



**TYPICAL CHARACTERISTICS
ON
DBMX-4G12G-19-8D5-SFF**

PMI MODEL: DBMX-4G12G-19-8D5-SFF IS A DOUBLE BALANCED MIXER OPERATING OVER THE 4.0 GHz TO 12.0 GHz FREQUENCY RANGE. THIS UNIT PROVIDES A MINIMUM ISOLATION OF 19 dB FROM LO TO RF WHILE MAINTAINING A MAXIMUM NOISE FIGURE OF 8.5 dB. THIS COMPACT MIXER MEASURES 1.000" x 0.725" x 0.510" AND IS OUTFITTED WITH FIELD REPLACEABLE SMA FEMALE CONNECTORS.



DECEMBER 1, 2017

**DESIGNED BY:
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**TESTED BY:
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**REPORTED BY:
MATTHEW BERRY**



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OUTLINE DRAWING

DESCRIPTION

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SPECIFICATIONS @ 25°C

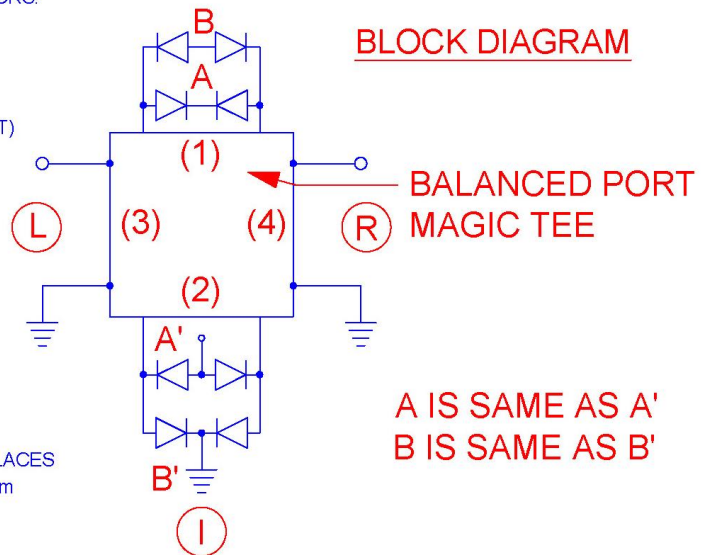
- INPUT: ----- F1 = 870 MHz (I PORT)
P1 = +5 dBm
F2 = 9.77 TO 10.27 GHz (L PORT)
P2 = +12 dBm
- OUTPUT FREQUENCY: ----- 8.9 TO 9.4 GHz (R PORT)
- FREQUENCY RANGE: ----- 4.0 TO 12.0 GHz
- CONVERSION LOSS: ----- 8.5 dB (I → R)
- ISOLATION: ----- 19 dB (L → R)
30 dB (L → I)
27 dB (I → R)
- NOISE FIGURE: ----- 8.5 dB MAXIMUM
- NOMINAL IMPEDANCE: ----- 50 Ω
- RF INPUT POWER: ----- 200 mW MAXIMUM @ +25°C
- INPUT CURRENT: ----- 100 mADC PEAK
- CONNECTORS: ----- MIL-C-39012 SMA FEMALE 3 PLACES
- SIZE (EXCLUDING CONNECTORS): -- 25.40 mm x 18.41 mm x 12.95 mm
1.000" x 0.725" x 0.510"
- FINISH: ----- PAINTED BLUE

ENVIRONMENTAL RATINGS

- TEMPERATURE: ----- -54 °C TO +100 °C (OPERATING)
-65 °C TO +100 °C (NON-OPERATING)
- VIBRATION: ----- MIL-STD-202, METHOD 204 COND. D
- SHOCK: ----- MIL-STD-202, METHOD 213 COND. C
- ALTITUDE: ----- SEA LEVEL TO 10,000 FT (OPERATING)
50,000 FT MAXIMUM (NON-OPERATING)
- HUMIDITY: ----- MIL-STD-202, METHOD 103 COND. B
- CORROSION: ----- MIL-STD-202, METHOD 106

NOTE 1: THE MIXER IS DESIGNED TO MEET THE LISTED ENVIRONMENTAL SPECS.
NOTE 2: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION.

