



**Typical Characteristics
ON
P6T-2G20G-55-T-SFF**

**PMI MODEL P6T-2G20G-55-T-SFF IS AN ABSORPTIVE, SINGLE POLE, SIX
THROW PIN DIODE SWITCH THAT OPERATES OVER THE 2.0 GHZ TO 20.0
GHZ FREQUENCY RANGE. THIS MODEL INCORPORATES A TTL
COMPATIBLE DRIVER FOR EASY SYSTEM INTEGRATION.**



November 25, 2019

Designed By: Engineering PMI

**Tested and Reported By:
Alfredo Lopez
Sebastian Palacio**



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Outline Drawing

DESCRIPTION

PMI MODEL P6T-2G20G-55-T-SFF IS AN ABSORPTIVE, SINGLE POLE, SIX THROW PIN DIODE SWITCH THAT OPERATES OVER THE 2.0 GHZ TO 20.0 GHZ FREQUENCY RANGE. THIS MODEL INCORPORATES A TTL COMPATIBLE DRIVER FOR EASY SYSTEM INTEGRATION.

SPECIFICATIONS

- FREQUENCY RANGE: 2.0 TO 20.0 GHz
- ISOLATION: 55 dB MIN
- INSERTION LOSS: 4.5 dB MAX
 - FLATNESS: 2-11 GHz +1.0/-0.5 dB
 - 11-20 GHz +2.0/-0.5 dB
- VSWR IN / OUT: 2.0 : 1 MAX
- INPUT POWER: +20 dBm OPERATIONAL, +27 dBm SURVIVAL
- RF SWITCHING SPEED: RISE: 30 ns MAX 10% TO 90%
FALL: 30 ns MAX 90% TO 10%
- DC VOLTAGE: +15V @ 200 mA
-5V @ 100 mA
- CONTROL SIGNAL: TTL LOGIC: "0"=ON, "1"=OFF
- VIDEO LEAKAGE: <1.3V MAX, 25 ns WINDOW
- CONNECTORS IN/OUT: SMA FEMALE
- CONTROL CONNECTORS: MIL-C-28748
- FINISH: ELECTROLESS NICKEL PER MIL-C-26074
0.0003" TO 0.0005" THICK

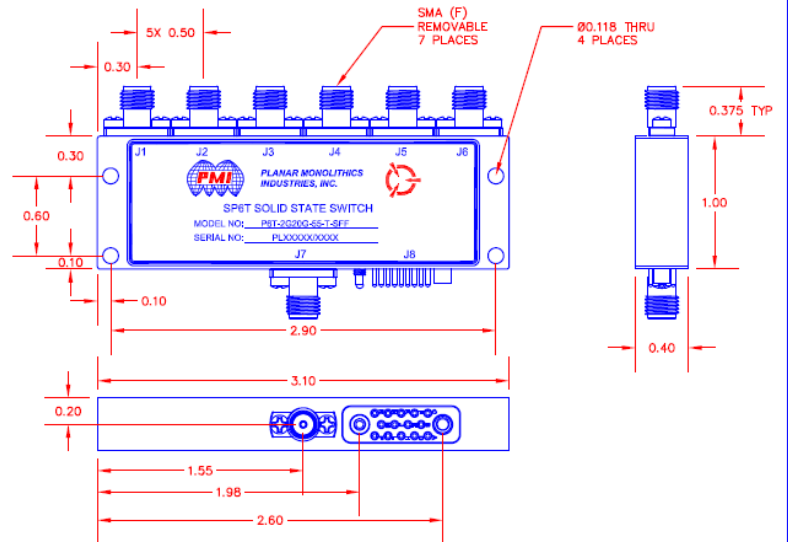
ENVIRONMENTAL RATINGS

- 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

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

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE	09/21/15	

MECHANICAL OUTLINE



PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.

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WEBSITE: www.pmi-rf.com
E-MAIL: sales@pmi-rf.com
ISO 9001 CERTIFIED



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

APPROVALS		DATE	TITLE		
DRAWN	<i>fl</i>	09/21/15	PRODUCT FEATURE P6T-2G20G-55-T-SFF		
CHECKED			SIZE	FIG. NO.	DWG. NO.
ISSUED			A	71A34	27026102
			SCALE	N: S	SHEET 1 OF 2



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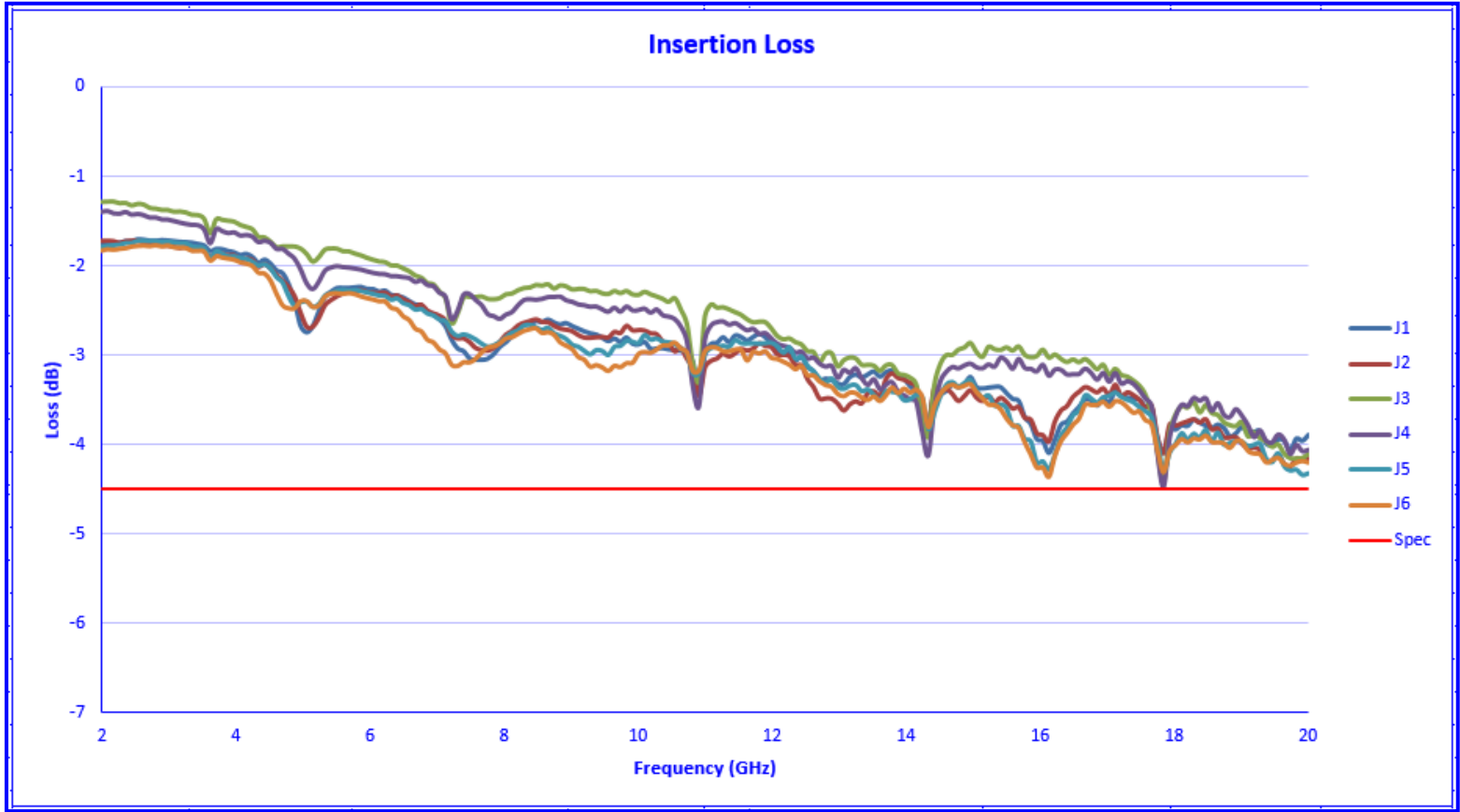
Technical Specifications

