



Radio Test Report

Report No.: STS2510106W01

Issued for

Dongguan Weisheng Communication Technology Co., Ltd.

Room 601, Building 1, No. 8, Qingfeng South Road, Tangxia
Town, Dongguan City, Guangdong Province, China.

Product Name: 100W Solid-state linear power amplifier

Brand Name: N/A

Model Name: GPA100

Series Model(s): N/A

FCC ID: 2BGMW-GPA100

Test Standards: FCC Part 97

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

**TEST REPORT**

Applicant's Name.....: Dongguan Weisheng Communication Technology Co., Ltd.
Address.....: Room 601, Building 1, No. 8, Qingfeng South Road, Tangxia Town,
Dongguan City, Guangdong Province, China.
Manufacture's Name.....: Dongguan Weisheng Communication Technology Co., Ltd.
Address.....: Room 601, Building 1, No. 8, Qingfeng South Road, Tangxia Town,
Dongguan City, Guangdong Province, China.

Product Description

Product Name: 100W Solid-state linear power amplifier

Brand Name: N/A

Model Name.....: GPA100

Series Model: N/A

Test Standards.....: FCC Part 97

This device described above has been tested by STS, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

The test results presented in this report relate only to the object tested. This report shall not be reproduced, except in full, without the written approval of the Shenzhen STS Test Services Co., Ltd.

Date of Test.....:

Date of receipt of test item.....: 20 Oct. 2025

Date of performance of tests ..: 20 Oct. 2025~27 Nov. 2025

Date of Issue.....: 27 Nov. 2025

Test Result: Pass

Testing Engineer :

Aaron Bu

(Aaron Bu)

Technical Manager :

Skylar Li

(Skylar Li)

Authorized Signatory :

Bovey Yang

(Bovey Yang)



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Revision History



Rev.	Issue Date	Report NO.	Effect Page	Contents
00	27 Nov. 2025	STS2510106W01	ALL	Initial Issue



SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Rules	Description of Test	Results
§2.1033(c)(9)	Power at the Final Amplifier	Compliant
§97.313&97.317(a)(1)(2)(3)	RF Output Power and Gain	Compliant
§2.1051& §97.307(d)(e) &97.317(a)(1)	Spurious emissions at antenna terminals	Compliant
§2.1053 & §97.307(d)(e) &97.317(a)(1)	Field strength of spurious radiation	Compliant
§1.1307(b) (3), §2.1091	MPE-Based Exemption	Compliant



1 INTRODUCTION

1.1 TEST FACTORY

SHENZHEN STS TEST SERVICES CO., LTD

Add. : A 1/F, Building B, Zhuoke Science Park, No.190 Chongqing Road, HepingShequ, Fuyong Sub-District, Bao'an District, Shenzhen, Guang Dong, China

FCC test Firm Registration Number: 625569

IC test Firm Registration Number: 12108A

A2LA Certificate No.: 4338.01

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainly
1	RF output power, conducted	$\pm 0.68\text{dB}$
2	Unwanted Emissions, conducted	$\pm 2.988\text{dB}$
3	All emissions, radiated 30-1GHz	$\pm 6.7\text{dB}$
4	All emissions, radiated 1G-6GHz	$\pm 5.5\text{dB}$
5	All emissions, radiated >6G	$\pm 5.8\text{dB}$
6	Conducted Emission (9KHz-150KHz)	$\pm 4.43\text{dB}$
7	Conducted Emission (150KHz-30MHz)	$\pm 5\text{dB}$



2 PRODUCT INFORMATION

Product Name	100W Solid-state linear power amplifier
Brand Name	N/A
Model Name	GPA100
Series Model(s)	N/A
Model Difference	N/A
Tx Frequency	1.8-54MHz
Maximum output power	1.8-30MHz: 100W 50MHz-54MHz: 80W
Mode	FM
Modulation Technique	F3E
Duty Cycle	100%
Power Rating	Input: working voltage: 12-15V DC Output: Driving power: Max.5W
Hardware version number:	N/A
Software version number:	N/A



3 MEASUREMENT INSTRUMENTS

RF Radiation Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibra- tion	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Signal Generator	Keysight	N5182A	MY46240556	2025.09.26	2026.09.25
Signal Generator	Keysight	N5182B	MY57301448	2025.09.26	2026.09.25
Pre-Amplifier(0.1M-3GHz)	EM	EM330	060665	2025.02.22	2026.02.21
Pre-Amplifier (1G-18GHz)	SKET	LNPA-01018G-45	SK2018080901	2025.09.25	2026.09.24
Pre-Amplifier(18G-40GHz)	SKET	LNPA_1840-50	SK2018101801	2025.02.22	2026.02.21
Positioning Controller	MF	MF-7802	MF-780208587	N/A	N/A
Signal Analyzer	R&S	FSV 40-N	101823	2025.09.26	2026.09.25
Switch Control Box	N/A	N/A	N/A	N/A	N/A
Filter Box	BALUN Tech- nology	SU319E	BL-SZ1530051	N/A	N/A
Video Controller	SKET	FCS C-3	N/A	N/A	N/A
Bilog Antenna	TESEQ	CBL6111D	34678	2025.09.27	2027.09.26
Horn Antenna	SCHWARZBECK	BBHA 9120D	02014	2025.09.27	2027.09.26
Horn Antenna	A-INFOMW	LB-180400-KF	J211020657	2025.09.27	2027.09.26
Antenna Mast	MF	MFA-440H	N/A	N/A	N/A
Turn Table	MF	N/A	N/A	N/A	N/A
AC Power Source	APC	KDF-11010G	F214050035	N/A	N/A
DC Power Supply	Zhaoxin	RXN 605D	20R605D11010081	N/A	N/A
Test SW	EMC Test Soft- ware	15.2.0.339			
	EZ-EMC	Ver.STSLAB-03A1 RE			
RF Connected Test Equipment					
Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibra- tion	Calibrated Until
Temperature & Humidity	SW-108	SuWei	N/A	2025.02.24	2026.02.23
Signal Generator	Keysight	N5182A	MY46240556	2025.09.26	2026.09.25
Signal Generator	Keysight	N5182B	MY57301448	2025.09.26	2026.09.25
Signal Analyzer	Agilent	N9020A	MY52440124	2025.02.22	2026.02.21
Signal Analyzer	Keysight	N9020A	MY5244012	2025.02.22	2026.02.21
RF Automatic Test System	Maiwei	MW200-SFCB	N/A	N/A	N/A
Temperature & Humidity Test Chamber	Safety test	AG80L	171200018	2025.02.22	2026.02.21
Programmable Power Supply	Agilent	E3642A	MY40002025	2025.09.26	2026.09.25
POWER DIVIDER	eastsheep	PD-0.5/0.6-2S	N/A	2025.02.25	2026.02.24



4 TEST ITEMS

4.1 POWER AT THE FINAL AMPLIFIER

Test Requirement:

FCC §2.1033(c)(9)

Test Procedures

No method of measurement is specified. The result has been calculated based on all available information.

Test Data

EUT Operating Voltage (V _{DC})	EUT Current (A)	Power at the final Amplifier(W)
12	10.75	129
15		

4.2 RF OUTPUT POWER AND GAIN

Test Requirement

FCC §97.313&97.317(a)(1)(2)

Limit

According to §97.313(b), No station may transmit with a transmitter power exceeding 1.5 kW PEP.

According to §97.313(c), No station may transmit with a transmitter power output exceeding 200 W PEP:

- (1) On the 10.10-10.15 MHz segment;
- (2) On the 3.525-3.60 MHz, 7.025-7.125 MHz, 21.025-21.20 MHz, and 28.0-28.5 MHz segment when the control operator is a Novice Class operator or a Technician Class operator; or
- (3) The 7.050-7.075 MHz segment when the station is within ITU Regions 1 or 3.

According to §97.313(c), No station may transmit with an effective radiated power (ERP) exceeding 100 W PEP on the 60 m band. For the purpose of computing ERP, the transmitter PEP will be multiplied by the antenna gain relative to a half-wave dipole antenna. A half-wave dipole antenna will be presumed to have a gain of 1 (0 dBd). Licensees using other antennas must maintain in their station records either the antenna manufacturer's data on the antenna gain or calculations of the antenna gain.

According to §97.317(a)(1), Satisfy the spurious emission standards of §97.307 (d) or (e) of this part, as applicable, when the amplifier is operated at the lesser of 1.5 kW PEP or its full output power and when the amplifier is placed in the “standby” or “off” positions while connected to the transmitter.

According to §97.317(a)(2), Not be capable of amplifying the input RF power (driving signal) by more than 15 dB gain. Gain is defined as the ratio of the input RF power to the output RF power of the amplifier where both power measurements are expressed in peak envelope power or mean power.

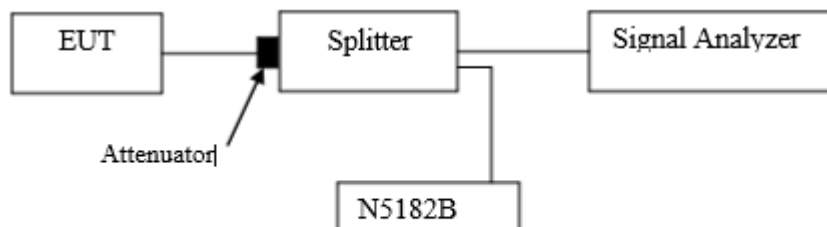
According to §97.317(a)(3), Exhibit no amplification (0 dB gain) between 26 MHz and 28 MHz.

TEST PROCEDURES

According to ANSI C63.26-2015 and FCC KDB 935210.

p) Repeat the procedure for each operational uplink and downlink frequency band supported by the booster.

Test Setup





Test Data

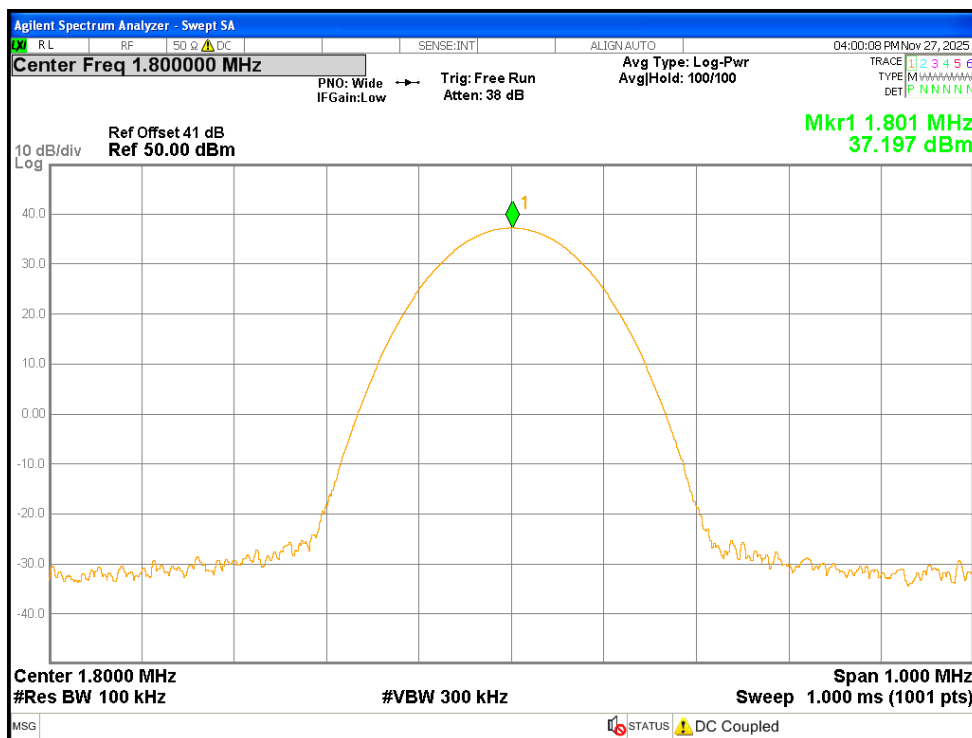
Frequency(MHz)	Power Input (dBm)	Power Output (dBm)	Gain (dB)	Limit (dB)
1.8	37.197	49.191	11.994	<15
3.8	36.929	48.959	12.030	<15
5.4	36.942	48.972	12.030	<15
7.05	36.849	48.873	12.024	<15
10.1	37.146	49.669	12.523	<15
14.2705	37.313	49.042	11.729	<15
18.1	36.844	49.558	12.714	<15
21	36.842	49.552	12.710	<15
24.9	36.829	49.747	12.918	<15
28.5	36.631	47.055	10.424	< 15
51	36.893	47.112	10.219	<15

