



GT-22-063

COAX CONTACT, Direct Attach, SIZE 12, 50 OHMS
CONTACTS 852-099 and 852-154
RF Signal Integrity Report



Revision History

Rev	Date	Issued	Approved	Description
A	12/1/2022	L. Blackwell, A. Saberi	G. Hunziker	Initial Release



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1. Introduction

This document contains results from testing that was performed to evaluate the high-frequency electrical performance of the Glenair Size 12 direct attach RF contacts. This report outlines the frequency domain performances of Insertion Loss (IL), Return Loss (RL), Voltage Standing Wave Ratio (VSWR) as well as the time-domain characteristic impedance performance.

2. Product Overview

50-ohm high frequency size #12 coaxial contacts fit Glenair Series 80 Mighty Mouse connectors, Glenair Series 79 Micro-Crimp®, Glenair Series 23 SuperNine® and MIL-DTL-38999 connectors. Maximum operating frequency 40 GHz. Spring-loaded male contact assures consistent mating dimensions and superior microwave performance. Supplied fully assembled with cable termination instruction sheet.

3. Test Information

3.1. Test Samples

The test sample consisted of the direct attach pin insert, 852-099, and the direct attach socket insert, 852-154. The inserts were assembled in a MTL-STD-38999 connector for testing. The assembled, mated sample is shown in Figure 1 (with two mated pairs assembled into the connector).



Figure 1. Mated Connection

3.2. Test Setup

All measurements were taken using a Tektronix DSA8300 Digital Serial Analyzer and a Keysight N5227B PNA network analyzer. No test fixturing was required as the test samples are directly connected to the test equipment. A 2x thru measurement was made to remove the lead in coax effects. The test data was saved in a touchstone (.s2p) format for the s-parameters and in a .csv format for the impedance data.

4. 2x-Thru Coax Performance

This section includes both frequency and time domain results of the 2x-thru cable assembly used to extract the Size 12 Coax Contact electrical characteristics from the overall measured DUT data.

