



Typical Characteristics on P8T-0R5G18G-70-T-SFF

PMI MODEL P8T-0R5G18G-70-T-SFF IS A SINGLE POLE EIGHT THROW
ABSORPTIVE SWITCH. THIS MODEL HAS THE FOLLOWING
SPECIFICATIONS.



January 05, 2016
Designed by: PMI Engineering
Reported by: Kevin Mansfield



Typical Characteristics on P8T-0R5G18G-70-T-SFF

Table of Contents

1. Outline Drawing	Page 3
2. Test Data	Page 4
3. Loss Plots	Page 5
4. Isolation Plots	Page 10
5. Switching Speed	Page 13



Typical Characteristics on P8T-0R5G18G-70-T-SFF

REVISIONS				
REV.	NO.	DESCRIPTION	DATE	APPROVED
A1		ORIGINAL RELEASE	01/12/11	
A2		ECN # 13-0062	06/17/13	

DESCRIPTION

PMI MODEL: P8T-0R5G18G-70-T-SFF IS A SINGLE POLE EIGHT THROW ABSORPTIVE SWITCH. THIS MODEL HAS THE FOLLOWING SPECIFICATIONS.

SPECIFICATIONS

- FREQUENCY RANGE:..... 0.5 TO 18.0 GHz
- INSERTION LOSS:..... 4.5 dB MAX
- ISOLATION:..... 0.5 GHz TO 2 GHz: 60 dB MIN
2 GHz TO 18 GHz: 70 dB MIN
- VSWR:..... IN / OUT: 2.0:1 Typ
TERMINATED OUT: 2.0:1 Typ
- RISE/FALL TIME:..... 10 ns TYPICAL, 15 ns MAX
- DELAY ON/OFF:..... 75 ns TYPICAL, 100 ns MAX
- INPUT POWER:..... +20 dBm CW MAX
- SURVIVAL POWER:..... 1 WATT CW MAX (+30 dBm)
10 WATTS PEAK 1 μs PULSE,
1% DUTY CYCLE
- CONTROL:..... TTL CONTROL — SEE LOGIC TABLE
- POWER SUPPLY:..... +5VDC @ 400 mA MAX
-5VDC @ 100 mA MAX
- CONNECTORS IN/OUT:..... SMA (F) REMOVABLE
- CONTROL CONNECTORS:..... SOLDER PINS
- SIZE:..... 4.00" (L) X 1.50" (W) X 0.40" (H)
- FINISH:..... GOLD PLATED

ENVIRONMENTAL RATINGS

- TEMPERATURE:..... -55°C TO +85°C (OPERATING)
-65°C TO +125°C (STORAGE)
- HUMIDITY:..... MIL-STD-202G, METHOD 103B COND. B
- SHOCK:..... MIL-STD-202G, METHOD 213B COND. B
- VIBRATION:..... MIL-STD-202G, METHOD 204D COND. B
- ALTITUDE:..... MIL-STD-202G, METHOD 105C COND. B
- TEMPERATURE CYCLE:..... MIL-STD-202G, METHOD 107G COND. A

NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS ARE IN INCHES
TOLERANCES: .005 .0010 .005 .005

MECHANICAL OUTLINE

SP8T SWITCH
MODEL NO: P8T-0R5G18G-70-T-SFF
SERIAL NO: PLXXX/XXXX

LOGIC TABLE		
3 BIT DECODER		
E1	E2	E3 FUNCTION
0	0	J1-J2 "Low Loss"
0	0	1 J1-J3 "Low Loss"
0	1	J1-J4 "Low Loss"
0	1	1 J1-J5 "Low Loss"
1	0	J1-J6 "Low Loss"
1	0	1 J1-J7 "Low Loss"
1	1	J1-J8 "Low Loss"
1	1	1 J1-J9 "Low Loss"

PLANAR MONOLITHICS INDUSTRIES, INC.

7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: 301-662-5019 FAX: 301-662-1731
WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001:2000 CERTIFIED

APPROVALS		DATE	TITLE	
DRAWN		01/12/11	PRODUCT FEATURE	
JSP			P8T-0R5G18G-70-T-SFF	
CHECKED			SIZE FROM NO.	DWG NO.
			A 05XQ0	27014421
DESIGNED			SCALE	SHEET
			N:S	1 OF 1



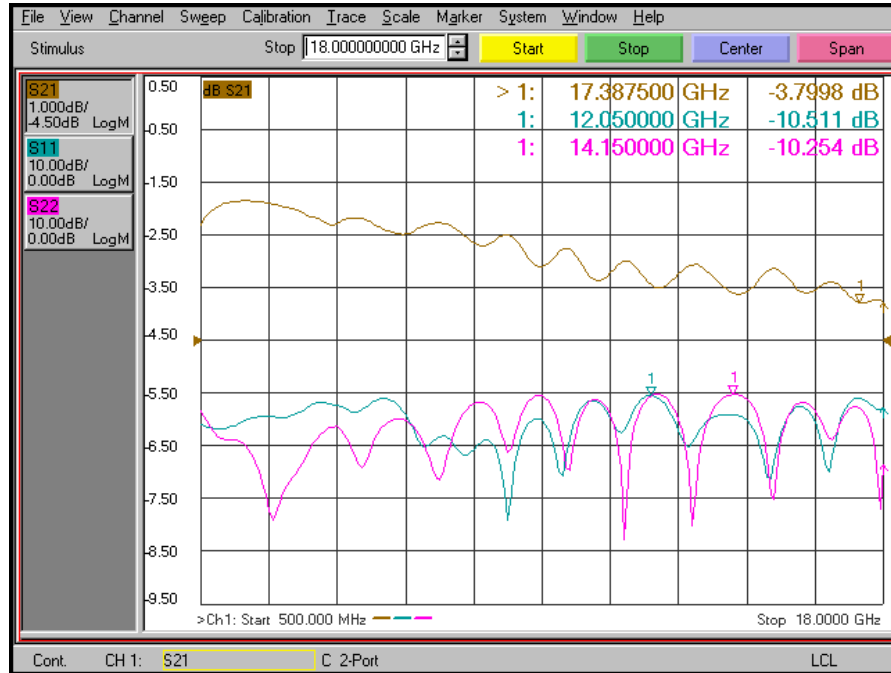
Typical Characteristics on P8T-0R5G18G-70-T-SFF