REVISIONS			
ZONE	REV.	DESCRIPTION	DATE
	A1	ORIGINAL RELEASE	08/04/17



PMI CONFIDENTIAL AND PROPRIETARY

PLANAR MONOLITHICS INDUSTRIES, INC.
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ISO 9001 CERTIFIED



APPROVALS		DATE		TITLE	
DRAWN	<i>M. Berry</i>		08/04/17	SIZE	PRODUCT FEATURE
CHECKED				FSOM NO.	DBMX-4G12G-19-8D5-SFF
ISSUED				DWG NO.	4.0 to 12.0 GHz Double-Balanced Mixer Up-Converter
				SCALE	27033120
					REV. A1
					SHEET 1 OF 2



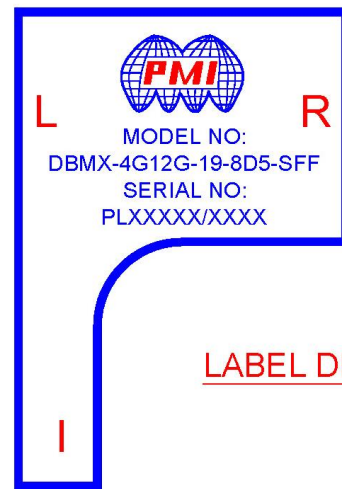
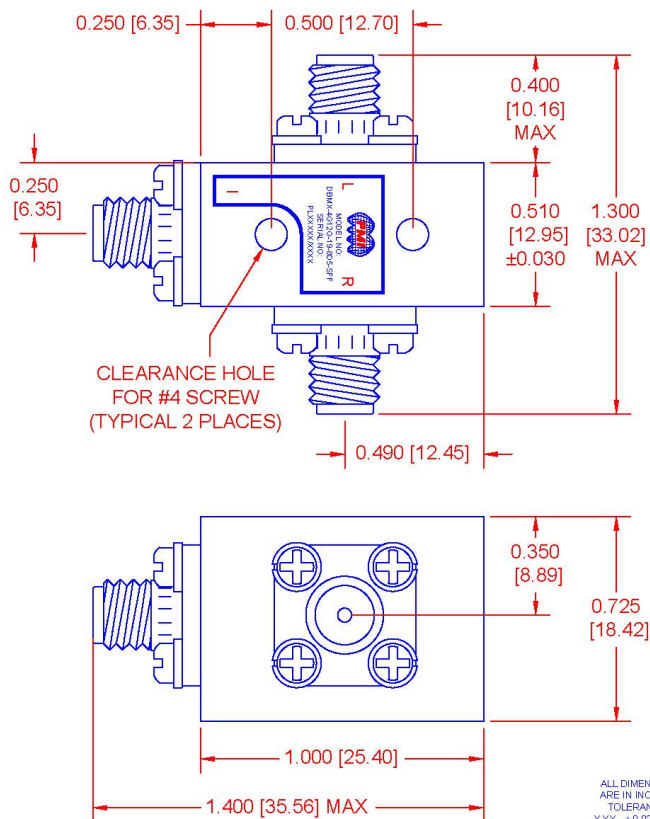
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MECHANICAL OUTLINE



