



**TYPICAL CHARACTERISTICS  
ON  
P16T-18G40G-90-T-512-SFF-DEC**

**PMI MODEL NUMBER: P16T-18G40G-90-T-512-SFF-DEC IS A SINGLE POLE, SIXTEEN THROW ABSORPTIVE PIN DIODE SWITCH THAT OPERATES FROM 18.0 TO 40.0 GHz FREQUENCY RANGE. THIS MODEL HAS A TYPICAL INSERTION LOSS OF 8.5dB AND 50dB OF ISOLATION. IT OPERATES AT 20 dBm CW AND IS CONTROLLED WITH 4-BIT DECODED TTL LOGIC.**



**September 28, 2017**

**DESIGNED BY: PMI ENGINEERING**

**TESTED & REPORTED BY: Jerry N**



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P16T-18G40G-90-T-512-SFF-DEC**

**TABLE OF CONTENTS**

Outline Drawing..... Page 3

Summary Test Data..... Page 4

S-Parameter Data Insertion Loss and Return Loss..... Page 5-20

S-Parameter Data Isolation and Termination Return Loss.... Page 5-20

Switching Speed..... Page 21-22



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**OUTLINE DRAWING**

**DESCRIPTION**

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**SPECIFICATIONS**

- FREQUENCY RANGE: 18.0 TO 40.0 GHz
- INSERTION LOSS: 12dB Typ.
- ISOLATION: 50dB Min.
- VSWR - INPUT/OUTPUT: 2.5:1 Typ.
- VSWR - OUTPUT/OFF: 2.5:1 Typ.
- SWITCHING SPEED:
  - RISE/FALL: 50ns Typ. / 10ns Typ.
  - DELAY ON/OFF: 150ns Max.
- INPUT POWER: +20dBm CW
- CONTROL: 4-BIT DECODED TTL LOGIC - SEE TABLE
- CONNECTORS: 2.92mm (F) REMOVABLE
- POWER SUPPLY: +5VDC @ 750mA Max.  
-12VDC @ 200mA Max.
- SIZE: (L) 8.00" X (W) 3.00" (H) 0.65"
- FINISH: GOLD PLATED

**OPTIONS:**

- -IND: INDIVIDUAL CONTROL LOGIC

**ENVIRONMENTAL RATINGS:**

- TEMPERATURE: -40°C TO +85°C (OPERATING)  
-65°C TO +125°C (STORAGE)
- HUMIDITY: -MIL-STD-202F, METHOD 103B COND. B
- SHOCK: -MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: -MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: -MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: -MIL-STD-202F, METHOD 107 COND. A

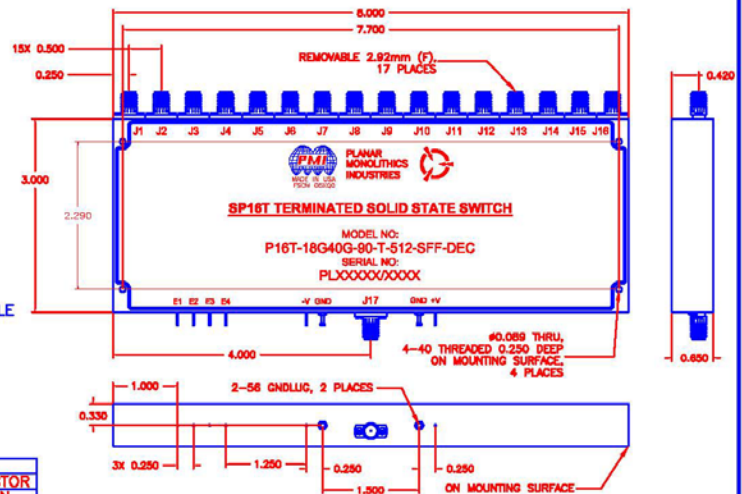
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

E1	E2	E3	E4	CONNECTOR
0	0	0	0	J1 ON
0	0	0	1	J2 ON
0	0	1	0	J3 ON
0	0	1	1	J4 ON
0	1	0	0	J5 ON
0	1	0	1	J6 ON
0	1	1	0	J7 ON
0	1	1	1	J8 ON
1	0	0	0	J9 ON
1	0	0	1	J10 ON
1	0	1	0	J11 ON
1	0	1	1	J12 ON
1	1	0	0	J13 ON
1	1	0	1	J14 ON
1	1	1	0	J15 ON
1	1	1	1	J16 ON

ALL DIMENSIONS ARE IN INCHES  
TOLERANCES:  
XXX ±0.020  
XXX ±0.010

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	8/8/17	
	A1	ECN#17-0201	8/22/17	

**MECHANICAL OUTLINE**



PMI CONFIDENTIAL AND PROPRIETARY

**PLANAR MONOLITHICS INDUSTRIES, INC.**

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ISO 9001 CERTIFIED



APPROVALS		DATE	TITLE	
DRAWN	<i>S. Thomas</i>	8/4/17	PRODUCT FEATURE	
CHECKED			P16T-18G40G-90-T-512-SFF-DEC	
ISSUED			SIZE	DRG NO.
			A 05XQ0	27031721
			SCALE	SHEET
			N:S	1 OF 1



**TYPICAL CHARACTERISTICS  
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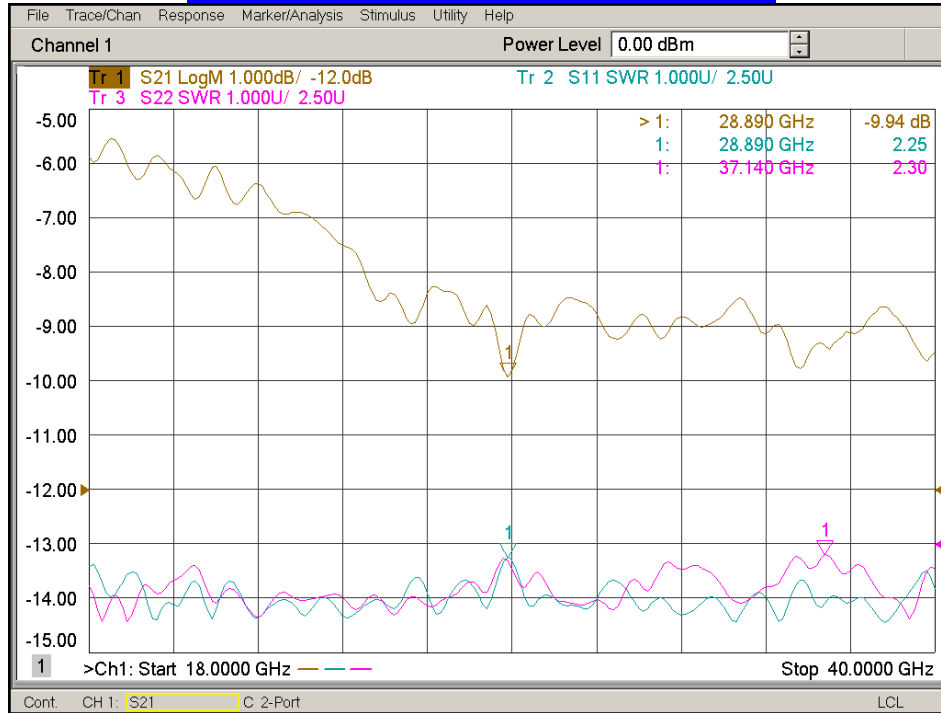
**TEST DATA SUMMARY**

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range:	18.0 to 40.0 GHz	<b>18.0 to 40.0 GHz</b> See Plot	
2	Insertion Loss:	12dB Typ	<b>10.38 dB</b> See Plot	
3	Isolation	50dB Min	<b>55.13 dB</b> See Plot	
4	VSWR (Input/Output):	2.5:1 Typ	<b>2.39 :1</b> See Plot	
5	VSWR (Output/Off):	2.5:1 Typ	<b>2.24 :1</b> See Plot	
6	Switching Speed (Rise/Fall):	50ns Typ / 10ns Typ	<b>13 ns / 6 ns</b> See Typical Characteristics	
7	Switching Speed (Delay On/Off):	150ns Max	<b>100.5 ns</b> See Typical Characteristics	
8	Input Power:	+20dBm CW	<b>Pass</b>	
9	Control:	4-Bit Decoded TTL Logic (See Table on Outline Drawing)	<b>Pass</b>	
10	DC Supply:	+5VDC @ 750mA -12VDC @ 200mA	<b>+5VDC @ 470 mA</b> <b>-12VDC @ 176 mA</b>	

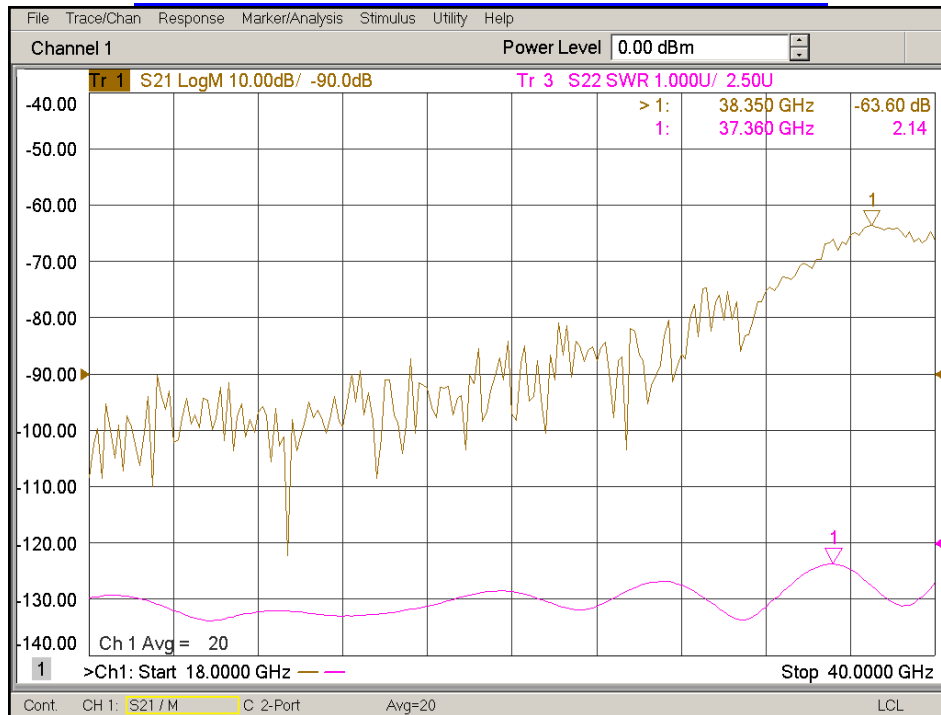


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J1 Insertion Loss and Return Loss