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC																																													
1	Frequency Range	0.5 GHz to 18.0 GHz	0.5 GHz to 18.0 GHz																																														
2	Insertion Loss	4.5 dB Maximum	3.9 dB (See Plot)																																														
3	Isolation	0.5 GHz TO 2 GHz: 60 dB Min 2 GHz TO 18 GHz: 70 dB Min	76 dB (0.5-2 GHz) 71 dB (2-18 GHz)																																														
4	VSWR	In/Out: 2.0:1 Typ. Terminated Out: 2.0:1 Typ.	2.0:1 On 1.9:1 Off (See Plot)																																														
5	Rise/Fall Time	10 nsec Typ. 15 nsec Max.	<1 nsec See Typical Characteristics																																														
6	Delay On/Off	75 nsec Typ. 100 nsec Max.	24 nsec See Typical Characteristics																																														
7	DC Supply	+5 VDC @ 400 mA Max. -5 VDC @ 100 mA Max.	70mA 20mA																																														
8	Control Signal	<p style="text-align: center;">LOGIC TABLE 3 BIT DECODER</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;"></th> <th style="width: 10%;">E1</th> <th style="width: 10%;">E2</th> <th style="width: 10%;">E3</th> <th style="width: 50%;">FUNCTION</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>0</td> <td>0</td> <td>J1 – J2 “Low Loss”</td> </tr> <tr> <td>0</td> <td>0</td> <td>1</td> <td>1</td> <td>J1 – J3 “Low Loss”</td> </tr> <tr> <td>0</td> <td>1</td> <td>0</td> <td>0</td> <td>J1 – J4 “Low Loss”</td> </tr> <tr> <td>0</td> <td>1</td> <td>1</td> <td>1</td> <td>J1 – J5 “Low Loss”</td> </tr> <tr> <td>1</td> <td>0</td> <td>0</td> <td>0</td> <td>J1 – J6 “Low Loss”</td> </tr> <tr> <td>1</td> <td>0</td> <td>1</td> <td>1</td> <td>J1 – J7 “Low Loss”</td> </tr> <tr> <td>1</td> <td>1</td> <td>0</td> <td>0</td> <td>J1 – J8 “Low Loss”</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>1</td> <td>J1 – J9 “Low Loss”</td> </tr> </tbody> </table>		E1	E2	E3	FUNCTION	0	0	0	0	J1 – J2 “Low Loss”	0	0	1	1	J1 – J3 “Low Loss”	0	1	0	0	J1 – J4 “Low Loss”	0	1	1	1	J1 – J5 “Low Loss”	1	0	0	0	J1 – J6 “Low Loss”	1	0	1	1	J1 – J7 “Low Loss”	1	1	0	0	J1 – J8 “Low Loss”	1	1	1	1	J1 – J9 “Low Loss”	Pass	
	E1	E2	E3	FUNCTION																																													
0	0	0	0	J1 – J2 “Low Loss”																																													
0	0	1	1	J1 – J3 “Low Loss”																																													
0	1	0	0	J1 – J4 “Low Loss”																																													
0	1	1	1	J1 – J5 “Low Loss”																																													
1	0	0	0	J1 – J6 “Low Loss”																																													
1	0	1	1	J1 – J7 “Low Loss”																																													
1	1	0	0	J1 – J8 “Low Loss”																																													
1	1	1	1	J1 – J9 “Low Loss”																																													

