

## D-COAX Male-Female 1501 Series Cables and Cable Pairs

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### High Frequency, Skew Matched, Phase Stable Cable Pair (40 GHz)

D-COAX 1501 Series Cable Pair consists of two skew matched (to  $\leq 1\text{ps}$ ) flexible cable assemblies with a 2.92mm female connector on one end and a 2.92mm male connector on the second end. The 1501 series cable is a low loss and phase stable cable. This cable series meets all the material requirements outlined in the MIL-C-17 specification. This cable utilizes silver plated copper conductor, with a very low loss expanded PTFE dielectric. The shield consists of two conductive layers: the first layer is a silver plated copper flat wire, applied in such manner that it yields low contact resistance and resulting in low insertion loss, the second layer is a silver plated copper braided shield that contributes to excellent RF leakage characteristics, specified at  $> -100\text{ dB}$  to 18 GHz. The standard outside jacket is a tough, resin melt, extruded FEP.

This assembly uses matched 2.92mm connectors to accomplish low return loss up to 40 GHz. These assemblies will make great and cost effective test cables. 1501 Series cable pair is available in custom lengths also.

## Features and Benefits

Flexibility	¾ inches bend radius
Durability	Multi-layer outer braid
	Outside jacket is a tough, resin melt, extruded FEP
RF performance	Center conductor is silver-plated solid copper
	Inner shield is silver-plated copper flat wire
	Outer shield is a round silver-plated copper braid
	Dielectric – expanded PTFE
	≤ 1ps skew match
	Phase Stable
	Low insertion loss
	Low return loss
High bandwidth	

## Specification\*

### Electrical

Characteristic Impedance	50 -Ohm
Max Frequency	40GHz
Phase stability with bending	16-degrees max
Amplitude stability with bending	0.14 dB max
Capacitance (cable)	24pf/foot
Skew Matched	≤ 1ps
Attenuation/ Insertion Loss	Less than 1.5dB (18.6 inches long), less than 2dB for 24 inches long
Return loss	Better than 15 dB
Shielding effectiveness	> -100 dB to 18 GHz
Power Handling	< 70 Watts @ 40GHz (Cable)

### Mechanical

Overall Length	Available in 12 inch, 24inch, 48 inch, or custom lengths
Cable outside diameter	0.15 inch
Connector type	Male & female 2.92 mm compatible connector
Bend Radius	¾ inches (centerline)
Connector Retention	17.5-lb (straight pull)
Center Conductor Retention	12-lb (straight pull)
Weight	28g (12-inch assembly), 38g (24-inch assembly), 58g (48-inch assembly)
Temperature Range	-40 to + 100 degree Celsius
Number of connections	> 2,000

\* Data, design and specifications depend on individual process conditions and can vary according to equipment configurations. Not all specifications may be valid simultaneously.

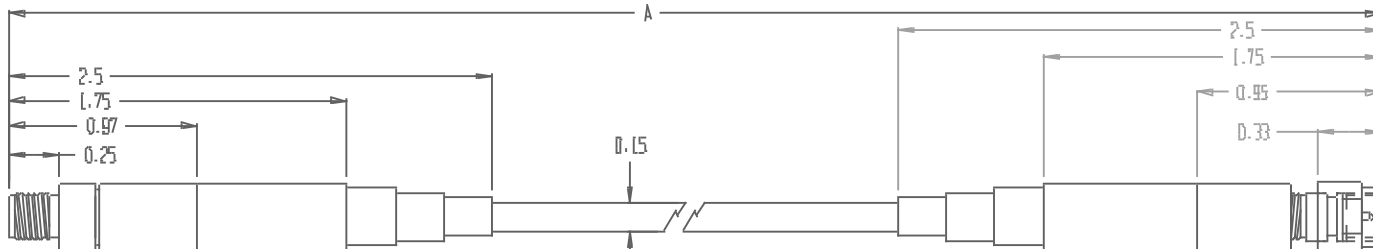
Male – Female 2.92mm connectors 1501 Series Skew Matched Cable Pair