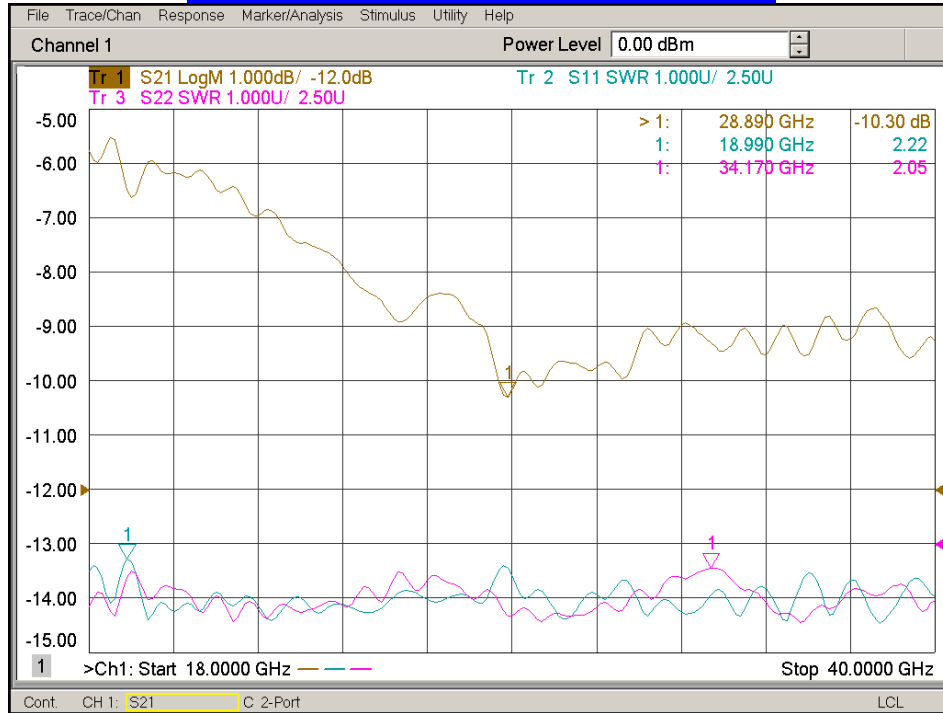
## J17-J1 Termination Isolation and Return Loss



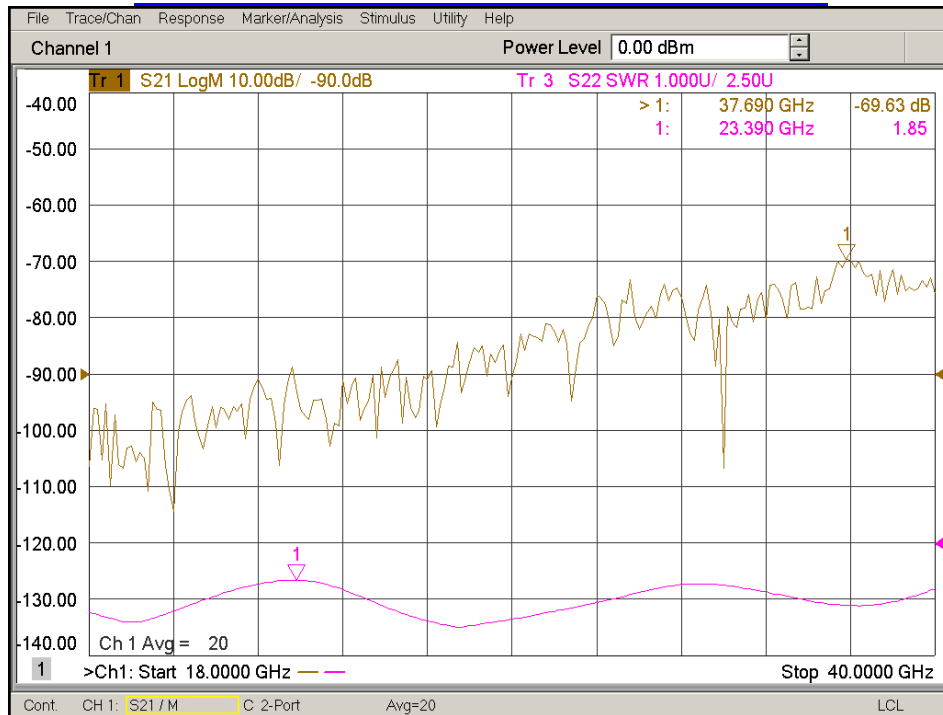


**TYPICAL CHARACTERISTICS  
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**J17-J2 Insertion Loss and Return Loss**



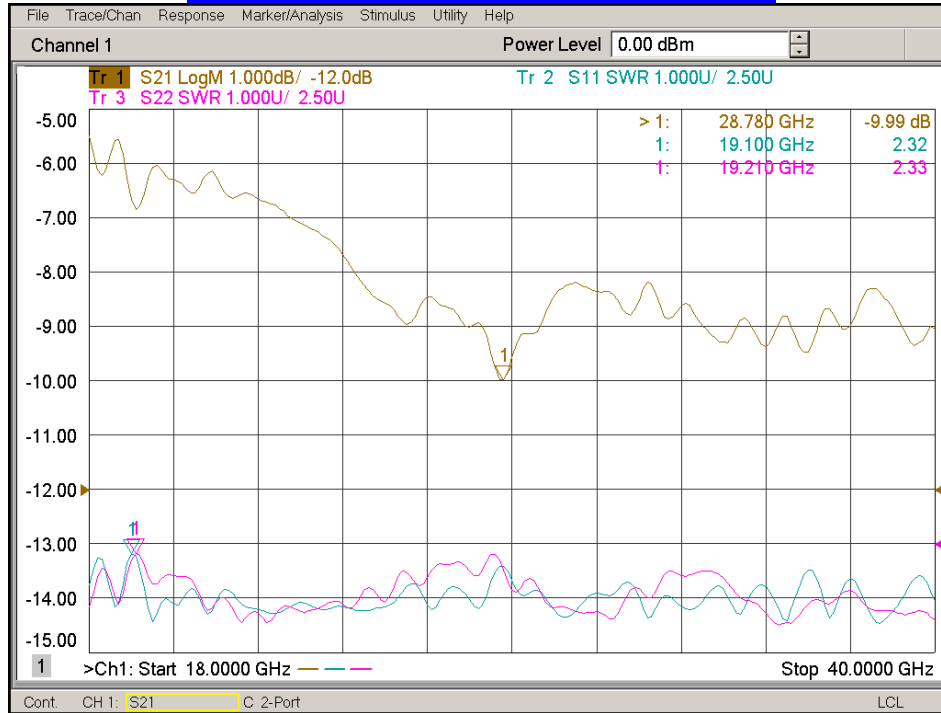
**J17-J2 Termination Isolation and Return Loss**



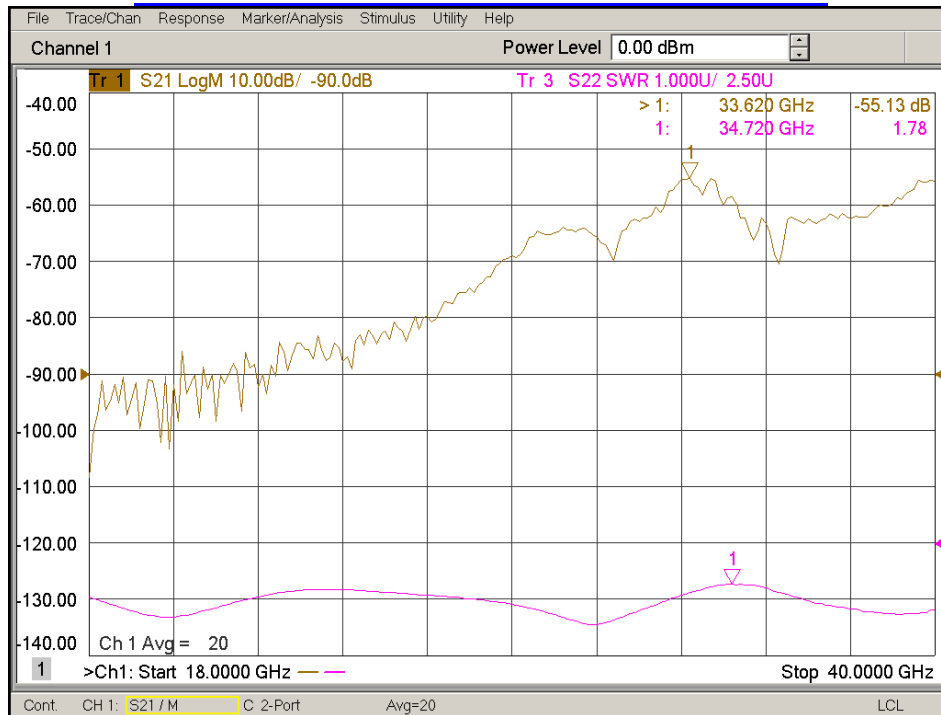


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J3 Insertion Loss and Return Loss



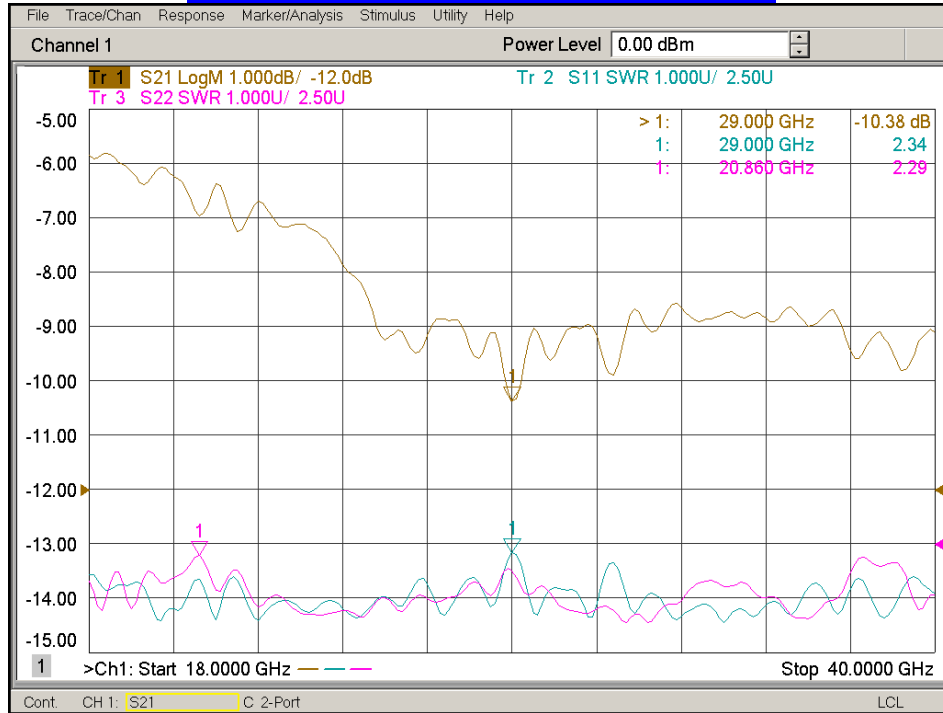
## J17-J3 Termination Isolation and Return Loss