Note: The rated power: 100W (50dBm), 80W (49dBm)

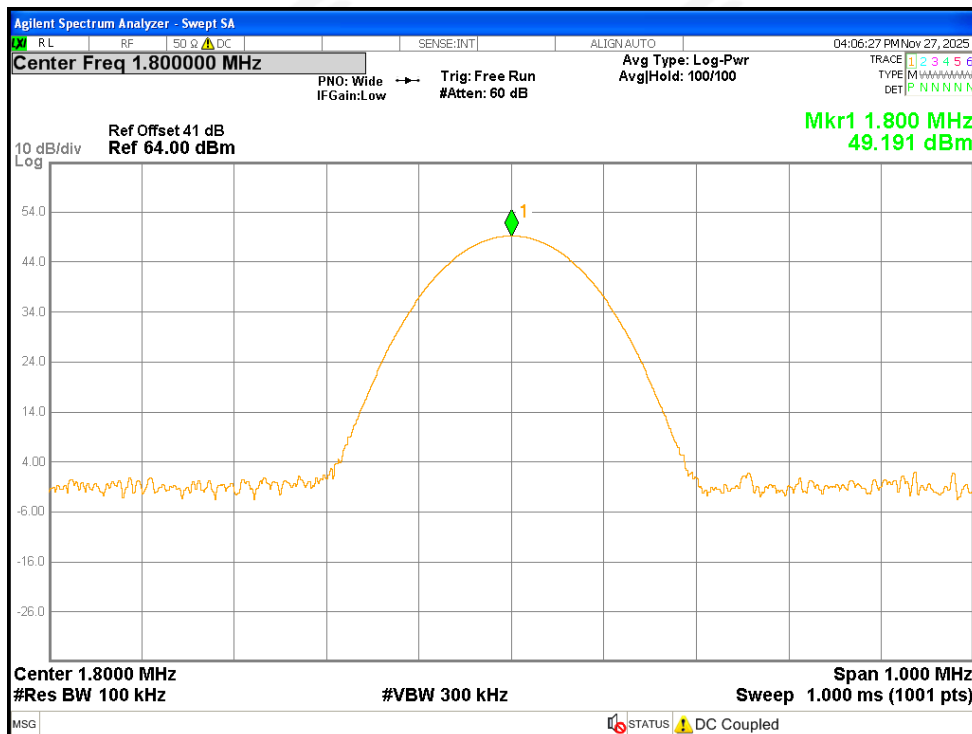
Gain= Power Output-Power Input



1.8MHz Input Power

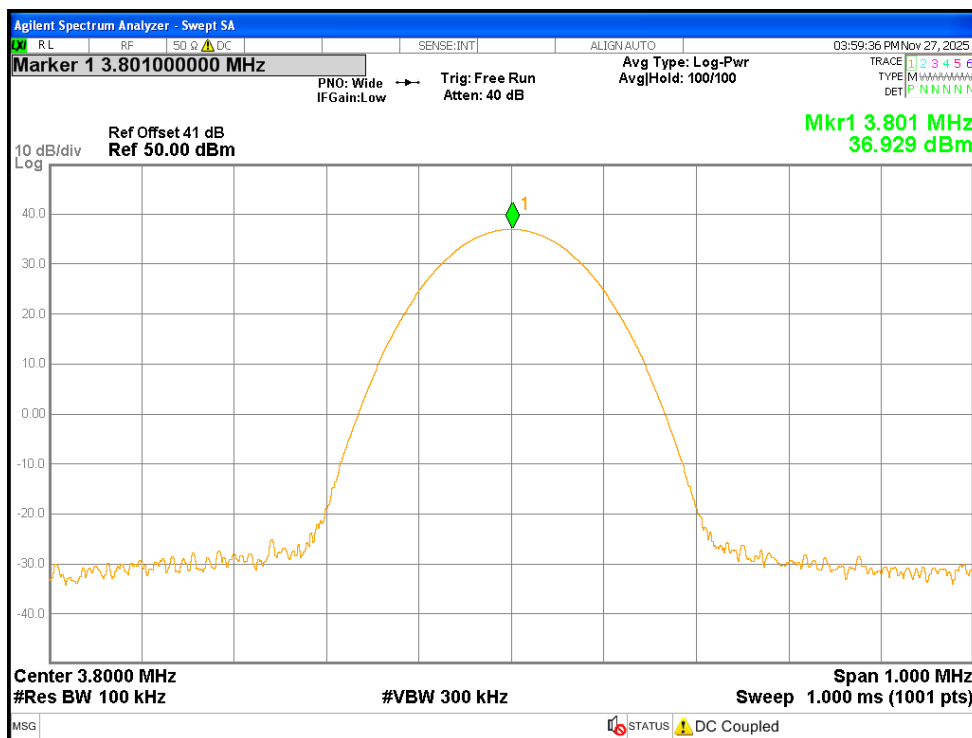


1.8MHz Output Power

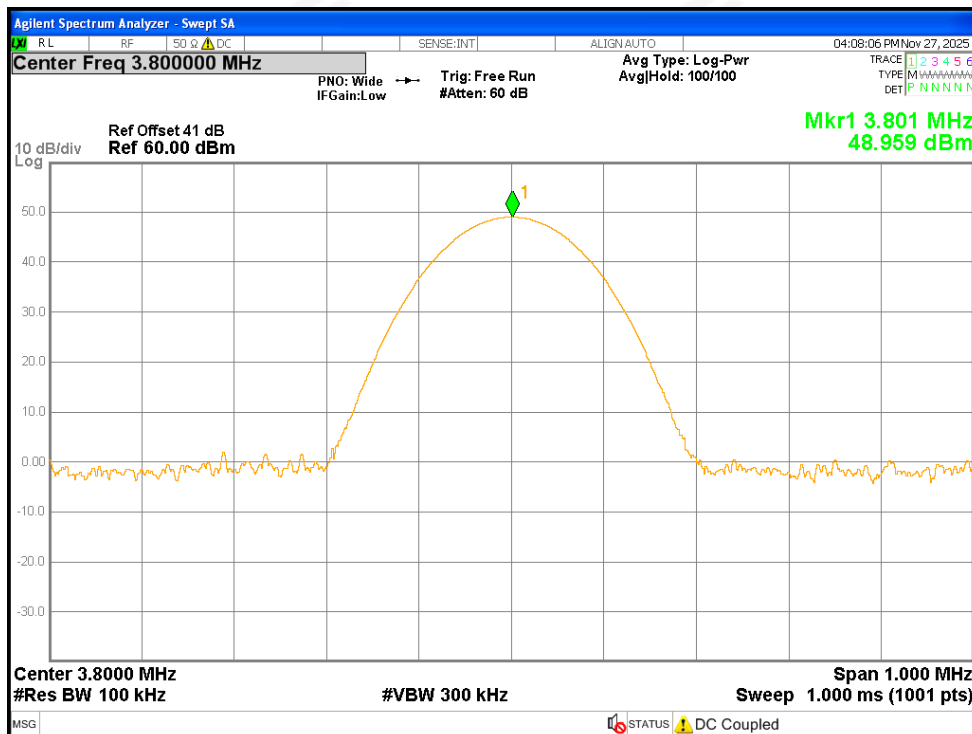




3.8MHz Input Power

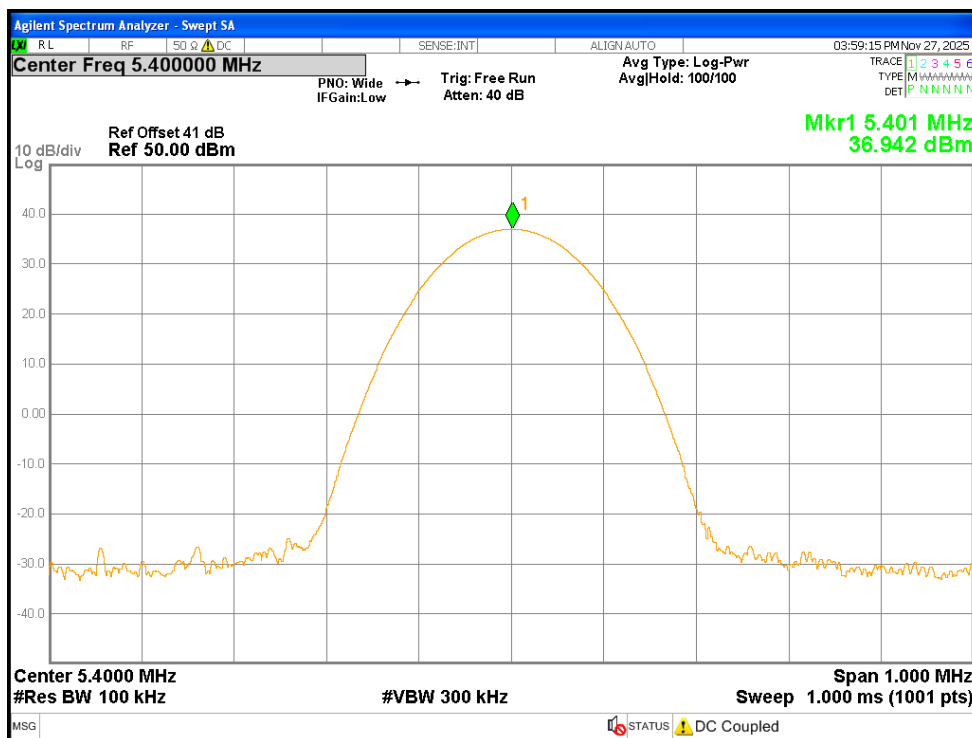


3.8MHz Output Power

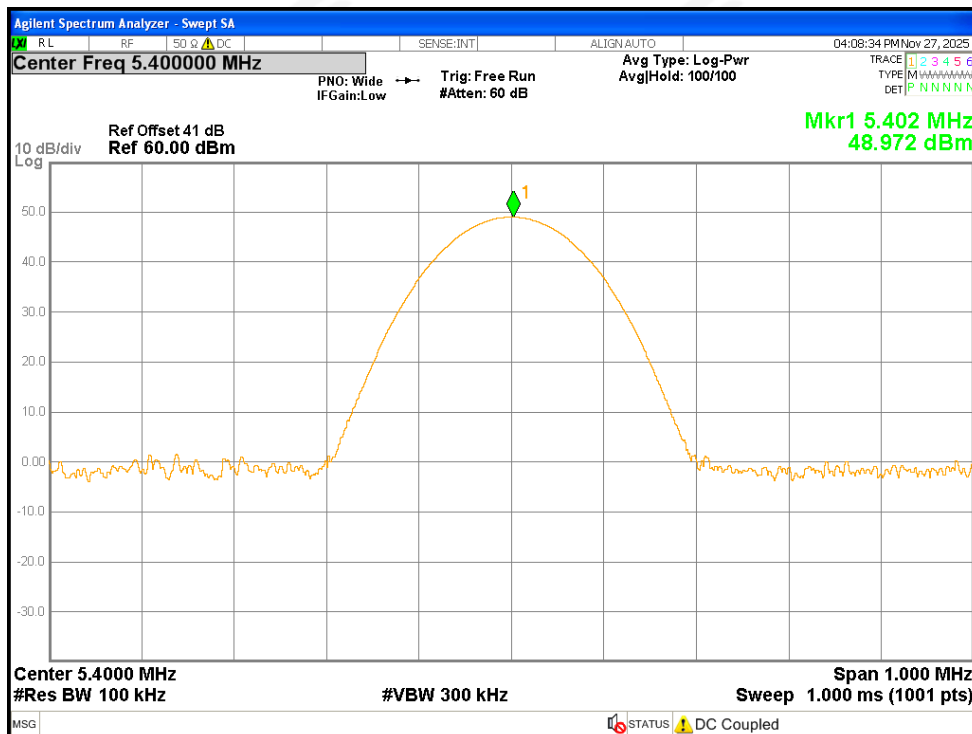




5.4MHz Input Power

