

**TYPICAL CHARACTERISTICS
ON
PMSN-4DT-561R875-NG-H02**

PMI MODEL PMSN-4DT-561R875-NG-H02 IS A TERMINATED SINGLE POLE FOUR THROW SWITCH MODULE, WHICH INCLUDES HIGH SPEED SP4T, PIN DIODE LIMITER, VIDEO FILTER, GAIN EQUALIZER, ATTENUATOR, AND AMPLIFIER. THE MODULE IS DESIGNED TO OPERATE FROM 0.7 TO 1.3 GHz WITH 4 dB INSERTION LOSS, HIGH SWITCHING SPEED, EXTREMELY LOW VIDEO TRANSIENT, MINIMUM 6 dBm P1dB AND MINIMUM 35 dB REVERSE ISOLATION.



**REPORTED BY:
J ESCANO
6/25/2024**

TYPICAL CHARACTERISTICS ON PMSN-4DT-561R875-NG-H02 PRODUCT FEATURE

DESCRIPTION:

PMI MODEL PMSN-4DT-561R875-NG-H02 IS A TERMINATED SINGLE POLE FOUR THROW SWITCH MODULE, WHICH INCLUDES HIGH SPEED SP4T, PIN DIODE LIMITER, VIDEO FILTER, GAIN EQUALIZER, ATTENUATOR, AND AMPLIFIER. THE MODULE IS DESIGNED TO OPERATE FROM 0.7 TO 1.3 GHz WITH 4 dB INSERTION LOSS, HIGH SWITCHING SPEED, EXTREMELY LOW VIDEO TRANSIENT, MINIMUM 6 dBm P1dB AND MINIMUM 35 dB REVERSE ISOLATION.

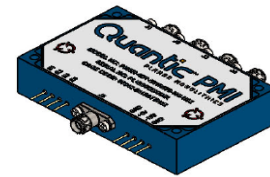
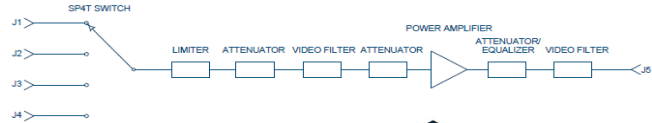
SPECIFICATIONS:

- FREQUENCY RANGE:..... 0.7 TO 1.3 GHz
- PATH GAIN:..... -4.0 dB ± 0.6 dB
- PORT TO PORT GAIN DEVIATION:..... ±0.4 dB MAX (ROOM TEMP)
- INSERTION LOSS GAIN DEVIATION:..... 0.5 dB OR -1 dB MAX FROM ROOM TEMP (OVER OPERATING TEMP)
- RF INPUT POWER:..... +3 dBm CW (OPERATING), +25 dBm CW (SURVIVAL)
- NOISE FIGURE:..... 15 dB MAX (ROOM TEMP)
- INPUT P1dB:..... +6 dBm MIN
- INPUT IP3:..... +15.5 dBm MIN
- HARMONICS:..... -20 dBc MAX WHEN PIN = 3 dBm
-65 dBc MAX WHEN PIN = -20 dBm
- SPURIOUS:..... -60 dBc MAX WHEN PIN = 3 dBm
-65 dBc MAX WHEN PIN = -20 dBm
- RF ISOLATION:..... 65 dB MIN FROM UNSELECTED INPUT TO OUTPUT
35 dB MIN FROM OUTPUT TO SELECTED INPUT
70 dB MIN FROM ISOLATION INPUT TO INPUT
-60 dBm MAX SPECTRAL ENERGY LEAKAGE FROM 700 TO 1300 MHz
- INSERTION PHASE VARIATION:..... ± 1.5° MAX FOR ANY 50 MHz SEGMENT
- INSERTION GAIN VARIATION:..... ± 0.3 dB MAX FOR ANY 50 MHz SEGMENT
- VSWR:..... INPUT: 1.4:1 MAX; OUTPUT: 1.6:1 MAX
- SWITCHING TIME:..... 25 ns MAX FROM 50% TTL TO 90% RF OUTPUT
- RECOVERY TIME:..... 1 us MAX TO WITHIN 0.5 dB AND 5° OF STEADY STATE WHEN INPUT POWER DROPS FROM +25 dBm TO 0 dBm FROM 500 TO 1300 MHz, -70 AND -60 dBm MAX AFTER A DURATION OF 30 ns AND 25 ns RESPECTIVELY
- SWITCH CONTROL:..... "0" ON, "1" OFF
- DC POWER REQUIREMENT:..... +5 VDC ±3.8% @ 320 mA MAX
-12 VDC ±3.8% @ 50 mA MAX
- SEALING:..... HERMETIC
- WEIGHT:..... 4 oz MAX
- FINISH:..... PAINTED BLUE,
MOUNTING SURFACE CHEMICAL CONVERSION COAT PER MIL-C-5541, CLASS 3

ENVIRONMENTAL RATINGS:

- TEMPERATURE:..... -40°C TO +85°C (OPERATING)
-54°C TO +95°C (STORAGE)
- THERMAL CYCLING:..... MIL-STD-202, METHOD 107, CONDITION A, MAX TEMP +95°C
- ALTITUDE:..... MIL-STD-202, METHOD 105, 60,000 FT
- VIBRATION:..... MIL-STD-883, METHOD 2026, CONDITION I-D, 5 MIN MAX
- SHOCK:..... MIL-STD-883, METHOD 2002, CONDITION B
- RESISTANCE TO SOLVENTS:..... MIL-STD-883, METHOD 2015
- SALT FOG:..... MIL-STD-202, METHOD 101E, 40 HOURS
- HUMIDITY:..... MIL-STD-202, METHOD 103 CONDITION B,
UP TO 100% CONDENSING
- ACOUSTIC NOISE:..... MIL-STD-810, METHOD 515, LEVELS PER SCD FIG. 4

FUNCTIONAL BLOCK DIAGRAM:



CONTROL LINES	SWITCH PATH			
E1	E2	E3	E4	SELECTED
0	1	1	1	J1 TO J5
1	0	1	1	J2 TO J5
1	1	0	1	J3 TO J5
1	1	1	0	J4 TO J5

PMI CONFIDENTIAL AND PROPRIETARY

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

APPROVALS		DATE	TITLE	
DESIGNED BY		DATE	OUTLINE	
DRAWN BY		DATE	PMSN-4DT-561R875-NG-H02	
CHECKED BY		DATE	SIZE	DRG NO.
APPROVED BY		DATE	B	05XQD 27046280
SCALE		1:1		SHEET 1 OF 2

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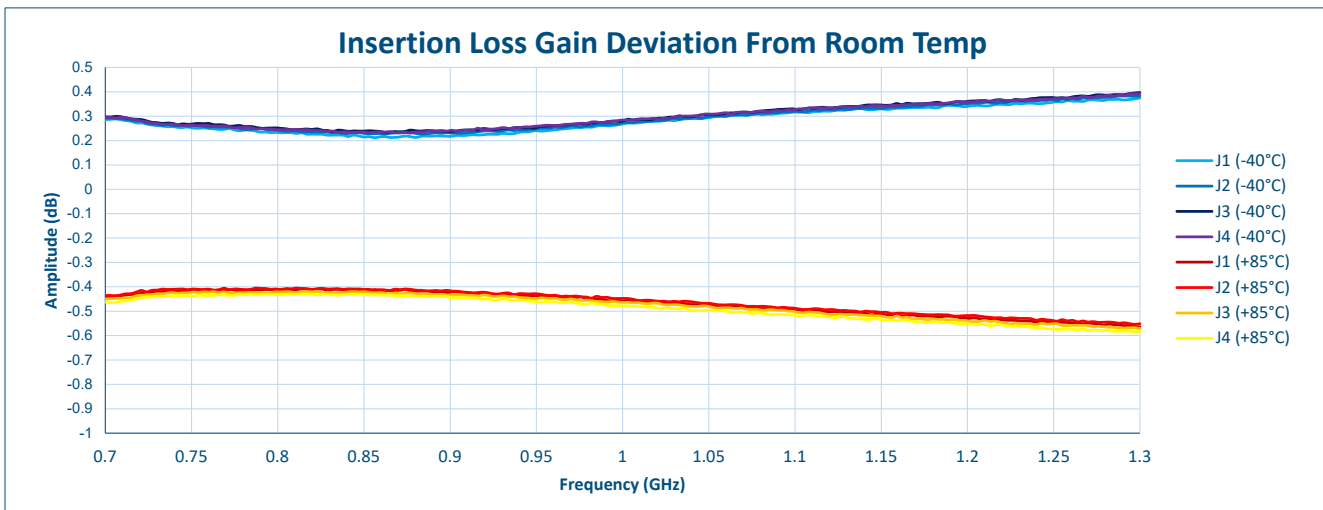
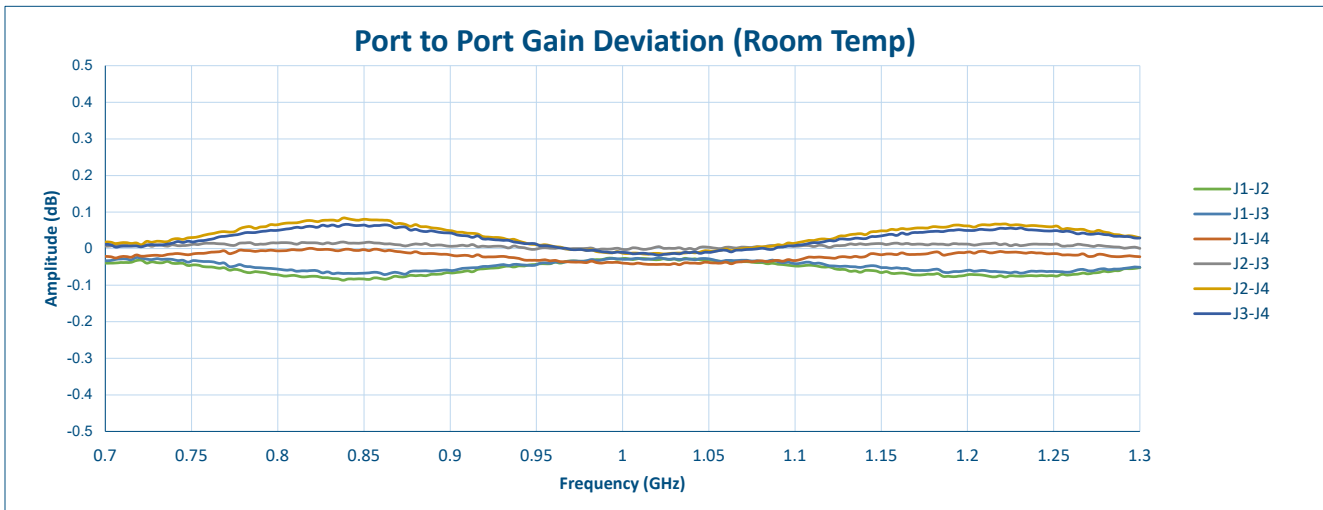
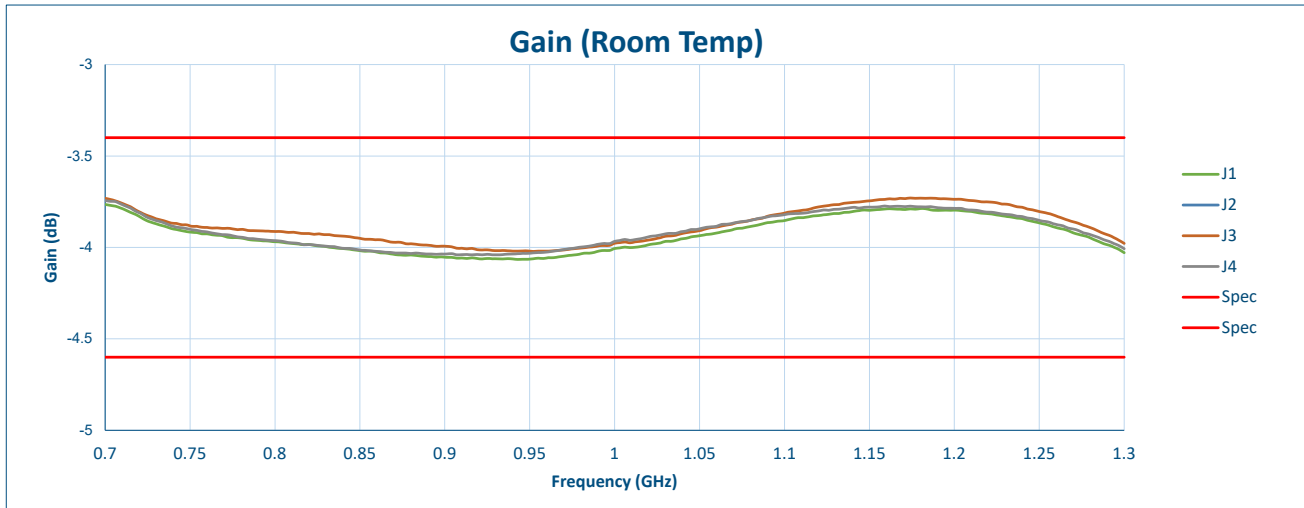
TEST SPECIFICATIONS

TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	TEST RESULTS		
			+25°C	-40°C	+85°C
1	Frequency Range	0.7 to 1.3 GHz	0.7 to 1.3 GHz		
2	Path Gain	-4.0 dB ± 0.6 dB (Room Temp)	-4.07 dB		
3	Port to Port Gain Deviation	±0.4 dB Max (Room Temp)	±0.09 dB		
4	Insertion Loss Gain Deviation	0.5 dB or -1 dB Max from Room Temp (Over Operating Temp)		+0.4 dB	-0.58 dB
5	RF Input Power	+3 dBm CW (Operating) +25 dBm CW (Survival)	Pass		
6	Noise Figure	15 dB Max (Room Temp)	13.78 dB	13.16 dB	14.89 dB
7	Input P1dB	+6 dBm Min	+17 dBm	+17 dBm	+16 dBm
8	Input IP3	+15.5 dBm Min	+33.98 dBm	+33.81 dBm	+34.02 dBm
9	Harmonics	-20 dBc Max, Pin = 3 dBm -65 dBc Max, Pin = -20 dBm	-48 dBc -69.2 dBc	-47.7 dBc -70.2 dBc	-48.7 dBc -71 dBc
10	Spurious	-60 dBc Max, Pin = 3 dBm -65 dBc Max, Pin = -20 dBm	-79.5 dBc -66.9 dBc		
11	RF Isolation	65 dB Min from Unselected Input to Output,	83.09 dB	83.63 dB	81.97 dB
		35 dB Min from Output to Selected Input,	48.74 dB	48.57 dB	49.05 dB
		70 dB Min from Isolation Input to Input,	85.46 dB	85.5 dB	85.45 dB
		-60 dBm Max Spectral Energy Leakage From 0.7 to 1.3 GHz	-70.85 dBm		
12	Insertion Phase Variation	±1.5° Max for any 50 MHz Segment	±1.06°	±1.13°	±1.01°
13	Insertion Gain Variation	±0.3 dB Max for any 50 MHz Segment	±0.02 dB	±0.03 dB	±0.02 dB
14	VSWR	Input: 1.4:1 Max Output: 1.6:1 Max	Input: 1.37:1 Output: 1.13:1	Input: 1.4:1 Output: 1.15:1	Input: 1.35:1 Output: 1.13:1
15	RF Leakage	60 dB Min Below OP1dB	-70.5 dBm		
16	DC Power Supply	+5 VDC ±3.8% @ 320 mA Max -12 VDC ±3.8% @ 50 mA Max	+5 V @ 268 mA -12 V @ 32 mA	+5 V @ 258 mA -12 V @ 32 mA	+5 V @ 288 mA -12 V @ 33 mA
17	Switch Control Characteristics	"0" = ON "1" = OFF	Pass		
18	Control Lines	CONTROL LINES	SWITCH PATH SELECTED		
		E1 E2 E3 E4			
		0 1 1 1	J1 TO J5		
		1 0 1 1	J2 TO J5		
		1 1 0 1	J3 TO J5		
1 1 1 0	J4 TO J5				
19	DC Block	No voltage detected from RF Ports	Pass		