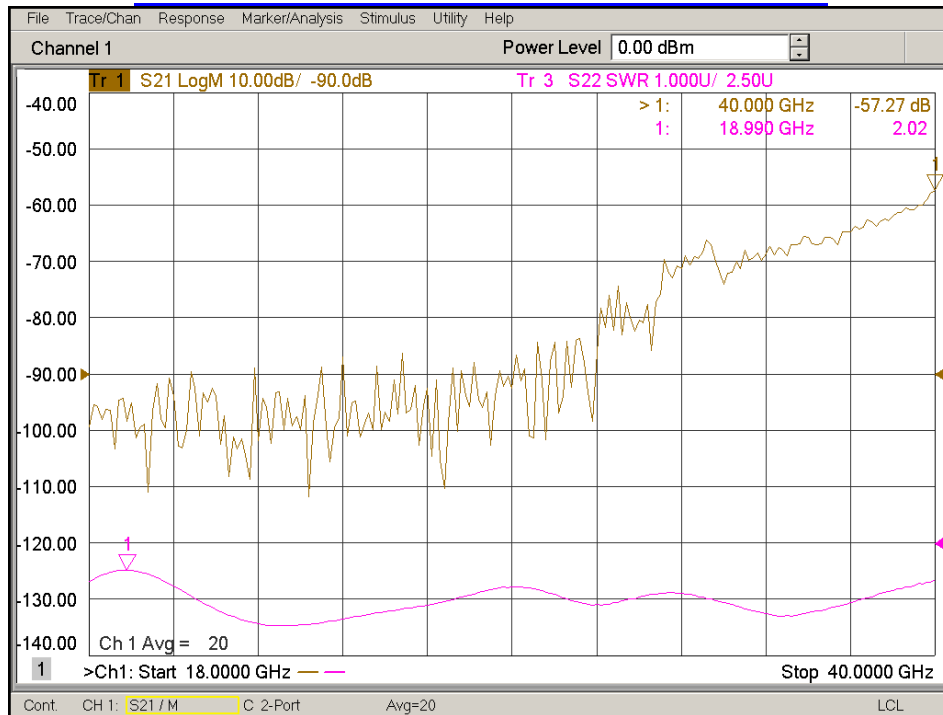


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J4 Insertion Loss and Return Loss



## J17-J4 Termination Isolation and Return Loss

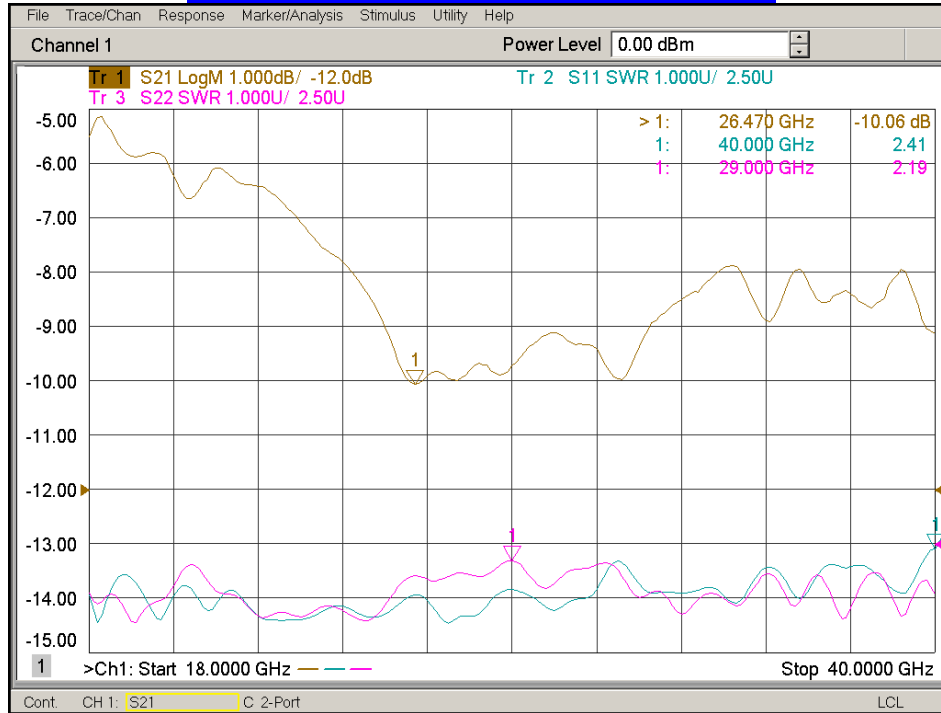




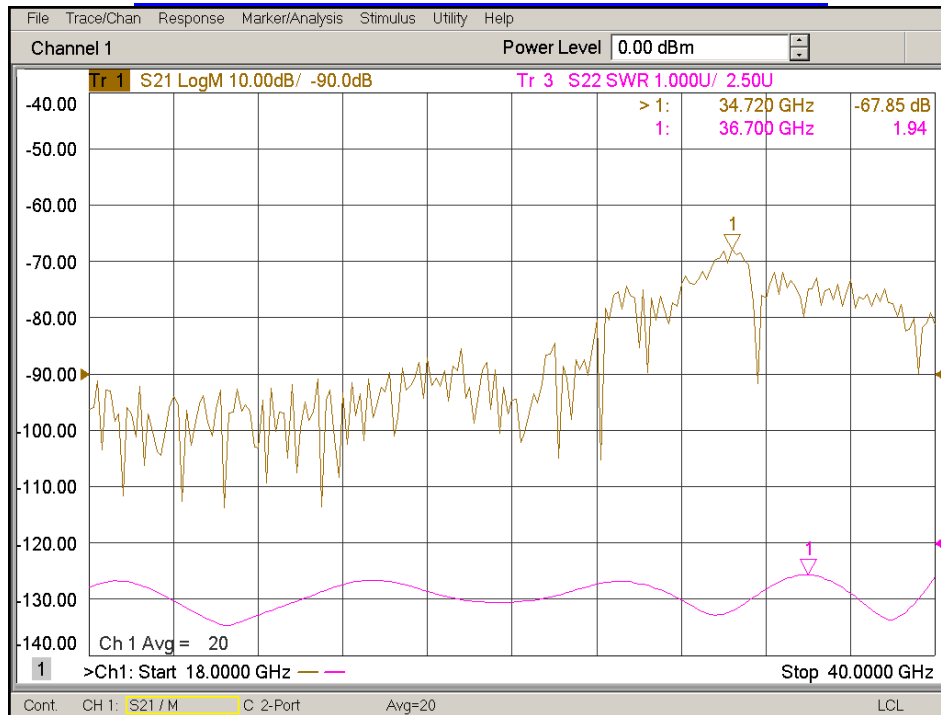


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J5 Insertion Loss and Return Loss



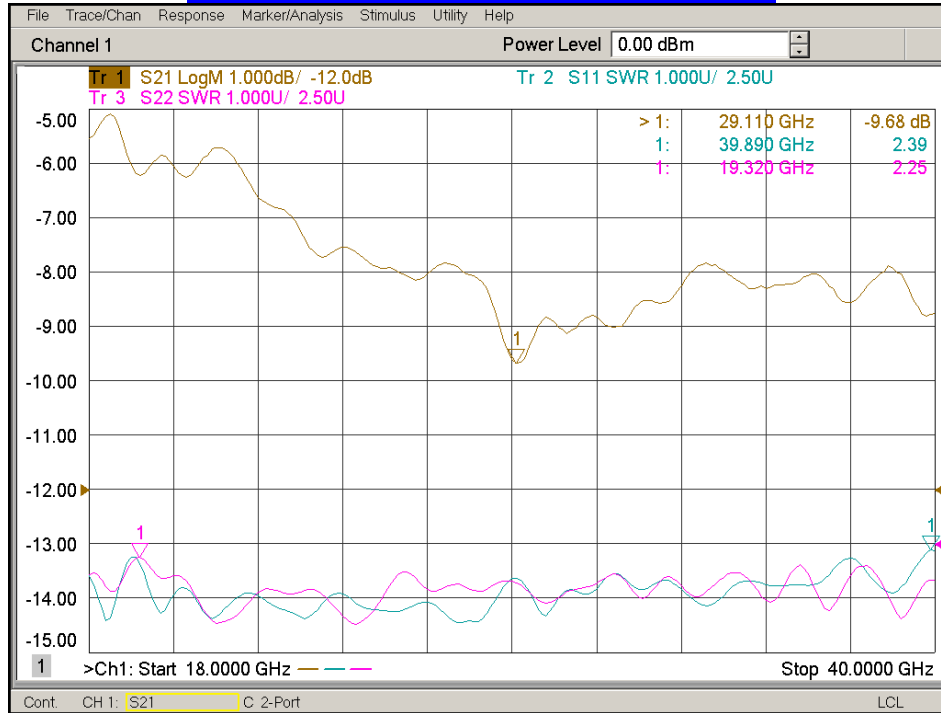
## J17-J5 Termination Isolation and Return Loss



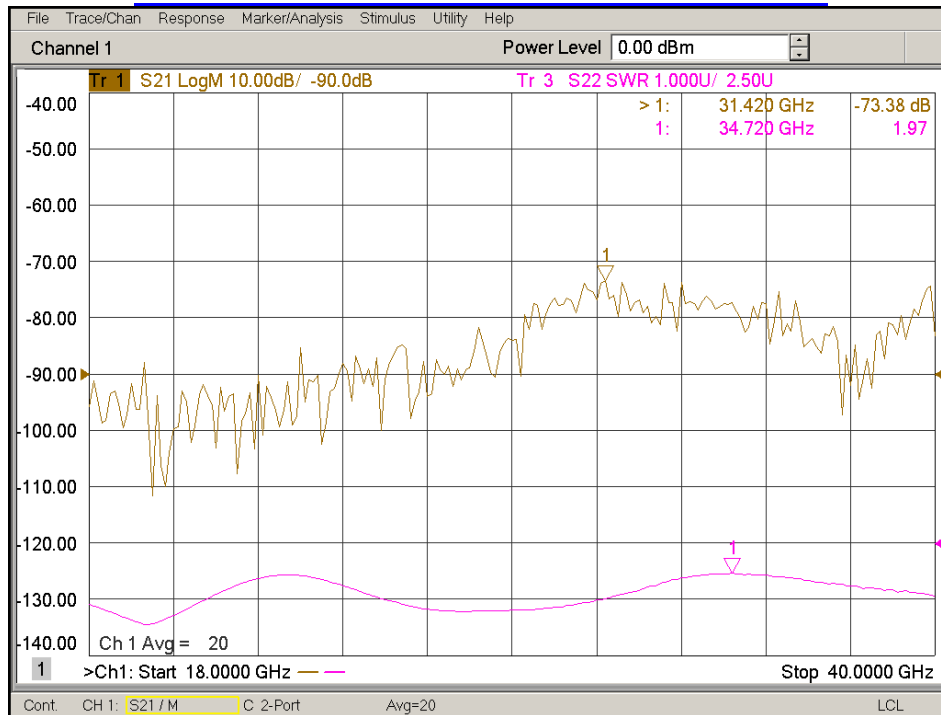


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J6 Insertion Loss and Return Loss



