



**Typical Characteristics
On
P3T-9G10G-45-R-SFF**

P3T-9G10G-45-R-SFF IS A 9.0 TO 10.0 GHz, SP3T REFLECTIVE SWITCH CAPABLE OF SWITCHING WITHIN 100 ns MAXIMUM. THIS UNIT HAS A TYPICAL INSERTION LOSS OF 2.7 dB MAXIMUM AND ISOLATION OF 45 dB MINIMUM WITH A VSWR OF 1.8:1.



March 31, 2017

Designed By:

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Tested & Reported By:

Sebastián Palacio / Alfredo López

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DESCRIPTION

PMI MODEL: P3T-9G10G-45-R-SFF IS A 9.0 TO 10.0 GHz, SP3T REFLECTIVE SWITCH CAPABLE OF SWITCHING WITHIN 100 ns MAXIMUM. THIS UNIT HAS A TYPICAL INSERTION LOSS OF 2.0 dB AND ISOLATION OF 45 dB MINIMUM WITH A VSWR OF 1.8:1.

SPECIFICATIONS

- FREQUENCY: 9.0 TO 10.0 GHz
- INSERTION LOSS: 2.5 dB TYPICAL
2.7 dB MAXIMUM
- ISOLATION: 45 dB MINIMUM
- VSWR: 1.8:1 TYPICAL
- LOGIC CONTROL: SEE LOGIC TABLE BELOW
- SWITCHING SPEED: 100 ns MAXIMUM
- POWER HANDLING: 10 W CW MINIMUM
57 dBm PEAK @ 1 μs PULSE WIDTH, 1% DUTY CYCLE
- SUPPLY: +5 V @ 85 mA
-15 V @ 75 mA
- FINISH: BLUE EPOXY POLIMIDE COATING IAW
MIL-C-22750, TYPE I OVER EPOXY POLIMIDE
PRIMER IAW MIL-P-23377, TYPE I, CLASS 1 OR 3.
MOUNTING SURFACE FREE OF PAINT

LOGIC CONTROL TTL

L1	L2	L3	COMM-J1	COMM-J2	COMM-J3
TTL LO	TTL HI	TTL HI	INSERTION LOSS	ISOLATION	ISOLATION
TTL HI	TTL LO	TTL HI	ISOLATION	INSERTION LOSS	ISOLATION
TTL HI	TTL HI	TTL LO	ISOLATION	ISOLATION	INSERTION LOSS

ENVIRONMENTAL RATINGS

- TEMPERATURE: -54 °C TO +95 °C (OPERATING)
-65 °C TO +125 °C (STORAGE)
- HUMIDITY: MIL-STD-202, METHOD 103B COND. B MAINTAIN
RH 95±4% @ 63 °C (ALLOWED RF 85% WHEN
TEMPERATURE-DOWN TRANSITION TIME.) THE
RATE OF TEMPERATURE CHANGE: ABOVE 8
°C/HOURS
- SHOCK: MIL-STD-202, METHOD 213, COND J
20G (DURING OPERATION) & 125g, 6 ms SAW
TOOTH TYPE, 3-AXIS (NO OPERATION)
- VIBRATION: MIL-STD-202, METHOD 214, COND A
12G 30 MIN. X, Y, Z-AXIS (DURING OPERATION)
& 20G 30 MIN X, Y, Z-AXIS (DURING OPERATION)
- ALTITUDE: MIL-STD-202, METHOD 105C, COND B
200Km (8.47e-7 hPa or 6.353e-7 torr) DURING
OPERATION
- TEMPERATURE CYCLE: MIL-STD-202, METHOD 107D COND. A

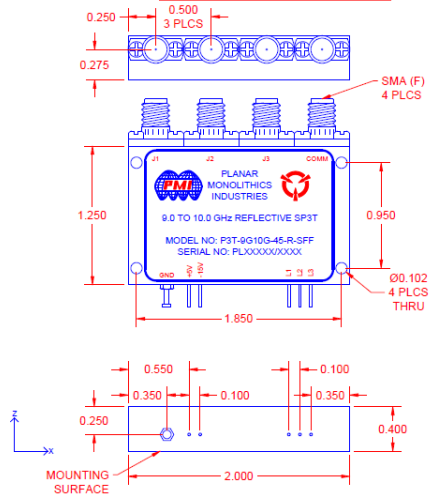
NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE
NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

