GT-22-062

COAX CONTACT, Direct Attach, SIZE 16, 50 OHMS

CONTACTS 852-133 and 852-134

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 16 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

Snap-in, rear release 50 ohm, Size 16 coax contacts with SMPS interface fit MIL-DTL-38999 connectors and Glenair connectors with size 16 contact cavities. These spring-loaded contacts are suitable for millimeter-wave applications up to 65 Ghz. Use with .047 flexible or semi-rigid cable with 29 AWG signal conductor. Solder termination. Supplied fully assembled with cable termination instructions.

3. Test Information

3.1. Test Samples

The test sample consisted of the direct attach pin insert, 852-133, and the direct attach socket insert, 852-134. 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 16 Coax Contact electrical characteristics from the overall measured DUT data.

4.1. Frequency Domain Analysis

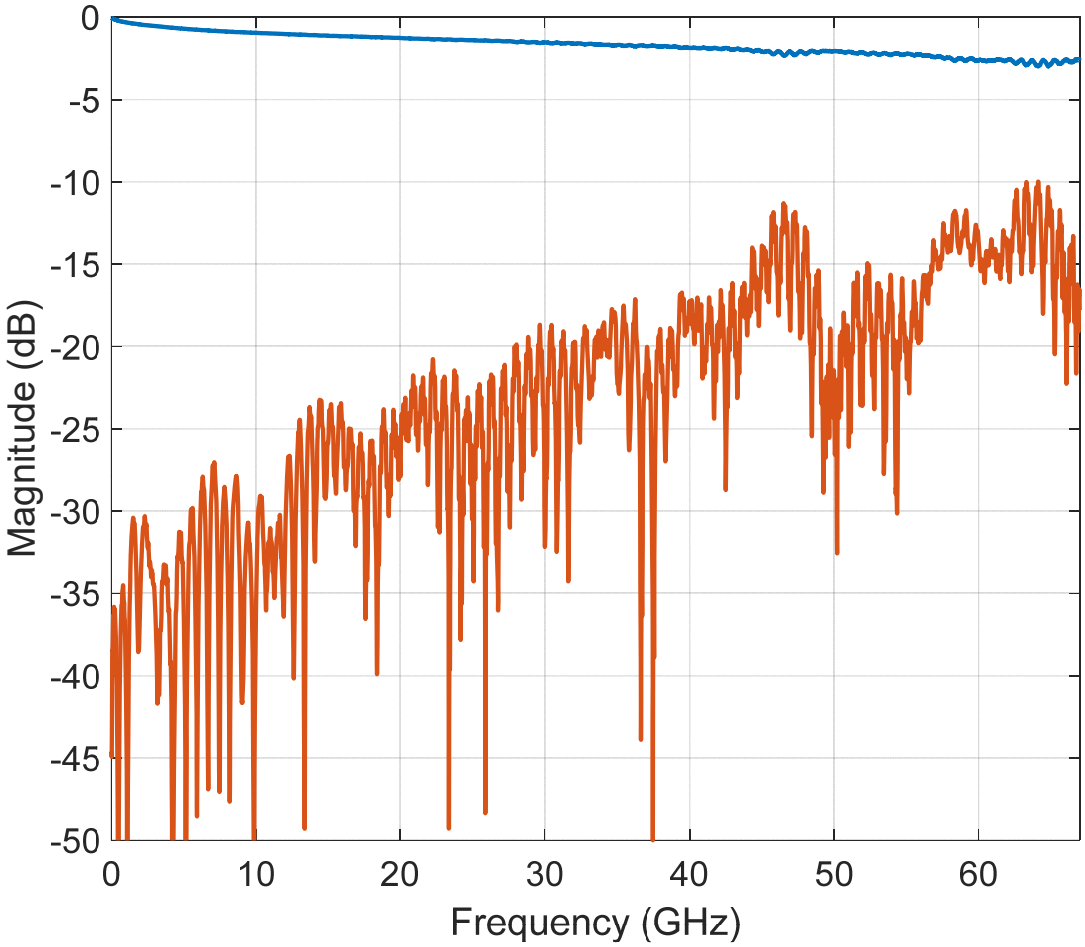

Figure 2. Size 12 Coax Contact 2x-Thru Cable Assembly Response

5. Test Results

5.1.Frequency Domain Analysis