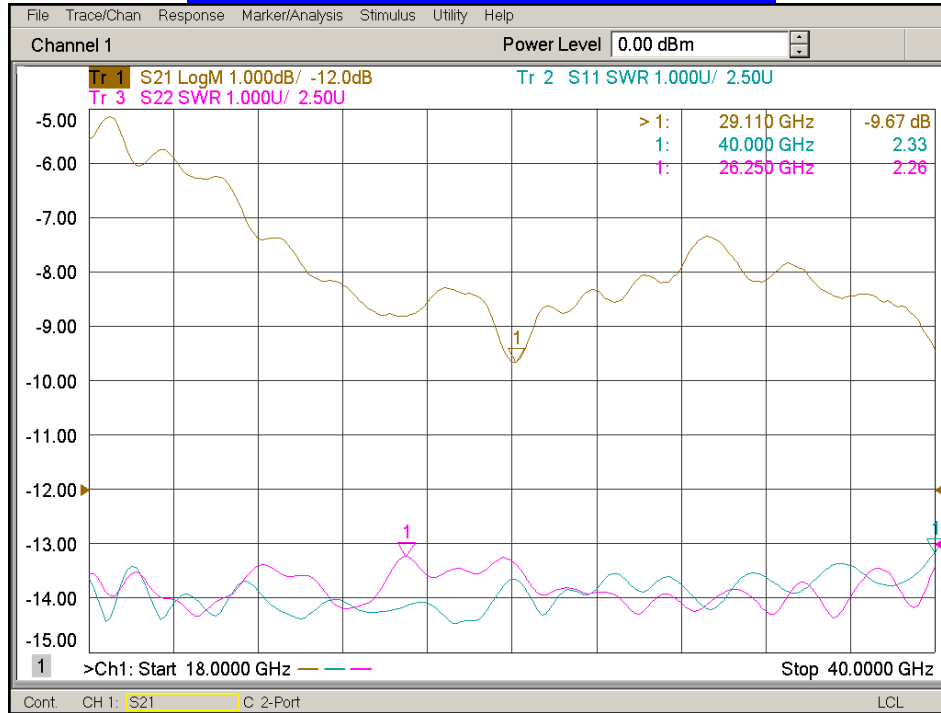
## J17-J6 Termination Isolation and Return Loss



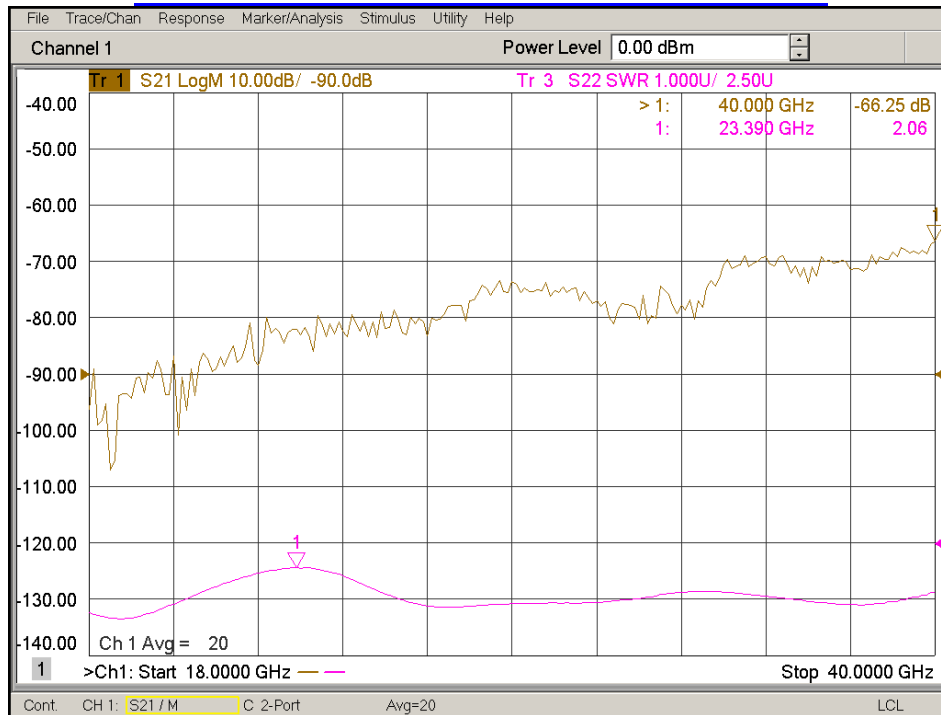


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J7 Insertion Loss and Return Loss



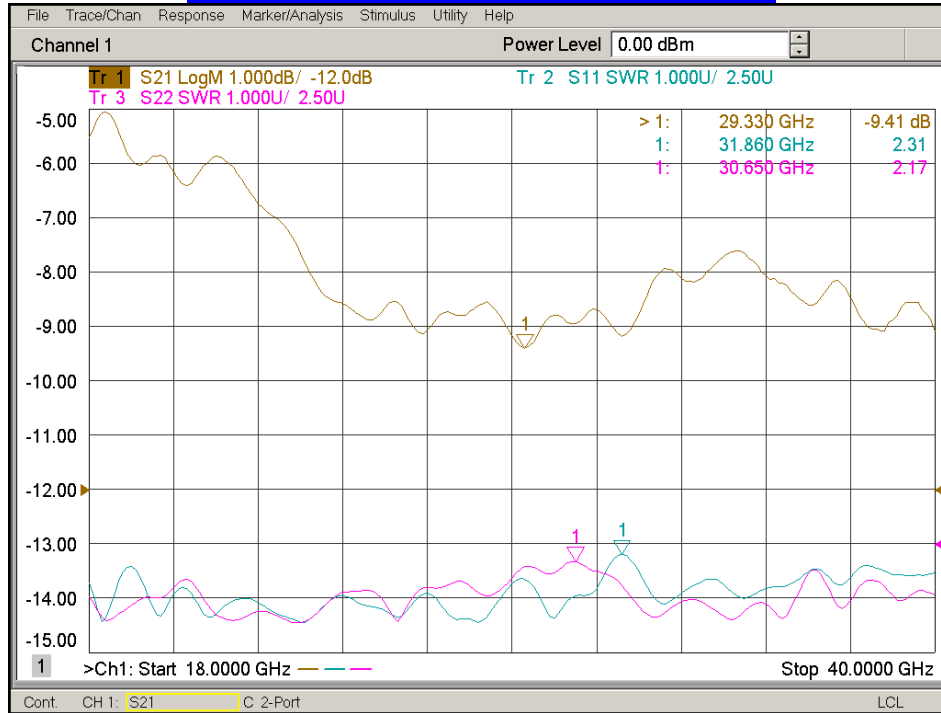
### J17-J7 Termination Isolation and Return Loss



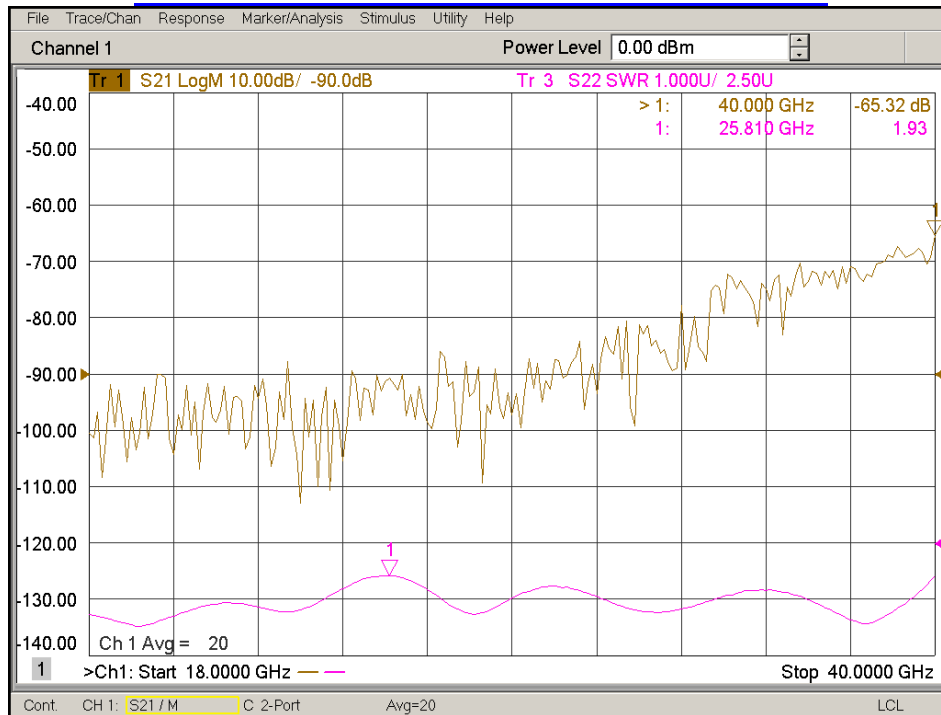


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J8 Insertion Loss and Return Loss



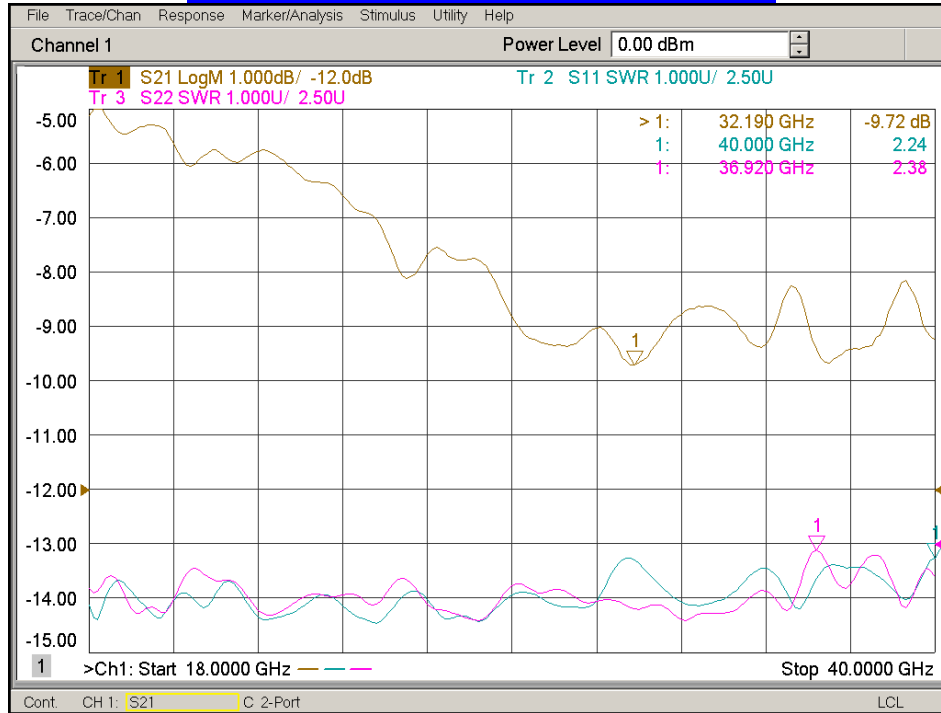
### J17-J8 Termination Isolation and Return Loss