TEST. ITEM NO	PARAMETERS	SPECIFIED VALUE	TEST RESULTS			Q A Q C
			-40°C	+25°C	+85°C	
1	Frequency Range:	2.0 to 20.0 GHz	2.0 to 20.0 GHz	2.0 to 20.0 GHz	2.0 to 20.0 GHz	
2	Isolation:	55 dB Min	62.8 dB (See Plots)	63.5 dB (See Plots)	63.70 dB (See Plots)	
3	Insertion Loss:	4.5 dB Max	4.43 dB (See Plots)	4.47 dB (See Plots)	4.49 dB (See Plots)	
4	Frequency Flatness:	2 to 11 GHz (+1.0/-0.5 dB) 11 to 20 GHz (+2.0/-0.5 dB)	+0.80/-0.46 dB +0.96/-0.51dB (See Plots)	+0.87/-0.38 dB +1.0/-0.44dB (See Plots)	+0.80/-0.46 dB +0.96/-0.51dB (See Plots)	
5	VSWR In/Out:	2.0:1 Max	2.0:1 (See Plots)	2.0:1 (See Plots)	1.99.:1 (See Plots)	
6	Input Power:	+20 dBm Operational +27 dBm Survival	Pass (See Graph)	Pass (See Graph)	Pass (See Graph)	
7	RF Switching Speed:	Rise: 30 ns Max (10% to 90%) Fall: 30ns Max (90% to 10%)	2.34 ns 2.60 ns (See Plots)	2.34 ns 2.60 ns (See Plots)	2.34 ns 2.60 ns (See Plots)	
8	Video Leakage:	<1.3V Max, 25ns Window	BW 20MHz = 280mV BW 350MHz = 952mV (See Plots)	BW 20MHz = 280mV BW 350MHz = 952mV (See Plots)	BW 20MHz = 280mV BW 350MHz = 952mV (See Plots)	
9	DC Voltage:	+15V @ 200 mA Max -5V @ 100 mA Max	+15V @ 74 mA -5V @ 62 mA	+15V @ 72 mA -5V @ 60 mA	+15V @ 73 mA -5V @ 62 mA	
10	Control Signal:	TTL Logic: "0" On, "1" Off	Pass	Pass	Pass	



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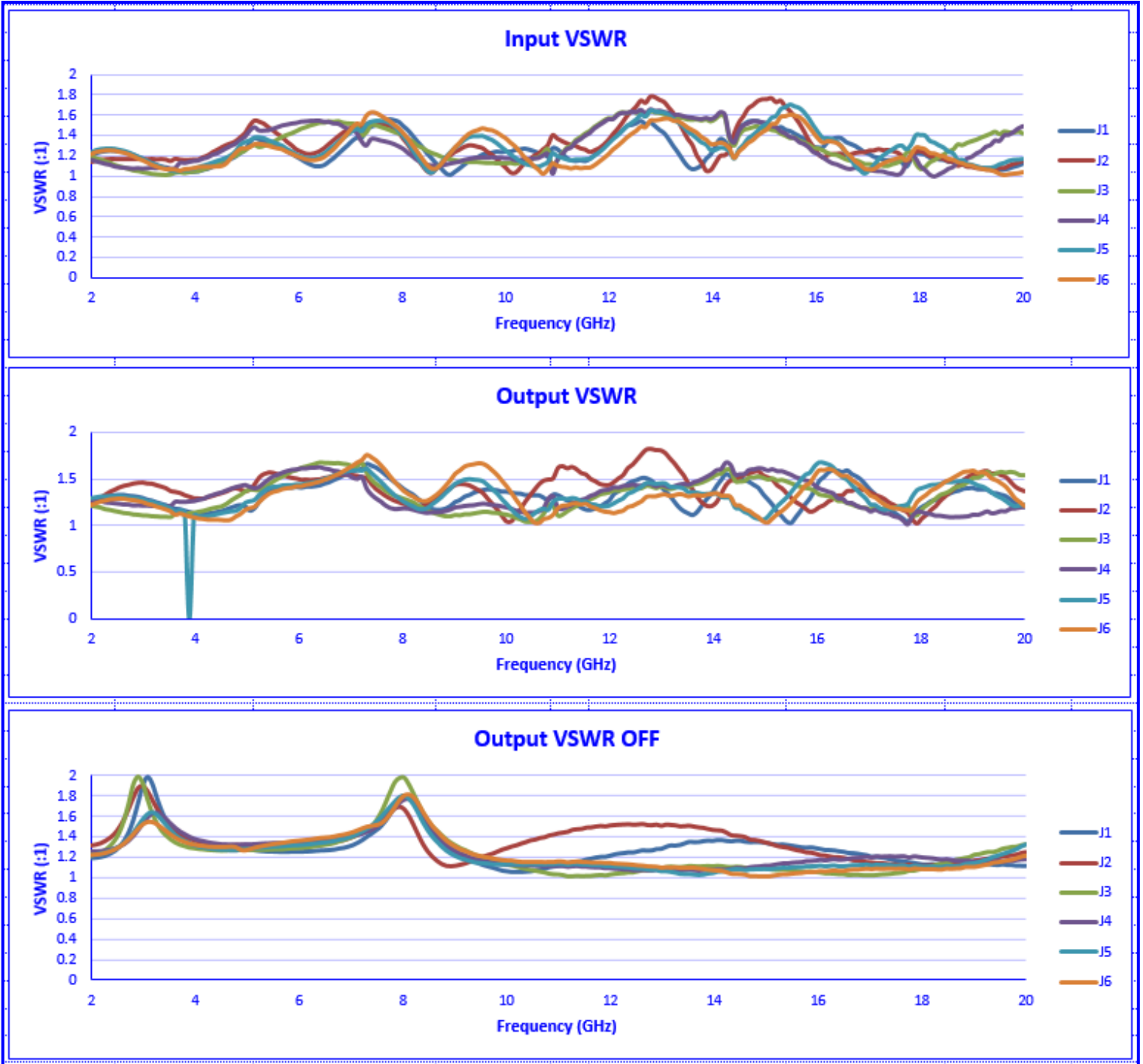
+25°C