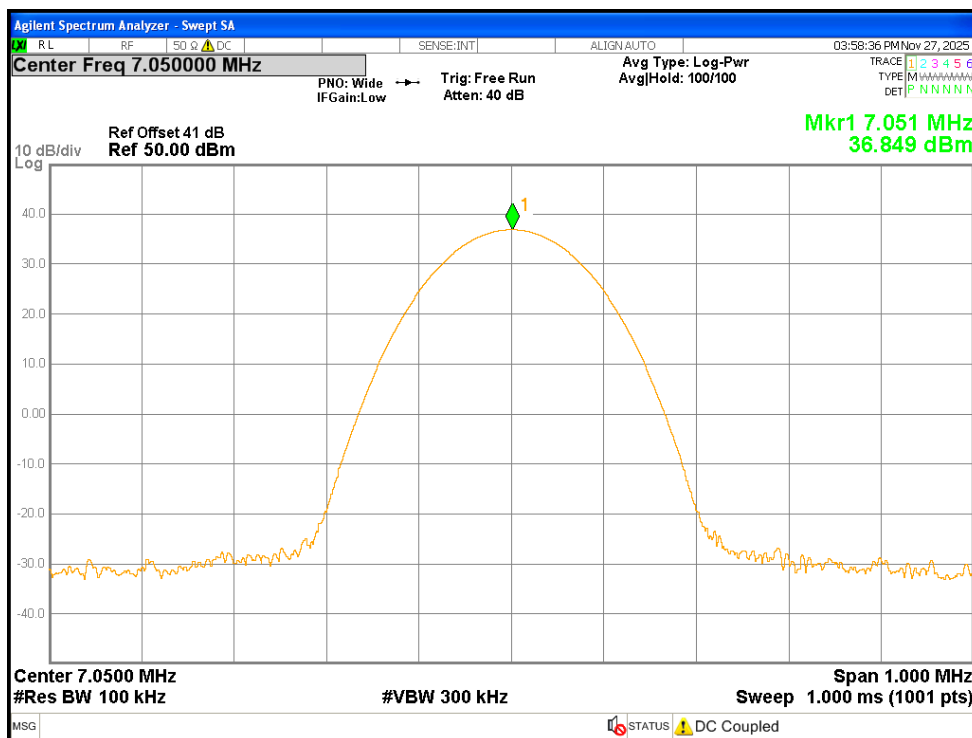


5.4MHz Output Power

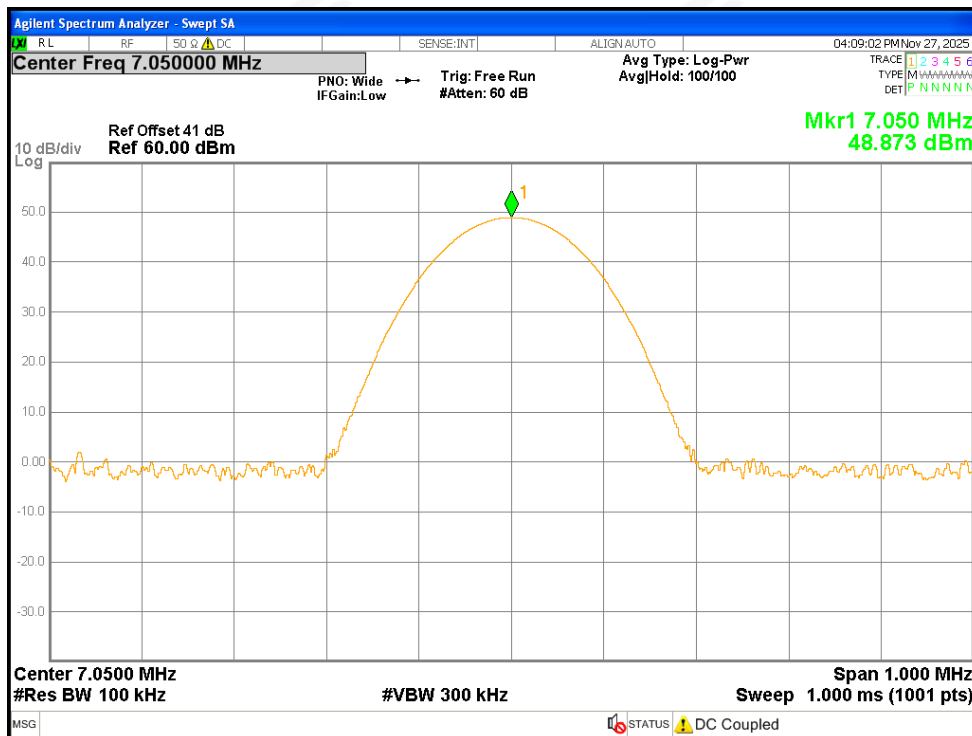




7.05MHz Input Power

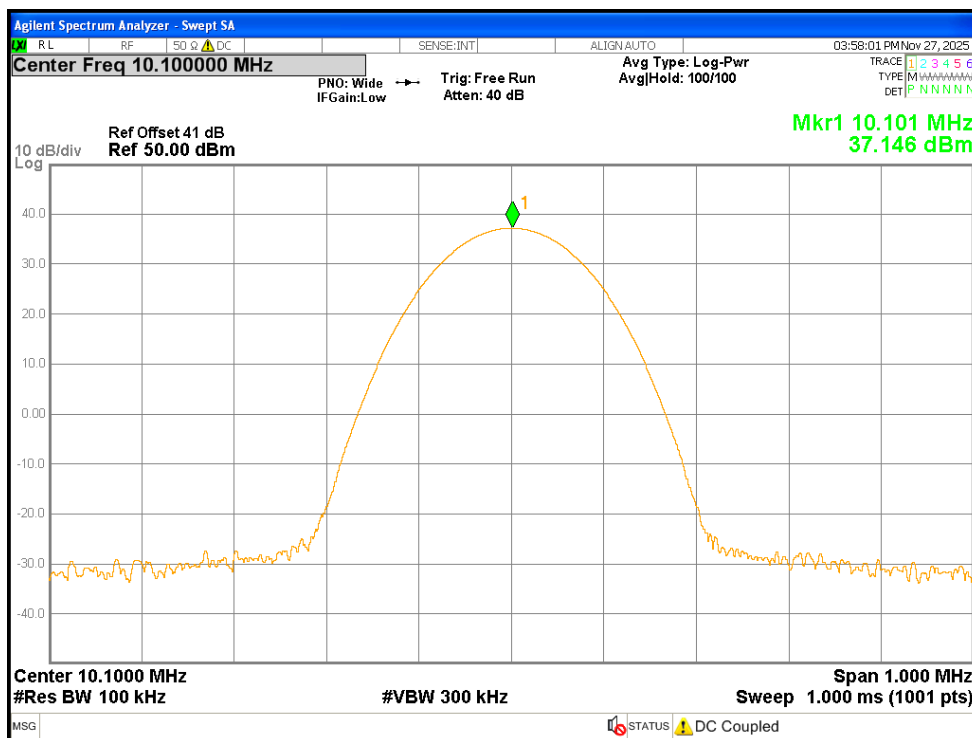


7.05MHz Output Power

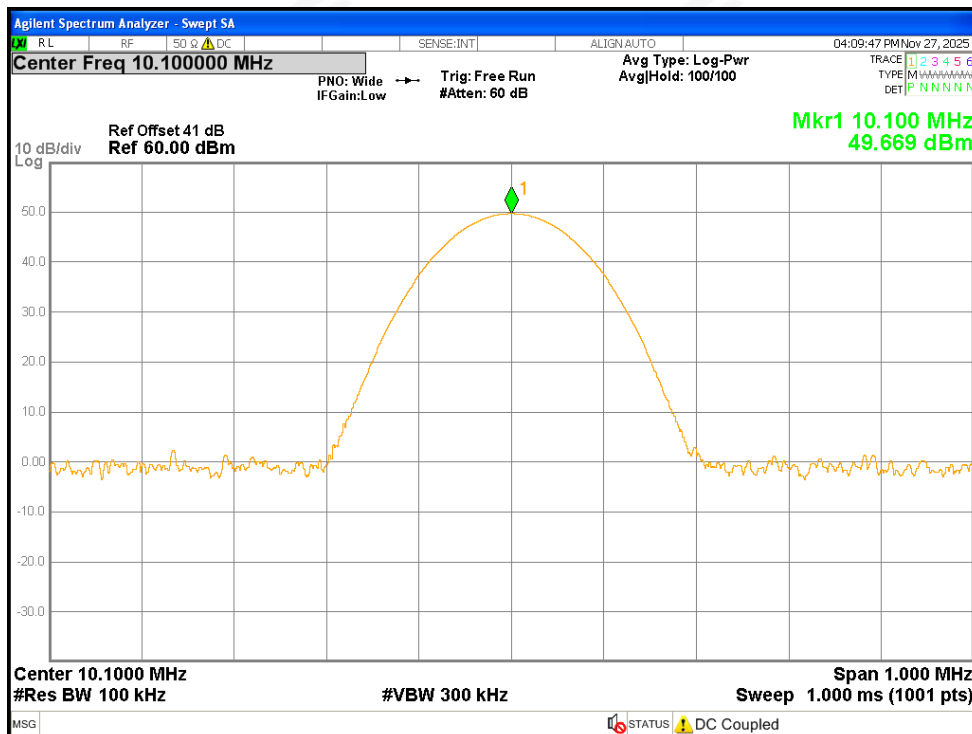




10.1MHz Input Power

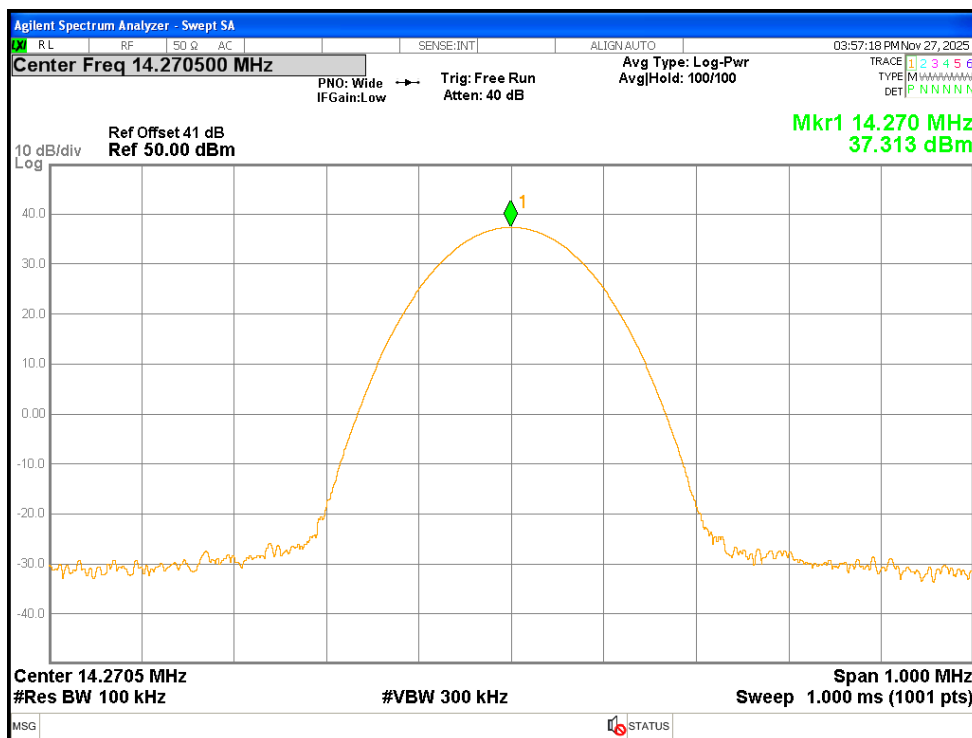


10.1MHz Output Power

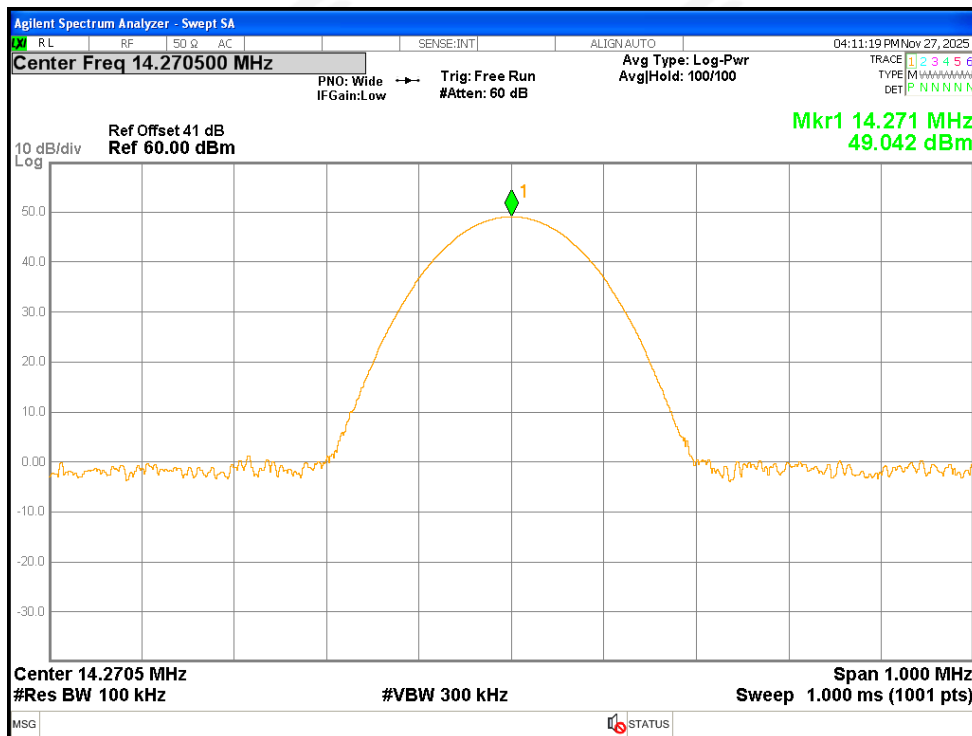




14.2705MHz Input Power