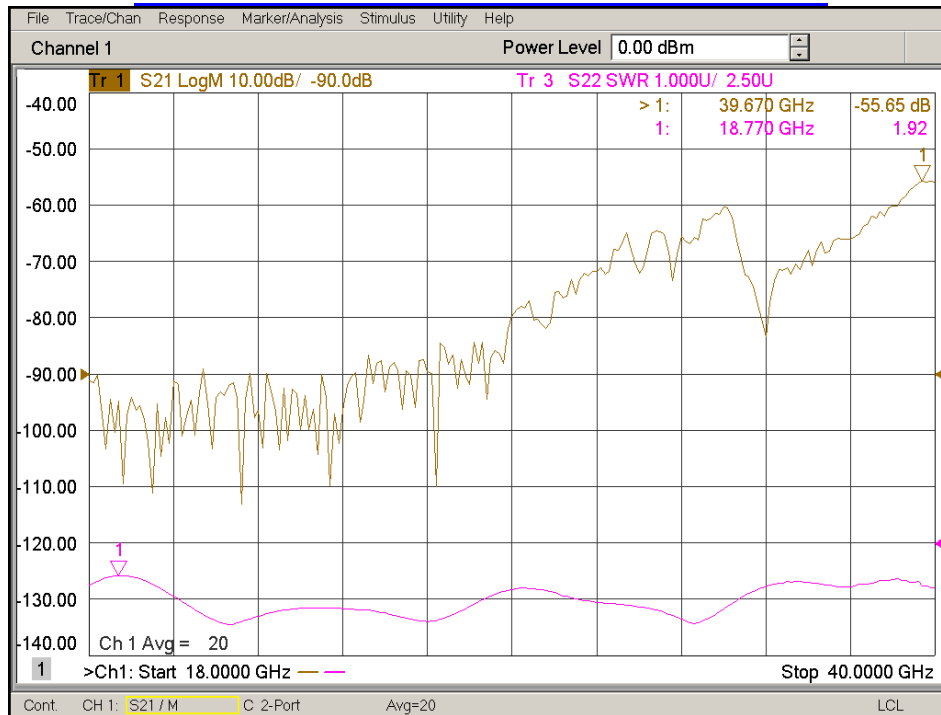


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J9 Insertion Loss and Return Loss



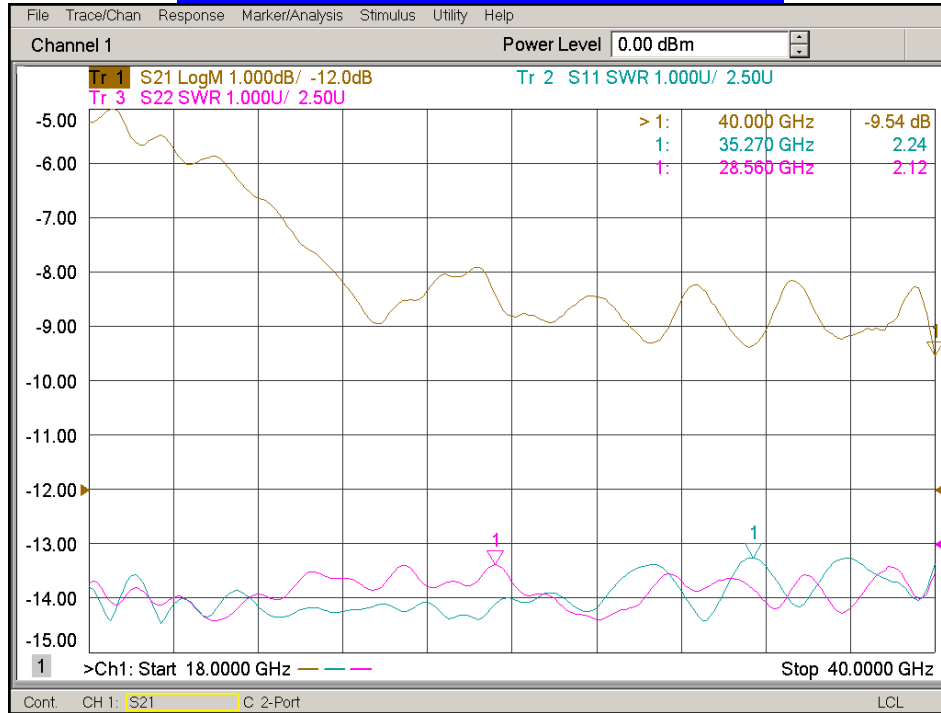
## J17-J9 Termination Isolation and Return Loss



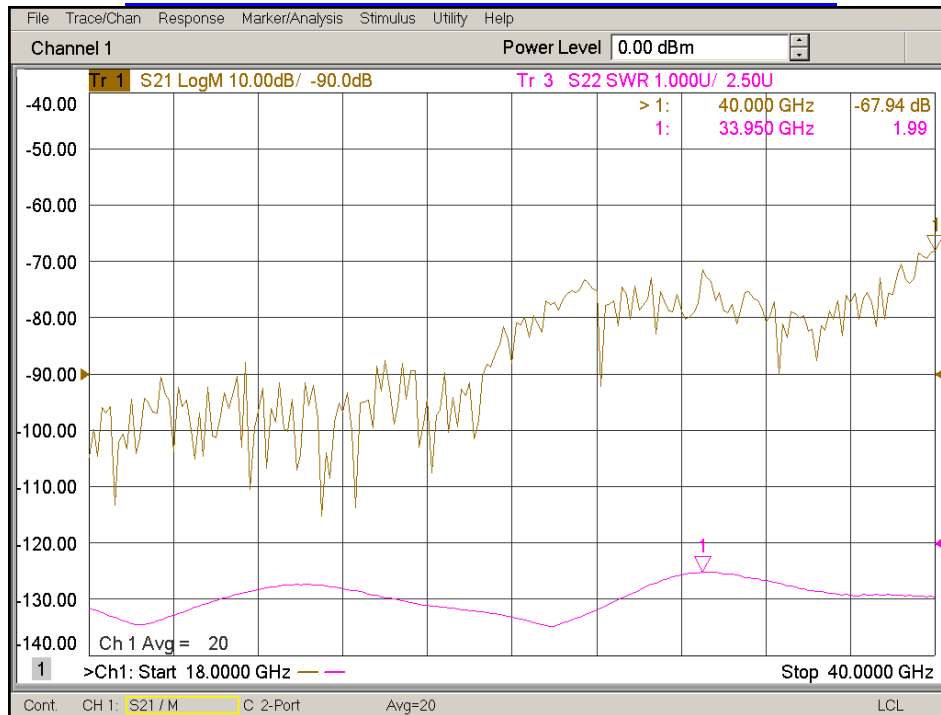


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J10 Insertion Loss and Return Loss



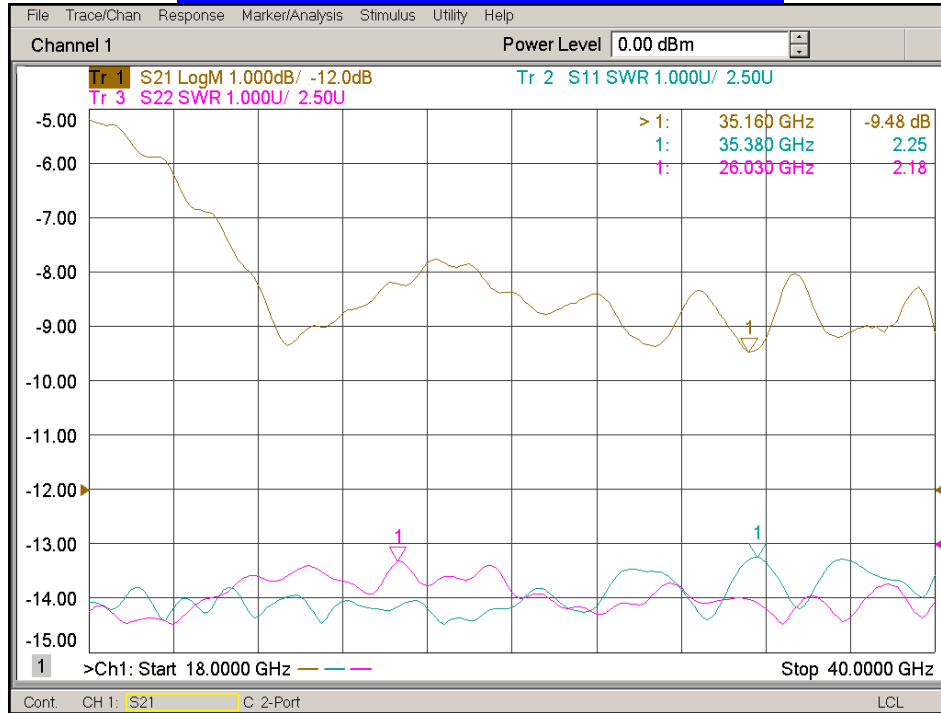
### J17-J10 Termination Isolation and Return Loss



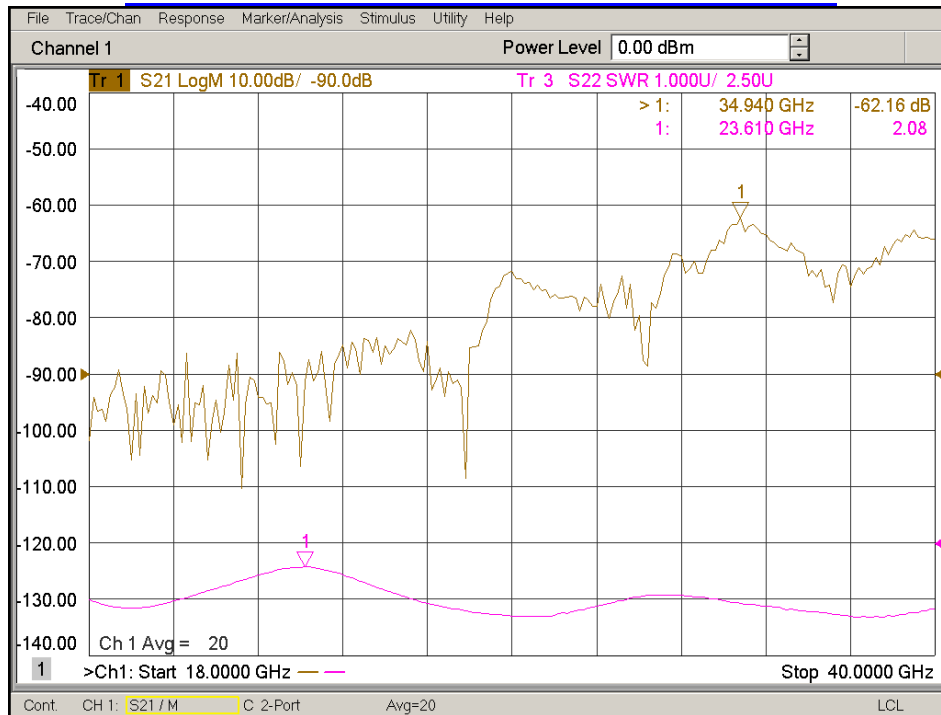


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J11 Insertion Loss and Return Loss