PMI CONFIDENTIAL AND PROPRIETARY

ALL DIMENSIONS
ARE IN INCHES (mm)
TOLERANCES:
XXX ±0.020
XXX ±0.010

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	10/17/16	
	A1	ECN # 17-0175	7/15/17	
	A2	ECN # 25-0049	2/24/25	

MECHANICAL OUTLINE



PLANAR MONOLITHICS INDUSTRIES, INC.
7311-F GROVE ROAD
FREDERICK, MARYLAND 21704 USA
TEL: (301)-662-5019, FAX: (301)-662-1731
WEB: www.pmi-rf.com, EMAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED

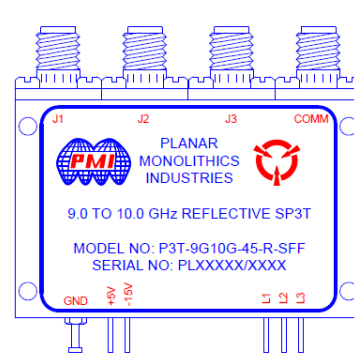
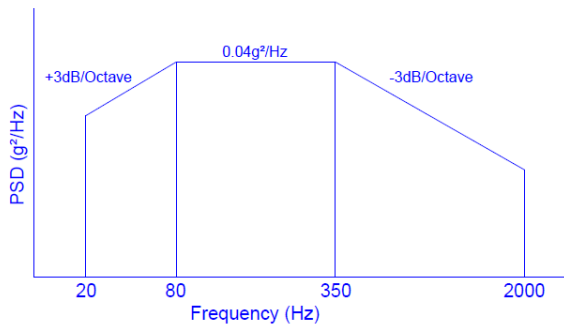
APPROVALS		DATE	TITLE		REV.
DESIGN	M. Berry	10/17/16	PRODUCT FEATURE P3T-9G10G-45-R-SFF		
CHECKED			SIZE	FORM NO.	DWG NO.
ISSUED			A	05XQ0	27030780
			SCALE	N:S	SHEET 1 OF 2



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VIBRATION TESTING PROFILE:

1. VIBRATION DIRECTION IS Z-AXIS
2. VIBRATION FREQUENCY IS RANDOM VIBRATION 20-2000 Hz AND EXCLUDES RESONANCE FREQUENCY OF A TEST ZIG
3. VIBRATION MAGNITUDE IS 6grms, 0.04g²/Hz ±3 dB OCTAVE FOR 10 MINUTES



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ALL DIMENSIONS
 ARE IN INCHES (mm)

TOLERANCES:

X.XX ±0.002

X.XXX ±0.010

APPROVALS	DATE	TITLE
DRAWN M.Berry	10/11/18	PRODUCT FEATURE P3T-9G10G-45-R-SFF 9.0 to 10.0 GHz, Single Pole, Three Throw Reflective Switch
CHECKED		SIZE: A PCKG NO: 05XQ0 DWG NO: 27030780 REV: A2
ISSUED		SCALE: N:S SHEET: 2 OF 2