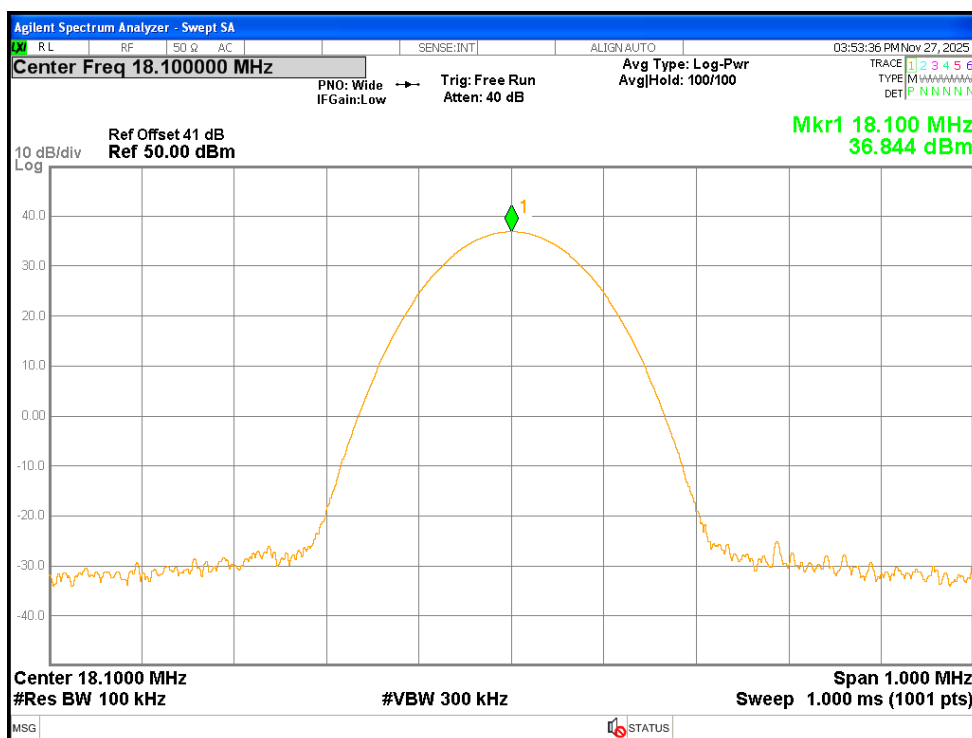


14.2705MHz Output Power

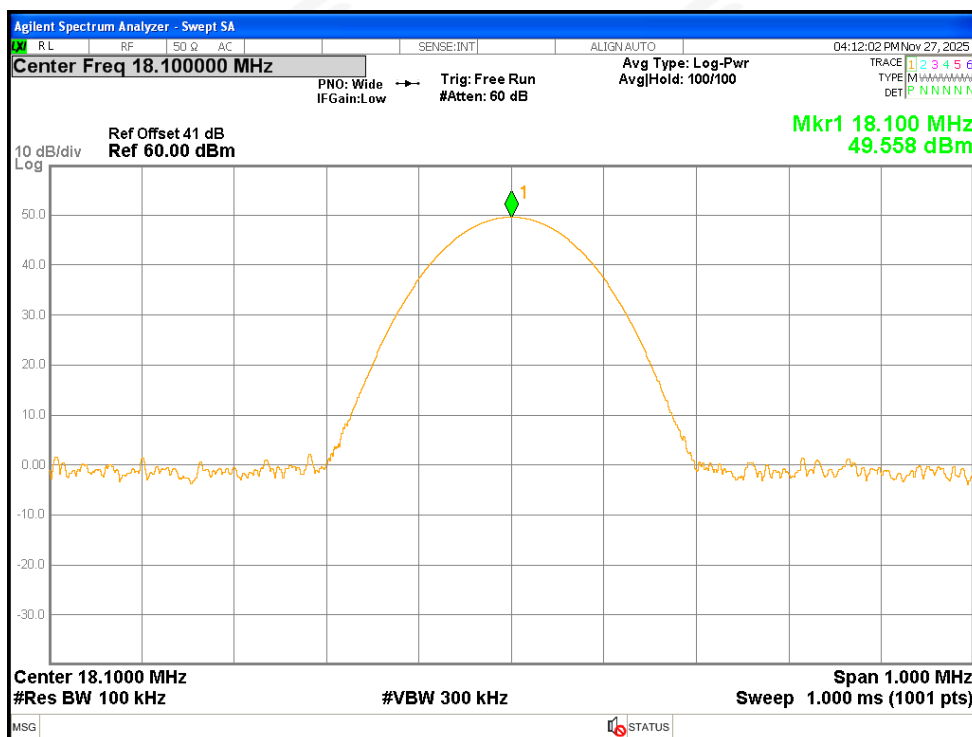




18.1MHz Input Power

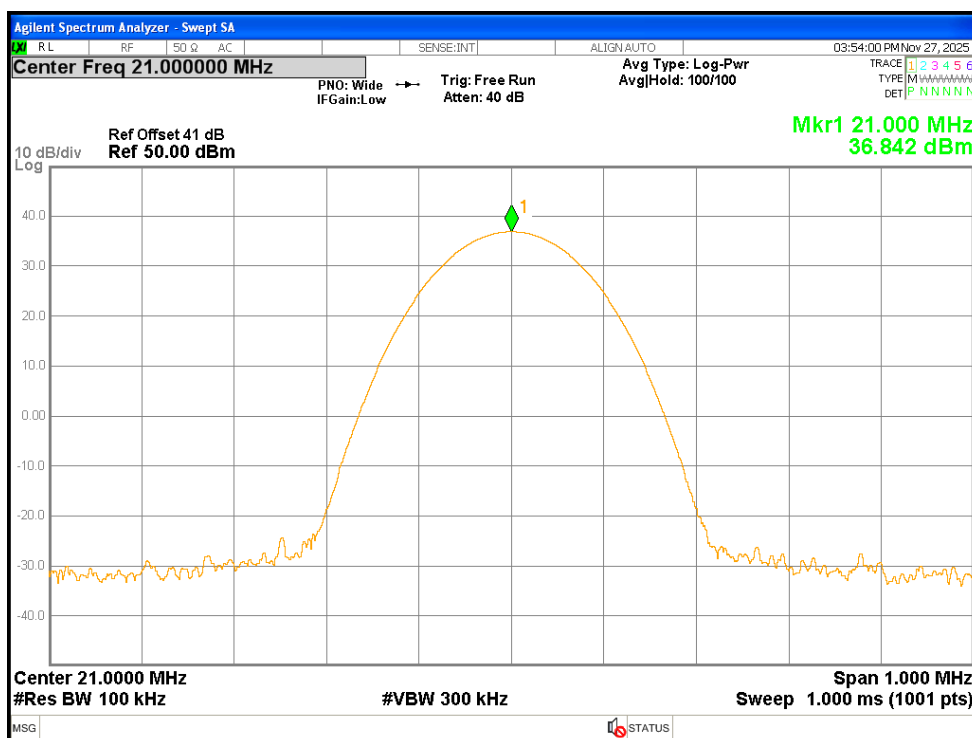


18.1MHz Output Power

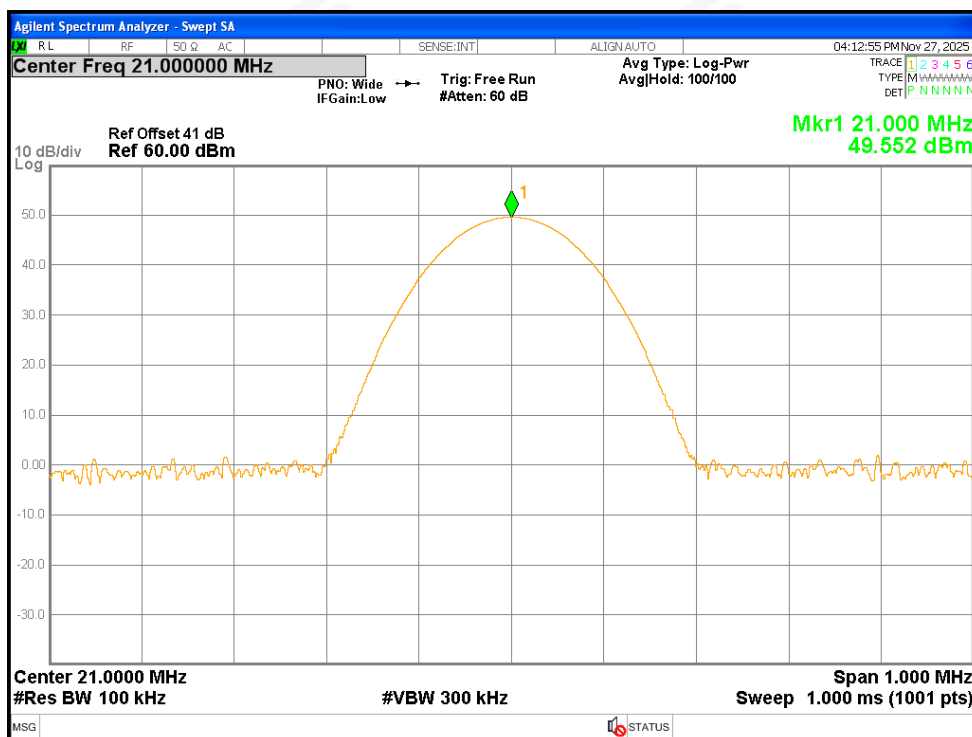




21MHz Input Power

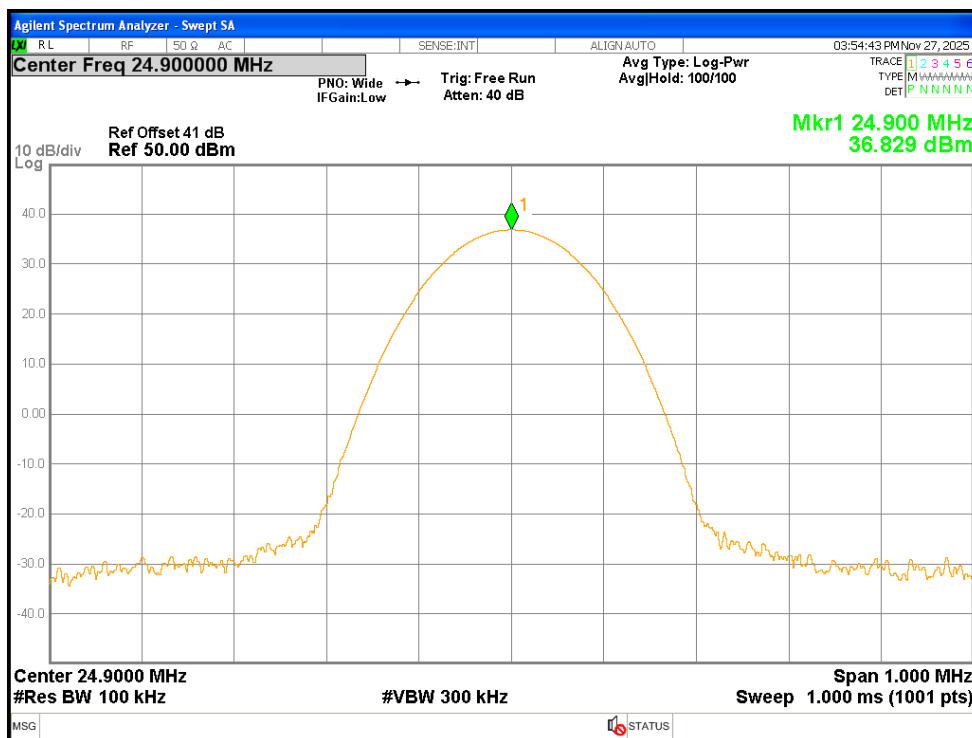


21MHz Output Power

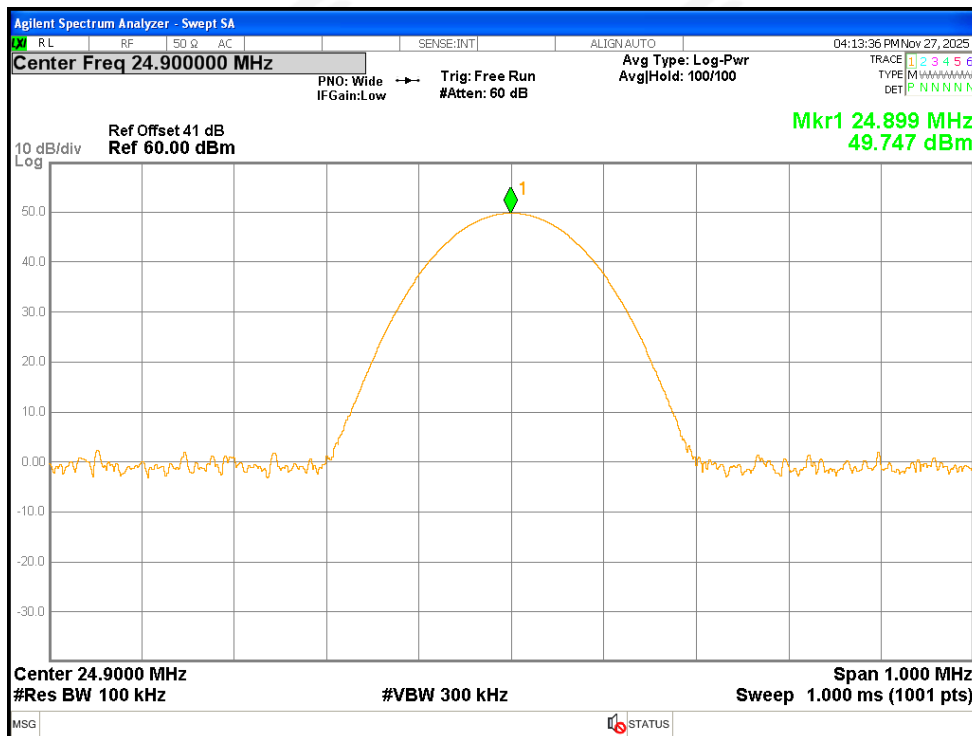




24.9MHz Input Power