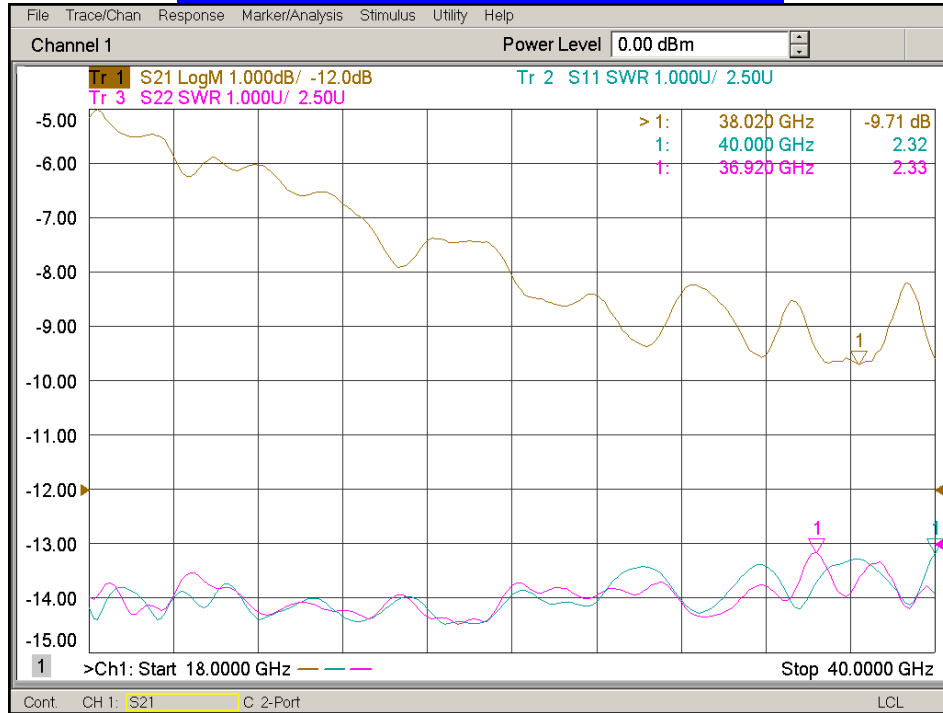
### J17-J11 Termination Isolation and Return Loss



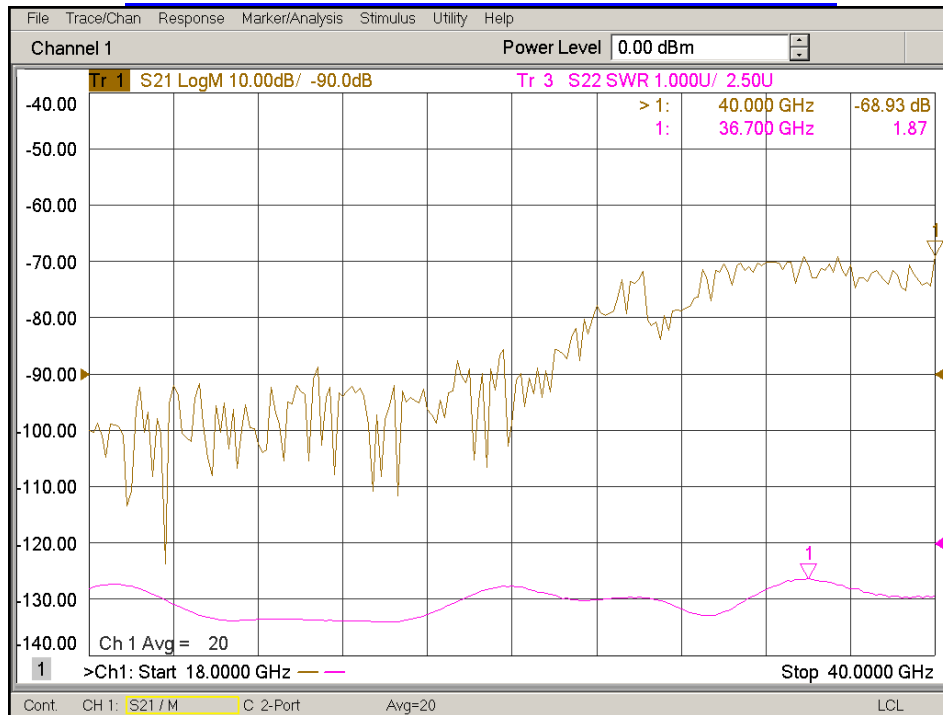


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J12 Insertion Loss and Return Loss



## J17-J12 Termination Isolation and Return Loss

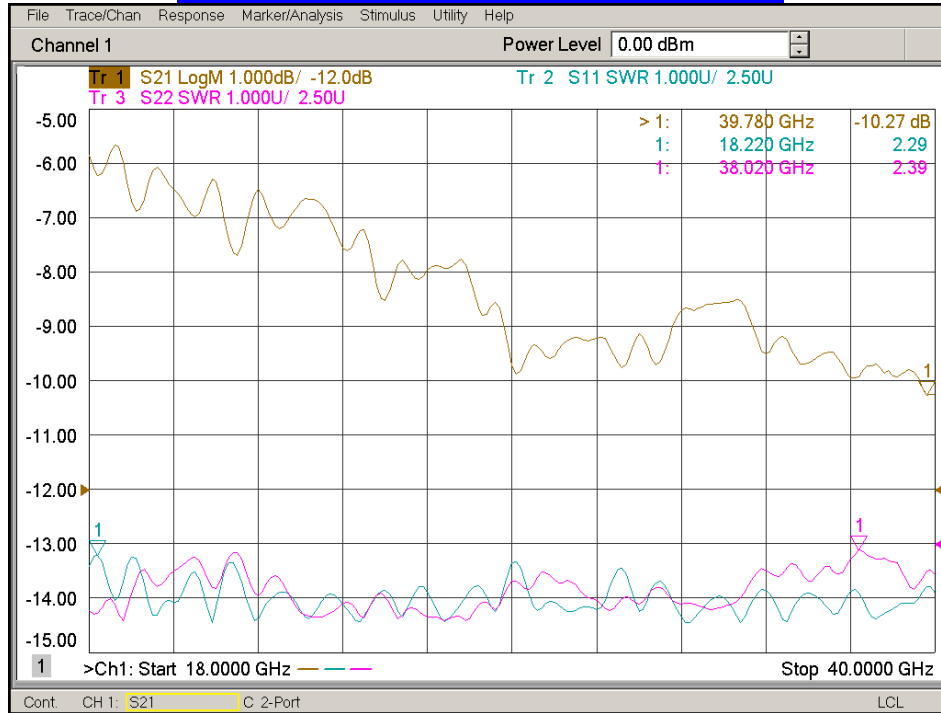




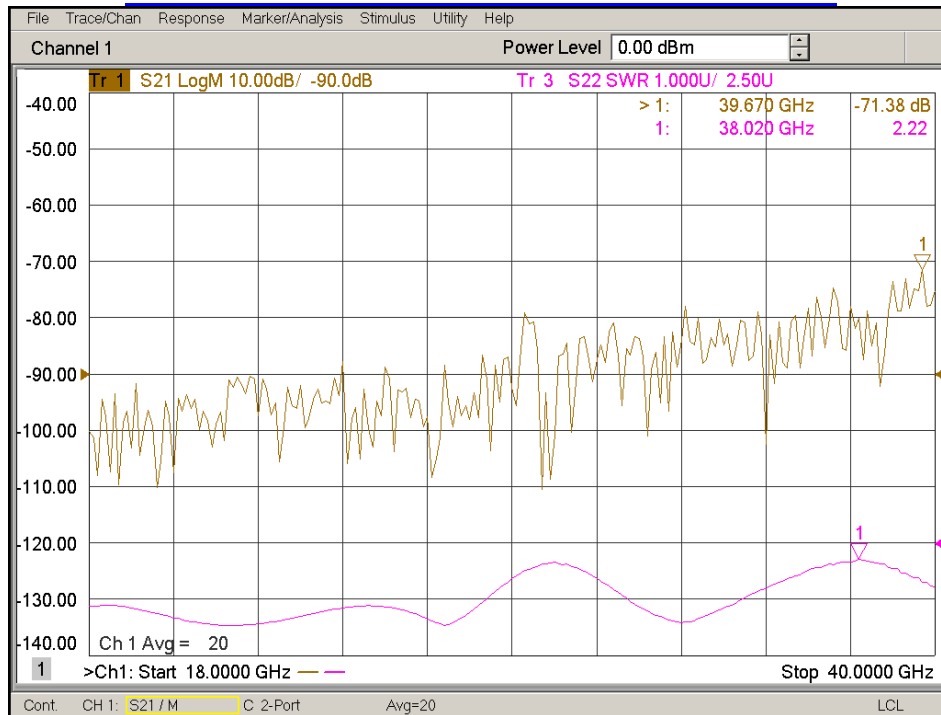


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J13 Insertion Loss and Return Loss



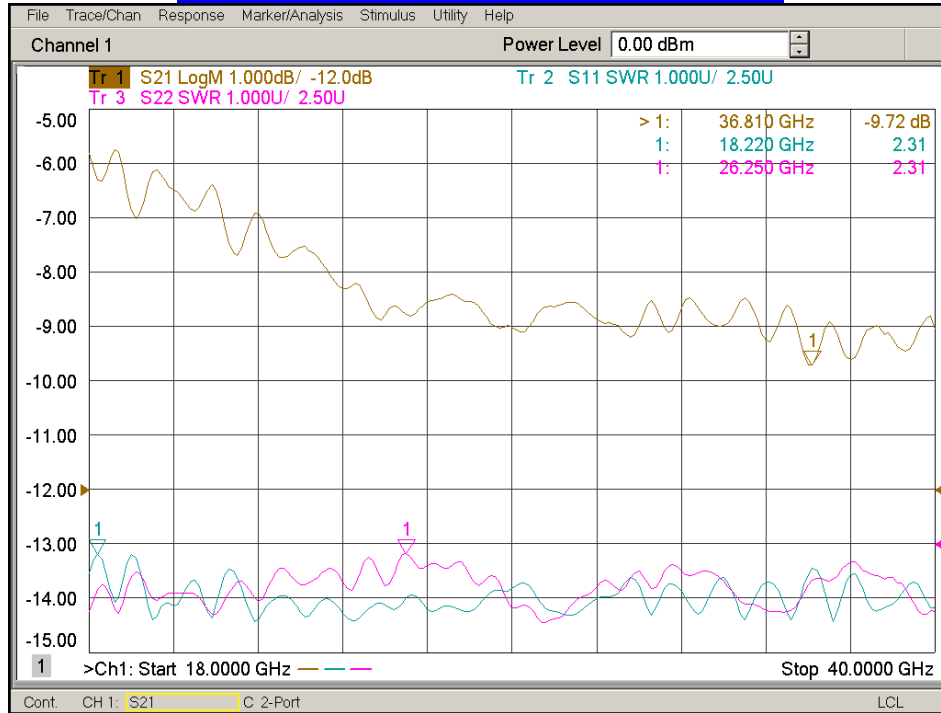
## J17-J13 Termination Isolation and Return Loss