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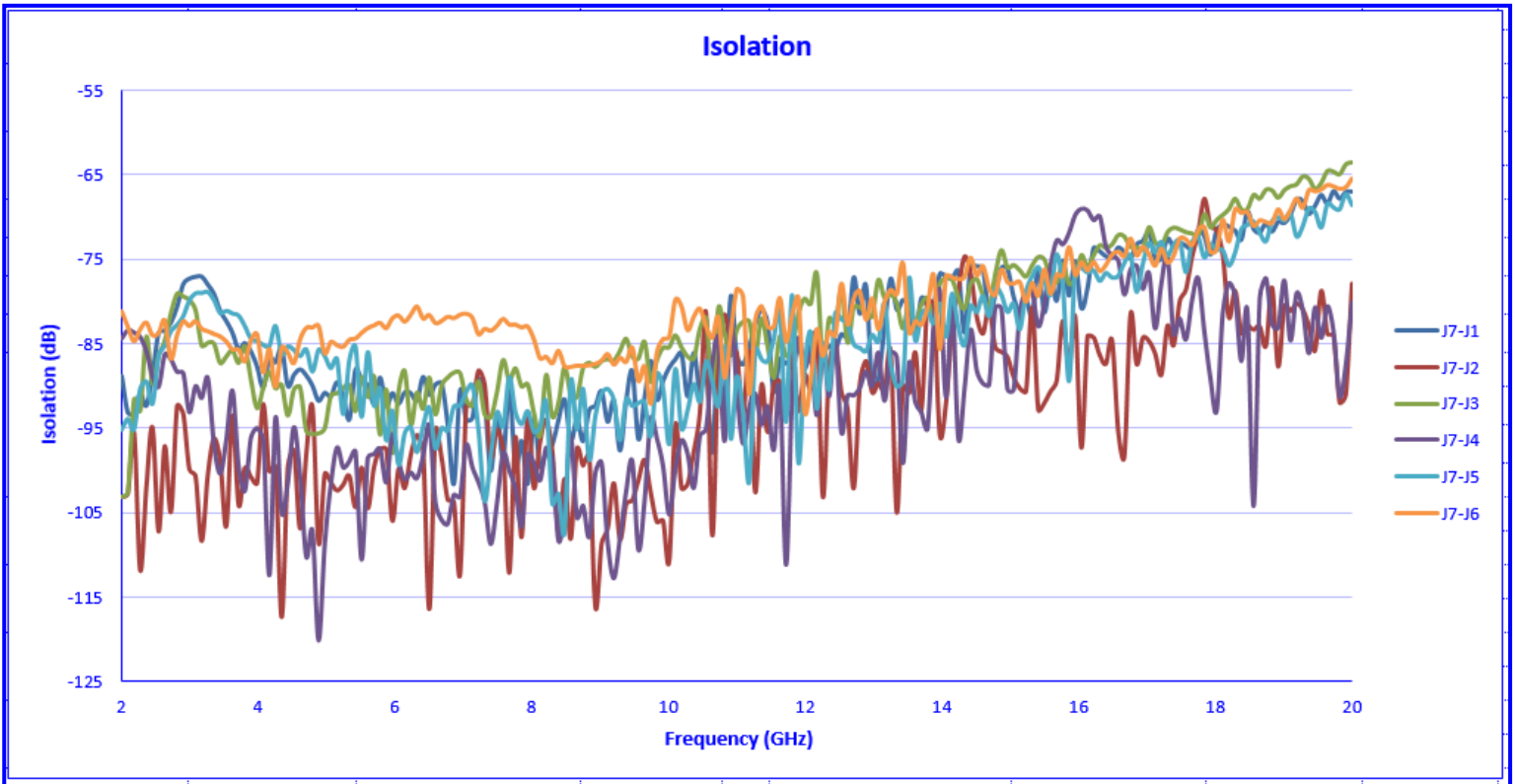
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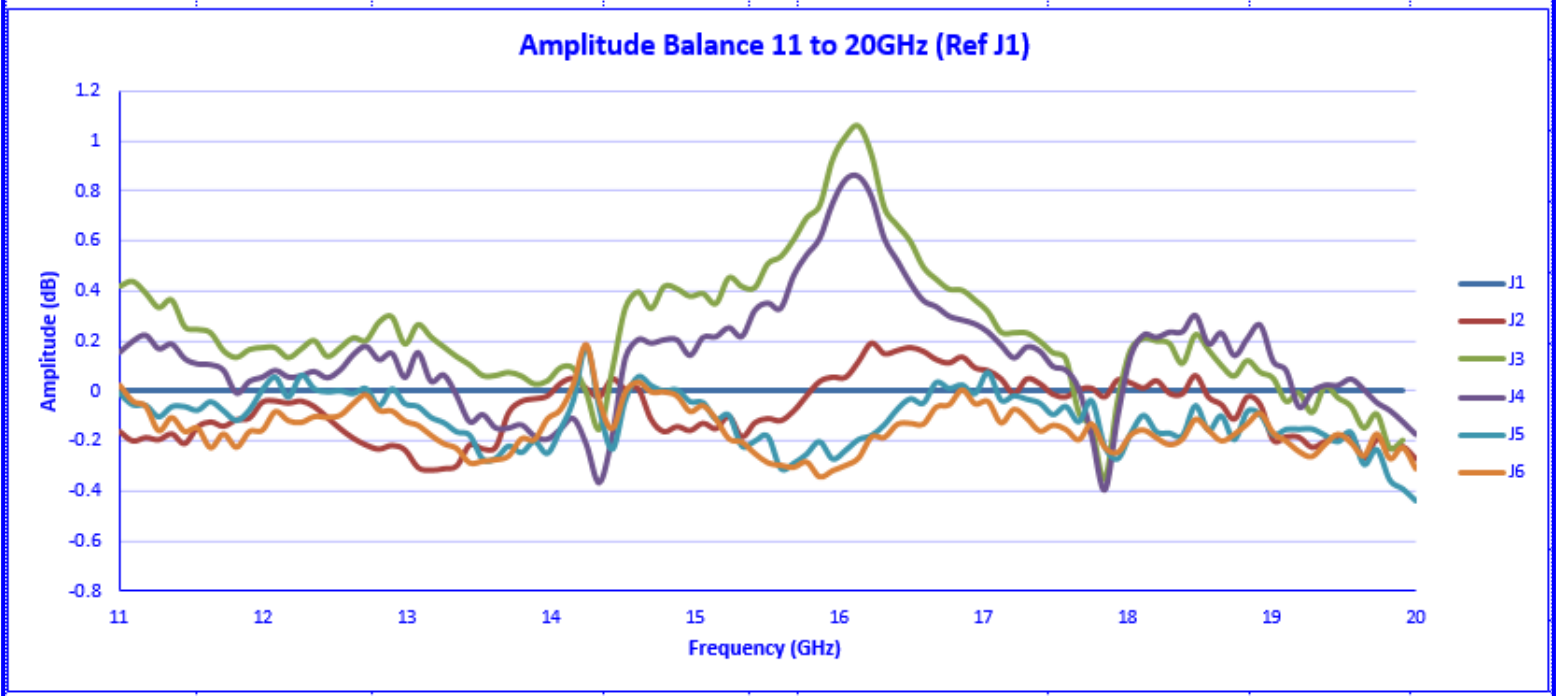
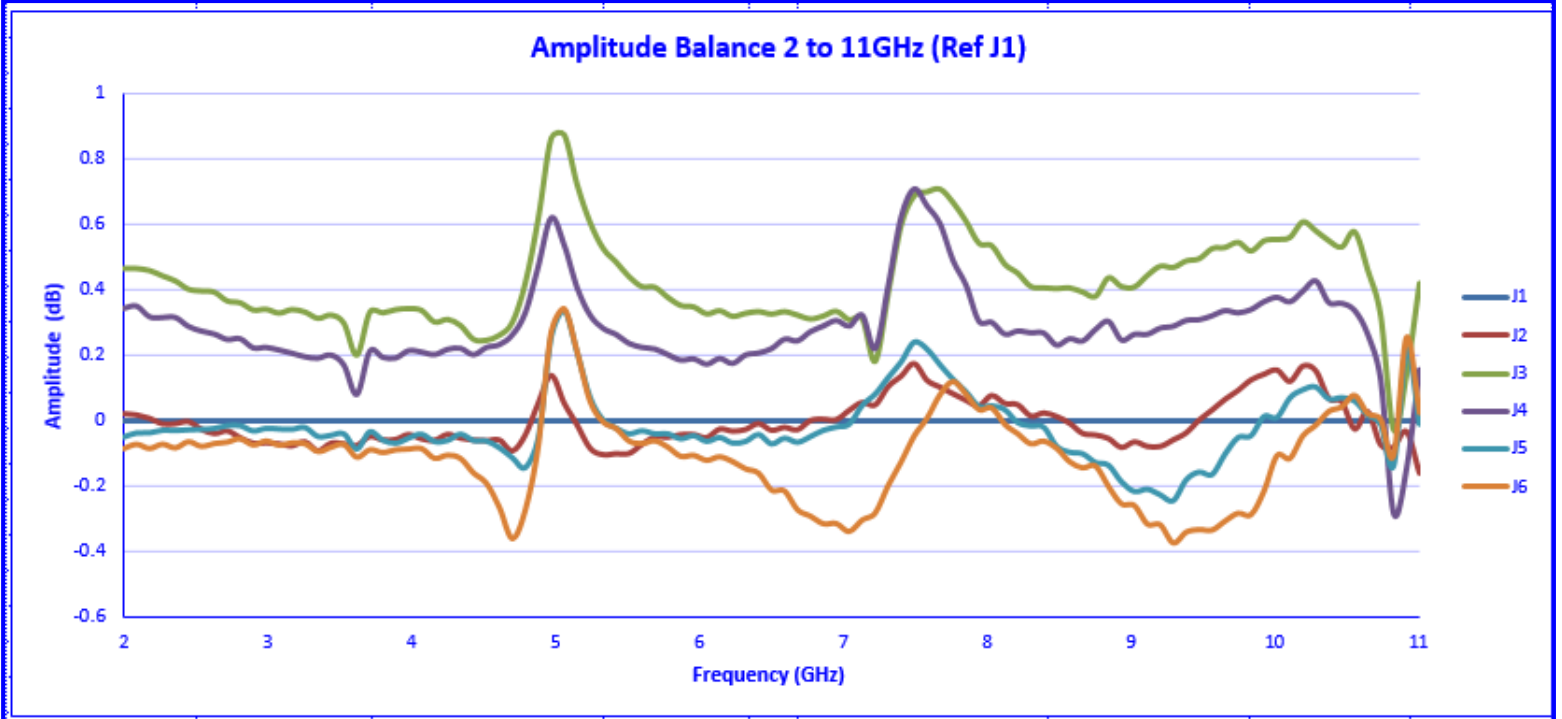
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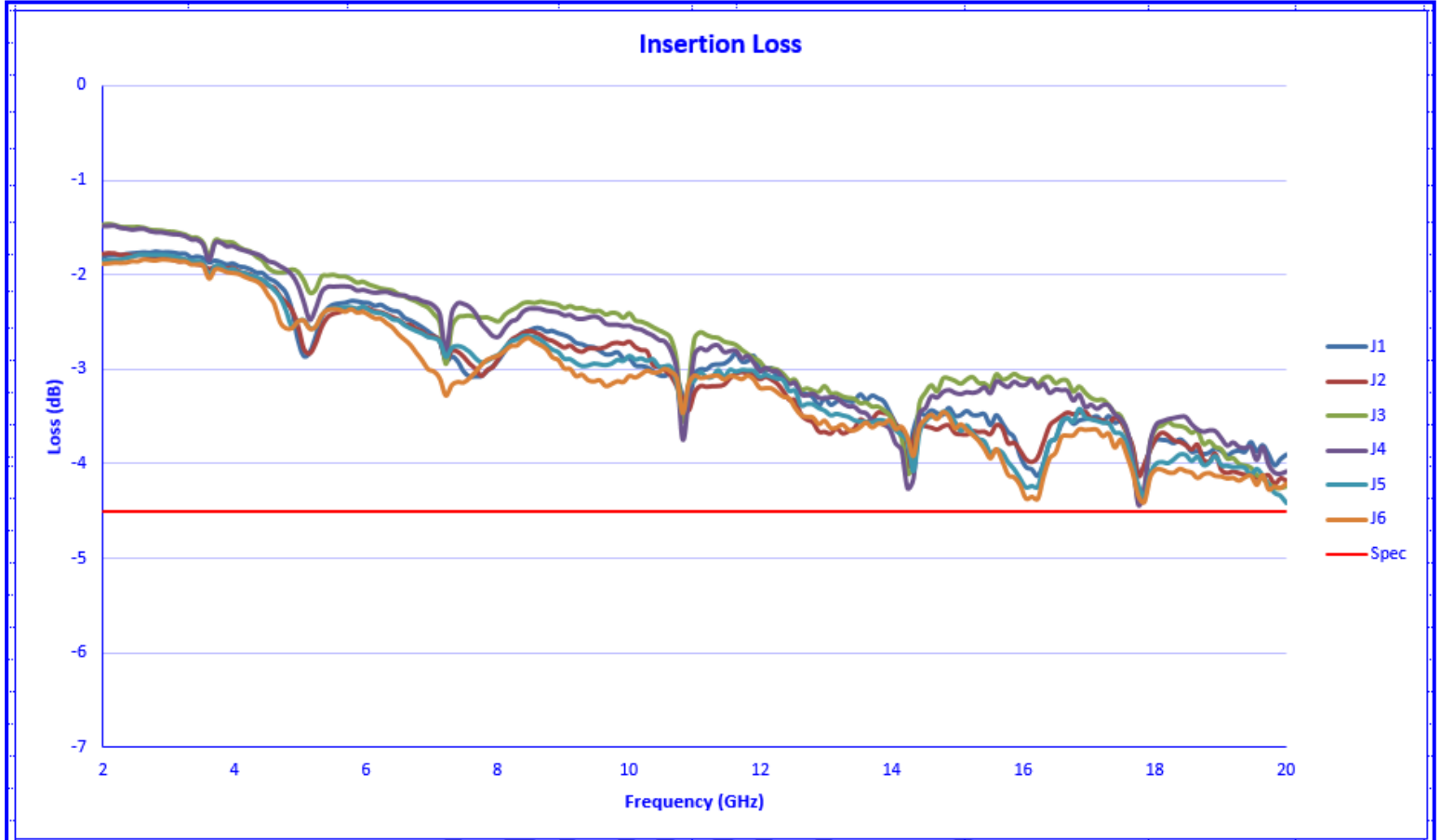
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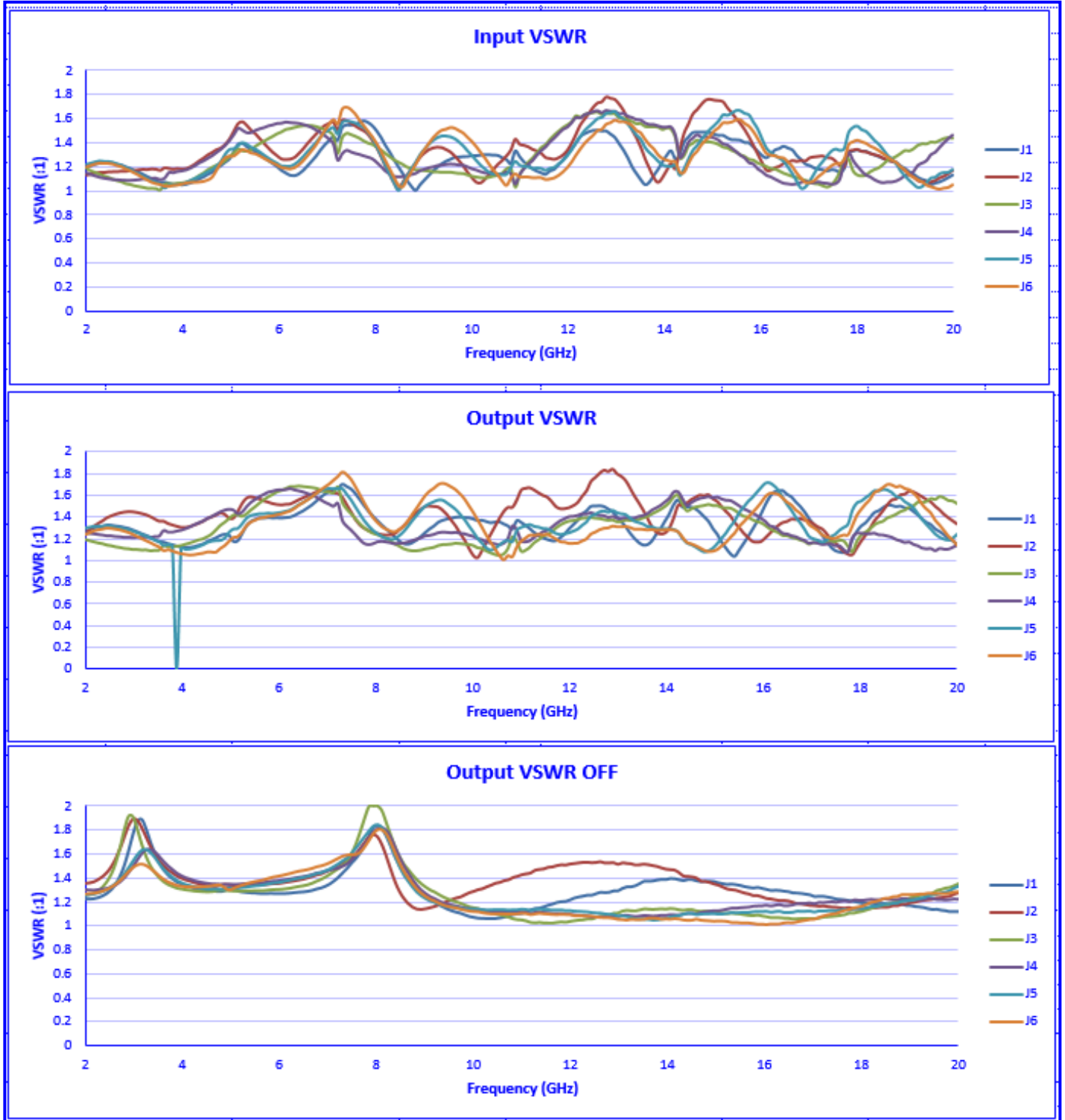
-40°C