4.1. Frequency Domain Analysis

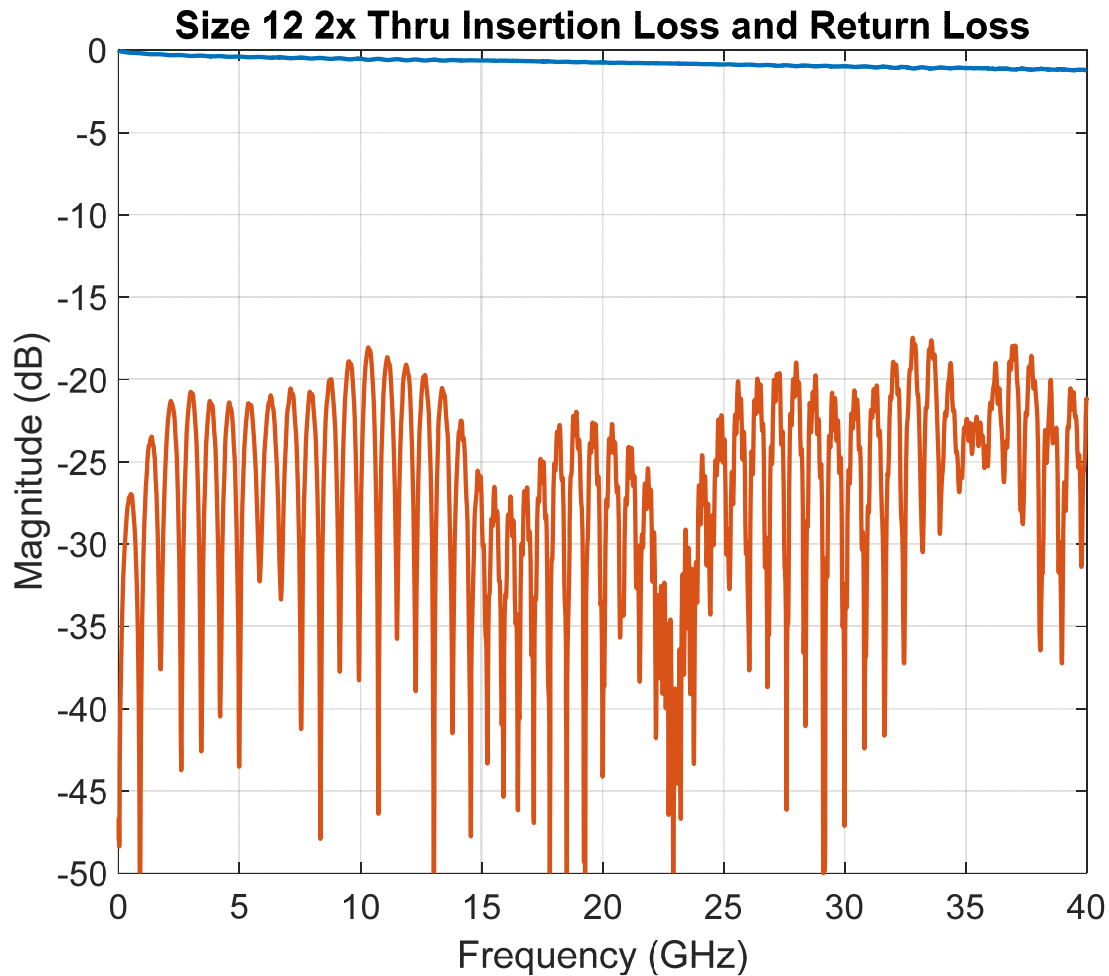


Figure 2. Size 12 Coax Contact 2x-Thru Cable Assembly Response

5. Test Results

5.1. Frequency Domain Analysis