**Typical Characteristics
On
P3T-9G10G-45-R-SFF**

Typical Data @ 25°C

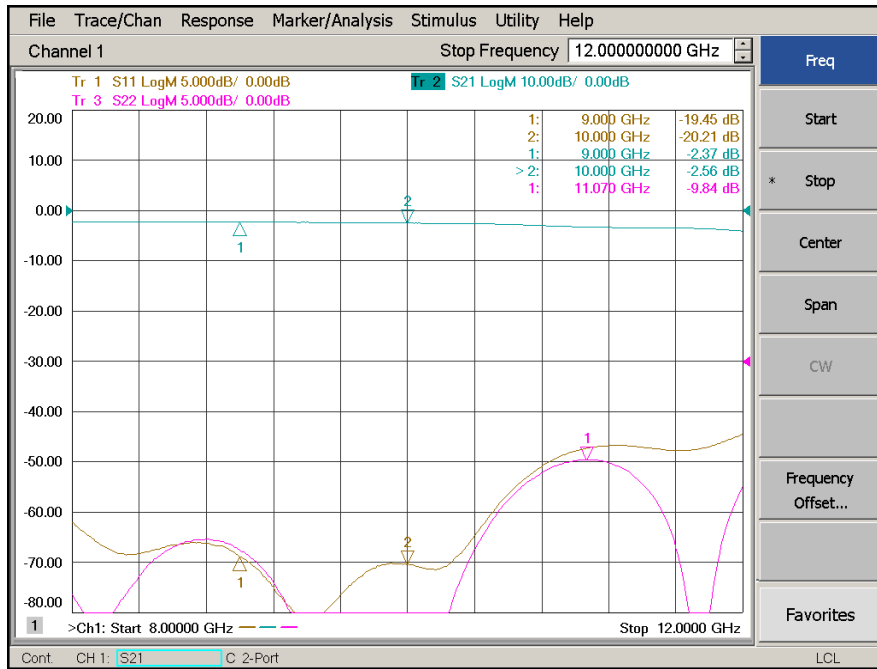
TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS	QA QC
1	Frequency Range	9.0 to 10.0 GHz	9.0 to 10.0 GHz See Plots	
2	Insertion Loss	2.50 dB Typ 2.70 dB Max	2.56dB See Plots	
3	Isolation	45 dB Min	51.07dB See Plots	
4	Power Handling	+40 dBm CW Mlin +57 dBm @ 1 μ s Pulse Width & 1% Duty Cycle	+40 dBm CW Mlin +57 dBm @ 1 μ s Pulse Width & 1% Duty Cycle See Graph	
5	VSWR	1.8:1 Typ	1.24:1 See Plots	
6	Switching Speed	100 ns Max	ON – 52ns OFF - 98ns See Plots	
7	Control Logic	See Table Below	Pass	
8	Supply	+5 V @ 85 mA -15 V @ 75 mA	+5 V @ 80mA -15 V @ 0mA	

Logic Control TTL					
L1	L2	L3	J0-J1	J0-J2	J0-J3
LOW	HIGH	HIGH	INSERTION LOSS	ISOLATION	ISOLATION
HIGH	LOW	HIGH	ISOLATION	INSERTION LOSS	ISOLATION
HIGH	HIGH	LOW	ISOLATION	ISOLATION	INSERTION LOSS