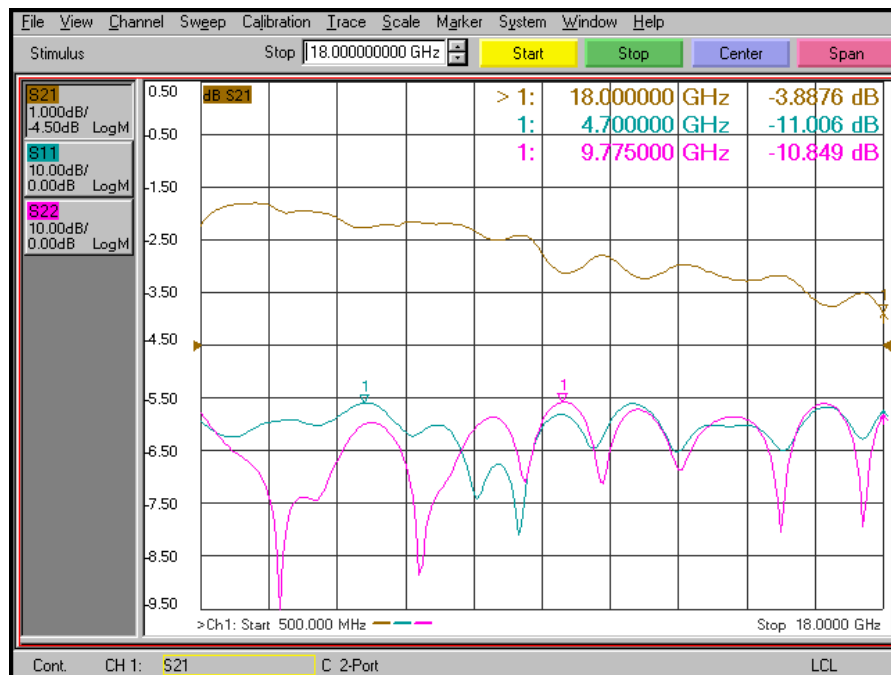


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J2) Insertion Loss and Return Loss



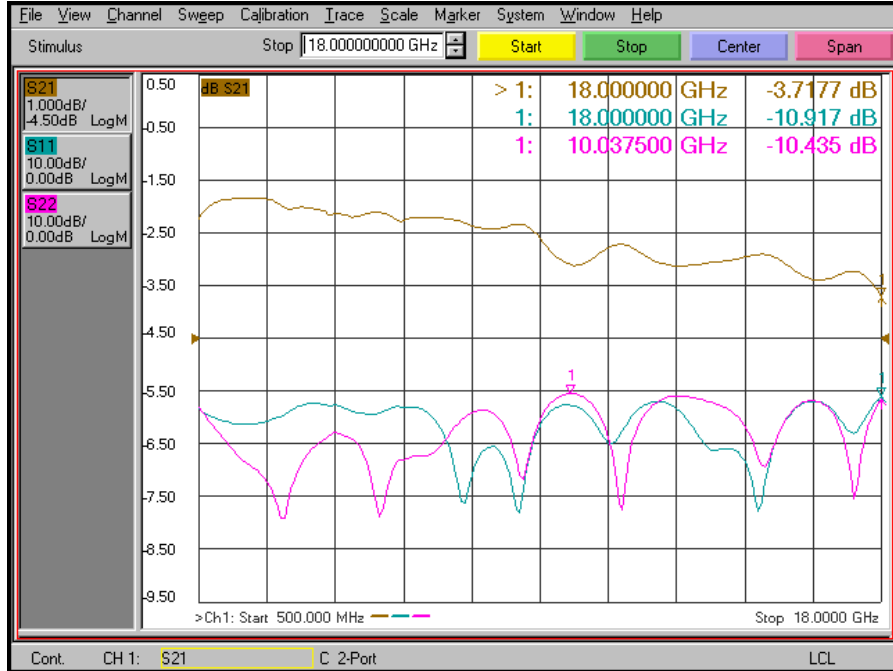
(J1 – J3) Insertion Loss and Return Loss





Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J4) Insertion Loss and Return Loss



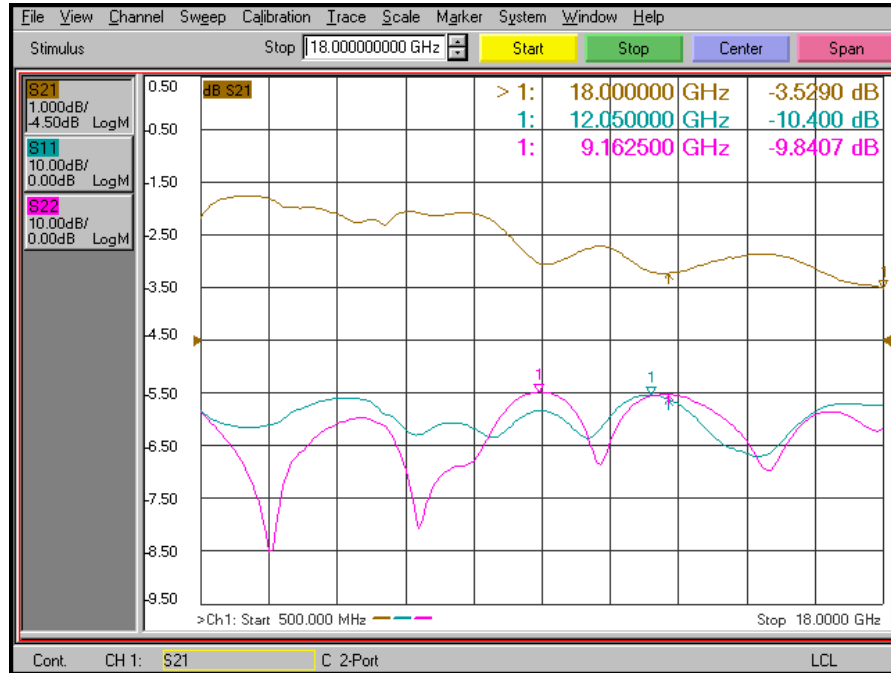
(J1 – J5) Insertion Loss and Return Loss