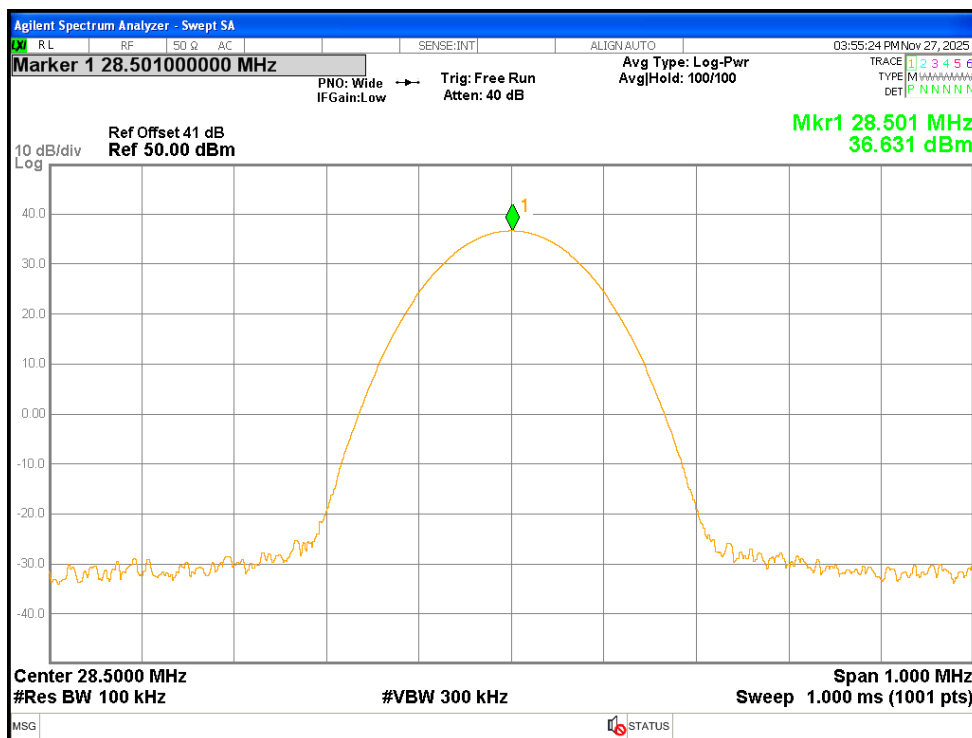


24.9MHz Output Power

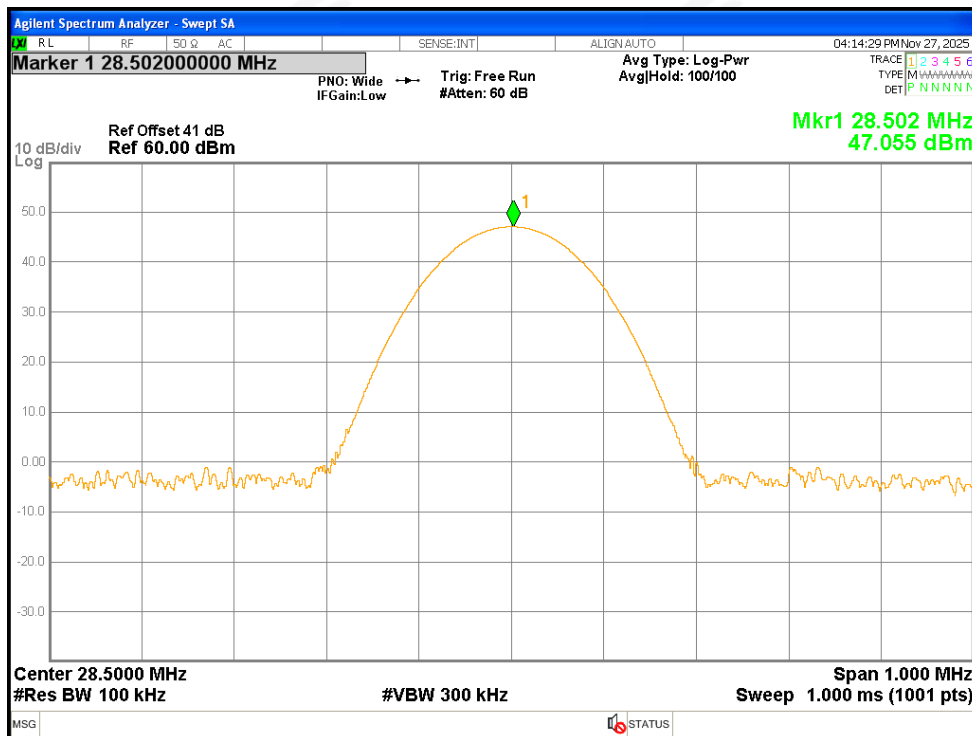




28.5MHz Input Power

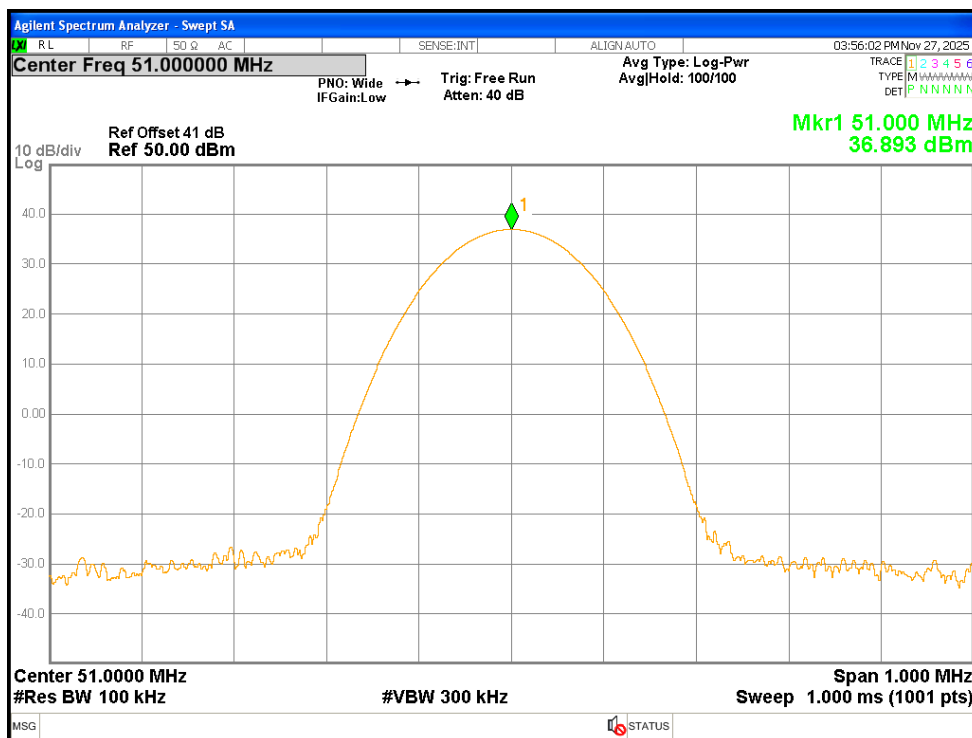


28.5MHz Output Power

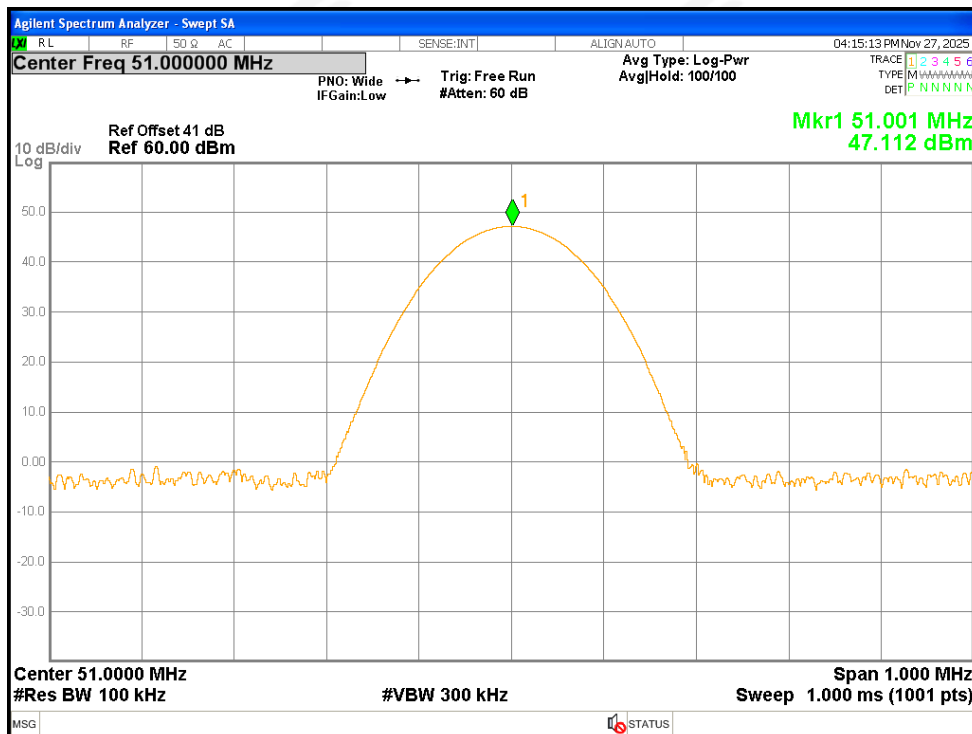




51MHz Input Power



51MHz Output Power



4.3 SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Test Requirement

FCC §2.1053&97.307(d)(e)