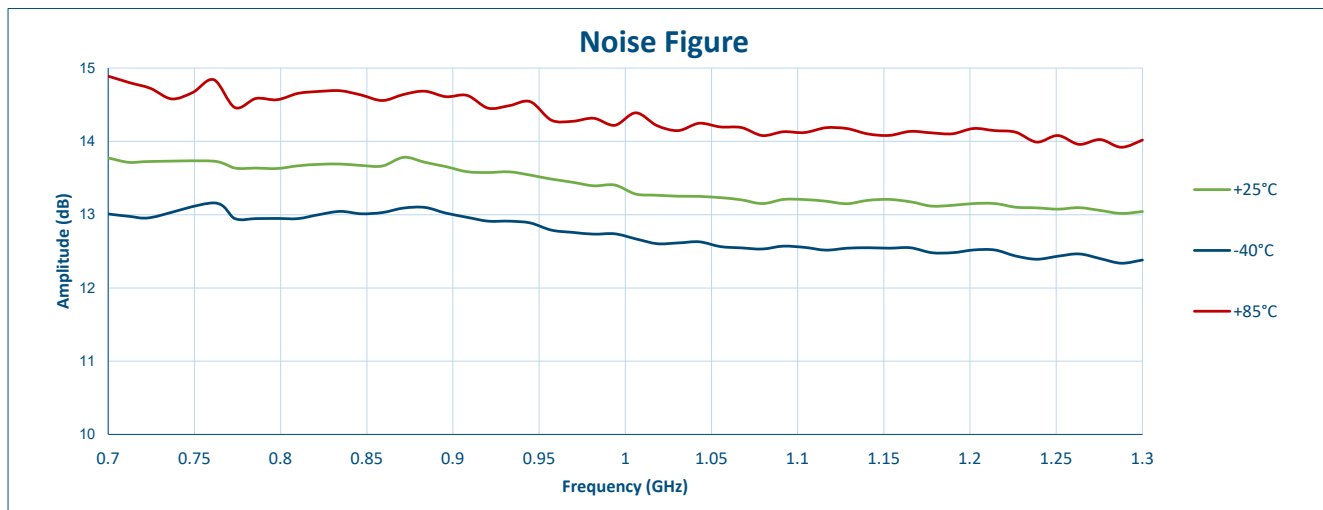
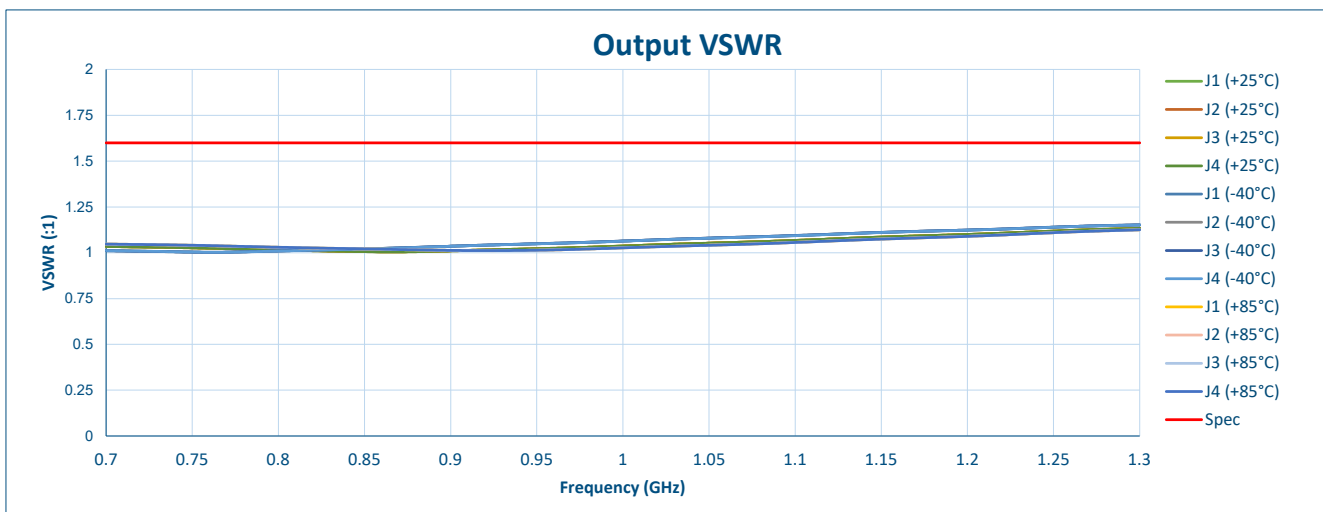
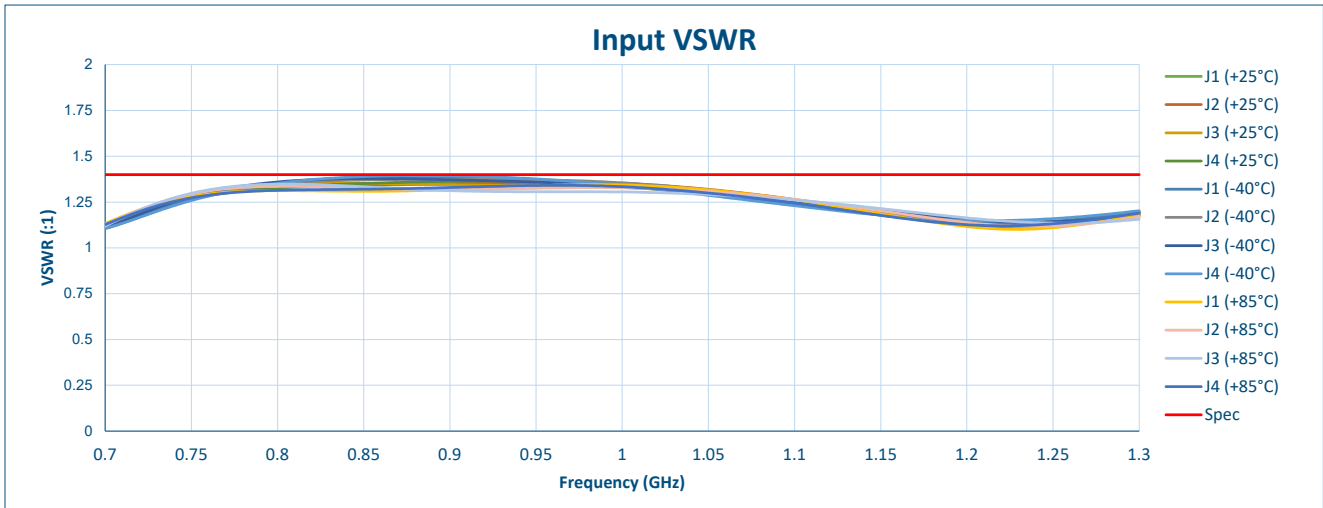
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TEST ITEM NO:	PARAMETERS	SPECIFIED VALUE	TEST RESULTS		
			+25°C	-40°C	+85°C
20	Switching Time	25 ns Max from 50% TTL to 90% RF Output	On: 21.1 ns Off: 16 ns		
21	Recovery Time	1 us Max to w/in 0.5 dB & 5° of steady state when input power drops from +25 dBm to 0 dBm	83.5 ns <5°		
22	Video Feedthrough	From 0.5 to 1.3 GHz -70 dBm Max, 30 ns duration -60 dBm Max, 25 ns duration	-70.85 dBm		
23	Power Supply	Unit returns to previous performance after power supply is restored	Pass		