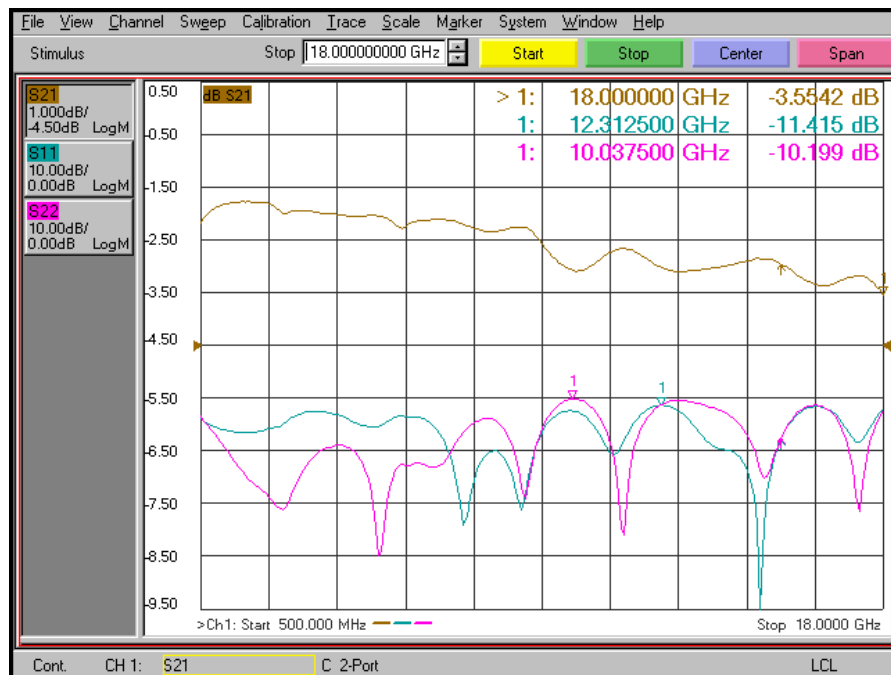


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J6) Insertion Loss and Return Loss



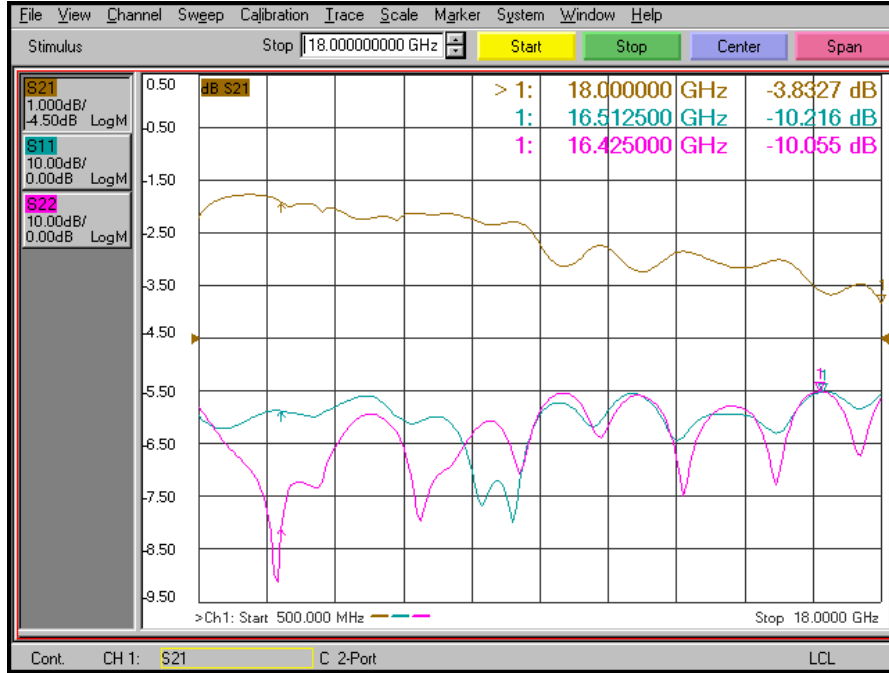
(J1 – J7) Insertion Loss and Return Loss



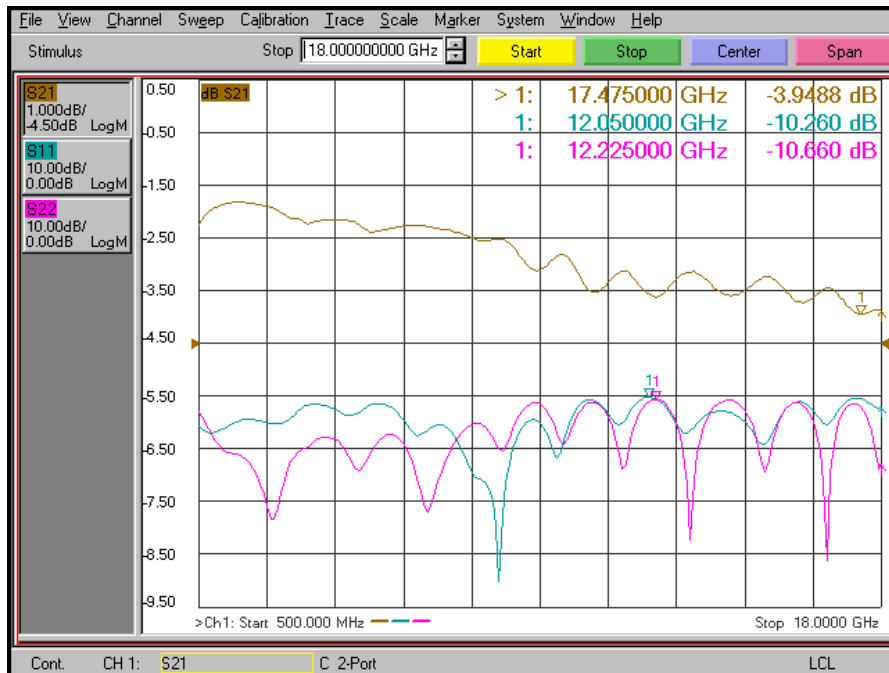


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J8) Insertion Loss and Return Loss