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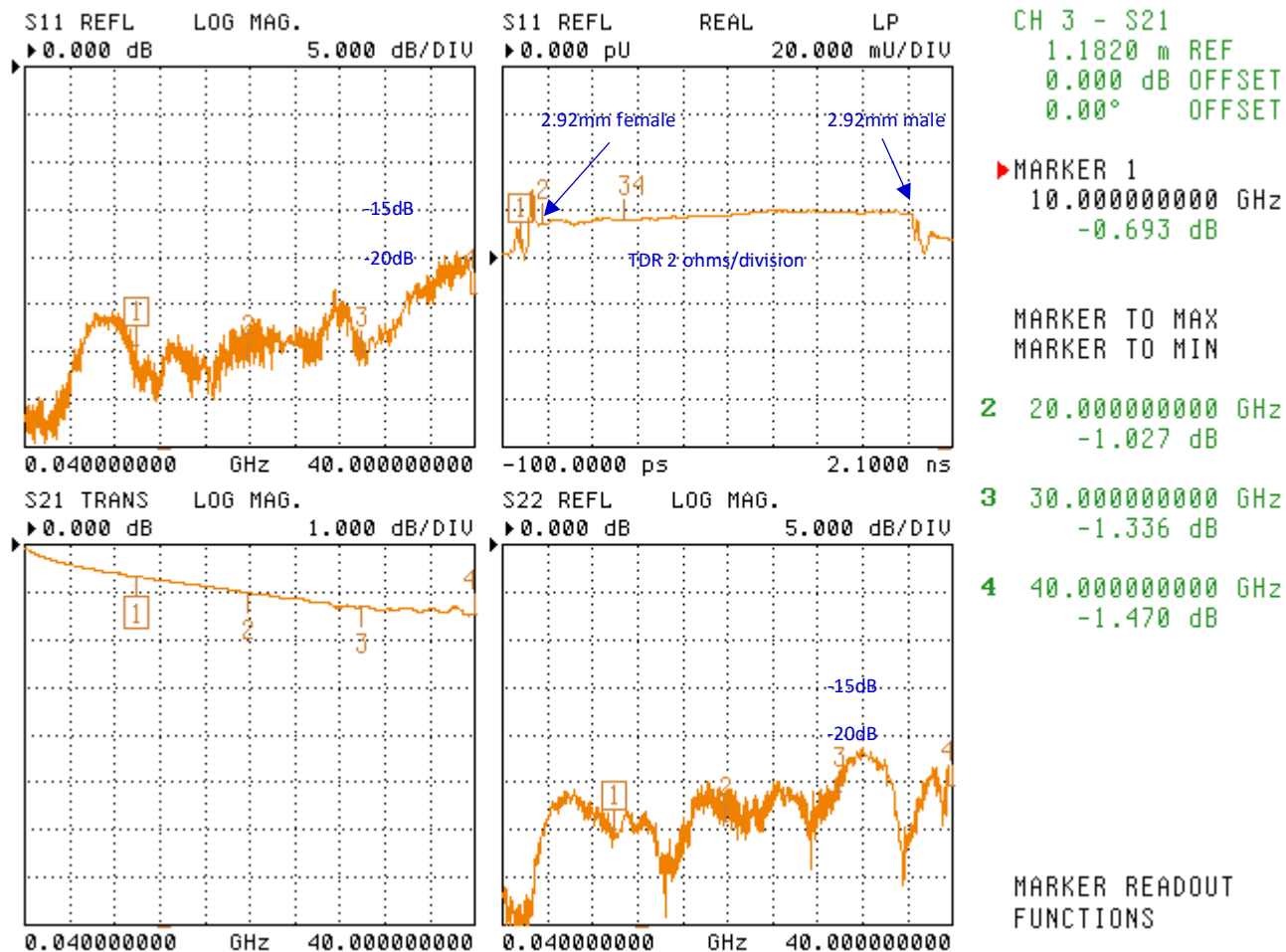
## Physical Dimensions

Series 1501 cable dimensions (all dimensions in inches, A – is variable length of the assembly)