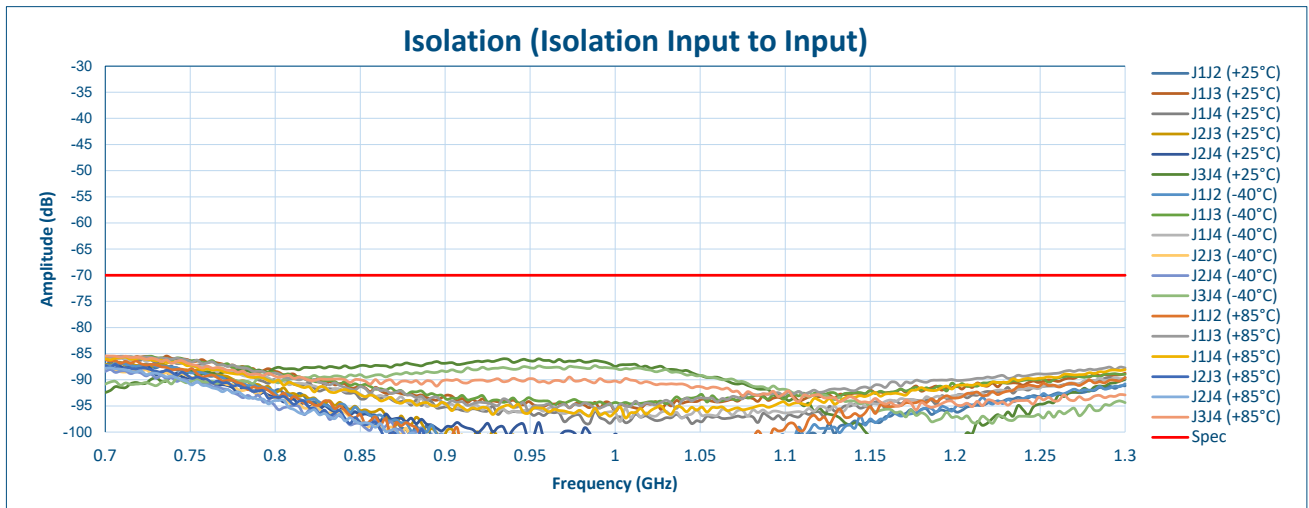
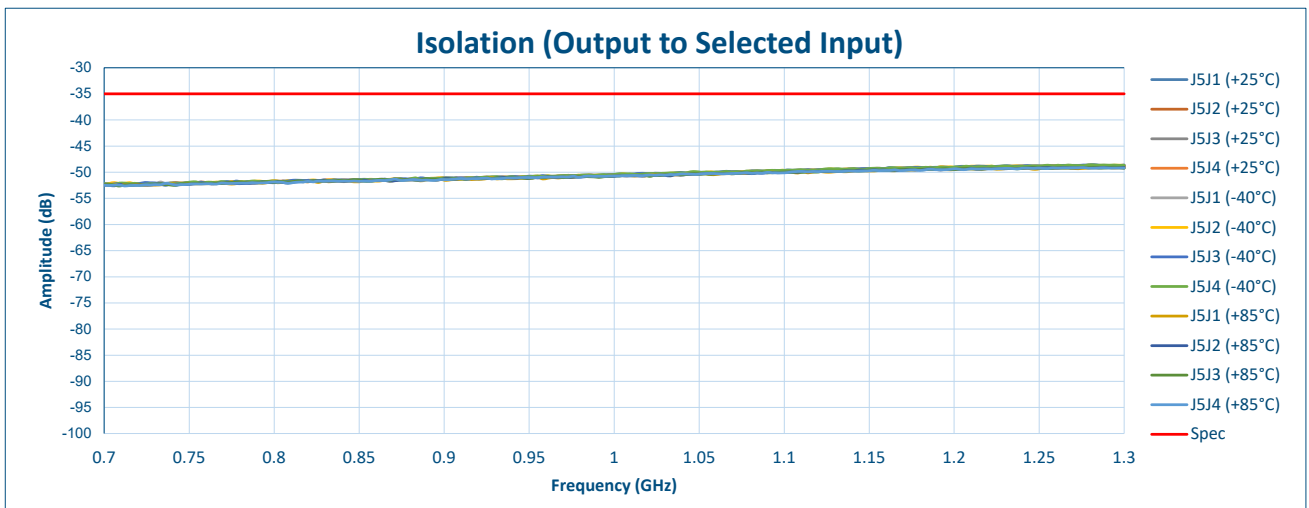
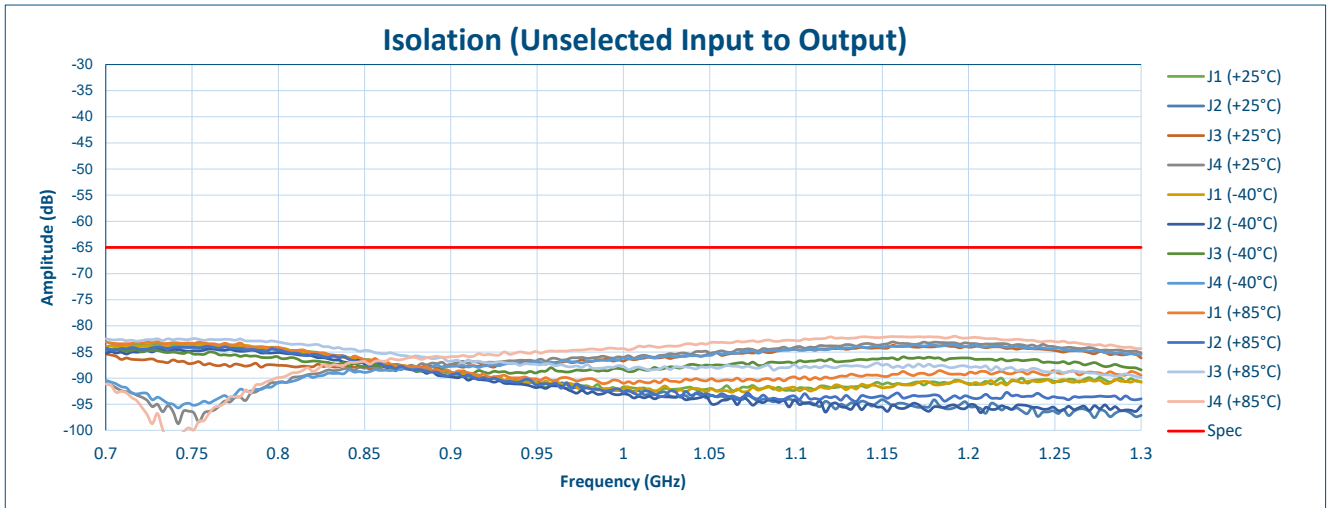
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