Limit

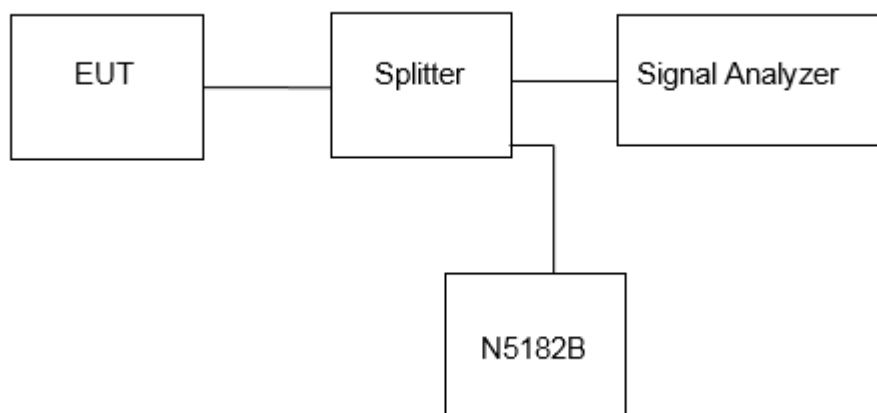
According to §97.307(d), The mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency below 30 MHz must be at least 43 dB below the mean power of the fundamental emission.

According to §97.307(e), The mean power of any spurious emission from a station transmitter or external RF power amplifier transmitting on a frequency between 30-225 MHz must be at least 60 dB below the mean power of the fundamental. For a transmitter having a mean power of 25 W or less, the mean power of any spurious emission supplied to the antenna transmission line must not exceed 25 μ W and must be at least 40 dB below the mean power of the fundamental emission, but need not be reduced below the power of 10 μ W.

Test Procedure

According to ANSI C63.26-2015 and FCC KDB 935210.