## Typical Performance

S-parameters performance of 18.6-inch cable



Male – Female 2.92mm connectors 1501 Series Skew Matched Cable Pair

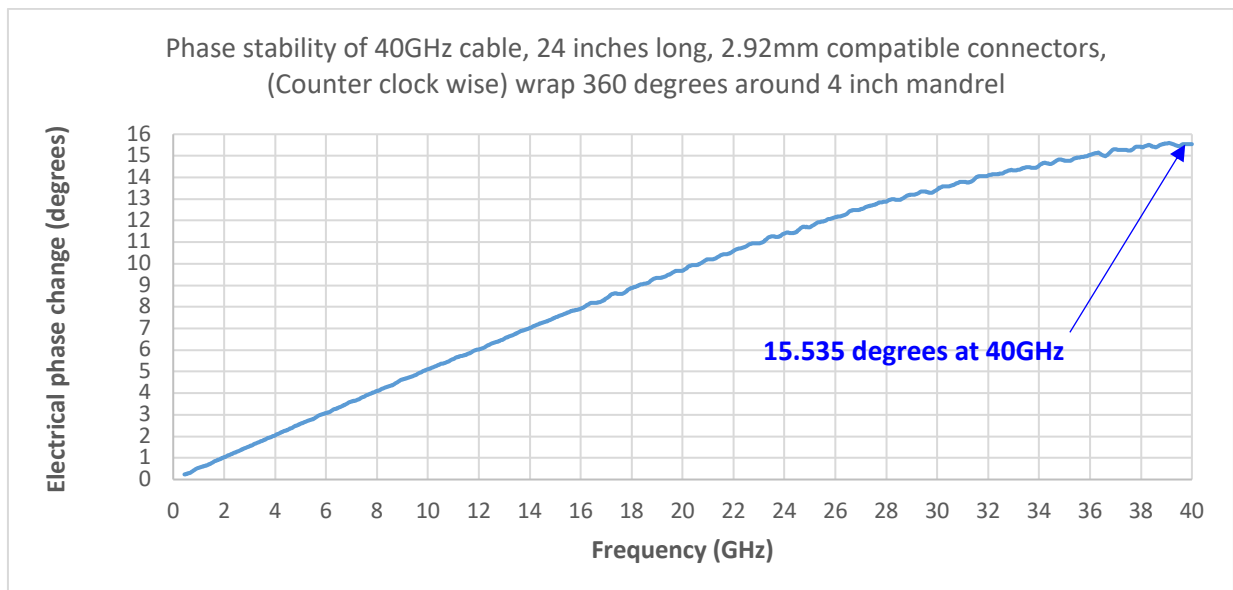