5.1.1. Insertion Loss

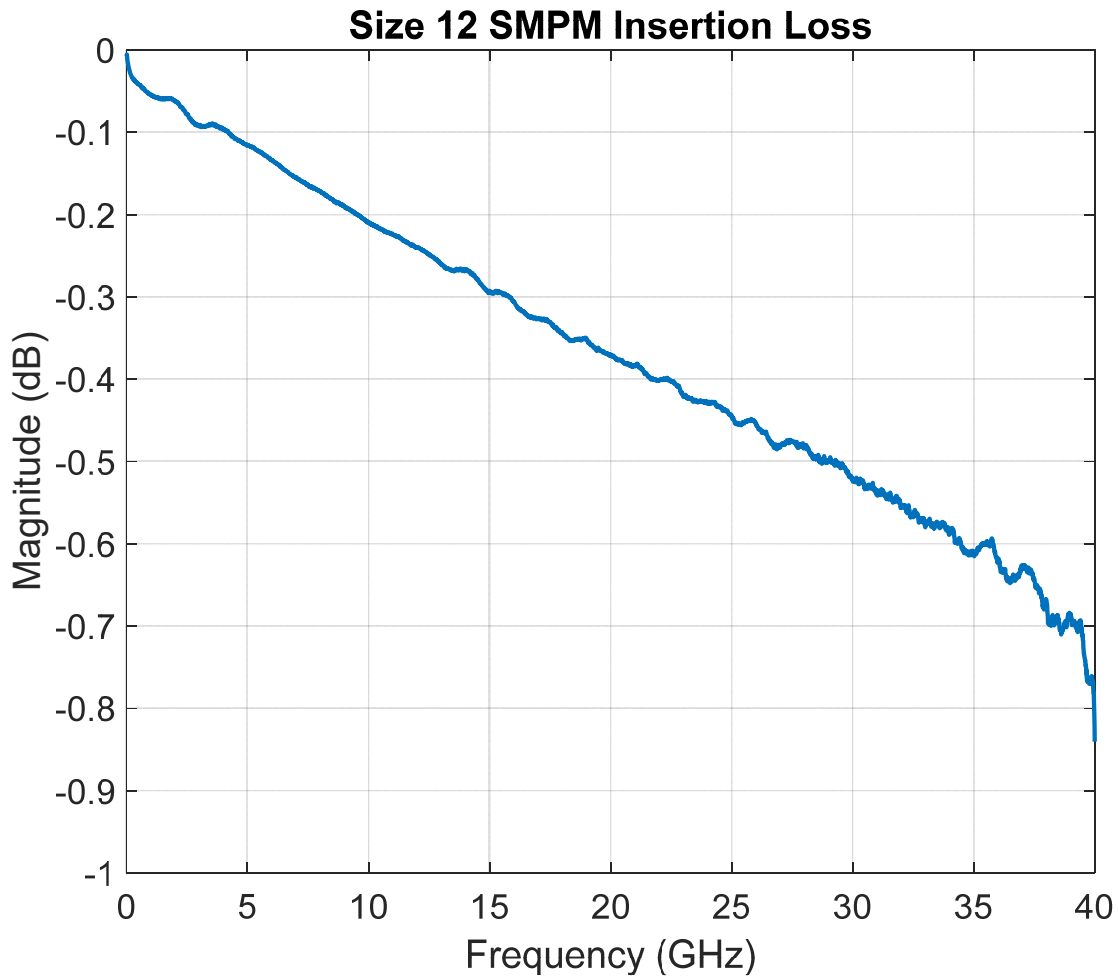


Figure 3. Insertion Loss

5.1.2. Return Loss

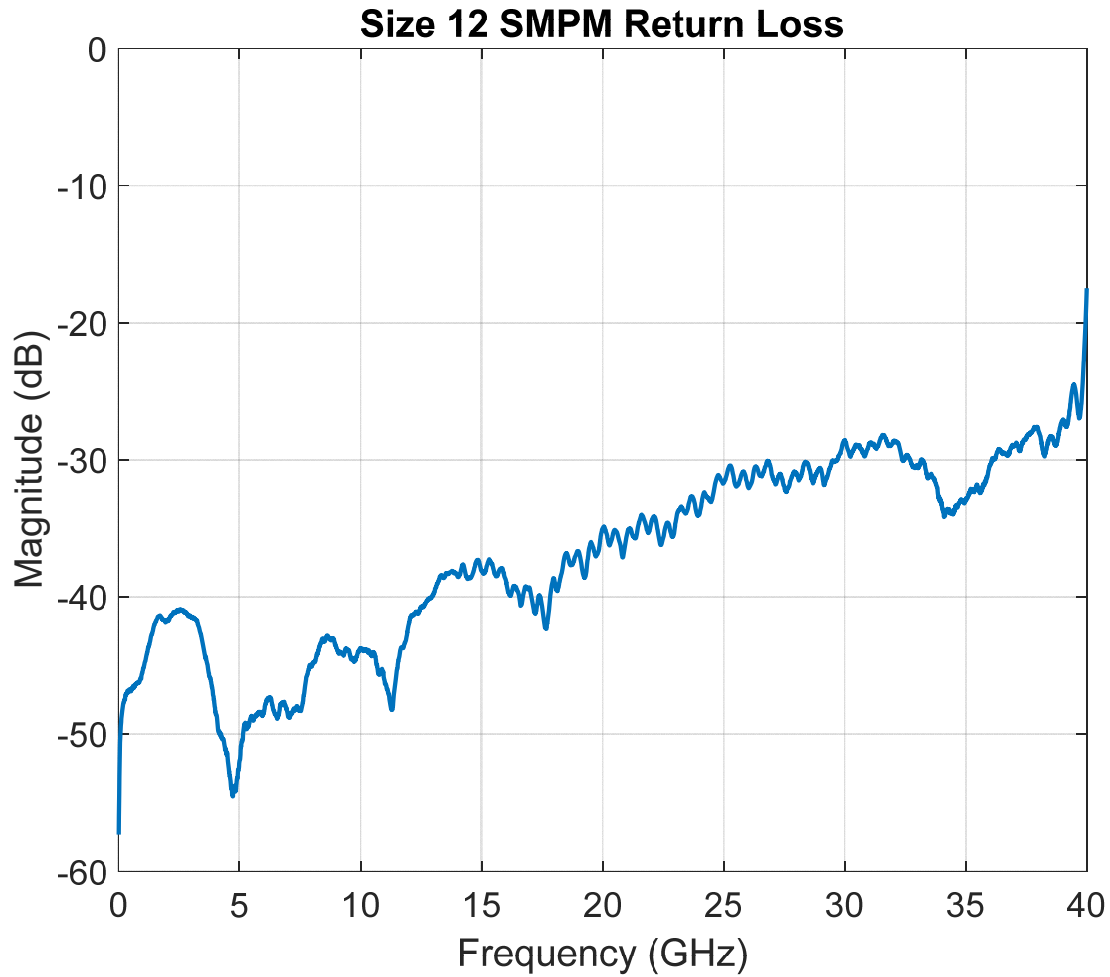


Figure 4. Return Loss