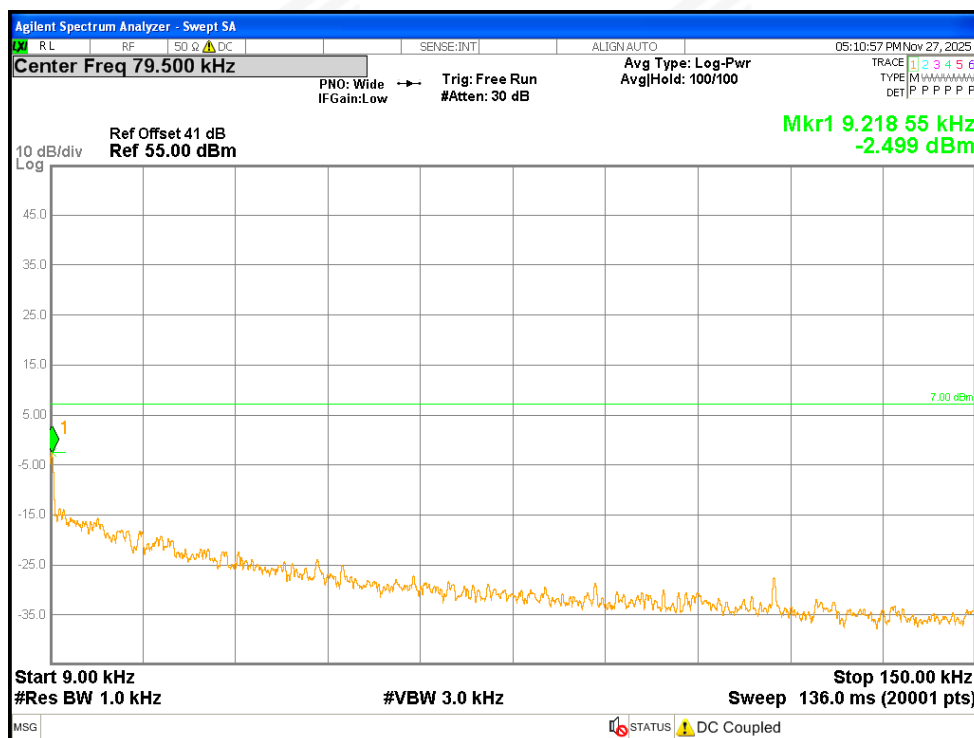
Test Setup



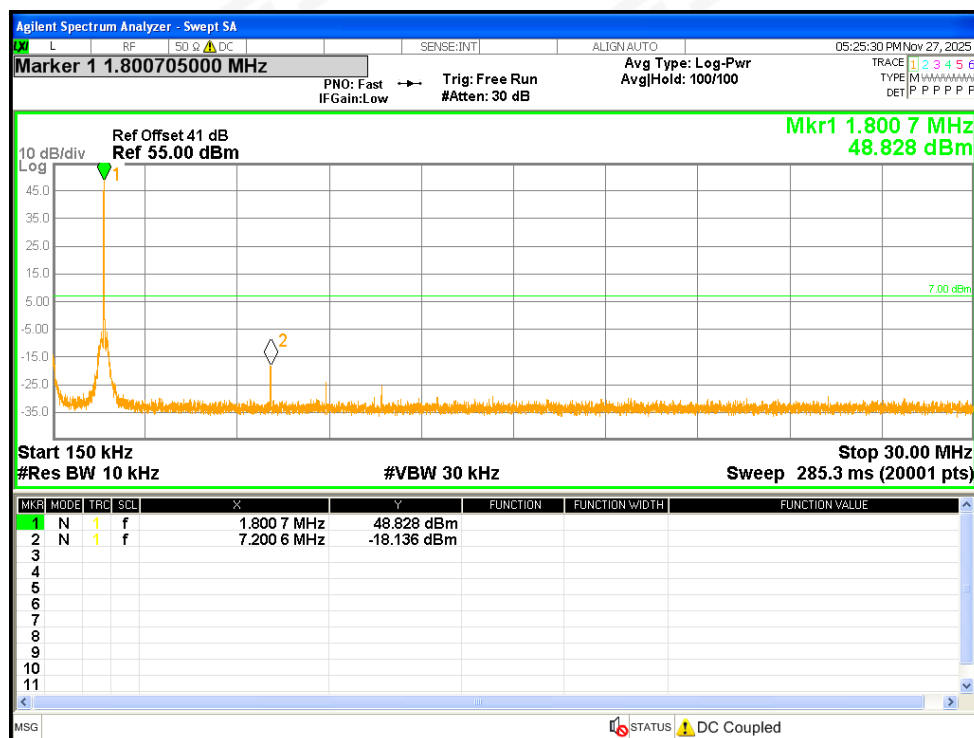


Test Data

1.8MHz Conducted Spurious 9kHz-150kHz

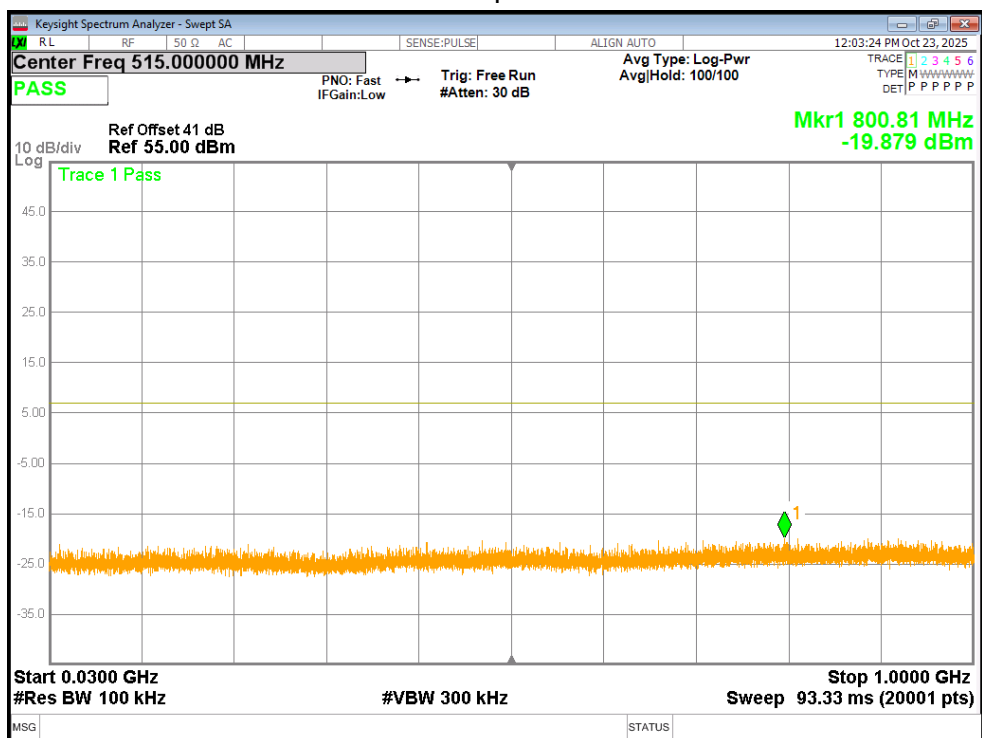


1.8MHz Conducted Spurious 150kHz-30MHz

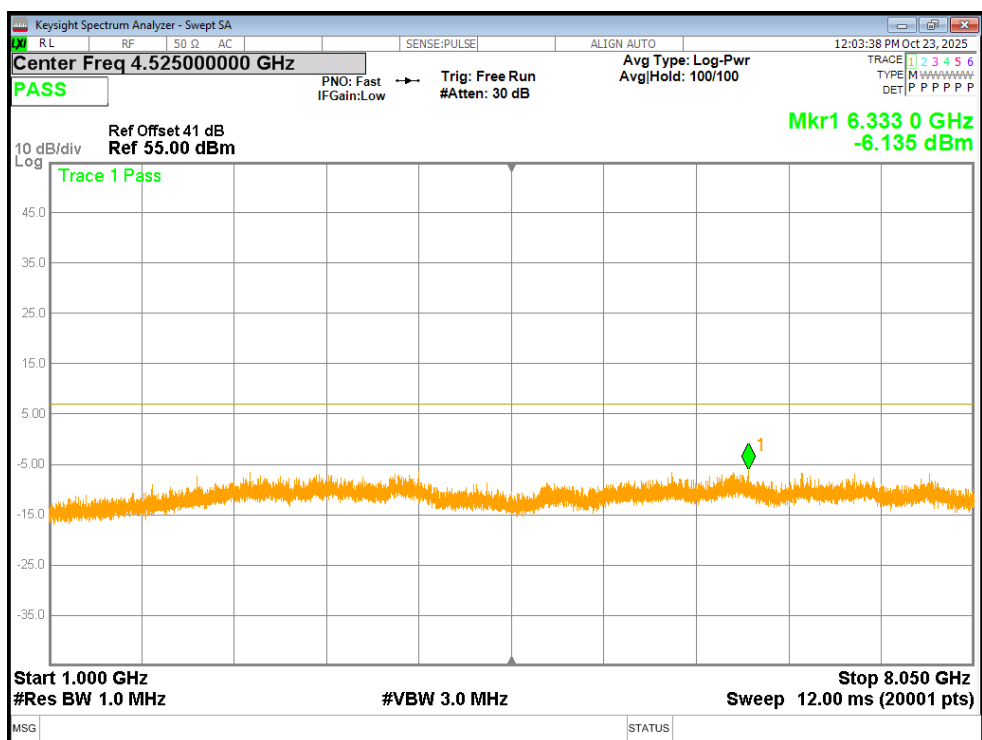




1.8MHz Conducted Spurious 30MHz-1GHz

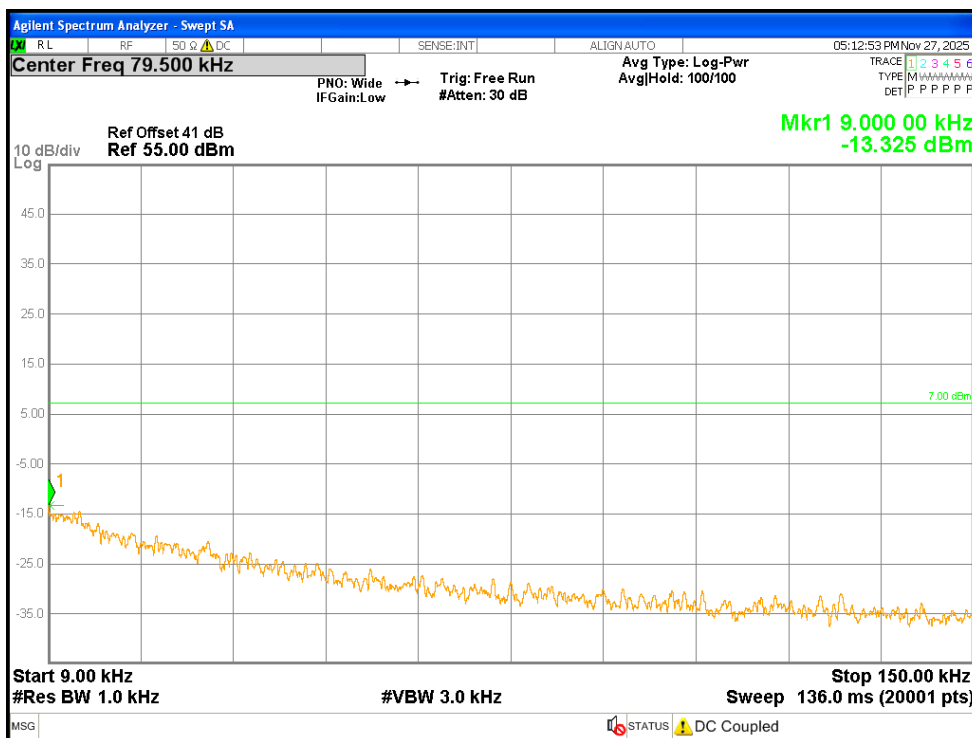


1.8MHz Conducted Spurious 1GHz-8.05GHz

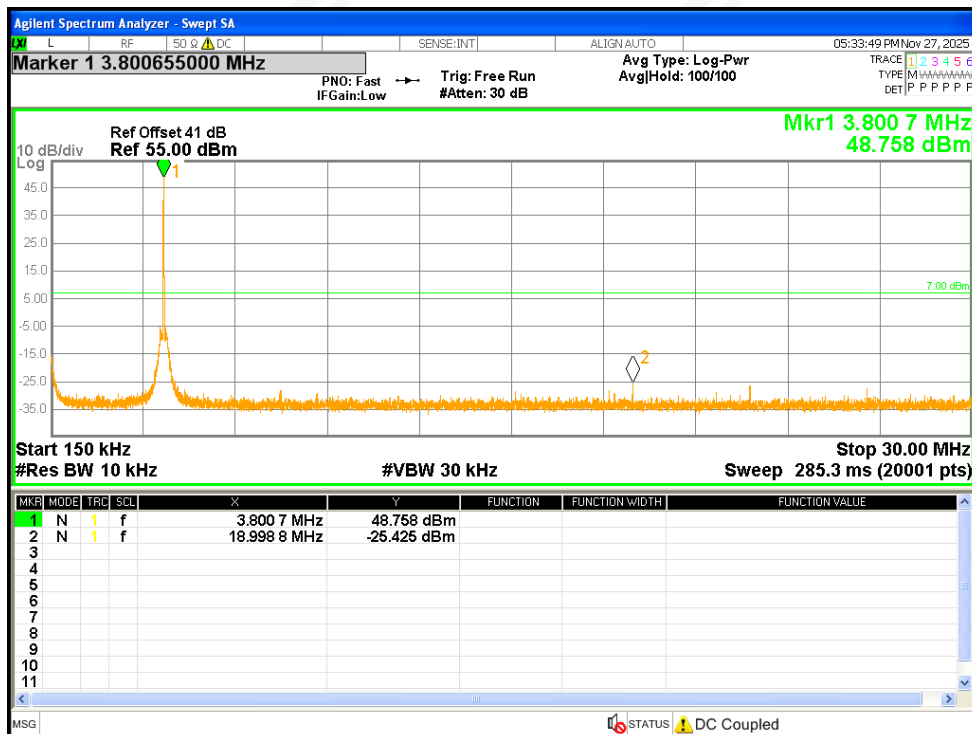




3.8MHz Conducted Spurious 9kHz-150kHz

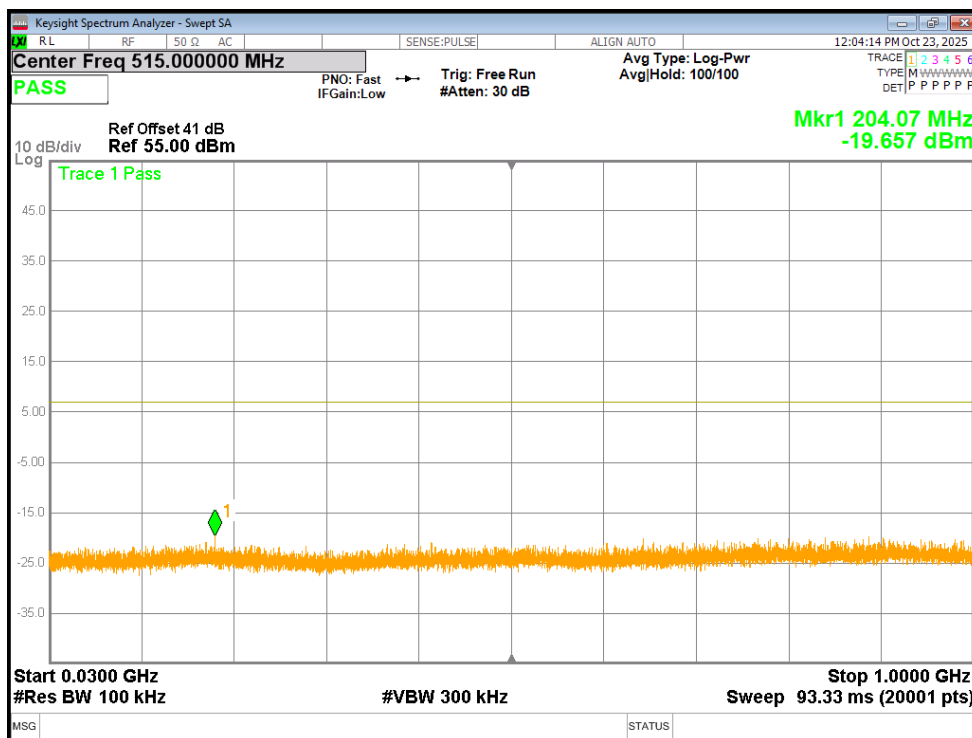


3.8MHz Conducted Spurious 150kHz-30MHz