5.1.1. Insertion Loss

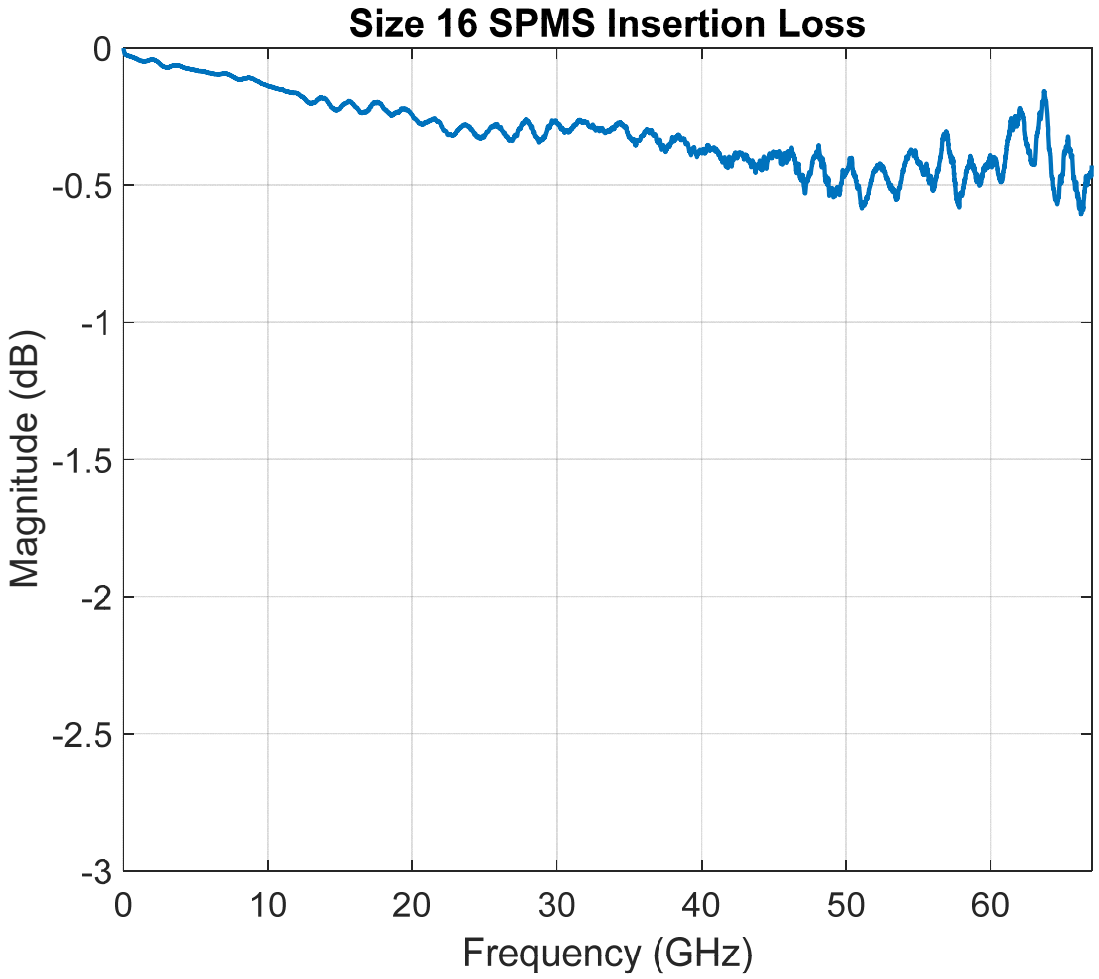

Figure 3. Insertion Loss

5.1.2. Return Loss

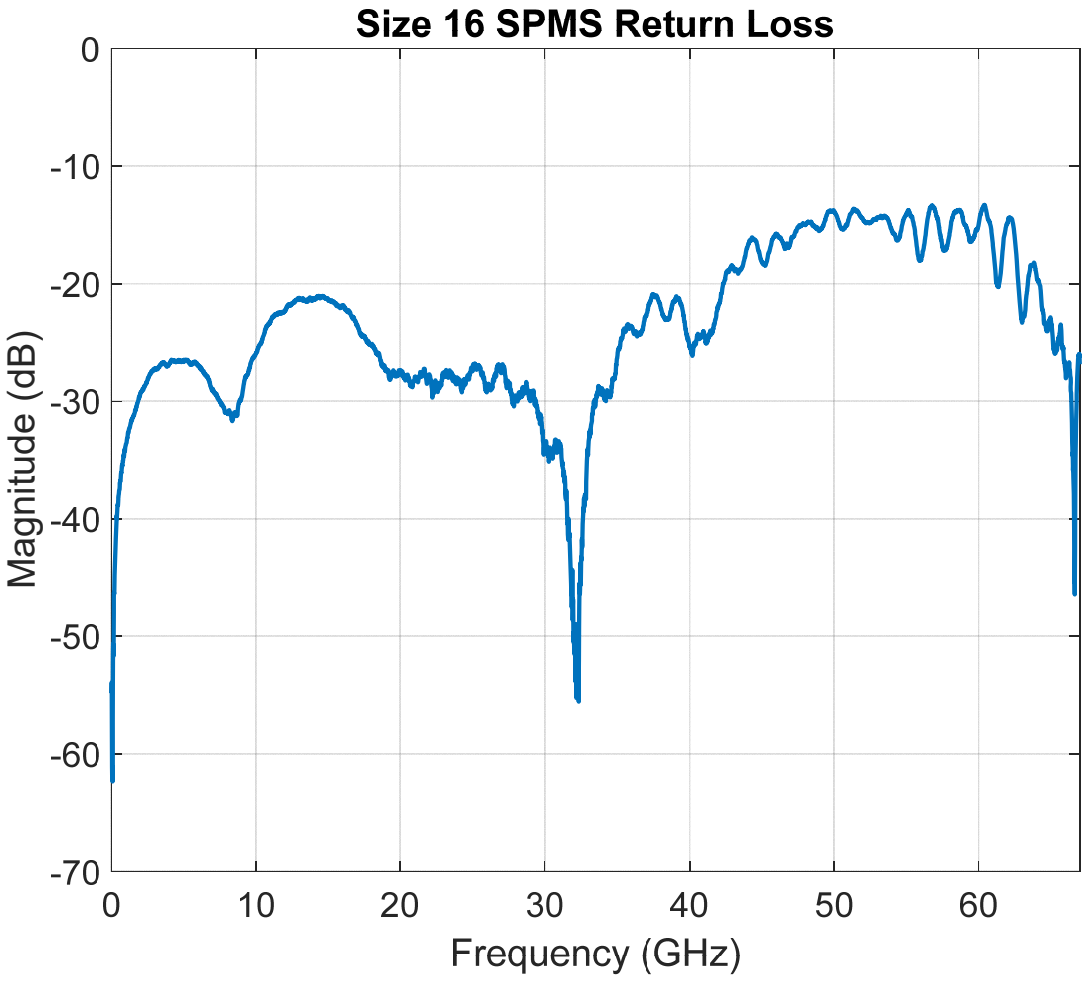

Figure 4. Return Loss

5.1.3. VSWR

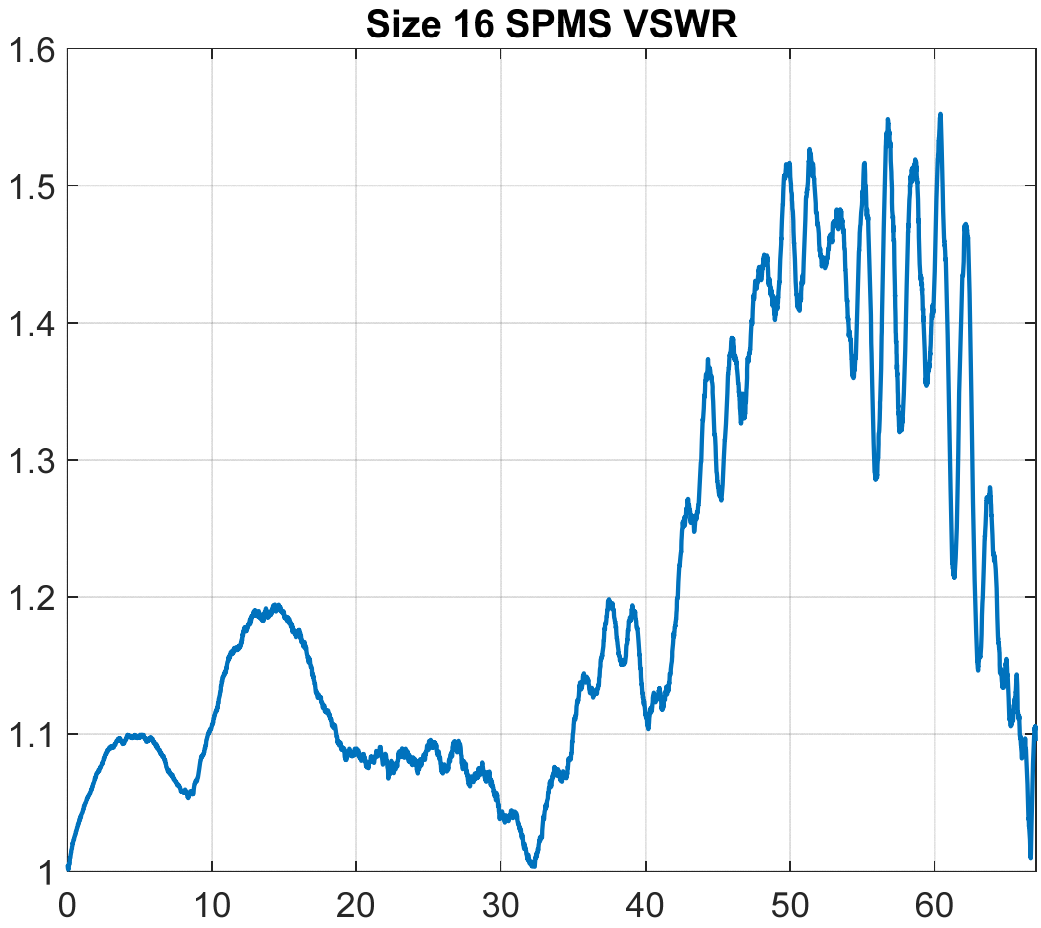

Figure 5. VSWR

5.2.Time Domain Analysis

5.2.1. TDR

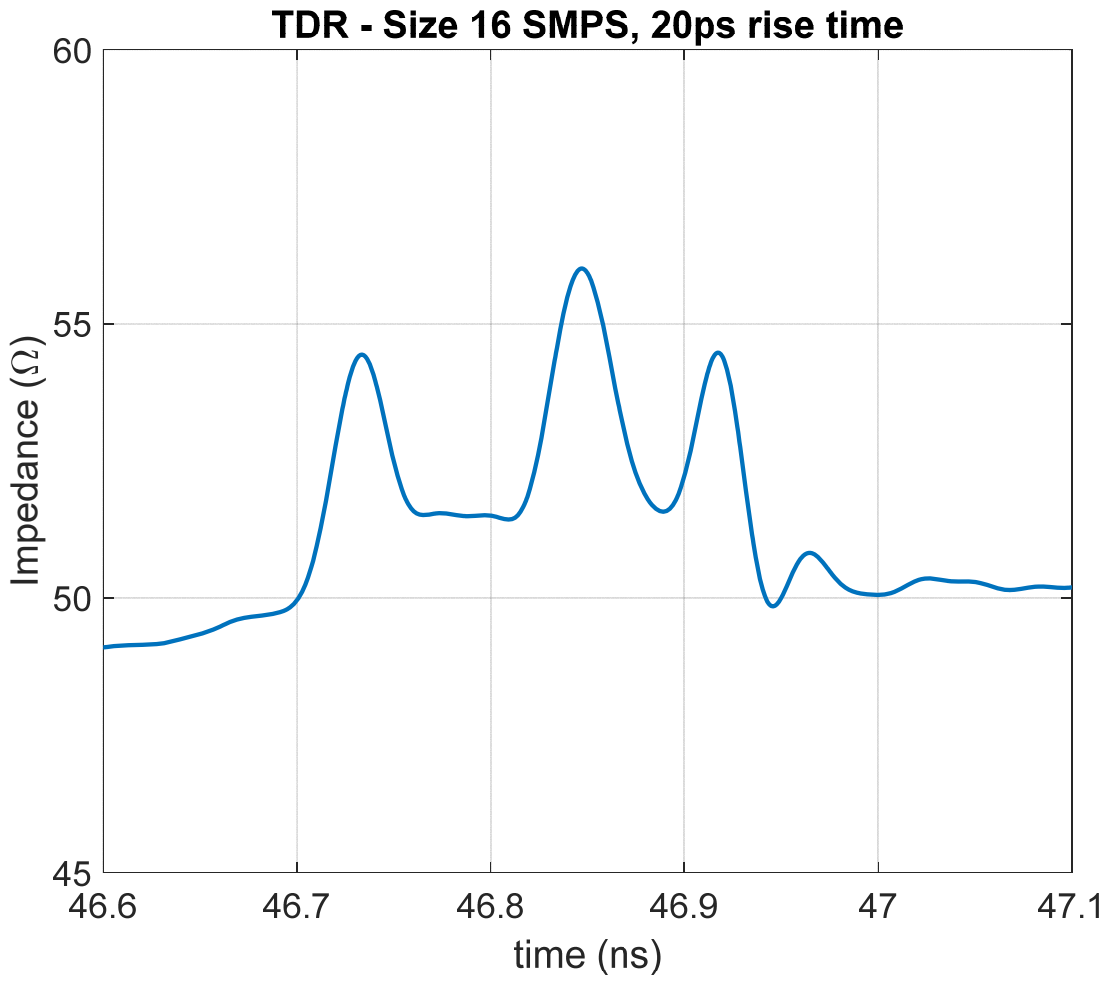

Figure 6. TDR