



AE-AN-TR-011-TR Multicoax Series End Connector Sizes and Information

Purpose:

This application note provides detailed information regarding the cable and connector side of the TR; explaining what connectors are used for different GHz TR Series Connectors and detailing how they can mate with other connectors in relation to their sizes and characteristics.

Amphenol Ardent Concepts' patented TR Series compression mount high frequency connector assembly stands alone as the only industry solution for high density multi-coaxial cable assembly capable of measurements up to 70 GHz.

At the board level, the TR series multi-coaxial cable assembly saves PCB real estate with its unique and compact interface design.

On the opposite end of the assembly, Amphenol Ardent offers familiar styles of precision coaxial connectors.

High Performance SMA Connector

For the entry level TR 20 series that is rated up to 20 GHz, Ardent offers a high performance SMA connector.

- 50 ohm impedance
- 1/4-36 thread size
- Available in either male (plug) or female (jack) (gender refers to center contact, not threads)
- 5/16 (.313") across flats of hex nut for male connectors
- 5/32 (.156") wrench flats for female connectors
- SMA precision connectors can mechanically mate with 2.92mm connectors.
- Amphenol Ardent's SMA connectors are high quality and can be safely mated to any existing 2.92mm connectors without any damage to either connector.

[Amphenol Ardent Concepts](http://www.amphenolardent.com)

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High Performance 2.92mm Connector

Amphenol Ardent offers a high performance 2.92mm connector, also known as a “K Connector”

- 50 ohm impedance
- 1/4-36 thread size
- Available in either male (plug) or female (jack) (gender refers to center contact, not threads)
- 5/16 (.313”) across flats of hex nut for male connectors
- 5/32 (.156”) wrench flats for female connectors
- Amphenol Ardent’s 2.92mm connectors are high quality, so if one wishes to connect our 2.92mm connector to a SMA connector, please be sure the mating SMA connector is also a high-quality connector, otherwise damage can occur to the 2.92mm connector.
- For connections from a 2.92mm connector to styles other than an SMA, an adapter will be required.
- Test equipment will commonly employ a 1.85mm interface.
- When connecting a 2.92mm to a 1.85mm, it is suggested to use a high quality 2.4mm to 2.92mm connector.
- The 2.4mm connector can mechanically mate to the 1.85mm connector, and although it isn’t as high performing as the 1.85mm connector, the limiting performance of the 2.92mm does not make this an issue.

High Performance 1.85mm Connector

For the top-level TR series that is rated up to 70 GHz, Amphenol Ardent offers a high performance 1.85mm connector.

- Also known as a “V Connector”
- 50 ohm impedance
- M7x0.75 thread size
- Available in either male (plug) or female (jack) (gender refers to center contact, not threads)
- 5/16 (.313”) across flats of hex nut for male connectors
- 5/32 (.156”) wrench flats for female connectors

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Application Note Summary:

- A high performance SMA connector is offered for the entry level TR 20 series.
- A high performance 2.92mm connector, “K connector”, is offered for the mid-level TR 40 series.
- A high performance 1.85mm connector, “V connector”, is offered for the top-level TR 70 series.

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Who Is Amphenol Ardent Concepts?

Amphenol Ardent Concepts is a leading designer and manufacturer of high performance multicoax and coaxial assemblies, connectors, and 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. As data rate requirements increase and devices and systems shrink, Ardent's products deliver superior signal integrity in a dense footprint that can be reusable across programs to maximize cost savings.

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