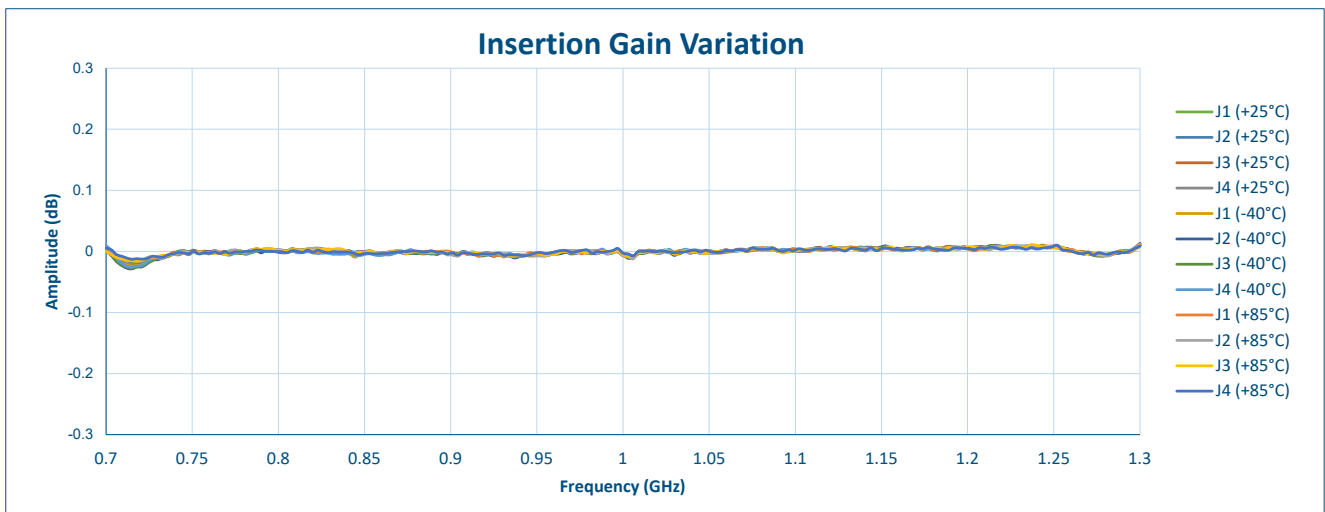
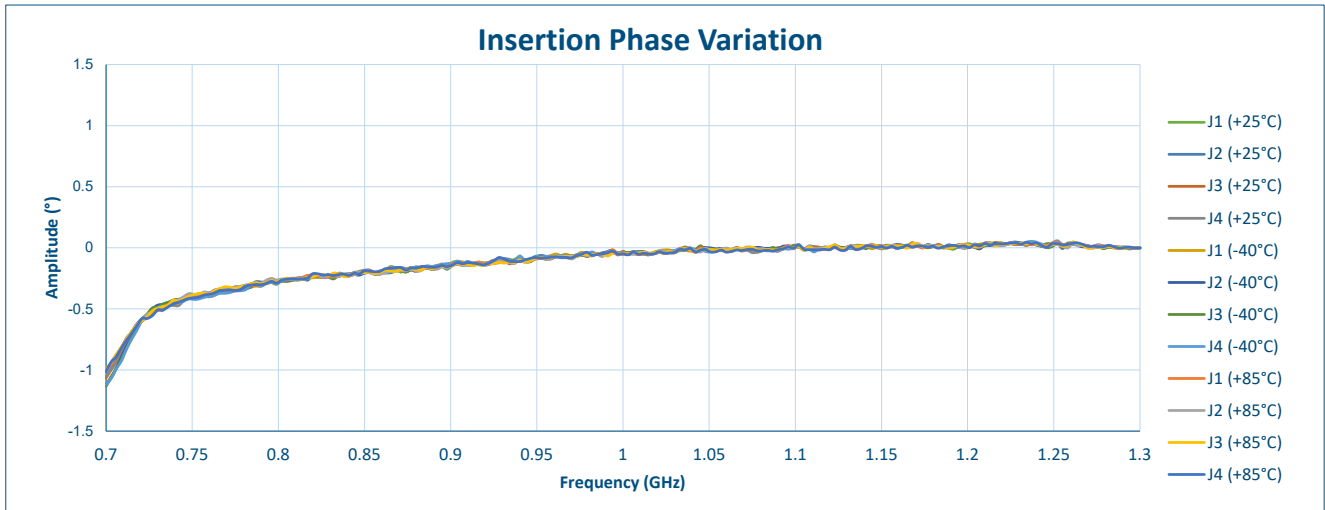
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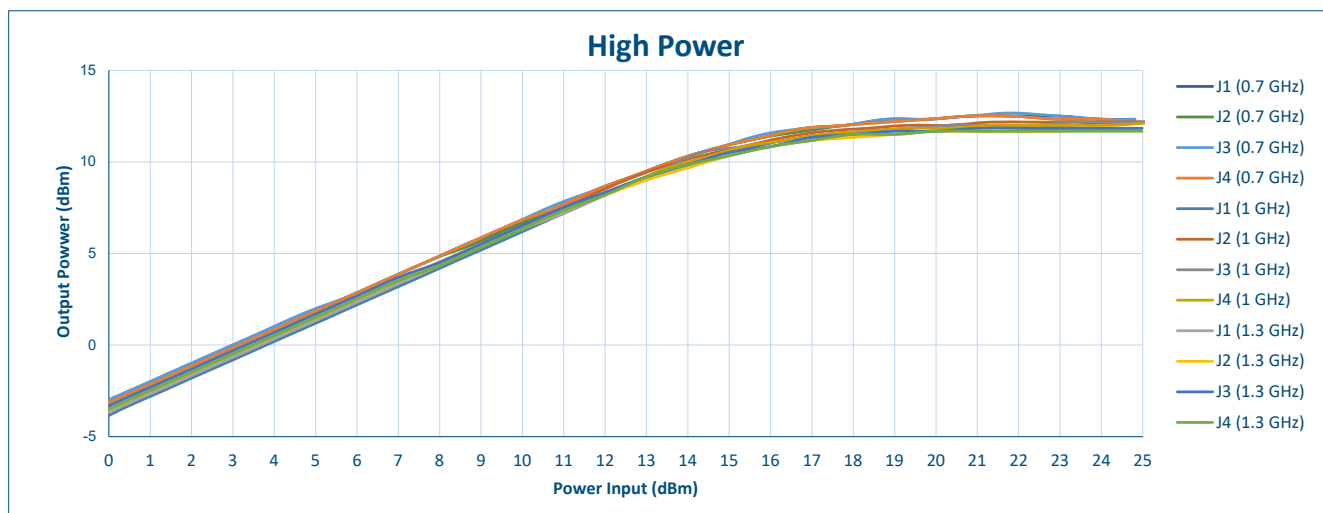
