

## VSWR PERFORMANCE

Assembly VSWR (return loss) is influenced by a number of factors including cable construction, assembly length, connector type and configuration (i.e., straight or angled), frequency range, and bend configuration (in semi-rigid assemblies).

### FACTORS

#### ■ **CABLE CONSTRUCTION**

- ~ Stranded or solid conductor
- ~ Solid or tape-wrapped dielectric
- ~ Shield construction
- ~ Deployed configuration

#### ■ **ASSEMBLY LENGTH**

- ~ Length > 4 feet

#### ■ **CONNECTOR TYPE**

- ~ Size mismatch  
(i.e., small connector/large cable)
- ~ Air vs. PTFE interface

#### ■ **CONNECTOR CONFIGURATION**

- ~ Angled or straight
- ~ Blindmate or threaded
- ~ High power

### KEY DRIVERS

VSWR TO RETURN LOSS CONVERSION	
VSWR	RETURN LOSS
1.05:1	-32.25
1.10:1	-26.45
1.15:1	-23.12
1.20:1	-20.83
1.25:1	-19.09

VSWR TO RETURN LOSS CONVERSION	
VSWR	RETURN LOSS
1.30:1	-17.70
1.35:1	-16.54
1.40:1	-15.56
1.45:1	-14.72
1.50:1	-13.98

Measured VSWR performance is also impacted by differences in equipment and test methods. As a result, it is not within the scope of this piece to provide VSWR specifications that account for every possible combination of factors.

For convenience sake, the following table may be used as a general guideline:

#### ■ **TYPICAL VSWR PERFORMANCE**

FREQUENCY (GHz)	2 STRAIGHT CONNECTORS	1 STRAIGHT / 1 ANGLED	2 ANGLED CONNECTORS
Up to 3	1.10:1	1.12:1	1.15:1
3 to 18	1.15:1	1.20:1	1.25:1
18 to 26.5	1.25:1	1.25:1 <sup>†</sup>	1.30:1 <sup>†</sup>
26.5 to 50	1.30:1	1.35:1 <sup>†</sup>	1.40:1 <sup>†</sup>

<sup>†</sup> Typical data based on factory-formed right angle connector

Once specific assembly requirements and test methods are established, it is often possible to guarantee improved VSWR performance. Contact us for more specific information.