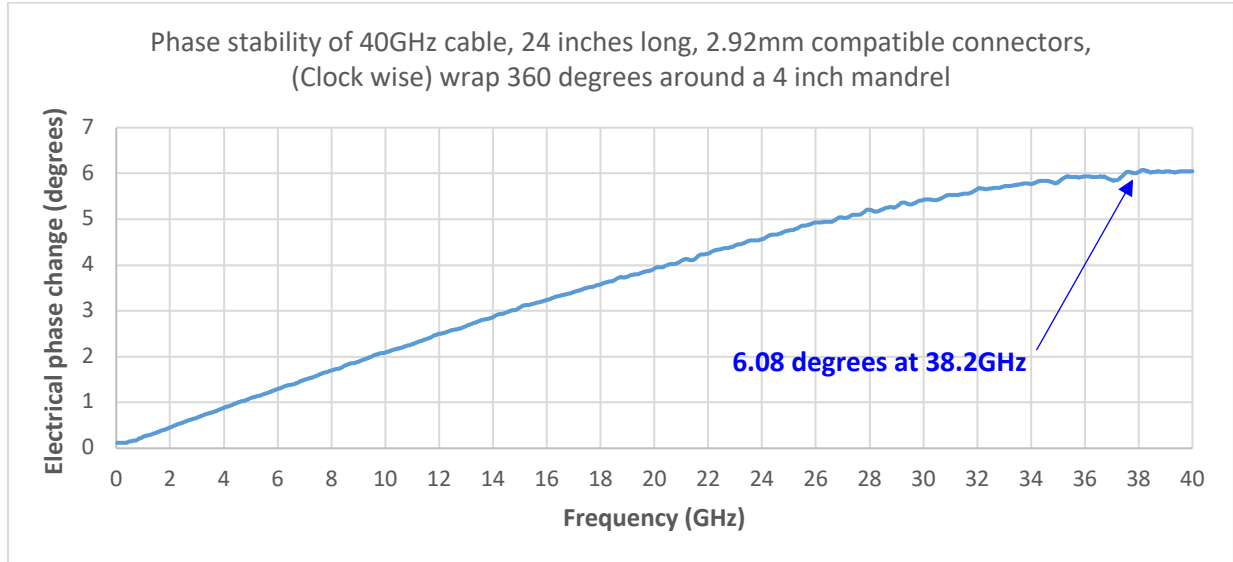
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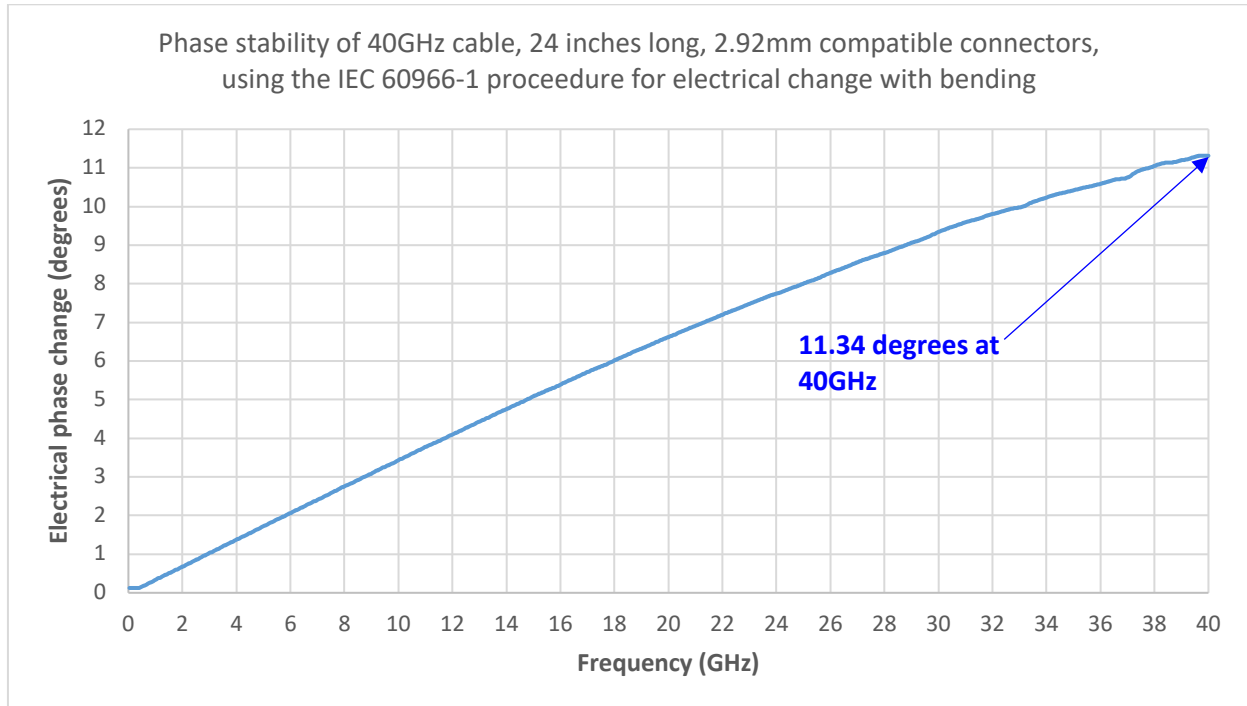
## Typical Performance (continued)