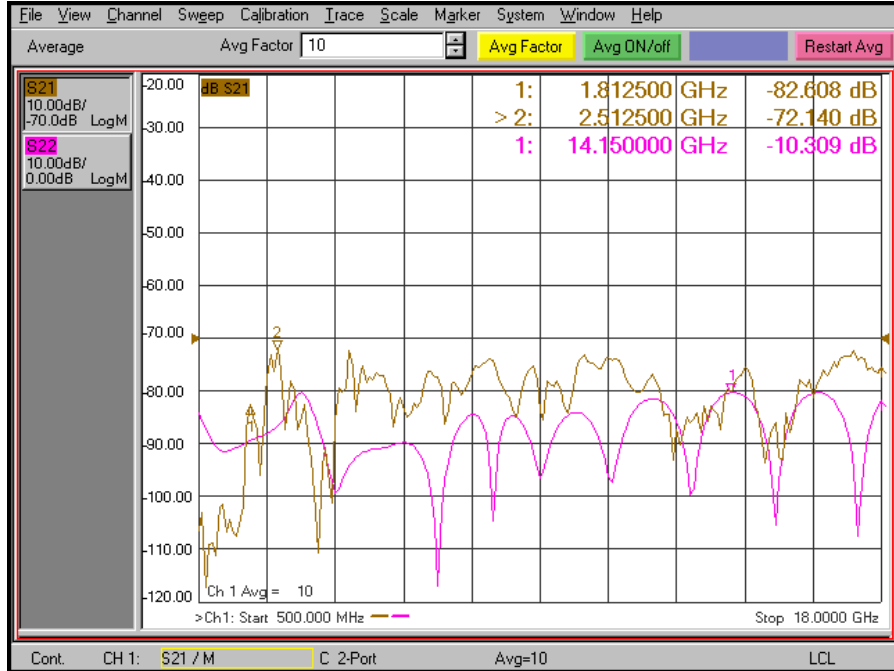
(J1 – J9) Insertion Loss and Return Loss



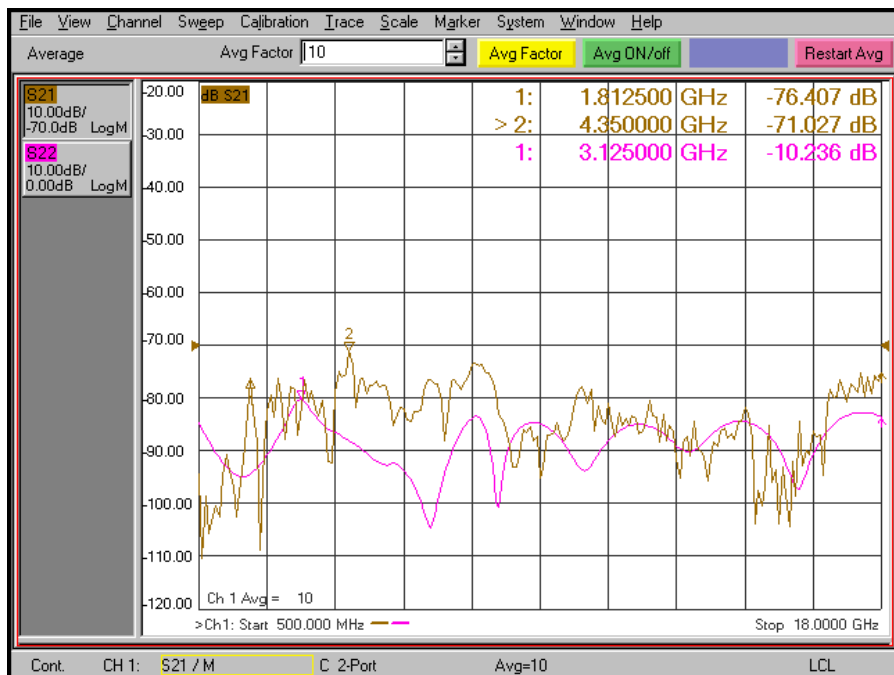


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J2) Isolation and Termination Return Loss