LABEL DETAIL

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				2 OF 2	



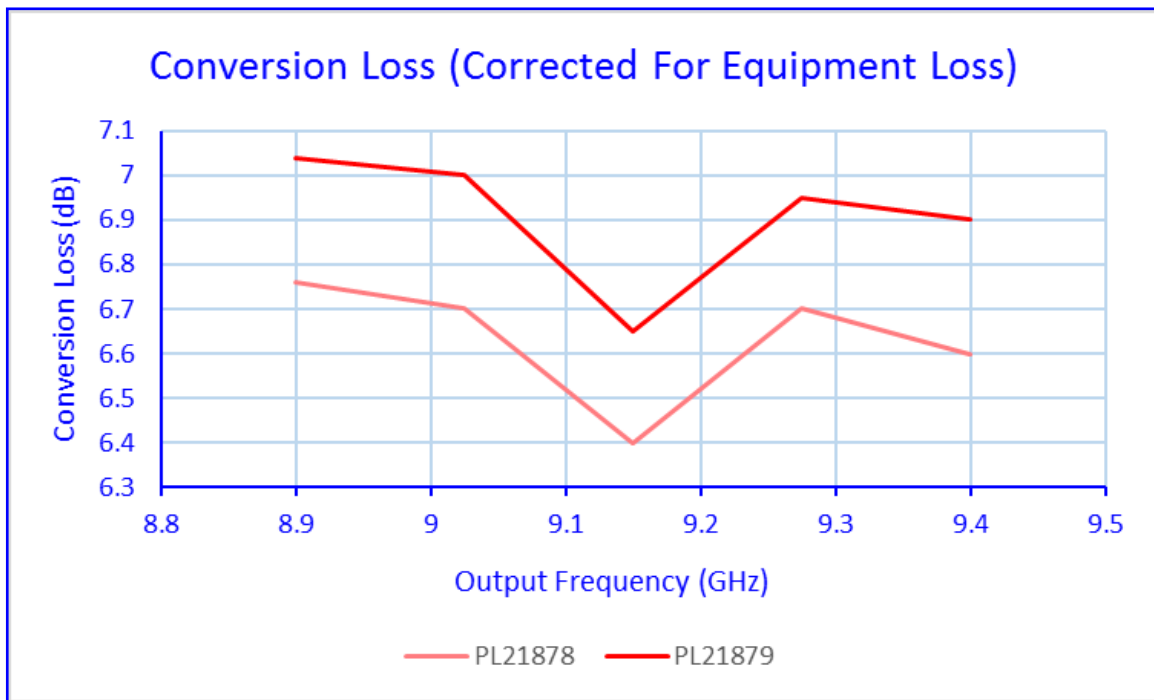
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TEST DATA SUMMARY

TEST ITEM	PARAMETER	SPECIFIED VALUE	TEST MEASUREMENT	TEST RESULT
1	Input Frequency	F1 = 870 MHz (I Port) P1 = +5 dBm F2 = 9.77 to 10.27 GHz (L Port) P2 = +12 dBm	F1 = 870 MHz P1 = +5 dBm F2 = 9.77 to 10.27 GHz P2 = +12 dBm	PASS
2	Output Frequency	8.9 to 9.4 GHz (R Port)	8.9 to 9.4 GHz	PASS
3	Frequency Range	4.0 to 12.0 GHz	4.0 to 12.0 GHz	PASS
4	Conversion Loss	8.5 dB (I → R)	7.04 dB (SEE PLOT)	PASS
5	Isolation	19 dB (L → R) 30 dB (L → I) 27 dB (I → R)	38.97 dB 62.60 dB 39.27 dB (SEE PLOTS)	PASS
6	Noise Figure	8.5 dB Max	7.04 dB	PASS
7	Nominal Impedance	50 Ω	50 Ω	PASS
8	RF Input Power	200 mW Max @ +25 °C	PASS BY DESIGN: ALL INTERNAL COMPONENTS ARE RATED FOR 0.3W OR MORE OVER TEMPERATURE	
9	Input Current	100 mADC Peak	PASS	



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Test Note:

IF Port ran at 870 MHz CW at +5 dBm from Network Analyzer.