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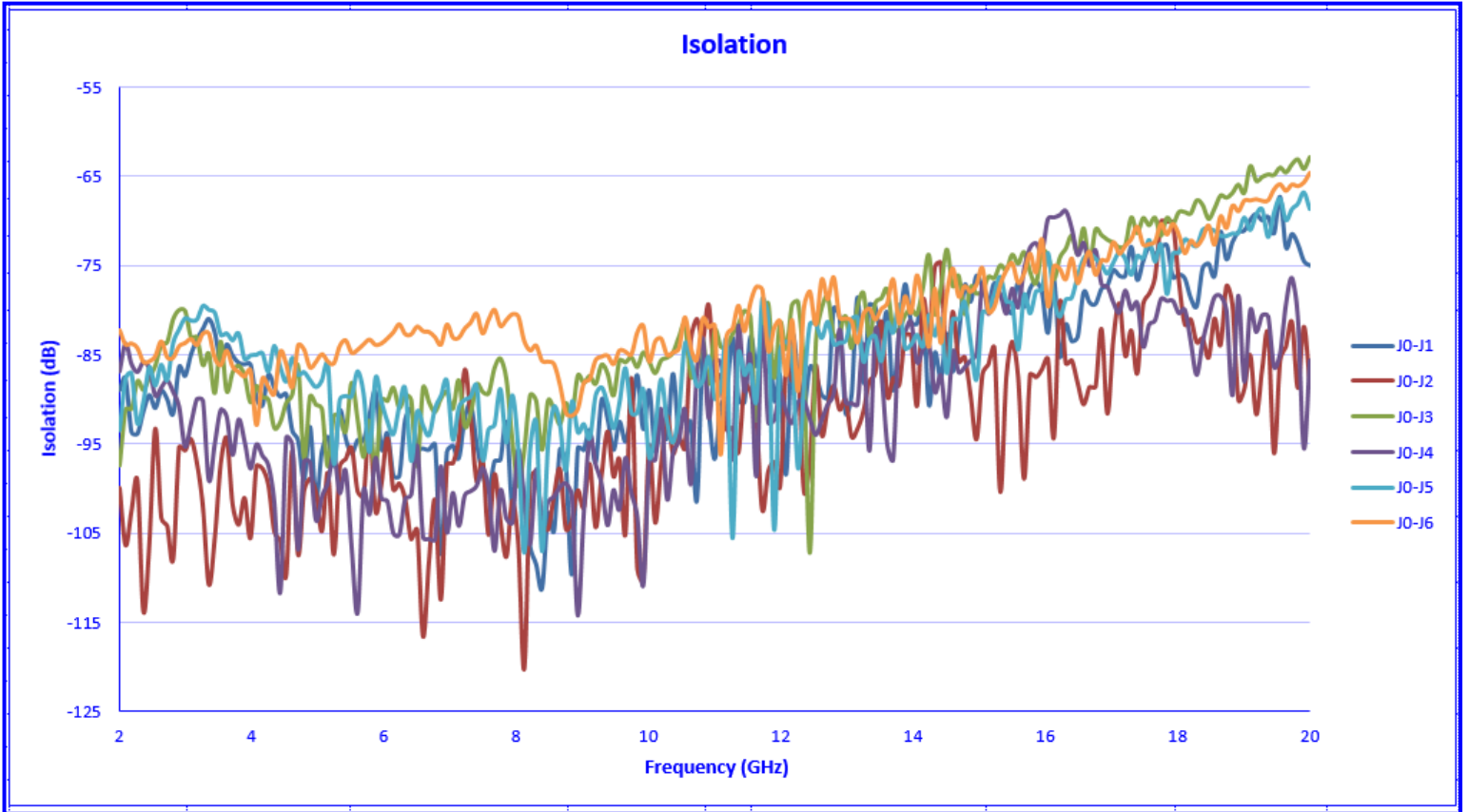
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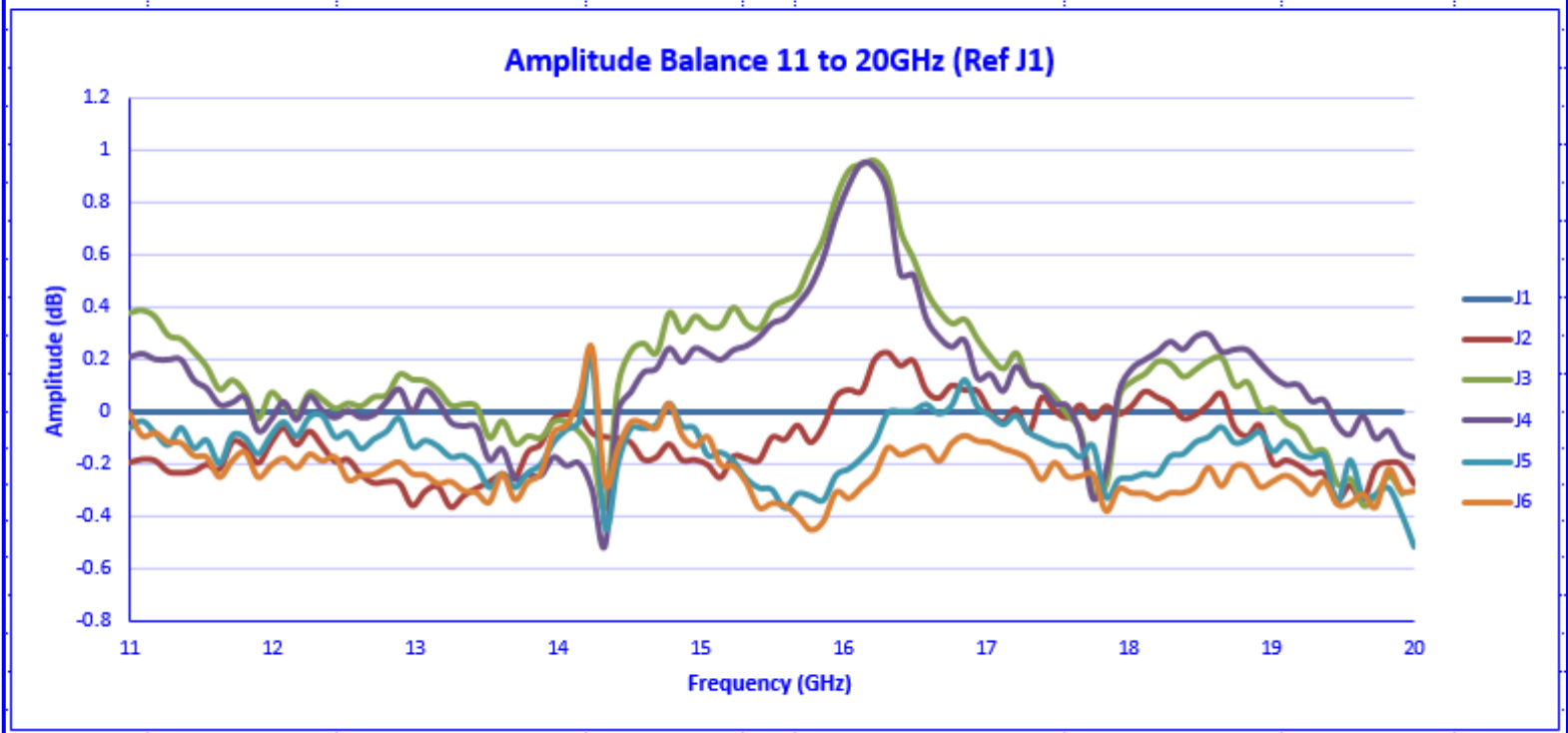
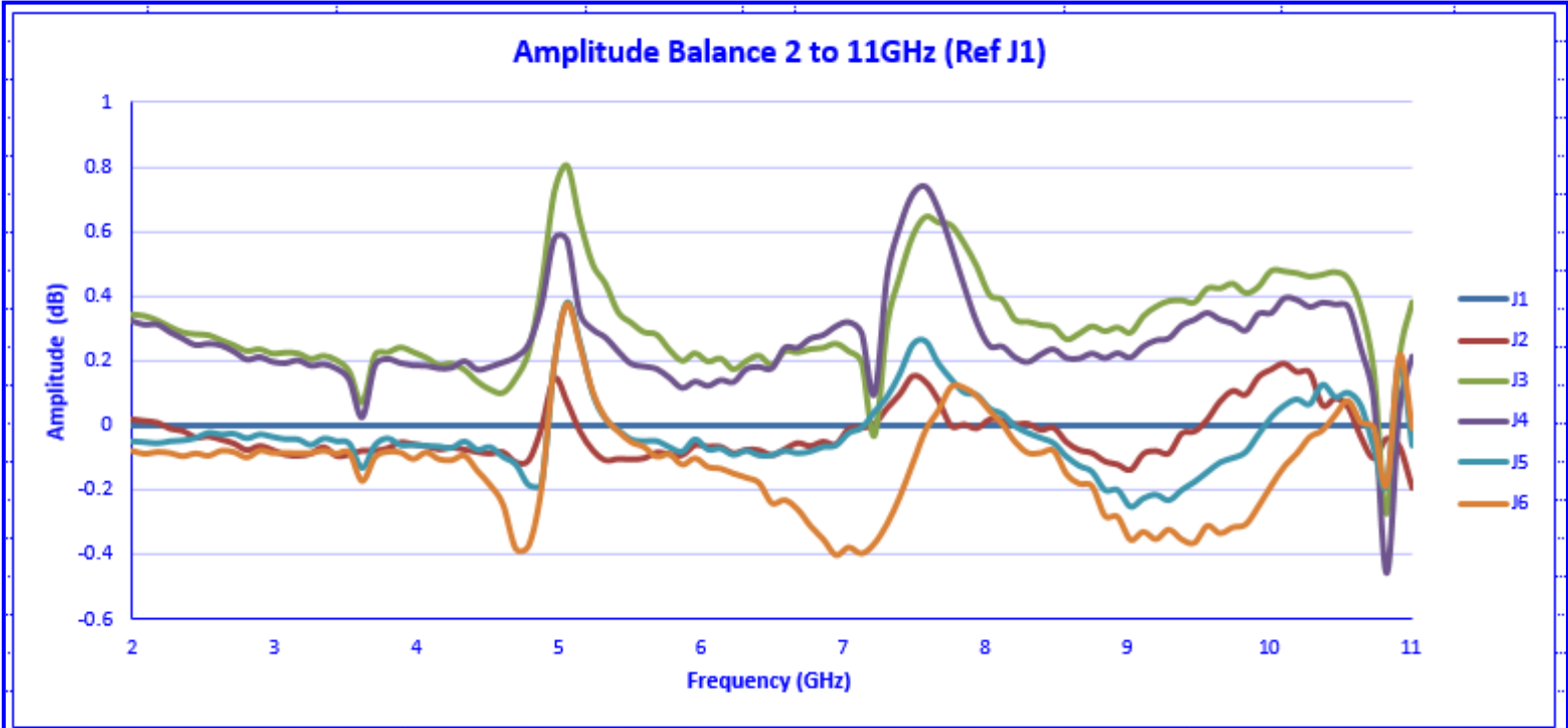