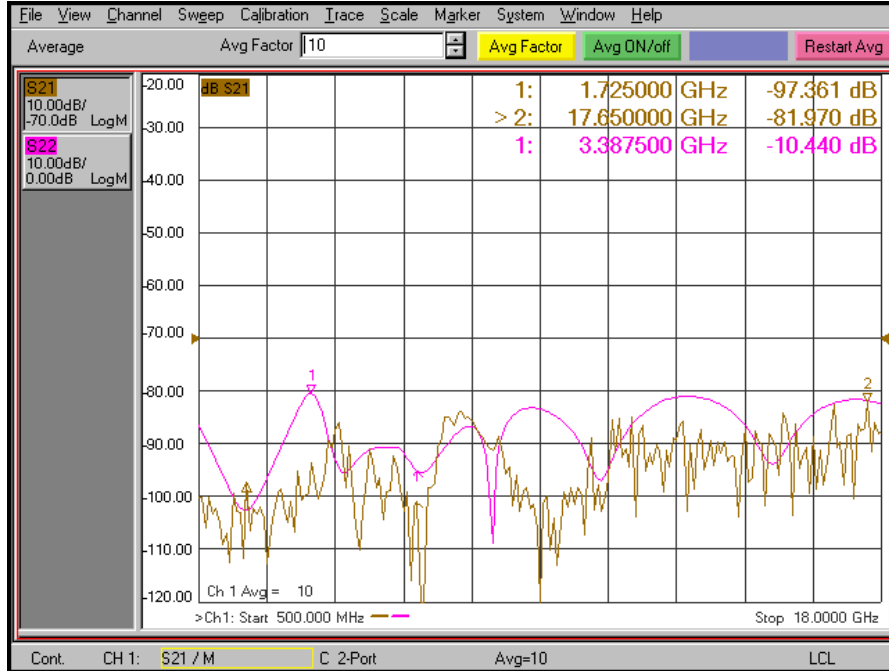
(J1 – J3) Isolation and Termination Return Loss



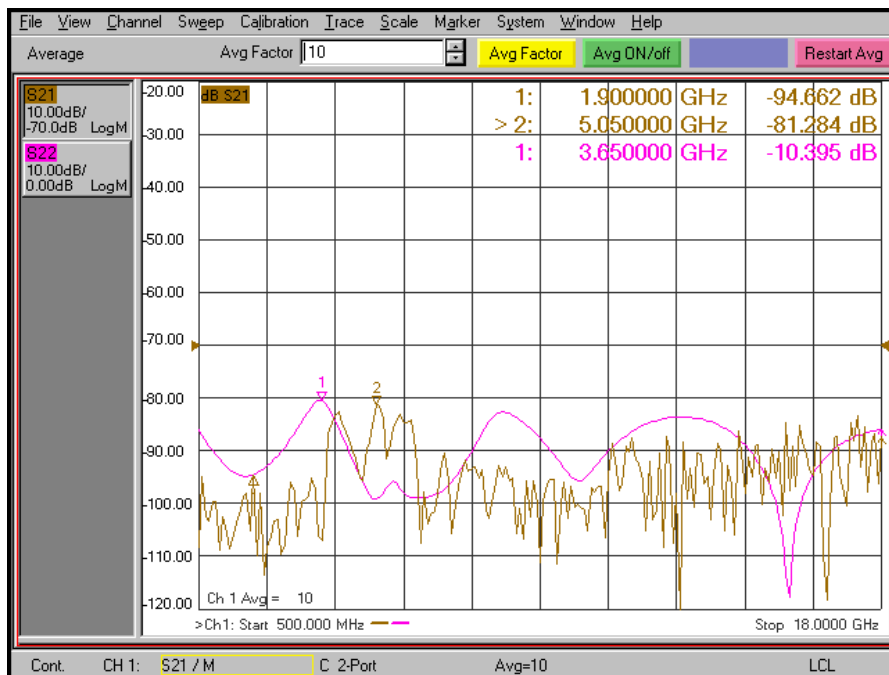


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J4) Isolation and Termination Return Loss



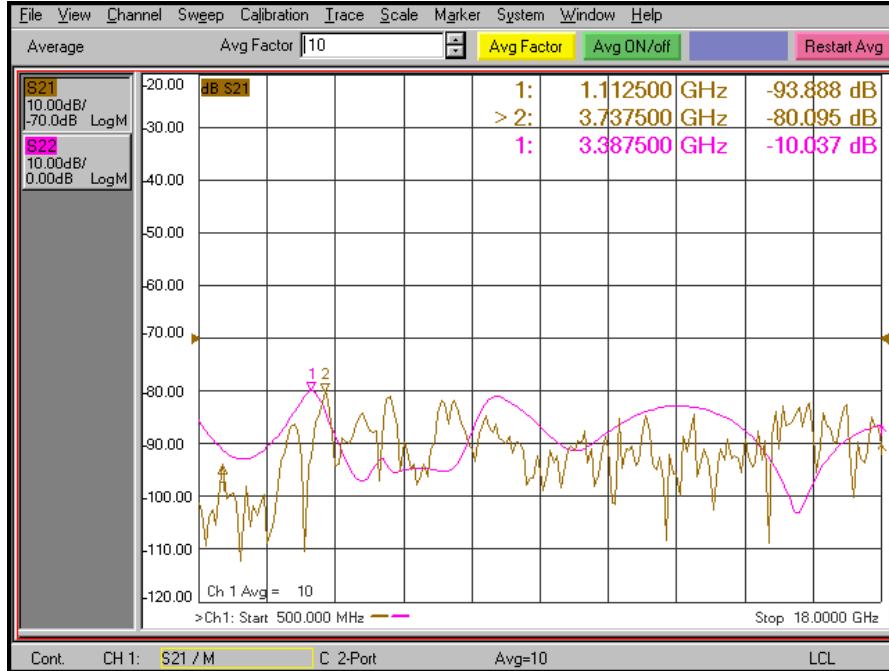
(J1 – J5) Isolation and Termination Return Loss