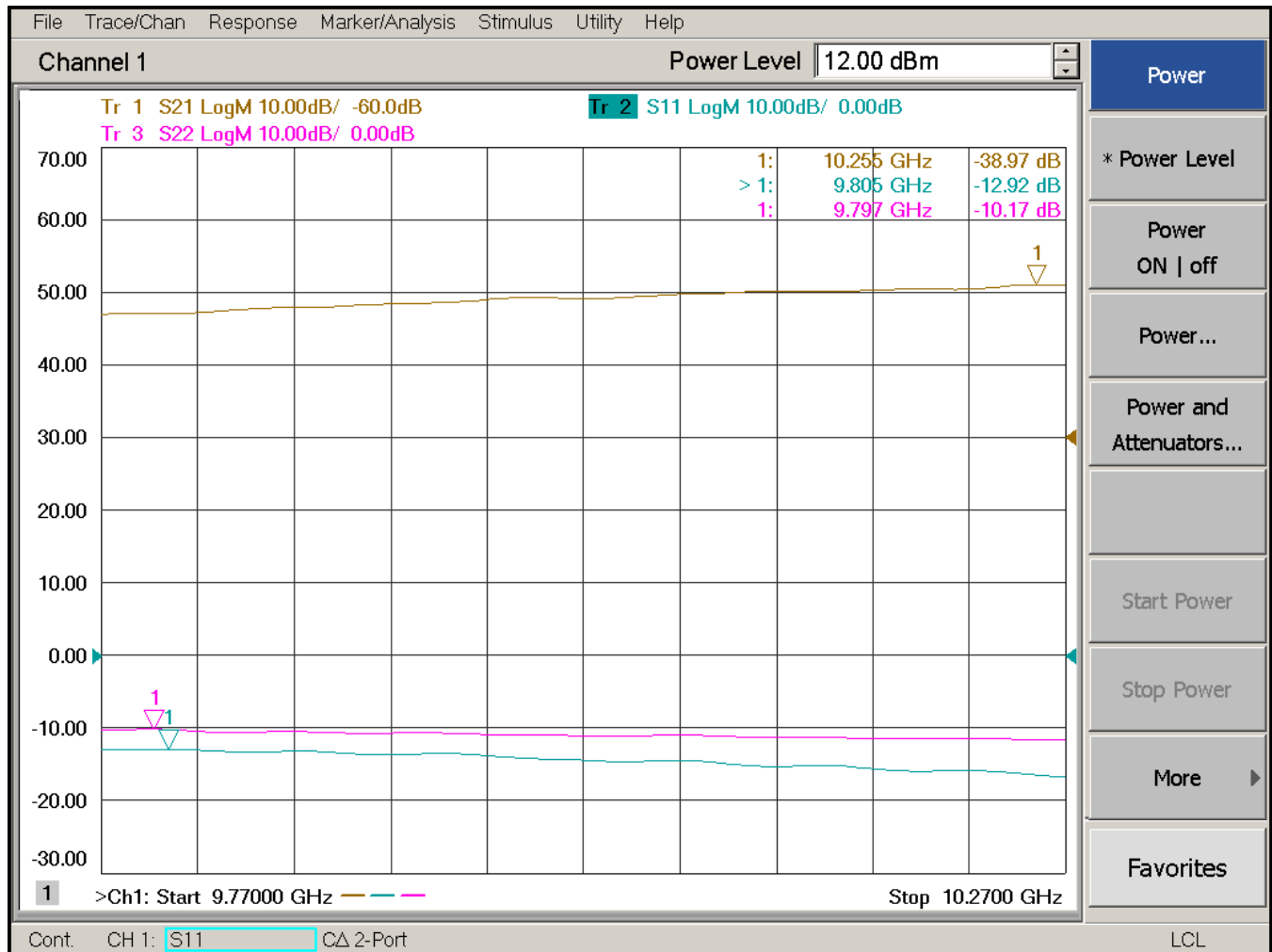
LO Port swept from 9.77-10.27 GHz, w/ 4000 points and 5 ms dwell from Signal Generator.

RF Port measured using Spectrum Analyzer.