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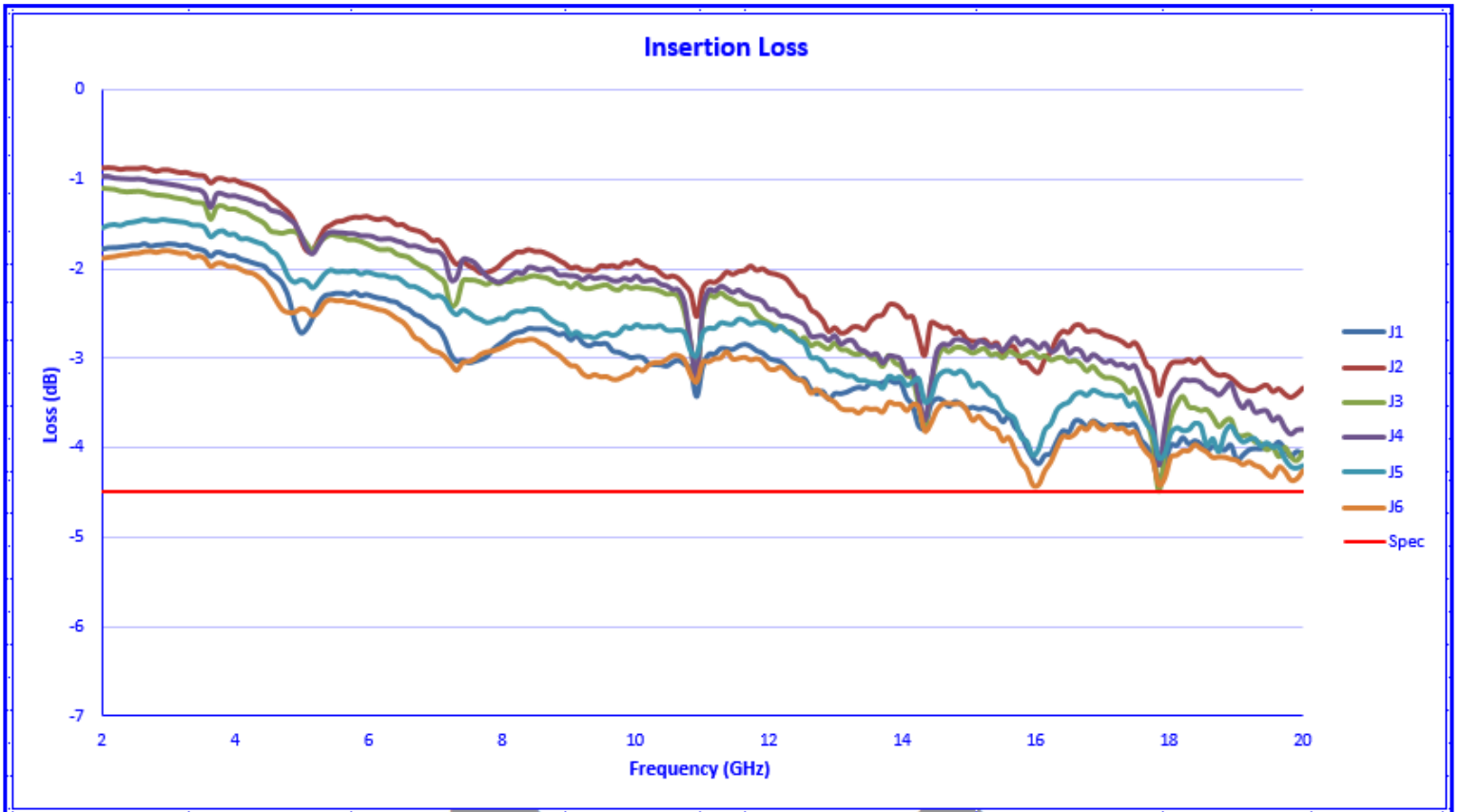
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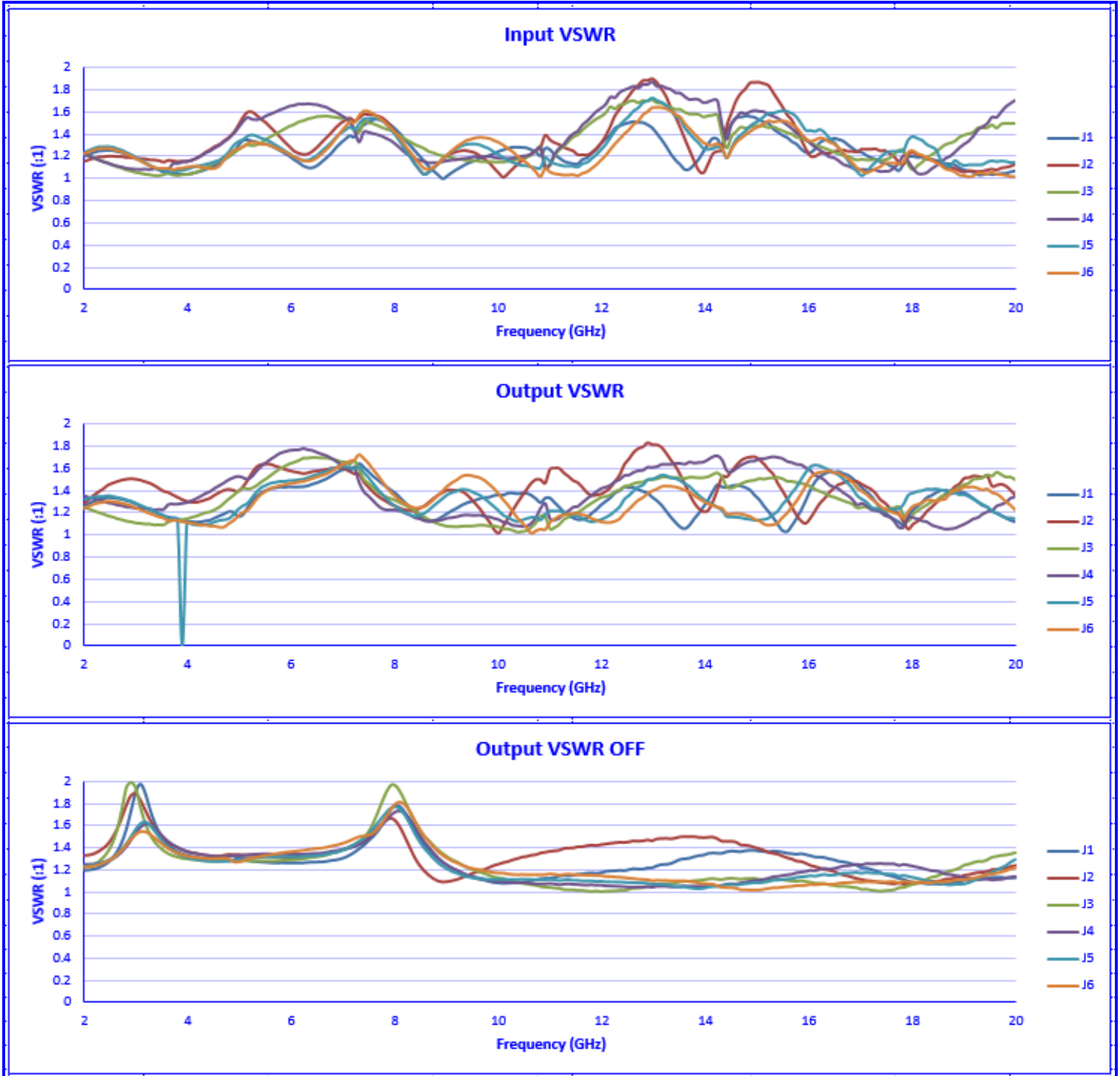
+85°C