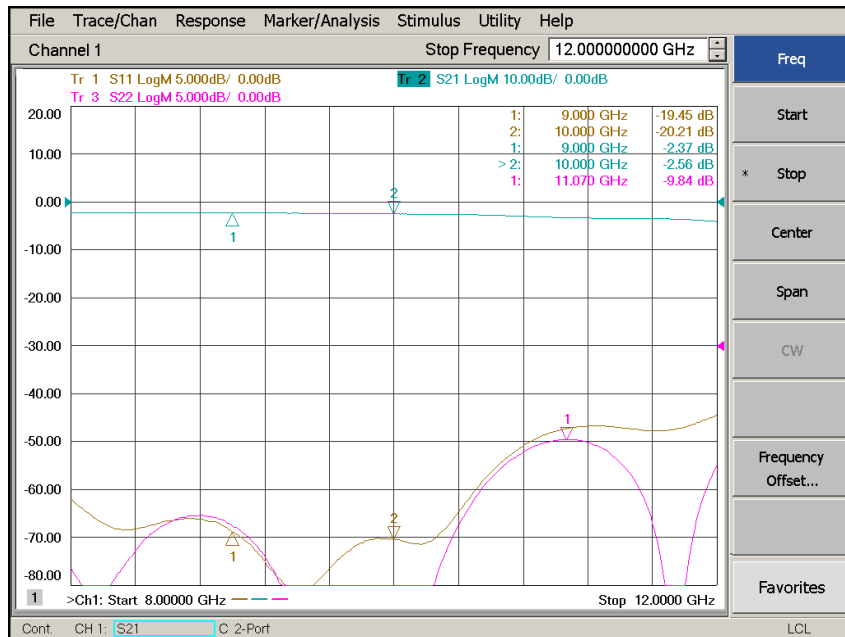
J0 – J1 Insertion Loss, Return Loss



Typical Characteristics On P3T-9G10G-45-R-SFF



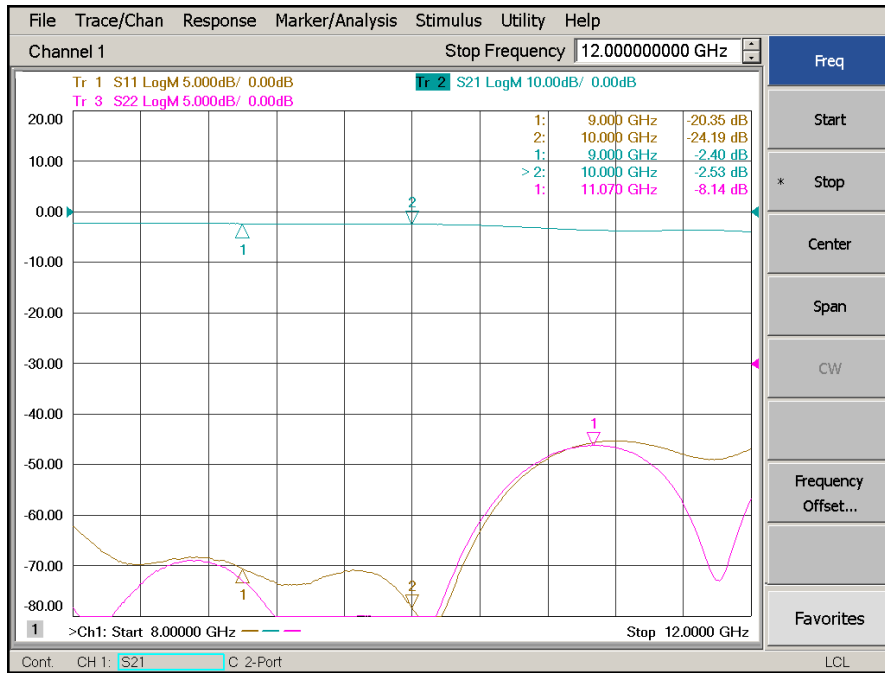
J0 – J2 Insertion Loss, Return Loss