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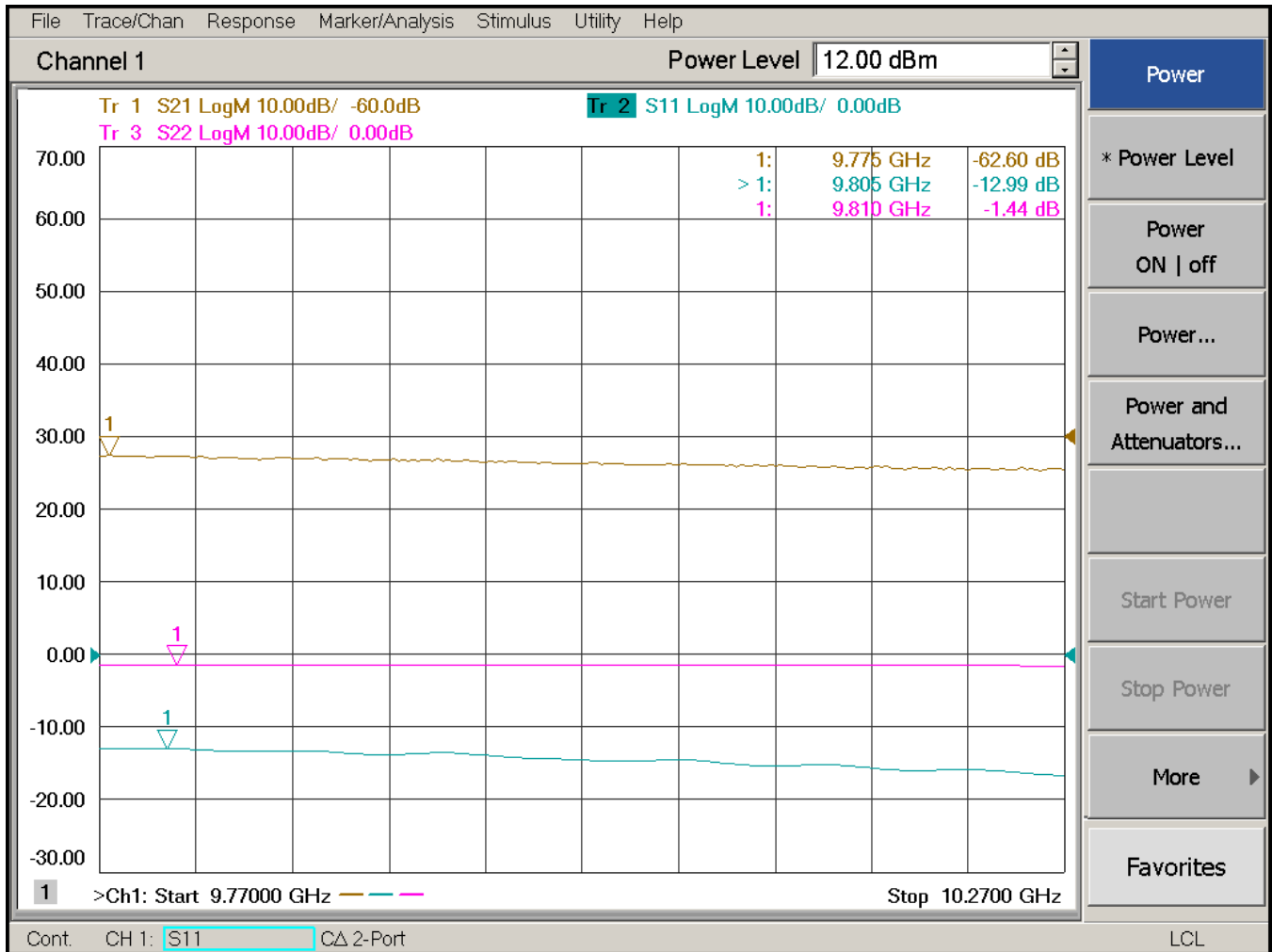
LO to RF Isolation