5.1.3. VSWR

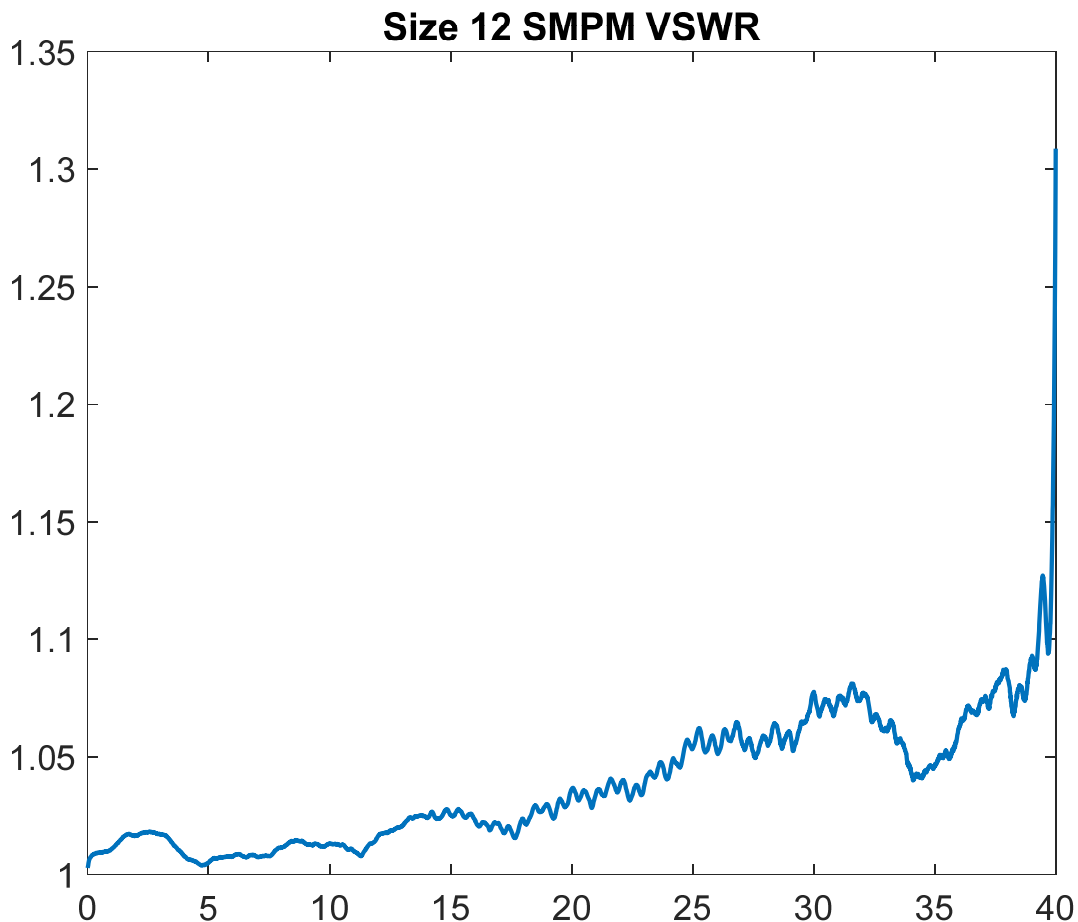


Figure 5. VSWR

5.2. Time Domain Analysis

5.2.1. TDR

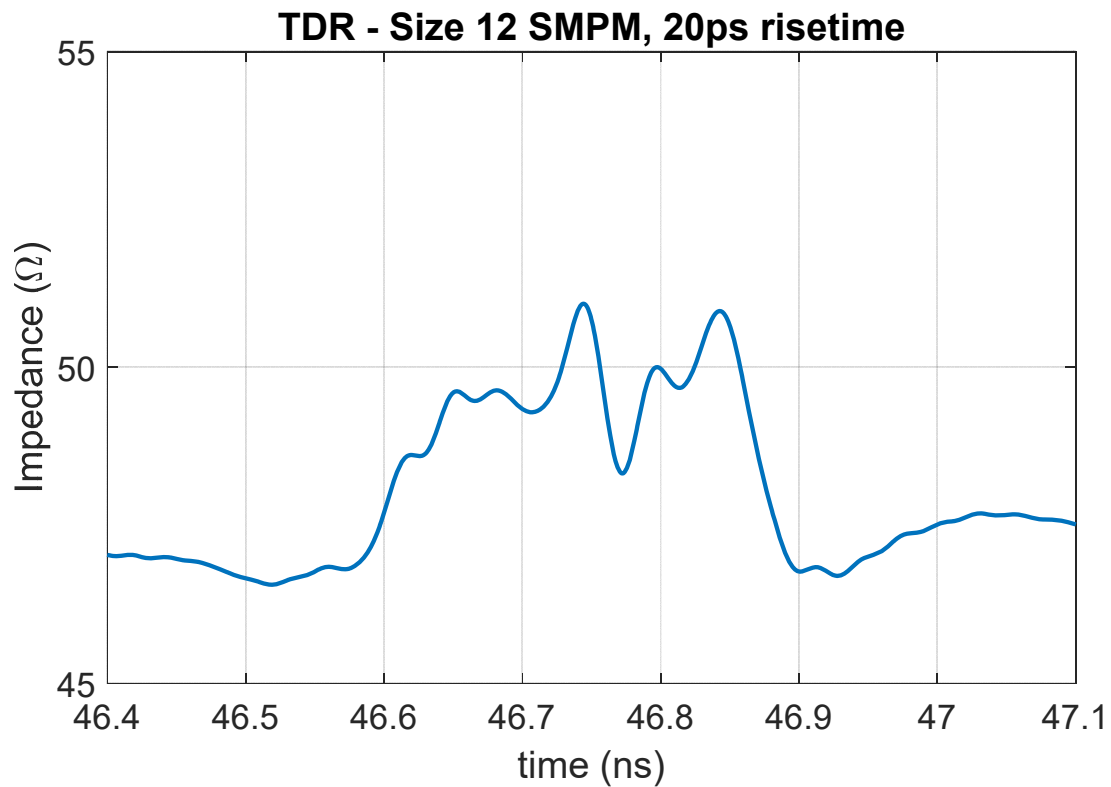


Figure 6. TDR