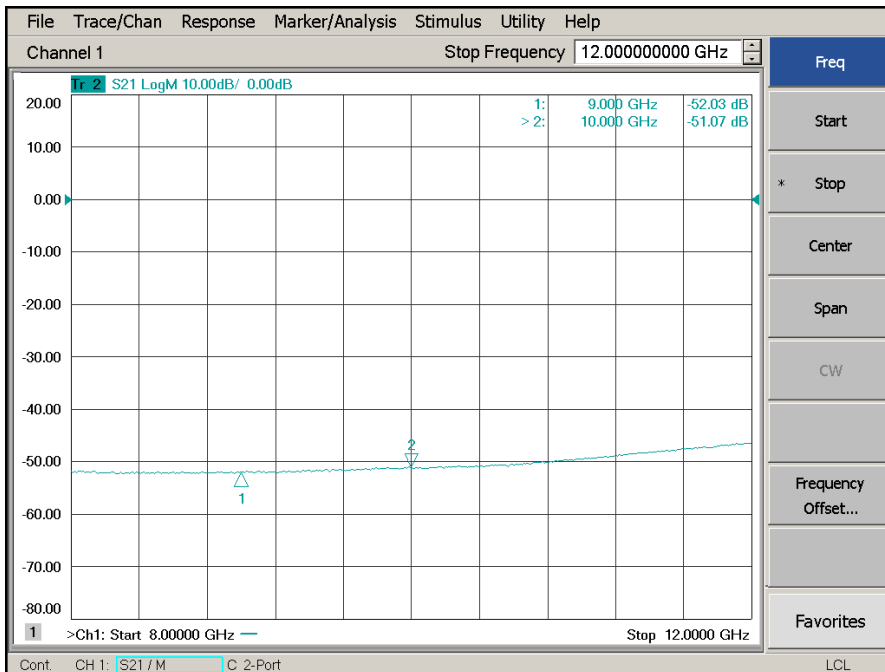
J0 – J3 Insertion Loss, Return Loss



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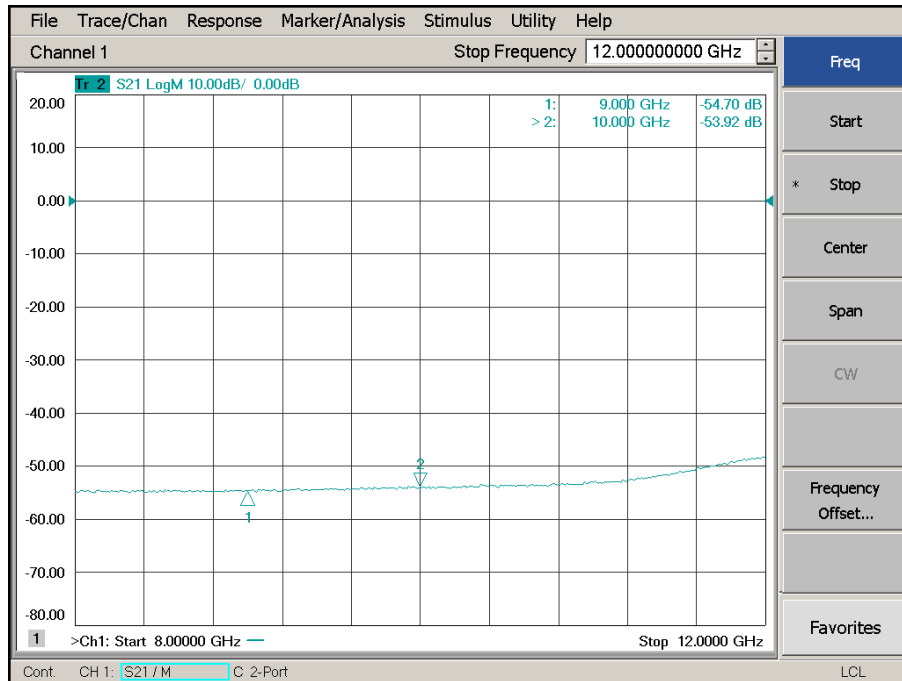
J1 Isolation