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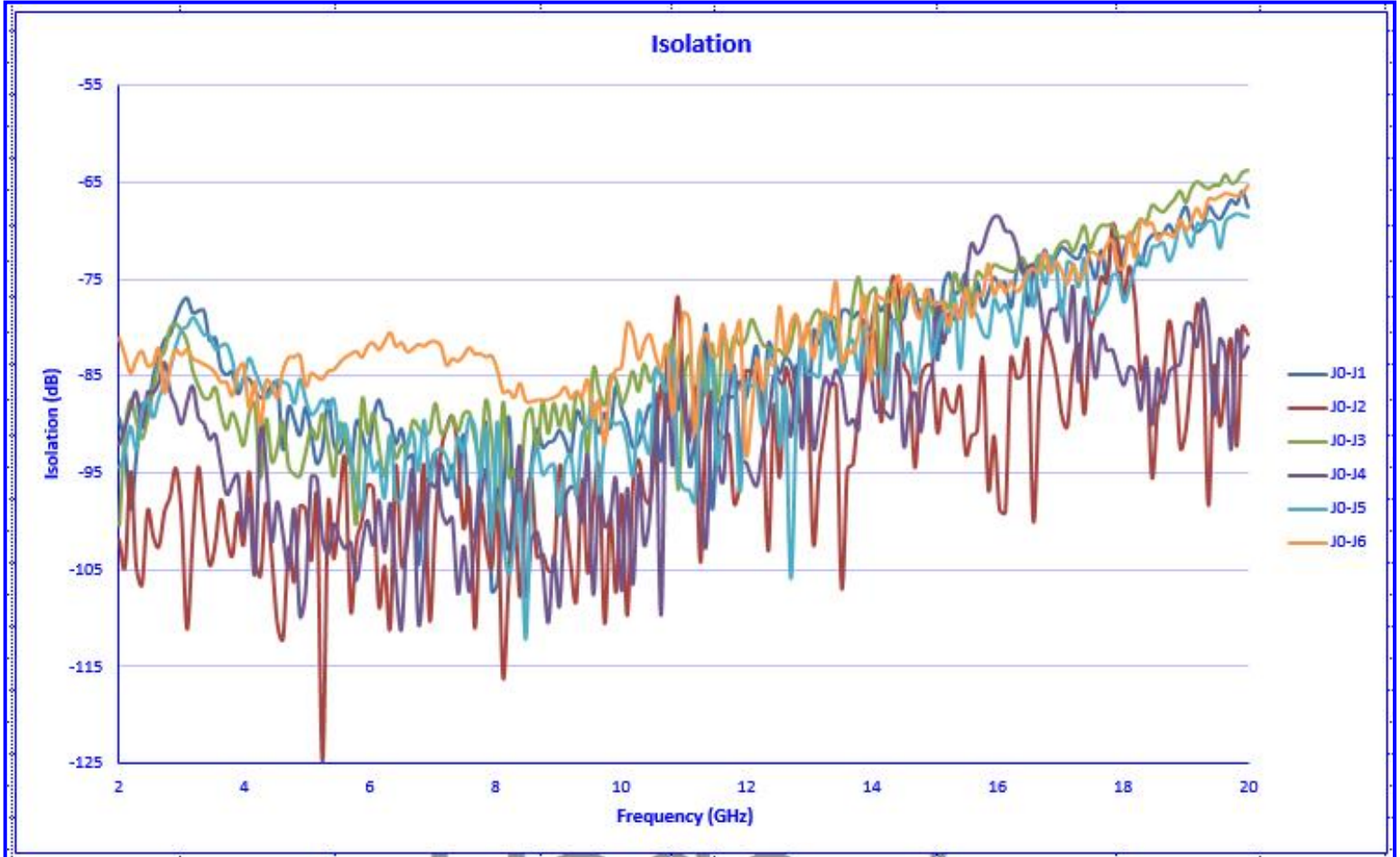
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+85°C