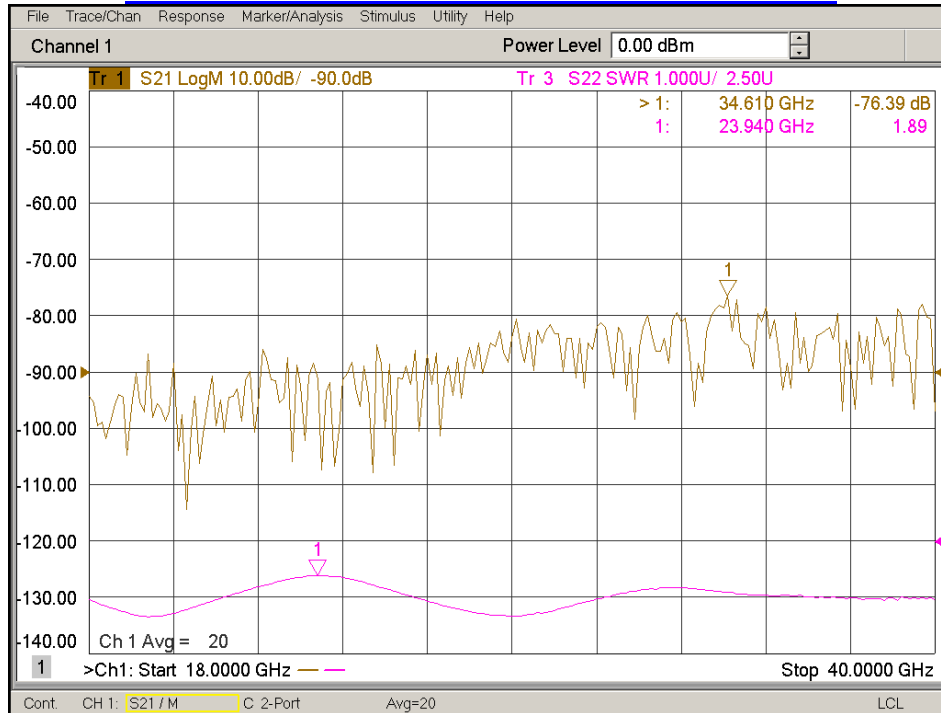


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J14 Insertion Loss and Return Loss



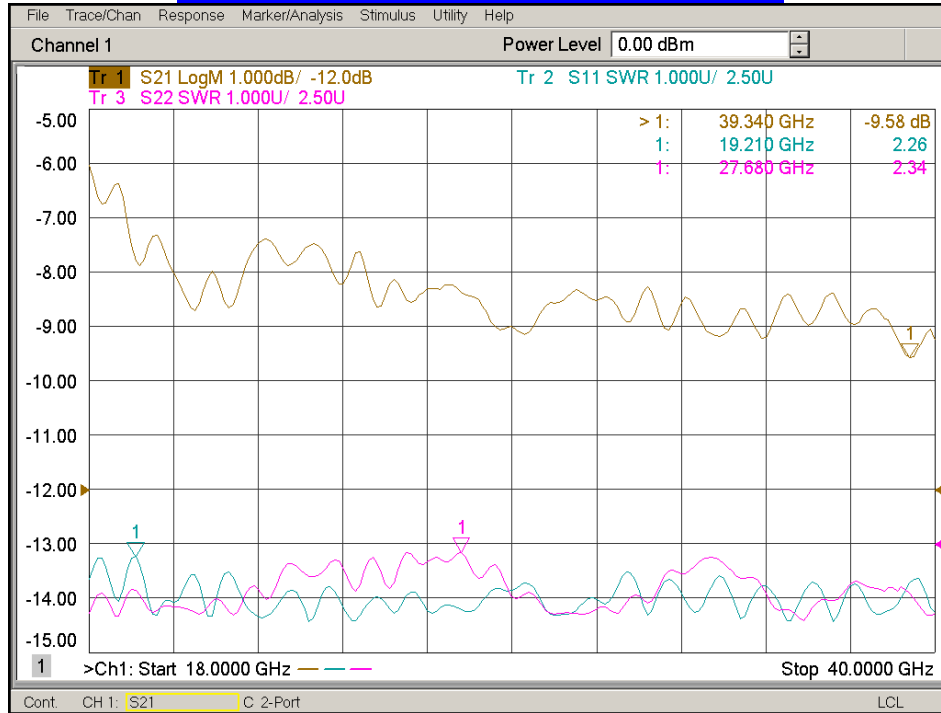
### J17-J14 Termination Isolation and Return Loss



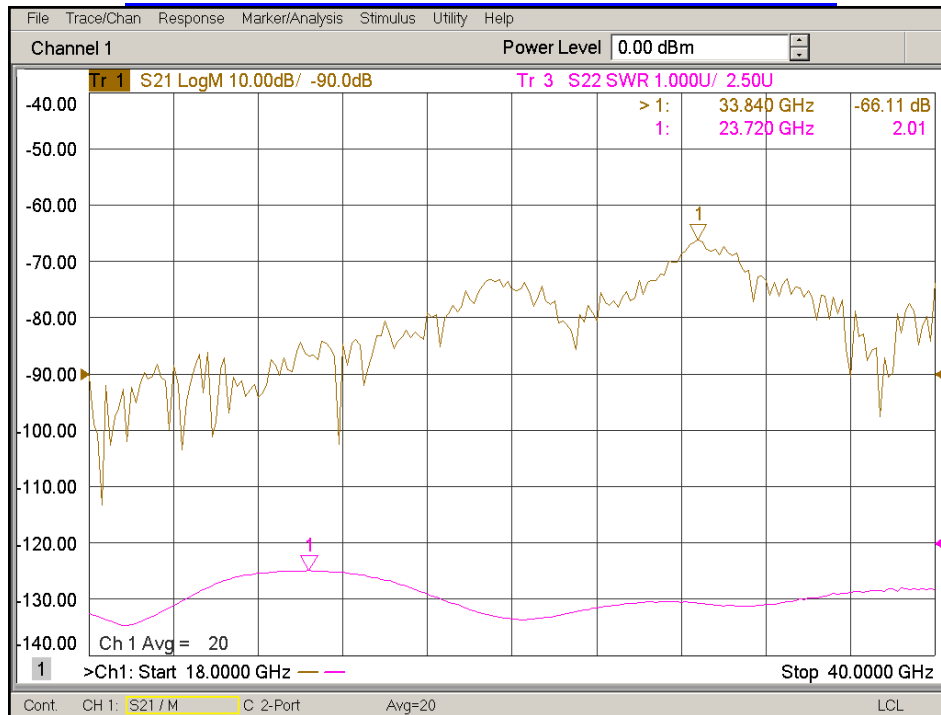


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## J17-J15 Insertion Loss and Return Loss



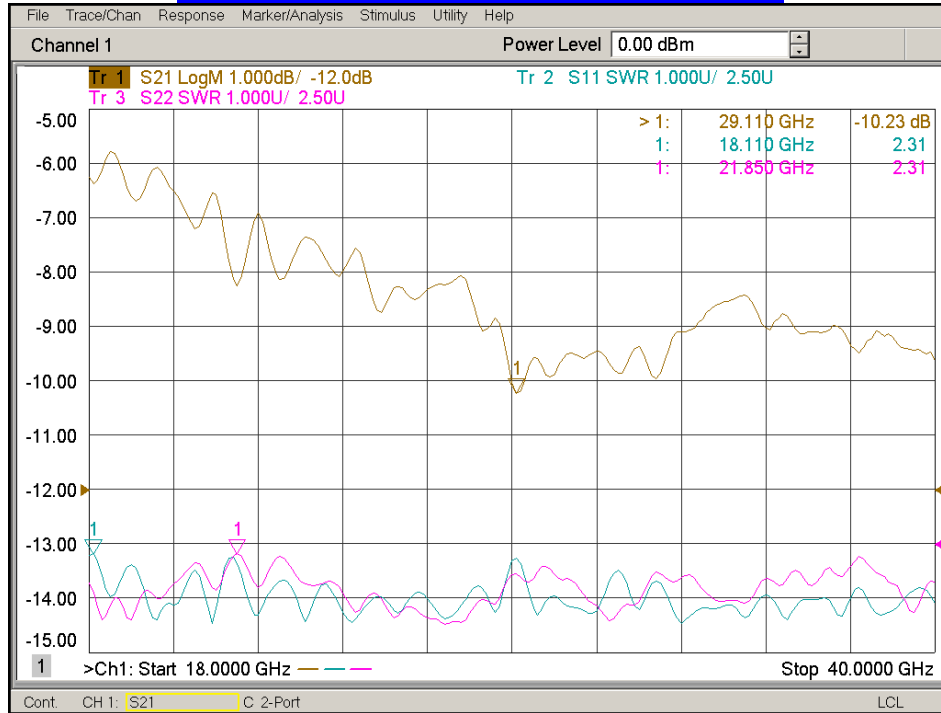
## J17-J15 Termination Isolation and Return Loss