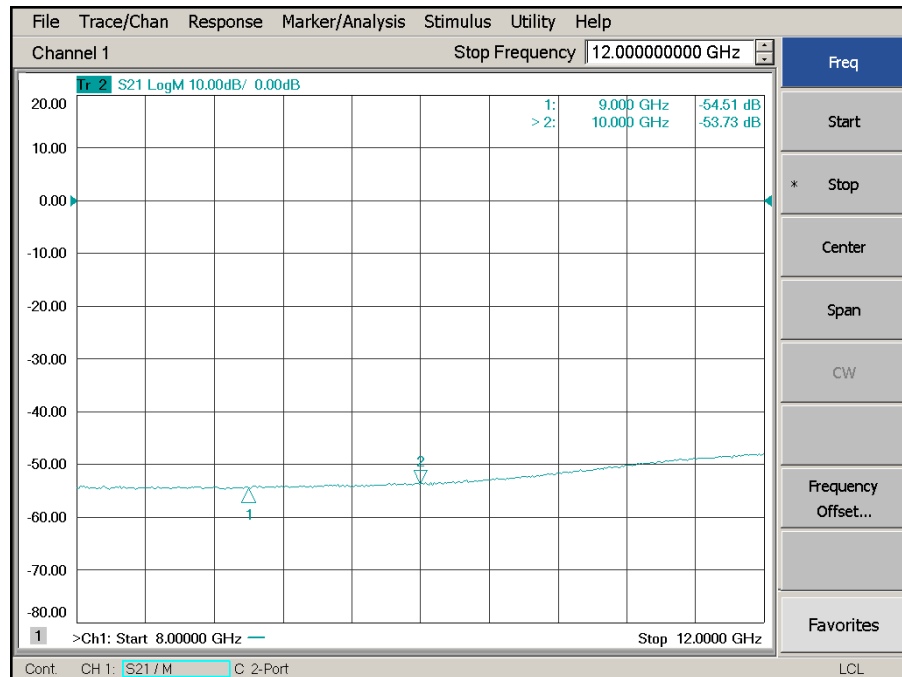
J2 Isolation



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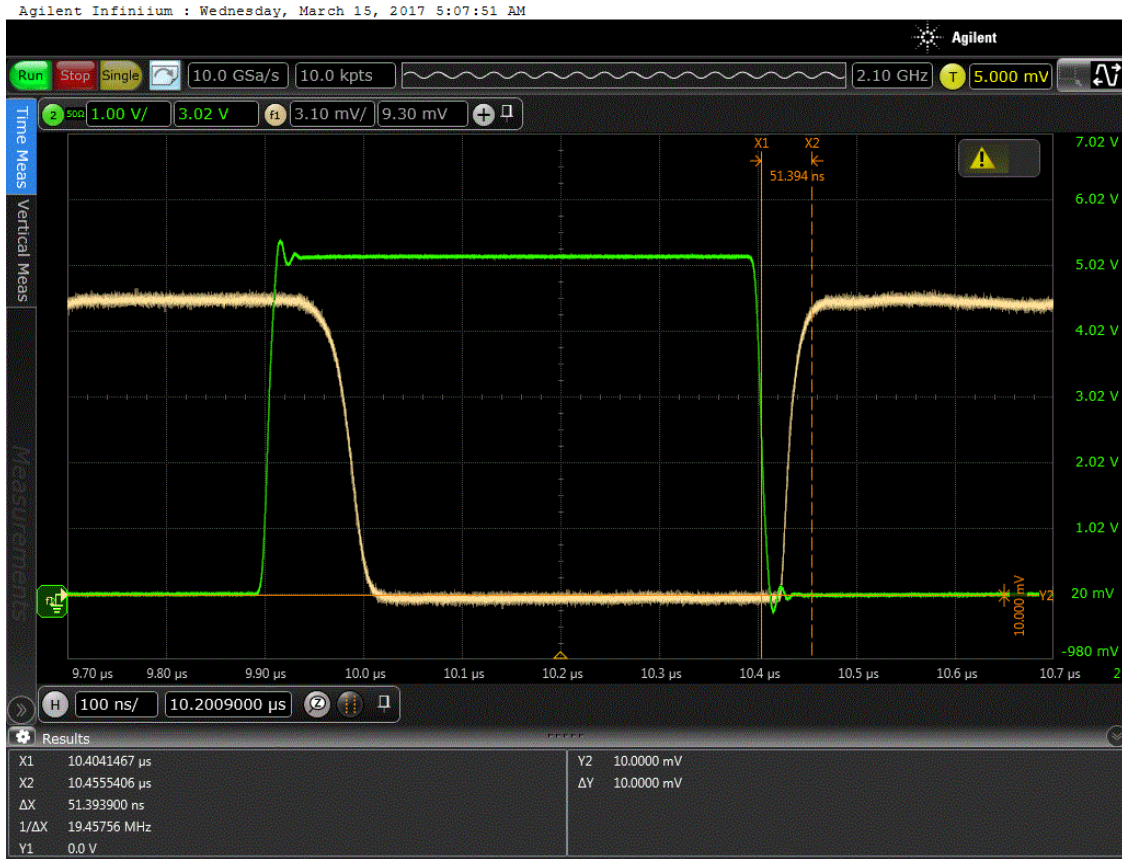
J3 Isolation





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**Switching Speed
ON Speed – 100ns per Div.**