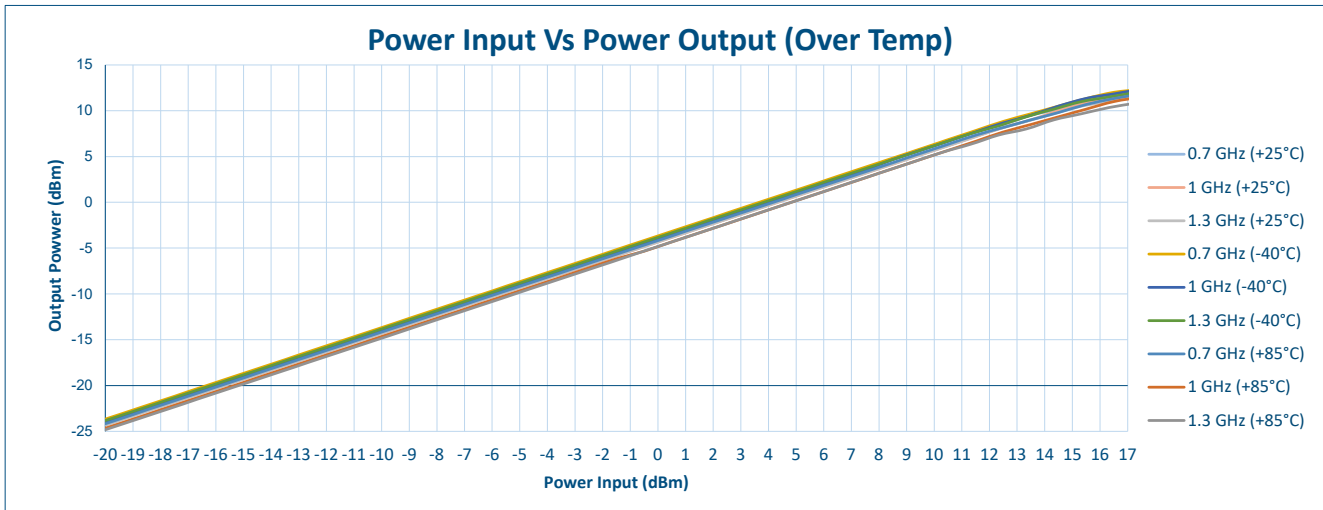
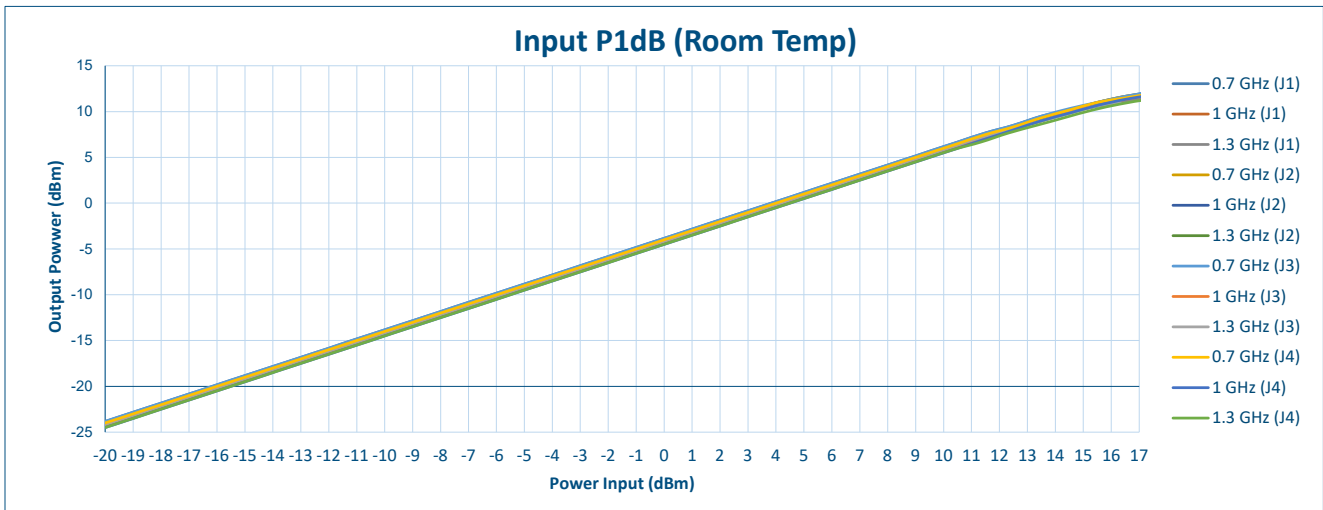
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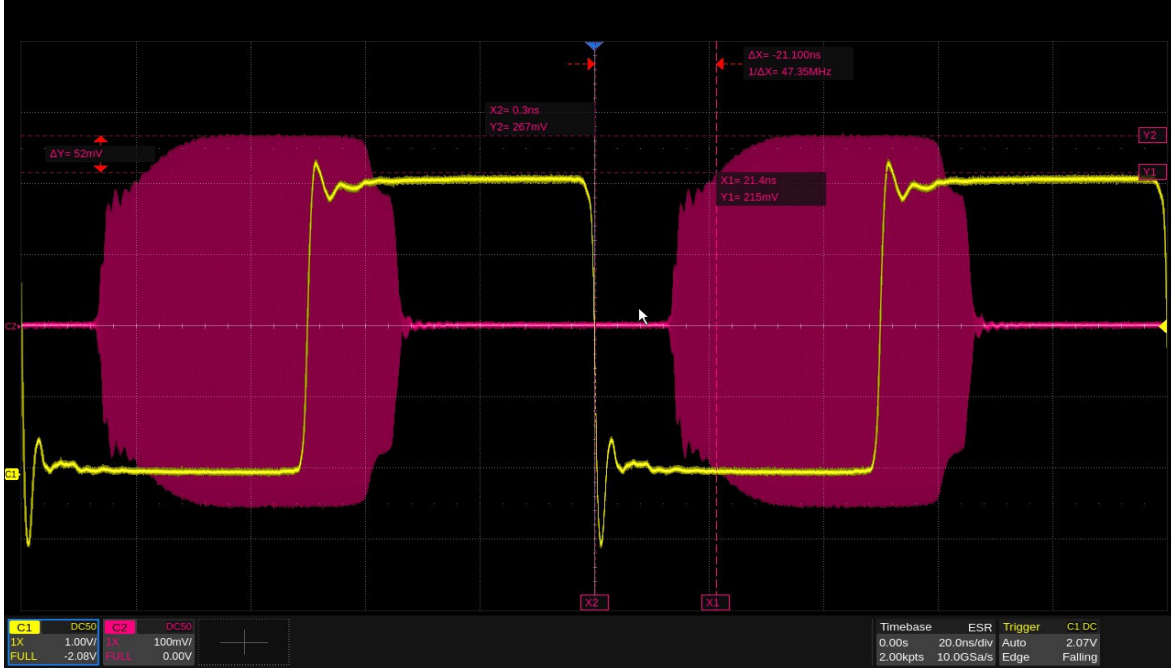