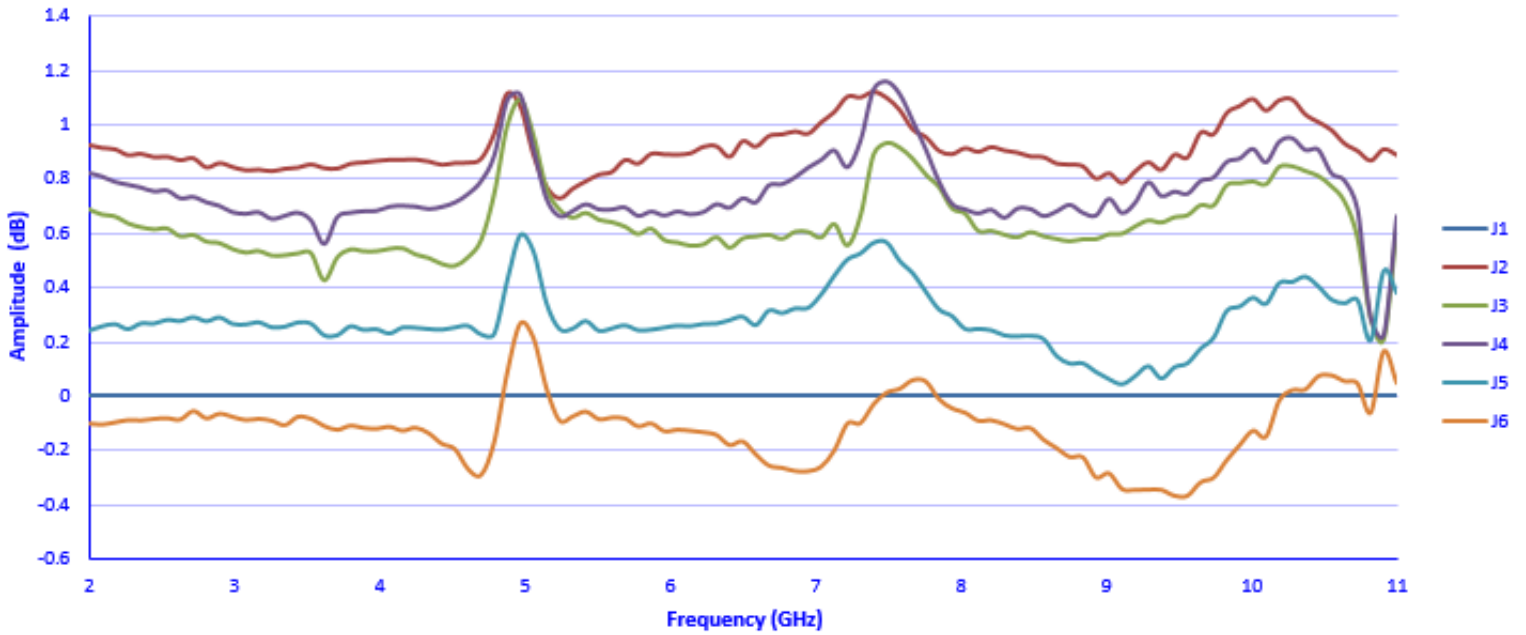




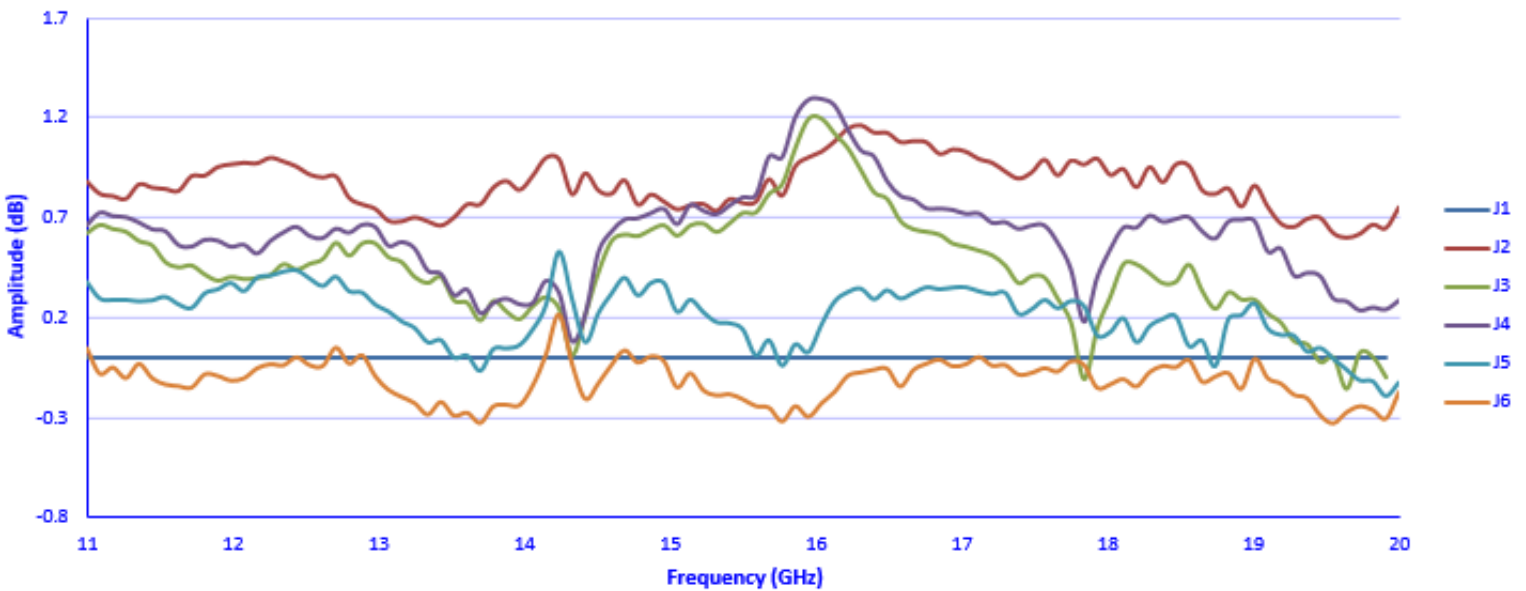
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ON
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+85°C

Amplitude Balance 2 to 11GHz (Ref J1)



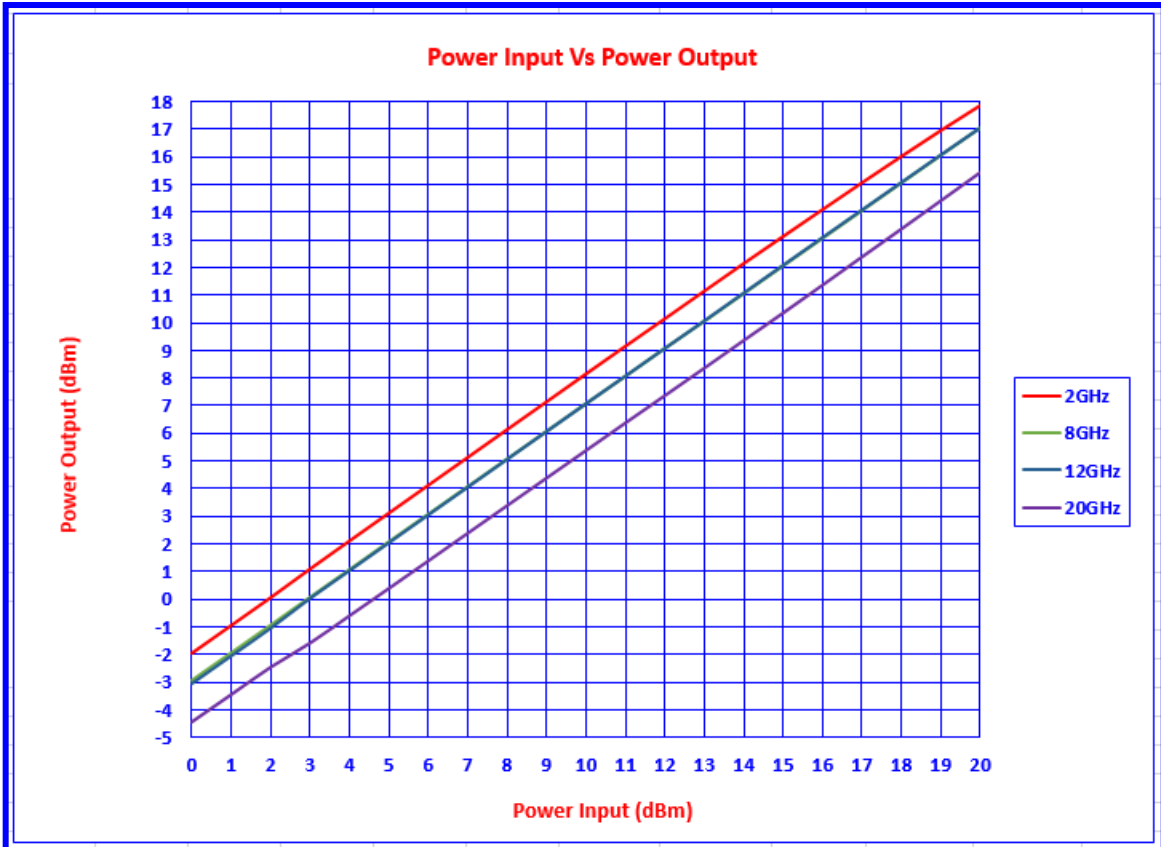
Amplitude Balance 11 to 20GHz (Ref J1)