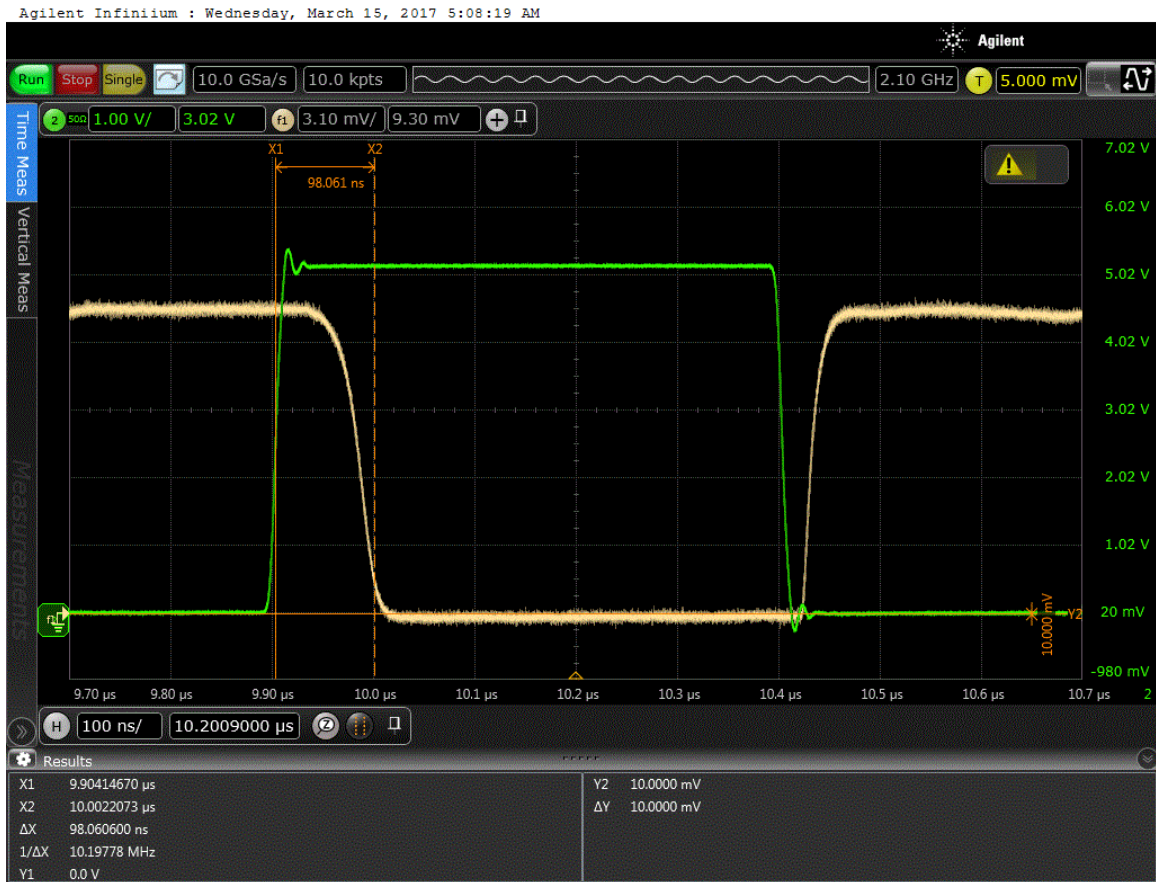


**Green Trace = TTL Signal
Light Brown Trace = RF Signal**



**Typical Characteristics
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**Switching Speed
OFF Speed – 100ns per Div.**

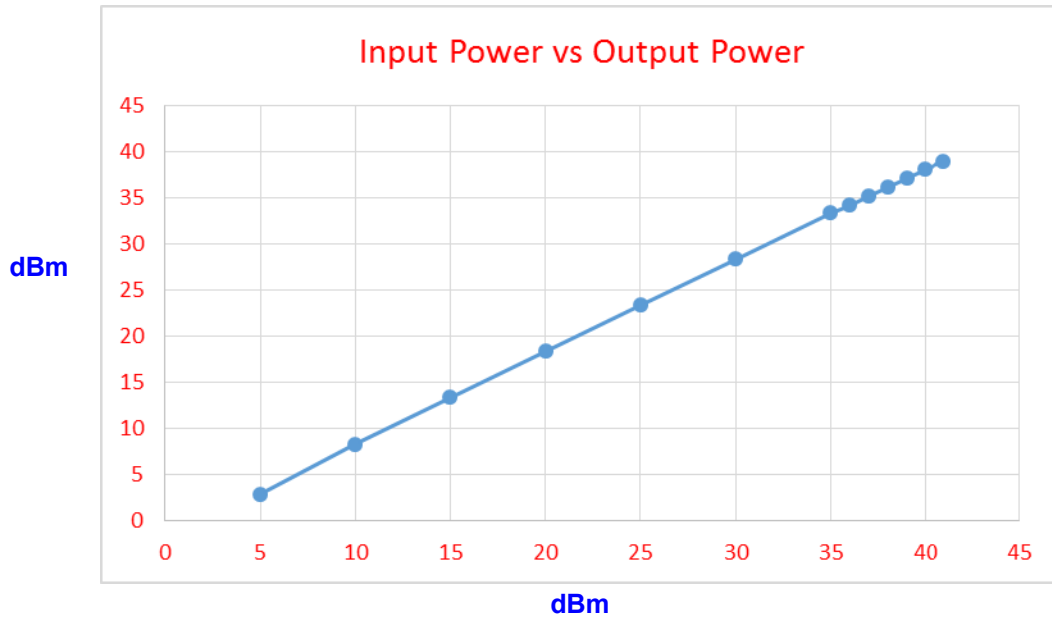


Green Trace = TTL Signal
Light Brown Trace = RF Signal

High Power Test



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INPUT POWER	OUTPUT POWER
5	2.88
10	8.28
15	13.36
20	18.4
25	23.39
30	28.38
35	33.35
36	34.21
37	35.17
38	36.13
39	37.1
40	38.04
41	38.94