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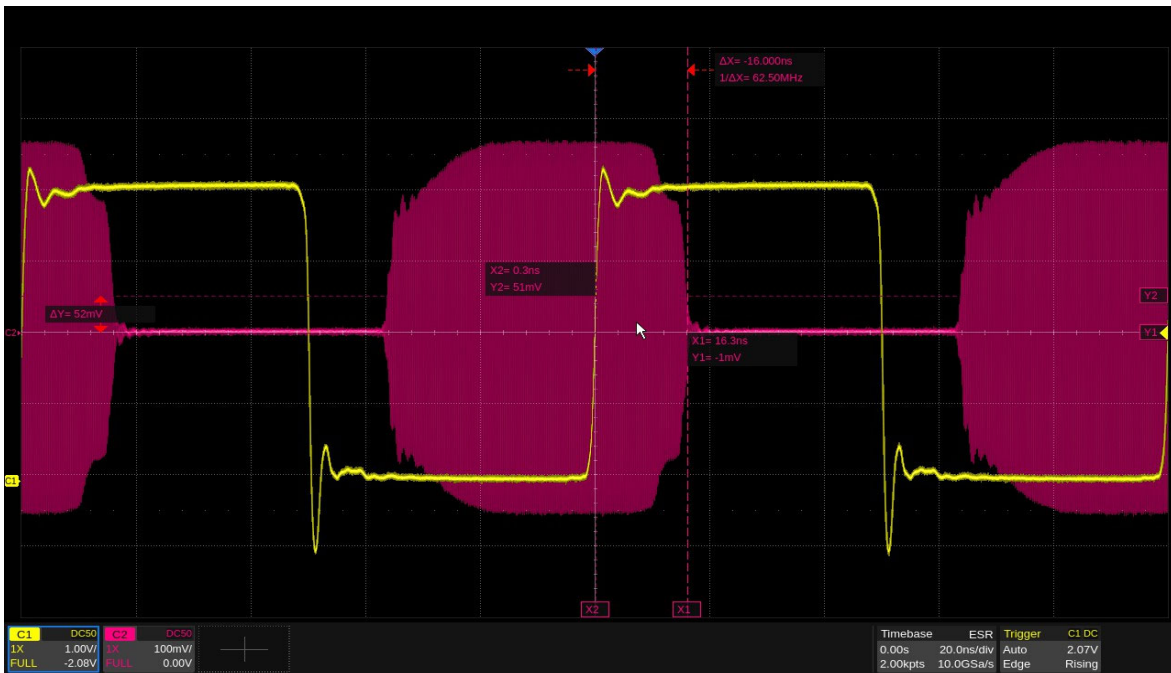


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Switching Time On



Switching Time Off



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Recovery Time