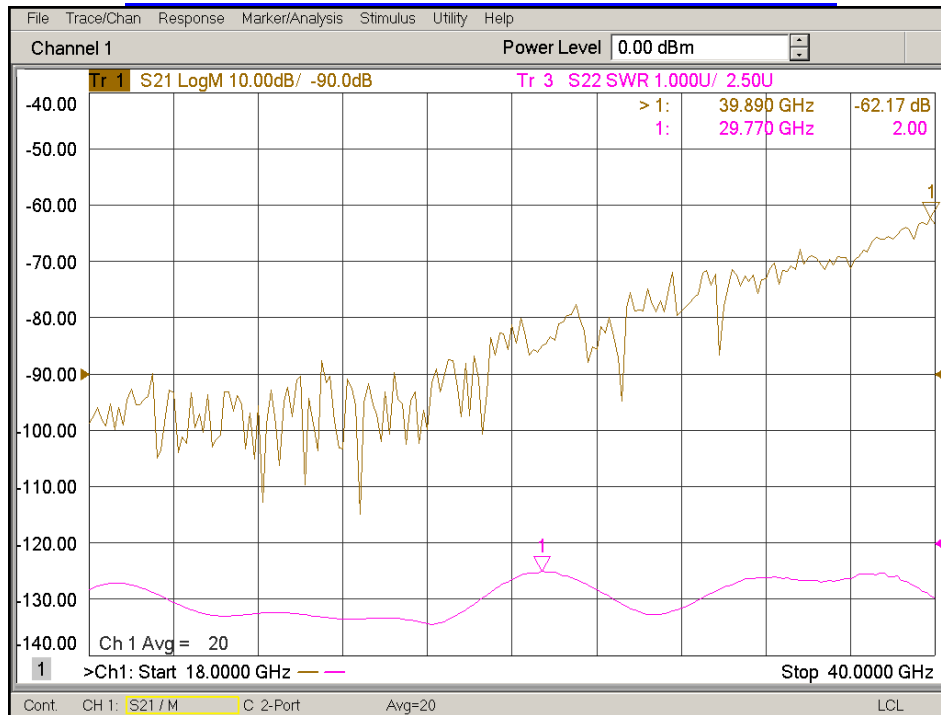


## TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

### J17-J16 Insertion Loss and Return Loss



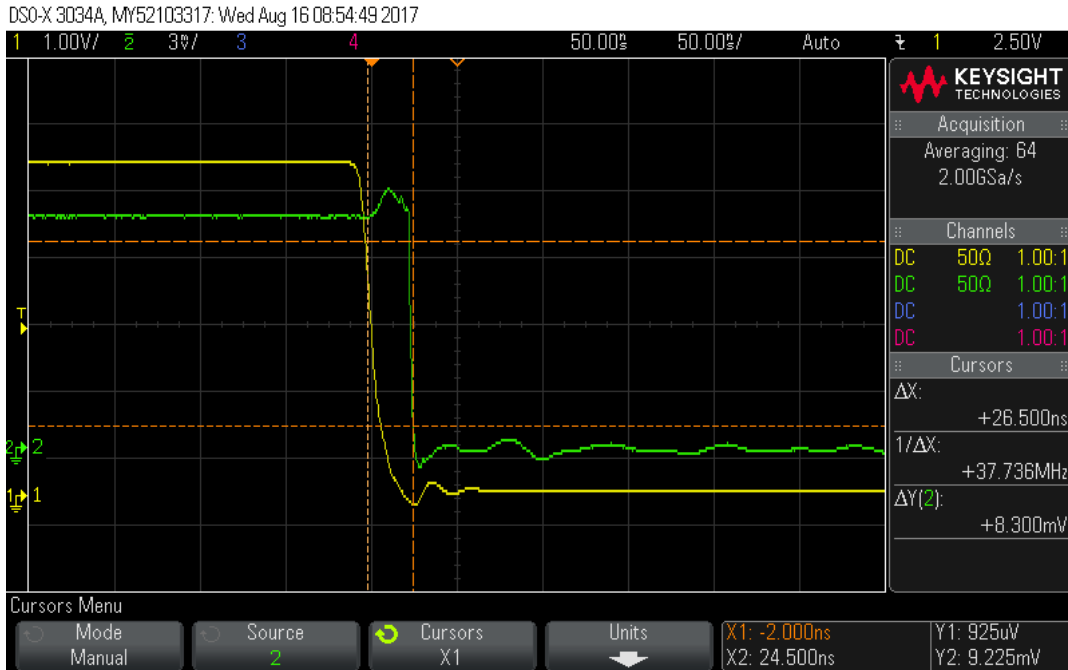
### J17-J16 Termination Isolation and Return Loss



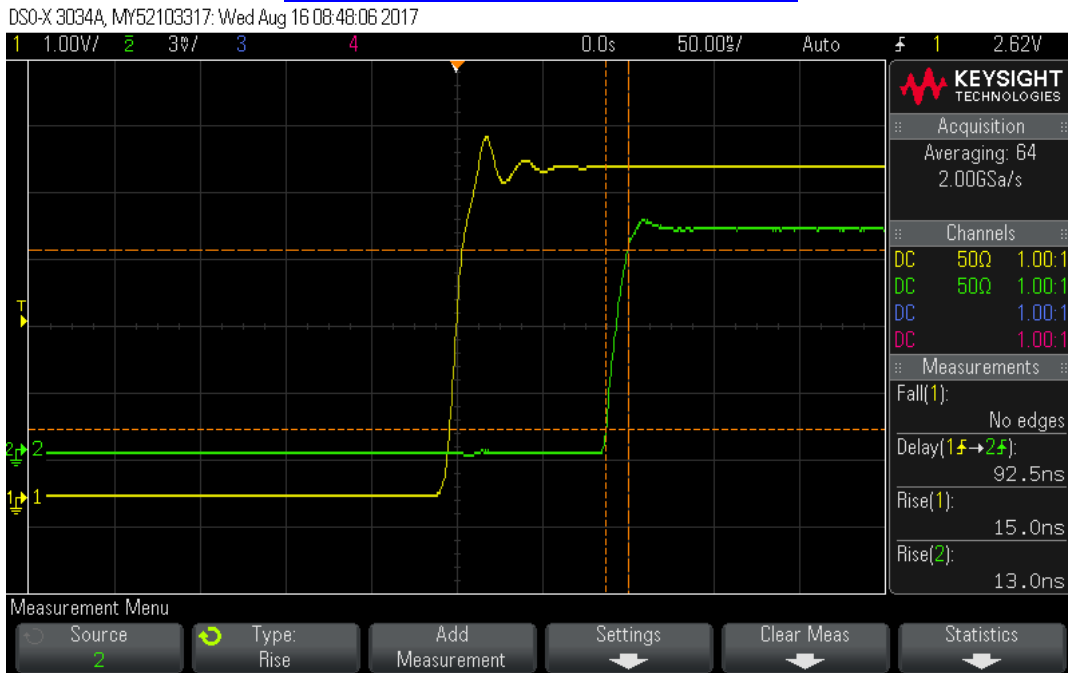


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## Switching Speed Characteristics OFF Delay and Fall Time – 50 ns per Div.



## ON Delay and Rise Time – 50 ns per Div.

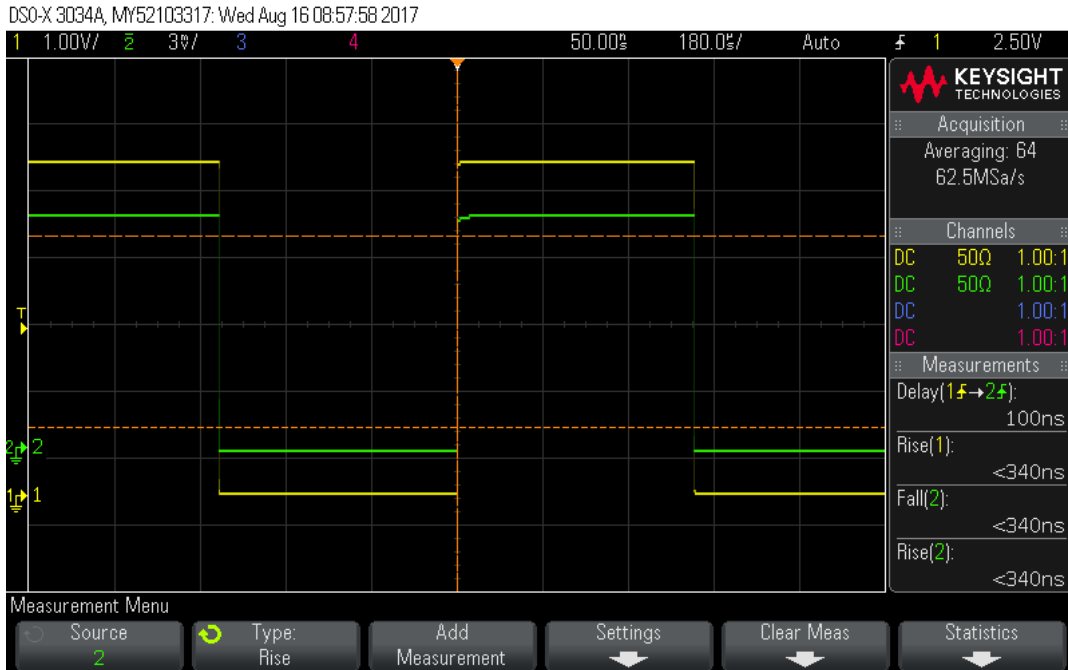


**GREEN TRACE: RF**  
**YELLOW TRACE: TTL**

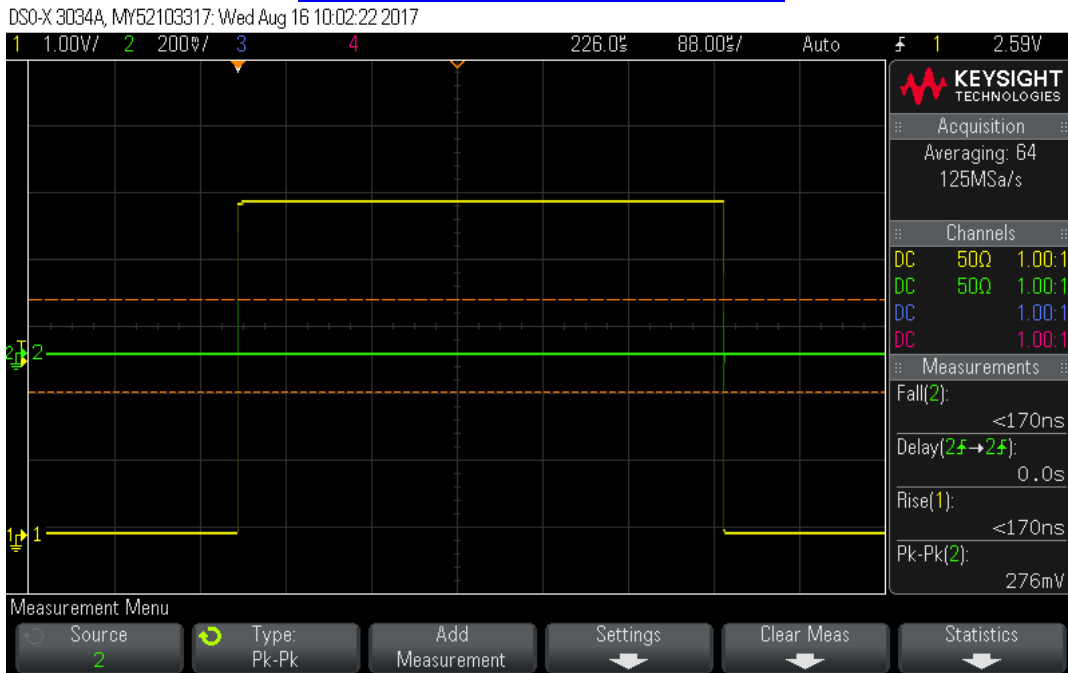


# TYPICAL CHARACTERISTICS ON P16T-18G40G-90-T-512-SFF-DEC

## FULL PULSE – 180 $\mu$ s per Div.



## VIDEO TRANSIENTS – 88 $\mu$ s per Div.



**GREEN TRACE: RF**  
**YELLOW TRACE: TTL**