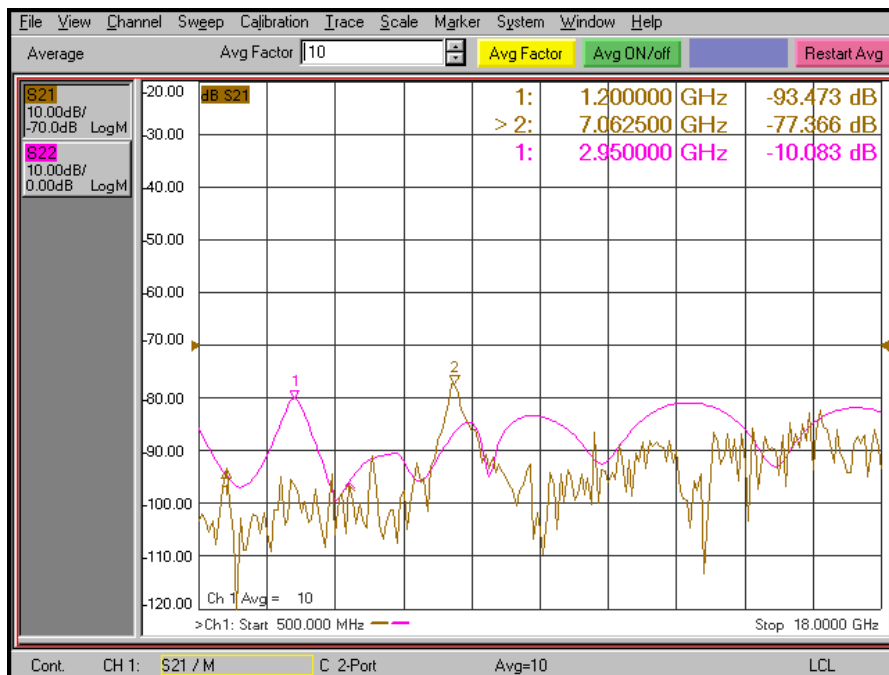


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J6) Isolation and Termination Return Loss



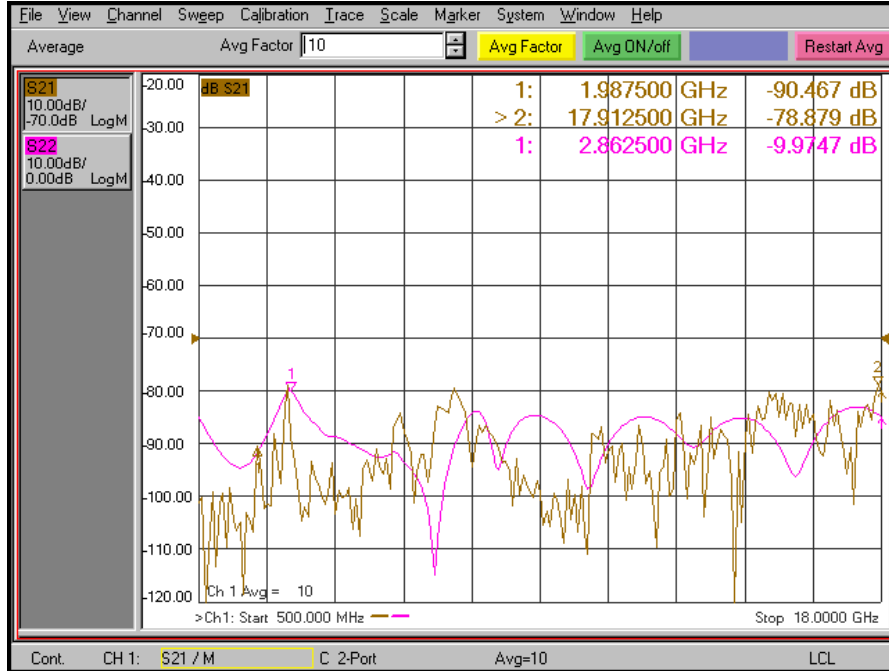
(J1 – J7) Isolation and Termination Return Loss