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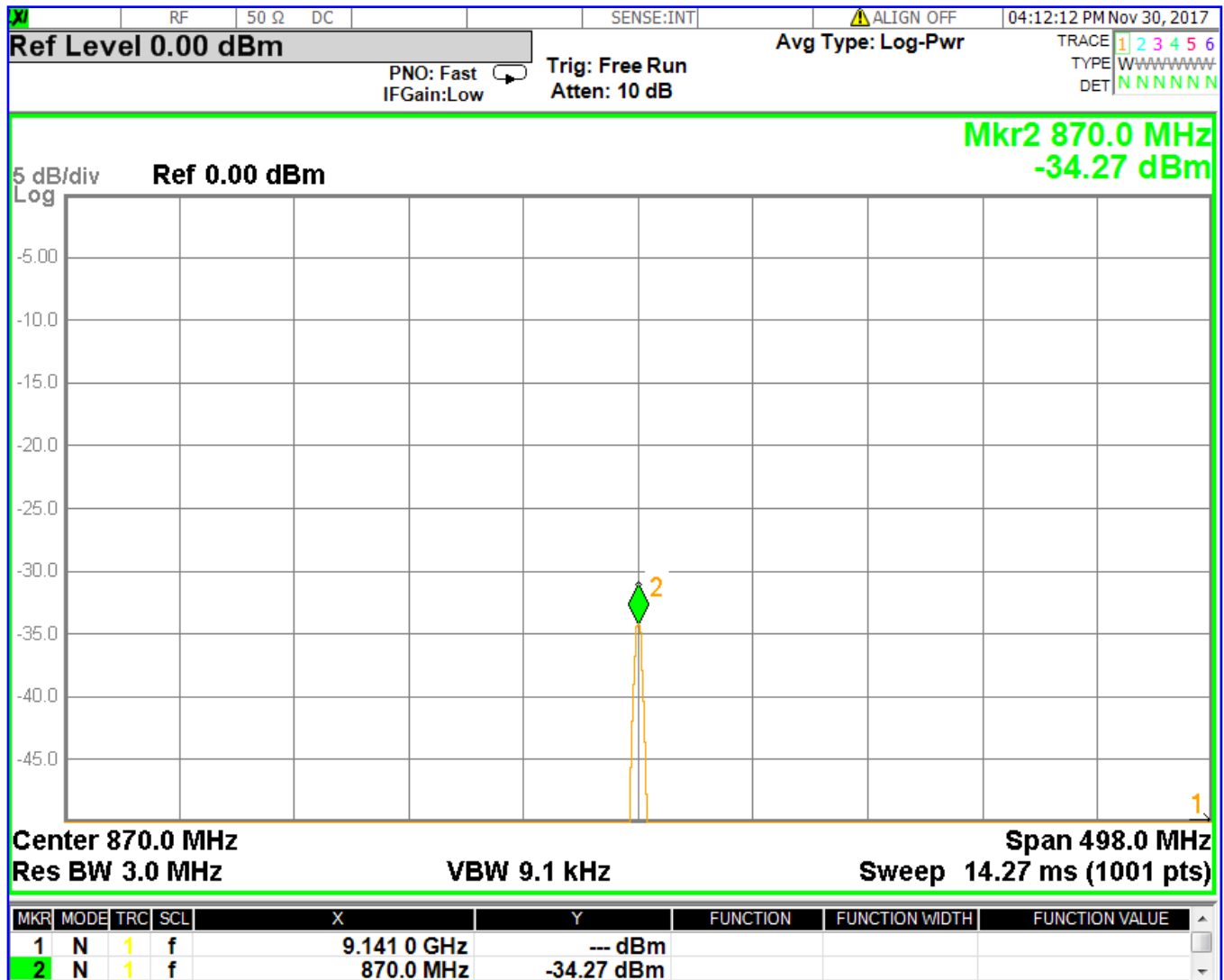
LO to IF Isolation