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High Power Test Graph



High Power Test Data											
2GHz			8GHz			12 GHz			20 GHz		
POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS	POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS	POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS	POWER INPUT (dBm)	POWER OUTPUT (dBm)	LOSS
0	-1.95	1.95	0	-2.94	2.94	0	-3.07	3.07	0	-4.43	4.43
1	-0.94	1.94	1	-1.94	2.94	1	-2.07	3.07	1	-3.44	4.44
2	0.06	1.94	2	-0.95	2.95	2	-1.06	3.06	2	-2.45	4.45
3	1.10	1.90	3	0.07	2.93	3	0.02	2.98	3	-1.58	4.58
4	2.11	1.89	4	1.06	2.94	4	1.02	2.98	4	-0.60	4.60
5	3.12	1.88	5	2.07	2.93	5	2.03	2.97	5	0.39	4.61
6	4.13	1.87	6	3.07	2.93	6	3.04	2.96	6	1.39	4.61
7	5.14	1.86	7	4.06	2.94	7	4.05	2.95	7	2.39	4.61
8	6.15	1.85	8	5.06	2.94	8	5.06	2.94	8	3.38	4.62
9	7.15	1.85	9	6.06	2.94	9	6.06	2.94	9	4.38	4.62
10	8.16	1.84	10	7.06	2.94	10	7.07	2.93	10	5.37	4.63
11	9.16	1.84	11	8.05	2.95	11	8.07	2.93	11	6.37	4.63
12	10.16	1.85	12	9.06	2.94	12	9.08	2.92	12	7.35	4.65
13	11.16	1.85	13	10.04	2.96	13	10.07	2.93	13	8.35	4.65
14	12.15	1.85	14	11.04	2.96	14	11.08	2.92	14	9.34	4.66
15	13.13	1.87	15	12.04	2.96	15	12.09	2.91	15	10.34	4.66
16	14.11	1.89	16	13.04	2.97	16	13.09	2.91	16	11.35	4.65
17	15.073	1.93	17	14.033	2.97	17	14.091	2.91	17	12.36	4.64
18	16.028	1.97	18	15.034	2.97	18	15.089	2.91	18	13.37	4.63
19	16.963	2.04	19	16.031	2.97	19	16.081	2.92	19	14.389	4.61
20	17.871	2.13	20	17.024	2.98	20	17.064	2.94	20	15.409	4.59



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**Switching Speed
Rise Time
10ns per Div. (2.34ns)**



**Fall Time
20ns per Div. (2.60ns)**



**Green = Signal TTL
Yellow = Signal RF**

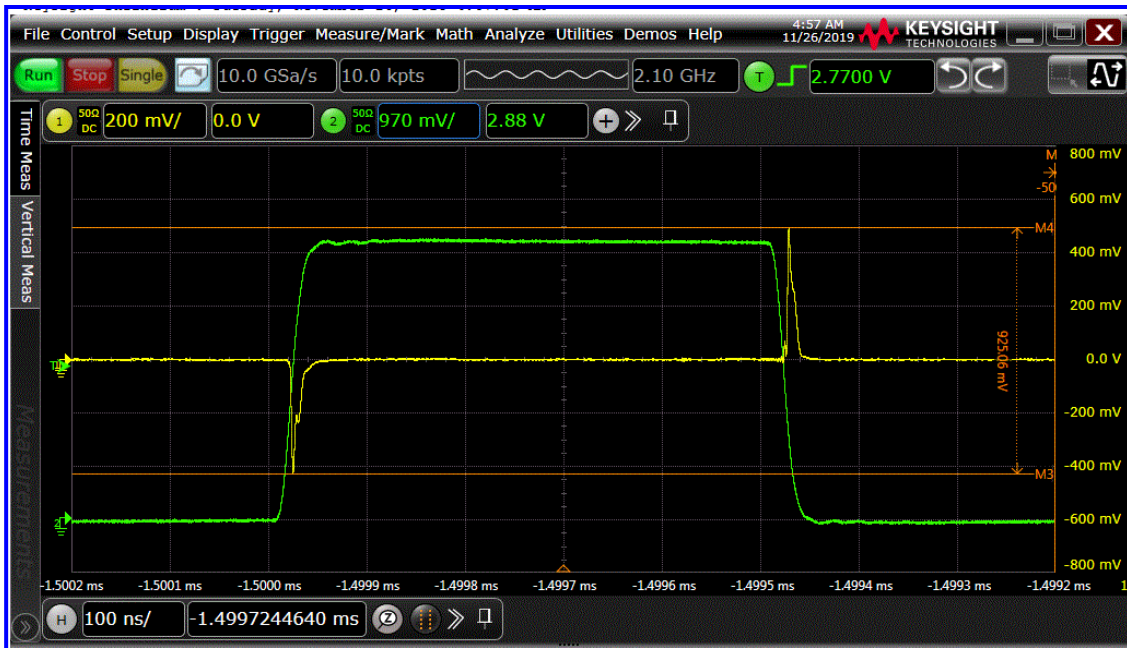


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**Output Video Transients (BW 20 MHz) = 280mV
200mV Per Div.**



**Output Video Transients (BW 350 MHz) = 952mV
200mV Per Div.**



**Green = Signal TTL
Yellow = Signal Video Leakage**

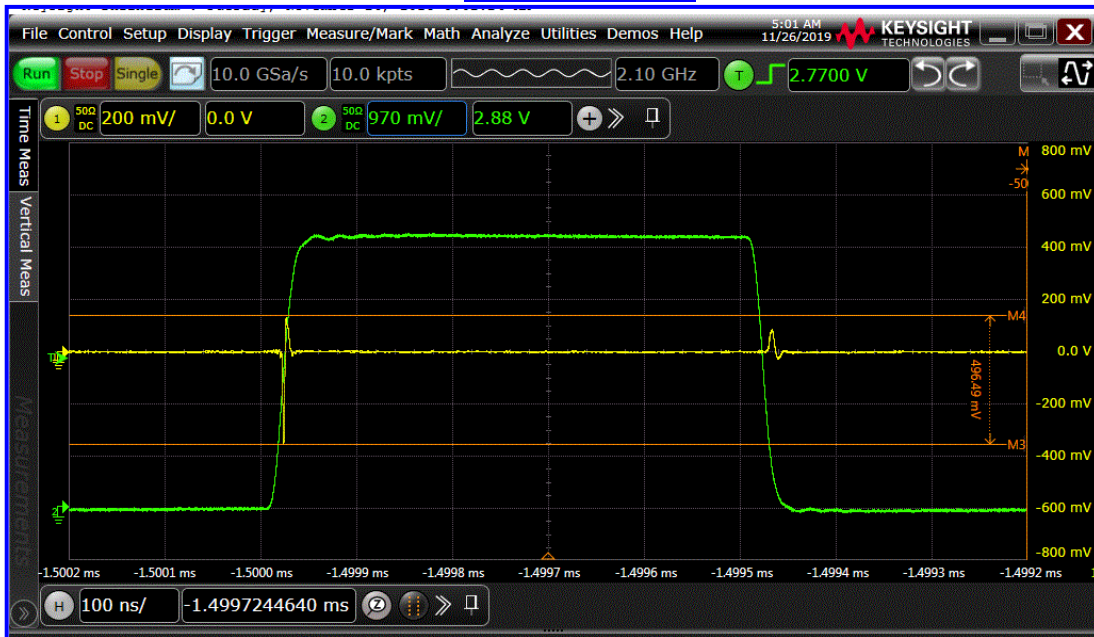


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Input Video Transients (BW 20 MHz) = 3.23mV
2mV Per Div.



Input Video Transients (BW 350 MHz) = 496mV
200mV Per Div.



Green = Signal TTL
Yellow = Signal Video Leakage