Phase Stability with bending for 24 inch cable pair by two different methods:

1. Wrapping clock wise and counter clockwise over 4 inch mandrel
2. Per IEC 60966-1 specifications

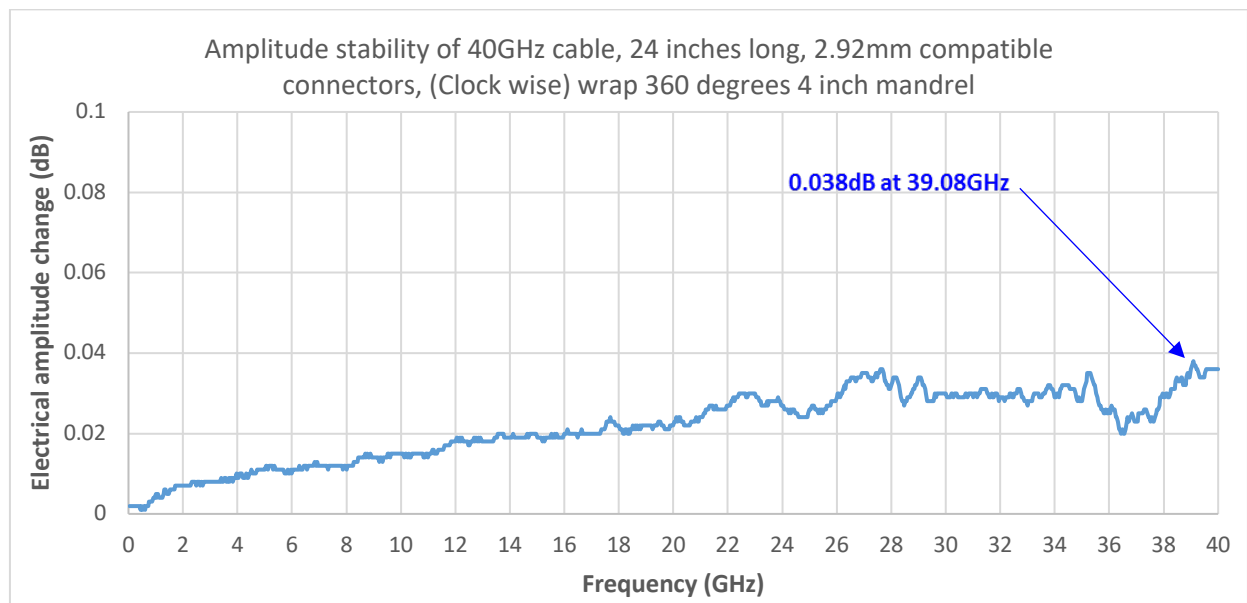


## Typical Performance (continued)

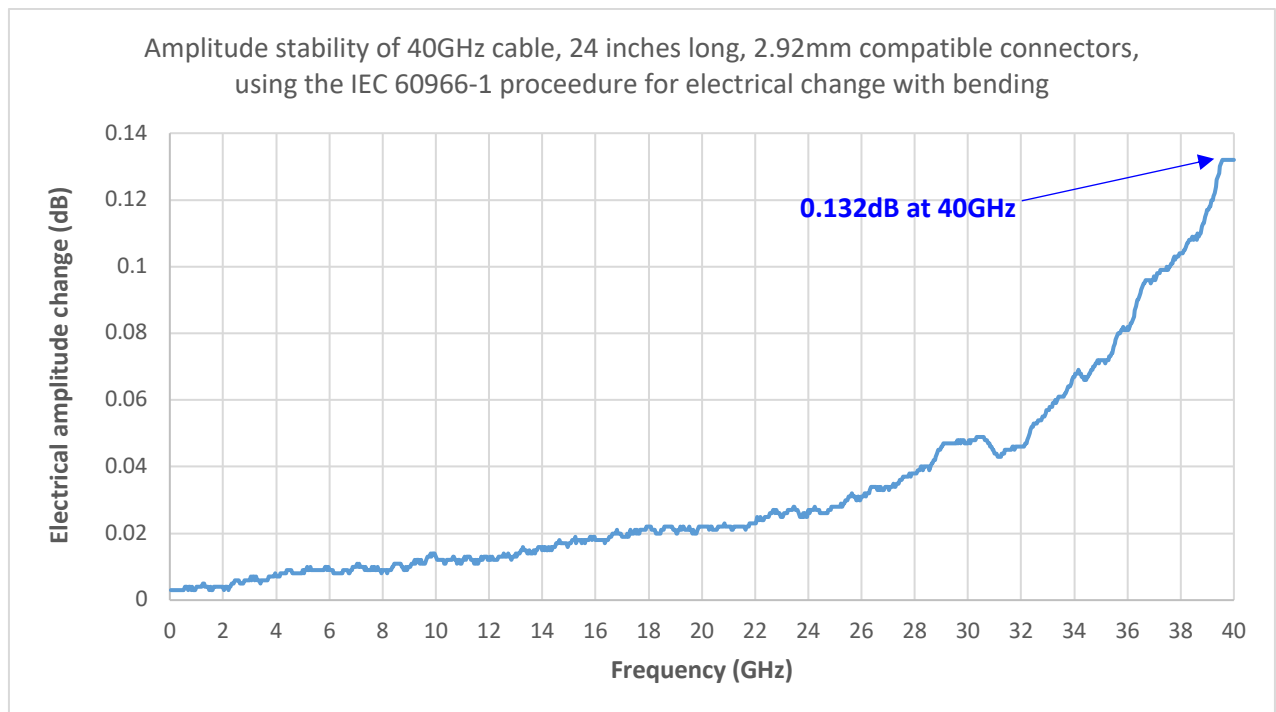
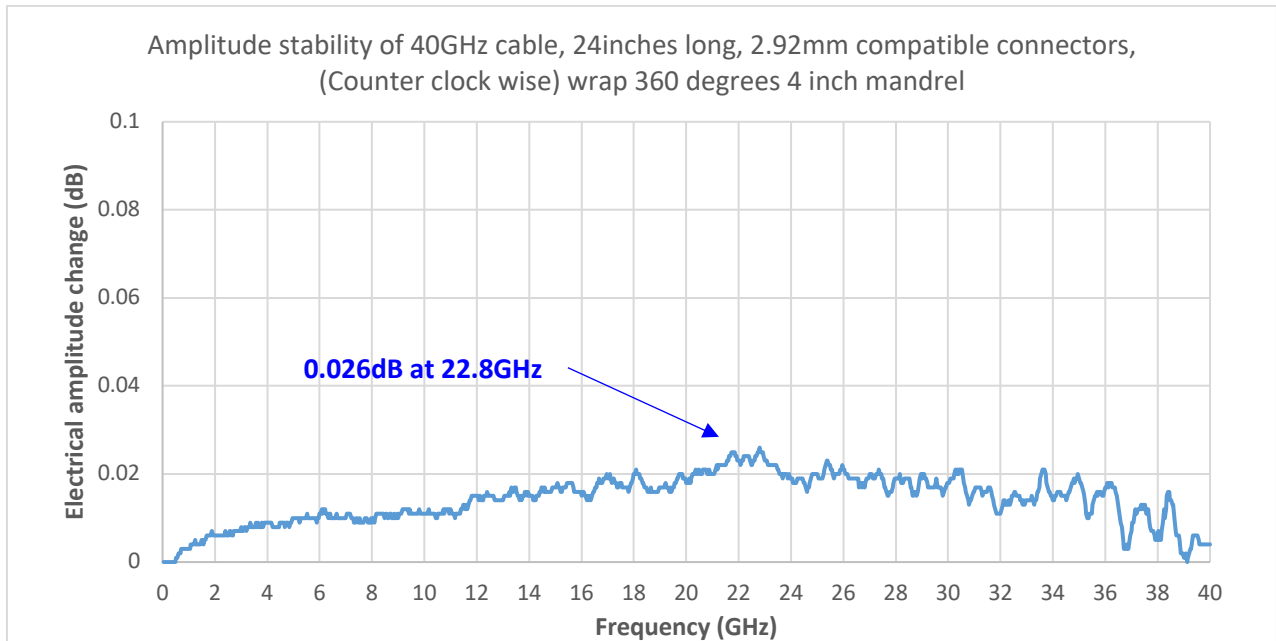


Amplitude Stability with bending for 24 inch cable pair by two different methods:

1. Wrapping clock wise and counter clockwise over 4 inch mandrel
2. Per IEC 60966-1 specifications



## Typical Performance (continued)



## Applications

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### The 1501 Series Cable Pair is ideal for:

- Signal Integrity
- Chanel Modeling
- Jitter Measurements
- Differential Measurements
- VNA measurements
- Replacement for semi-rigid cable

## Ordering Information

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### Standard Length Cable:

Part Number	Description	Length
600-00169-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	12"
600-00170-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	24"
600-00171-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	48"
600-00191-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	12"
600-00192-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	24"
600-00193-00	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	48"

### Standard Length Cable Pairs:

Part Number	Description	Length
600-00169-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	12"
600-00170-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	24"
600-00171-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92mm male straight	48"
600-00191-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	12"
600-00192-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	24"
600-00193-00-P	40 GHz 1501 Series Cable Pair, 2.92 mm male straight to 2.92 mm female straight	48"

Custom lengths are available.

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