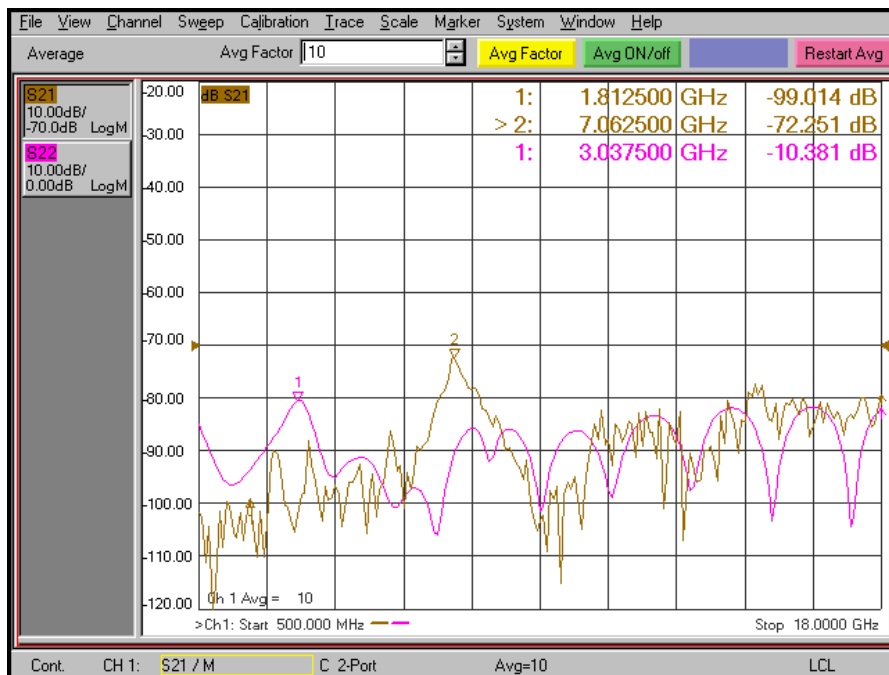


Typical Characteristics on P8T-0R5G18G-70-T-SFF

(J1 – J8) Isolation and Termination Return Loss



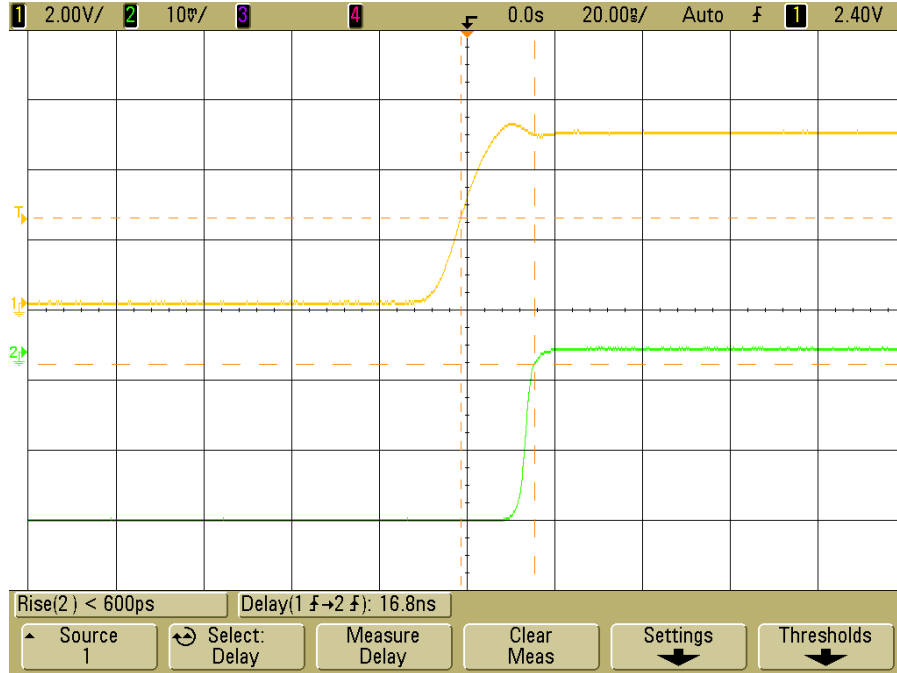
(J1 – J9) Isolation and Termination Return Loss





Typical Characteristics on P8T-0R5G18G-70-T-SFF

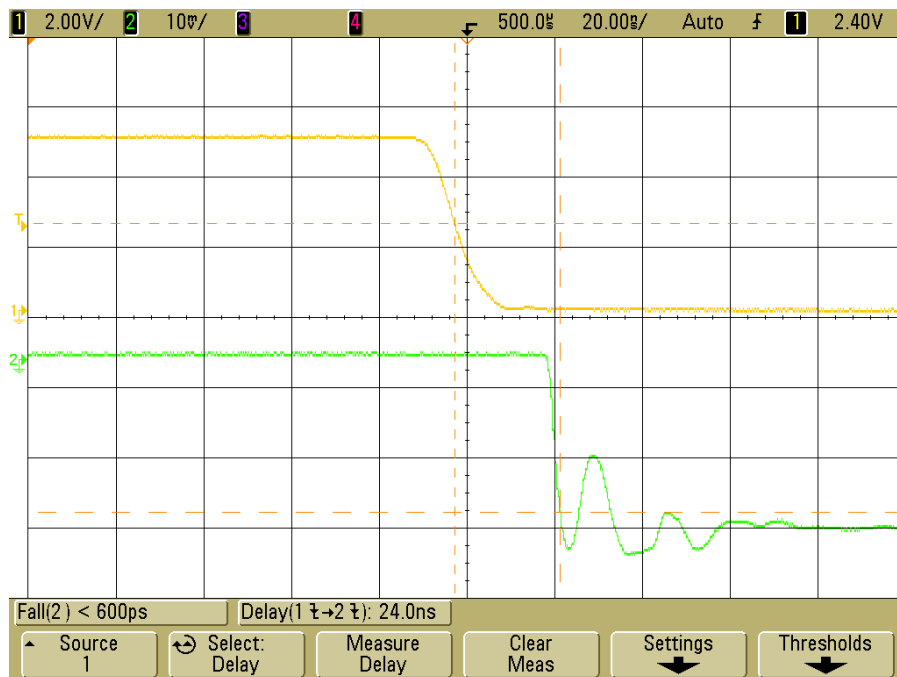
Switching Speed (Off)



Yellow Trace = TTL Control

Green Trace = RF Response From Crystal Detector

Switching Speed (On)



Yellow Trace = TTL Control

Green Trace = RF Response From Crystal Detector