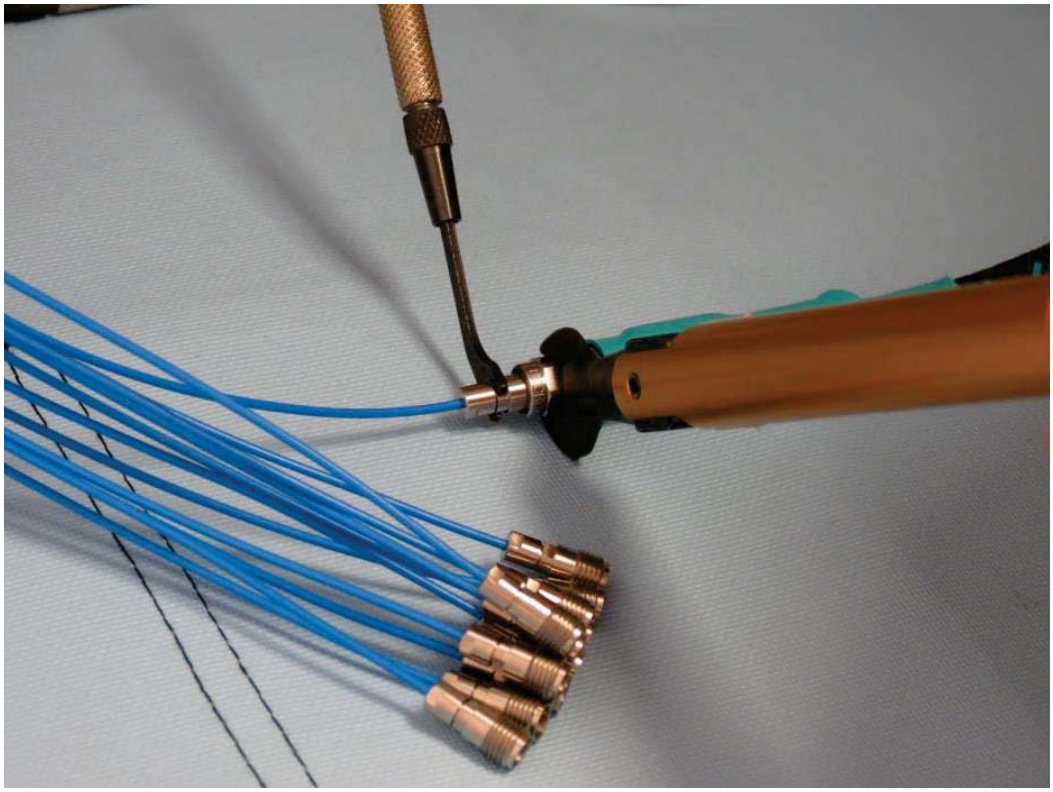

Figure 11: Connection Torque Procedure

DISCONNECTING TR FROM INSTRUMENTATION

- Carefully hold the device under test and instrument cables stationary by hand or with the corresponding permissible open ended wrenches: 5/32”, 5/16”, or 7mm.
- Repeat the connection procedure with an opposite moment force for disconnection.
- Place the torque wrench on the coupling nut and apply a steady moment force to loosen the connection with the torque wrench.
- When the moment force resistance feels released, continue to uncouple the connection by hand.

Application Note Summary

- Only use tools specified in this Application Note.
- Misalignment will significantly damage the fingers or plug of the coax connector.
- Tighten connectors by hand as much as possible before using tools.
- Do not exceed a torque of 8 in-lb (0.90 Nm) at the coupling nut to avoid damage and measurement error.

END OF DOCUMENT

Who is Ardent Concepts

Ardent Concepts, Inc. is a leading designer and manufacturer of high performance multicoax, probes, connectors, sockets used in the development of next generation semiconductors and electronics systems. Our core technology is the smallest, fastest, most electrically efficient compression mount connector technology worldwide. It is used to connect: integrated circuits and printed circuit boards to instrumentation and to each other offering superior signal integrity in a high speed environment. Markets for our products include: Semiconductor, Test & Measurement, Military/Aerospace, Communications and Medical.

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