TYPICAL CHARACTERISTICS ON DBMX-4G12G-19-8D5-SFF

IF to RF Isolation

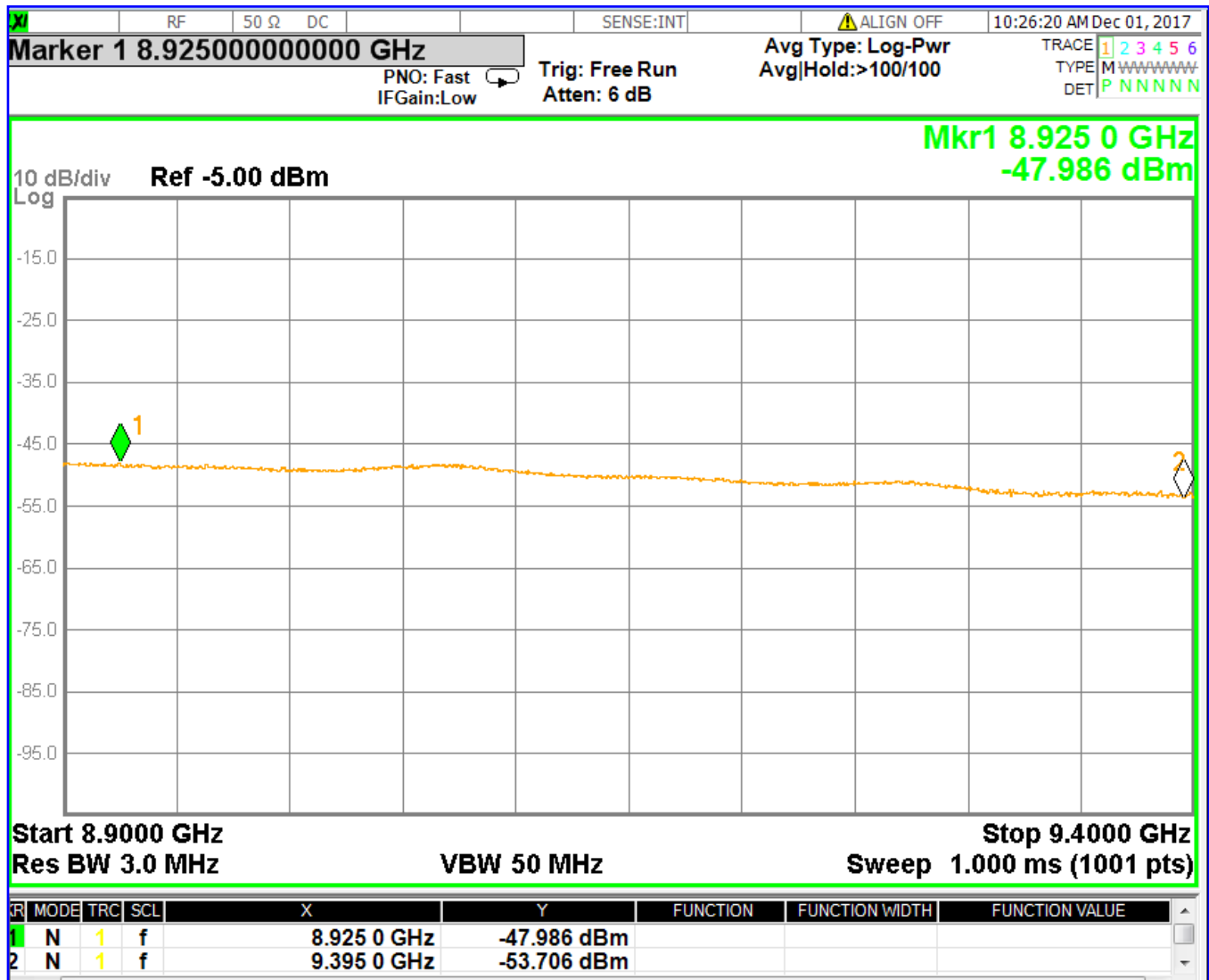


Test Note: +5 dBm Input to IF Port.



**TYPICAL CHARACTERISTICS
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RF to IF Isolation



Test Note: +12 dBm Input to RF Port.