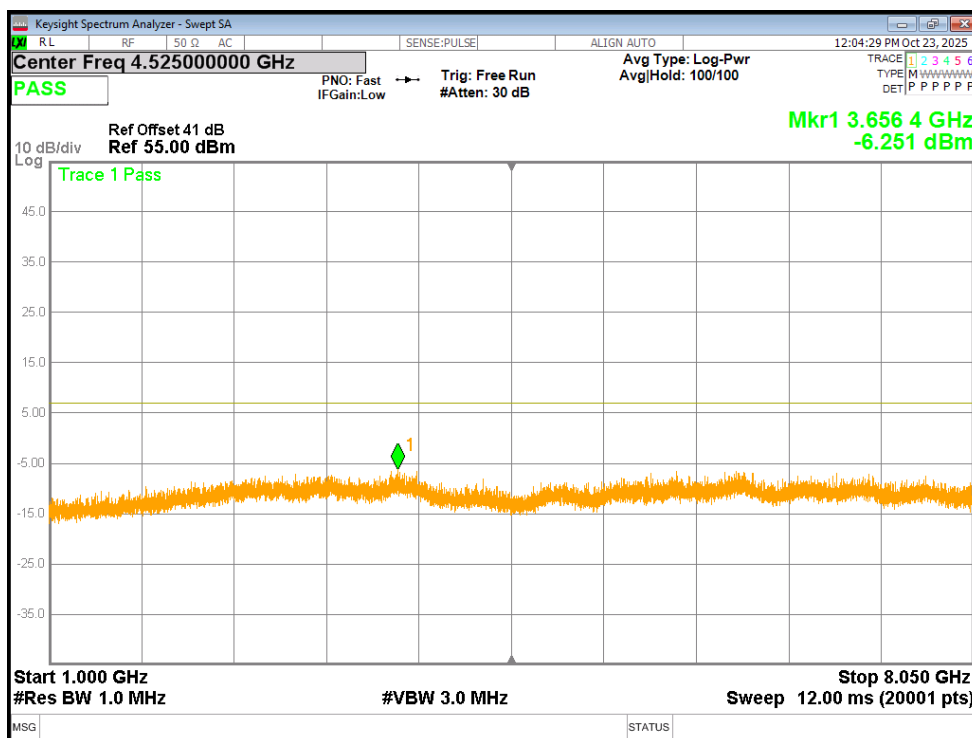




3.8MHz Conducted Spurious 30MHz-1000MHz

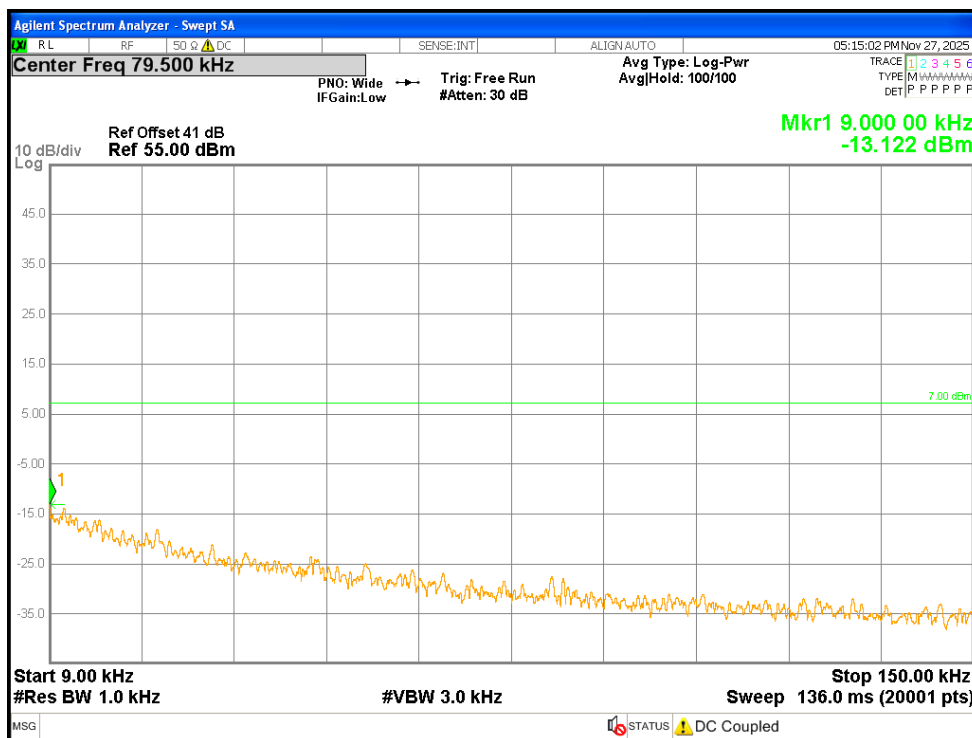


3.8MHz Conducted Spurious 1GHz-8.05GHz

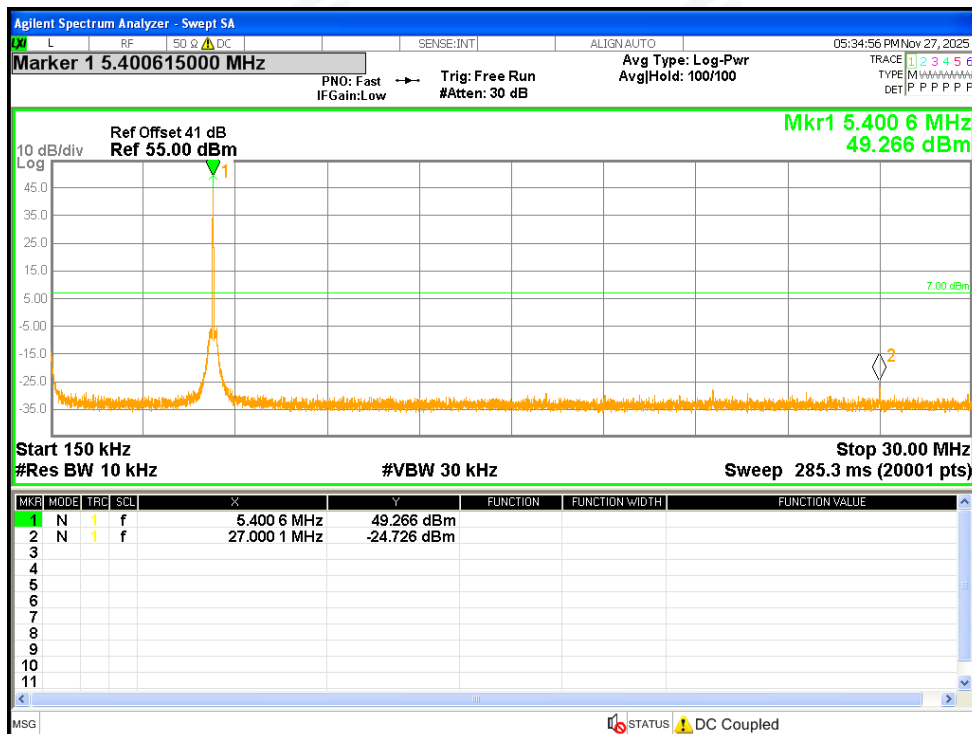




5.4MHz Conducted Spurious 9kHz-150kHz

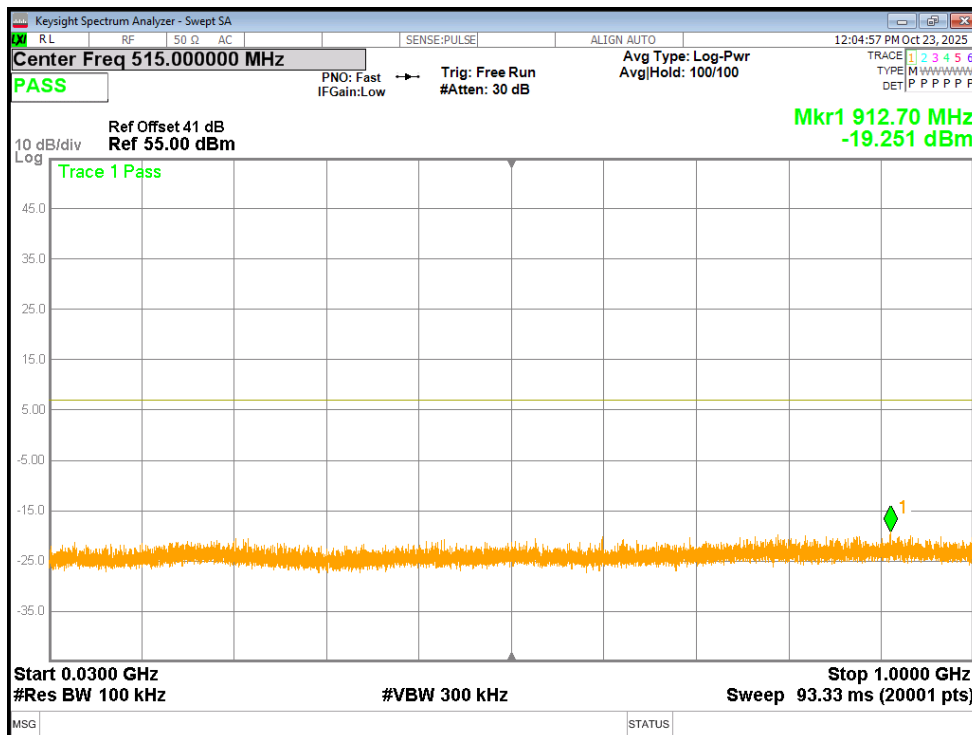


5.4MHz Conducted Spurious 150kHz-30MHz

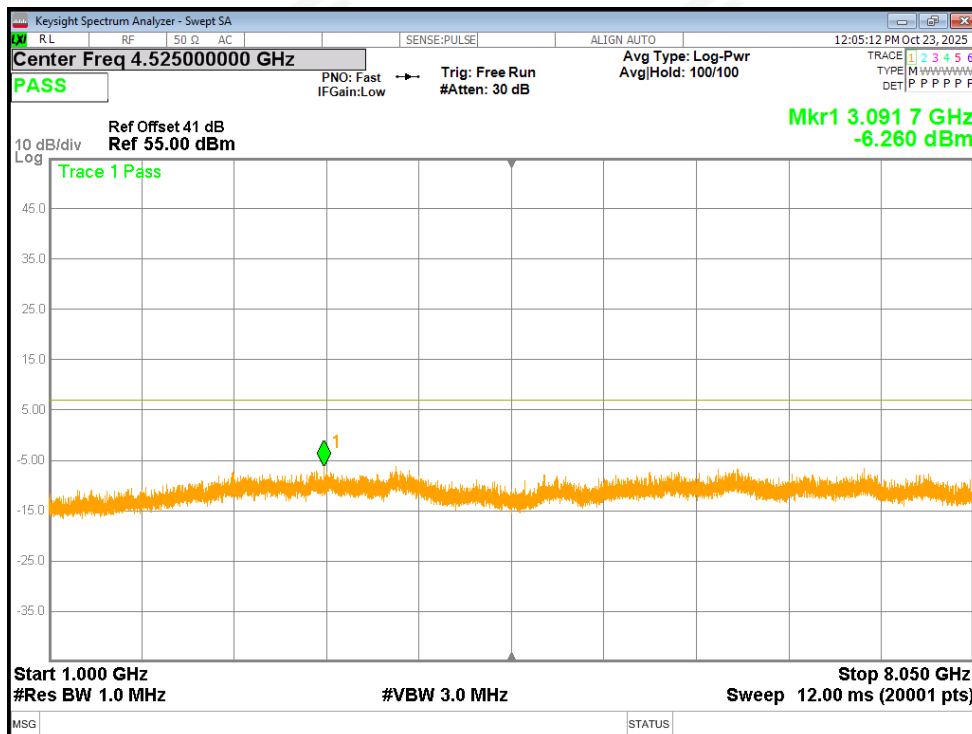




5.4MHz Conducted Spurious 30MHz-1000MHz

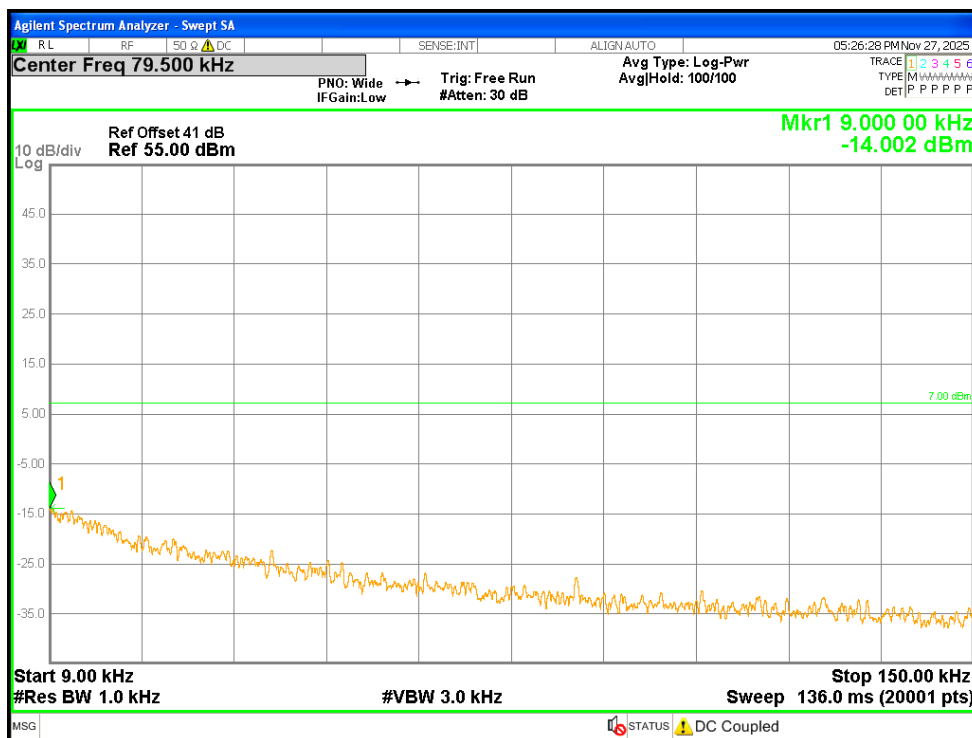


5.4MHz Conducted Spurious1GHz-8.05GHz

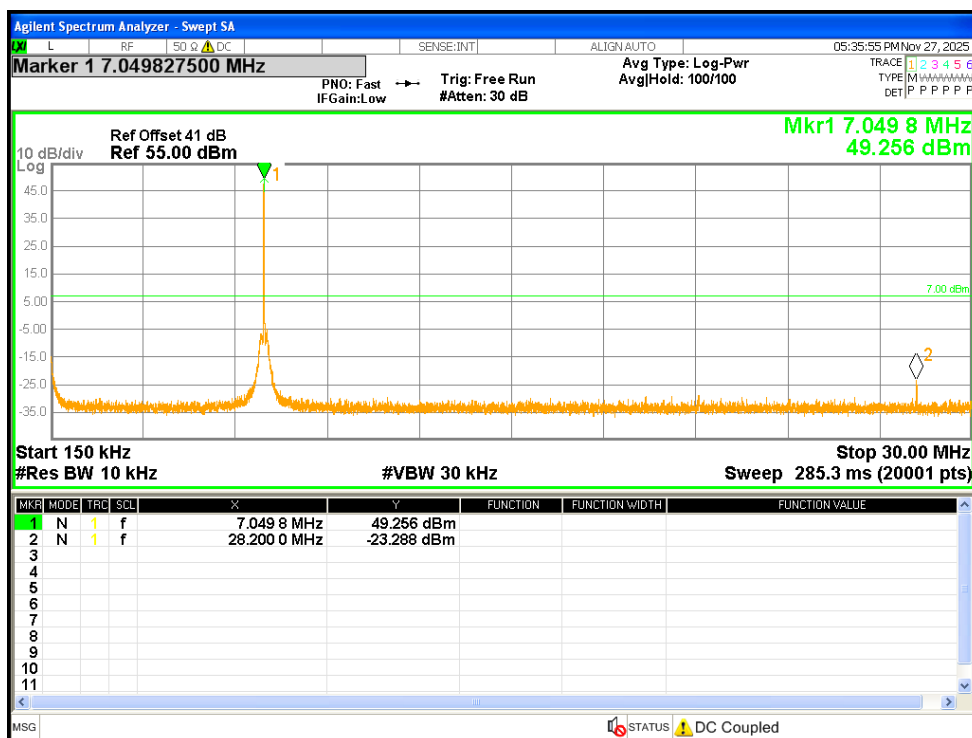




7.05MHz Conducted Spurious 9kHz-150kHz

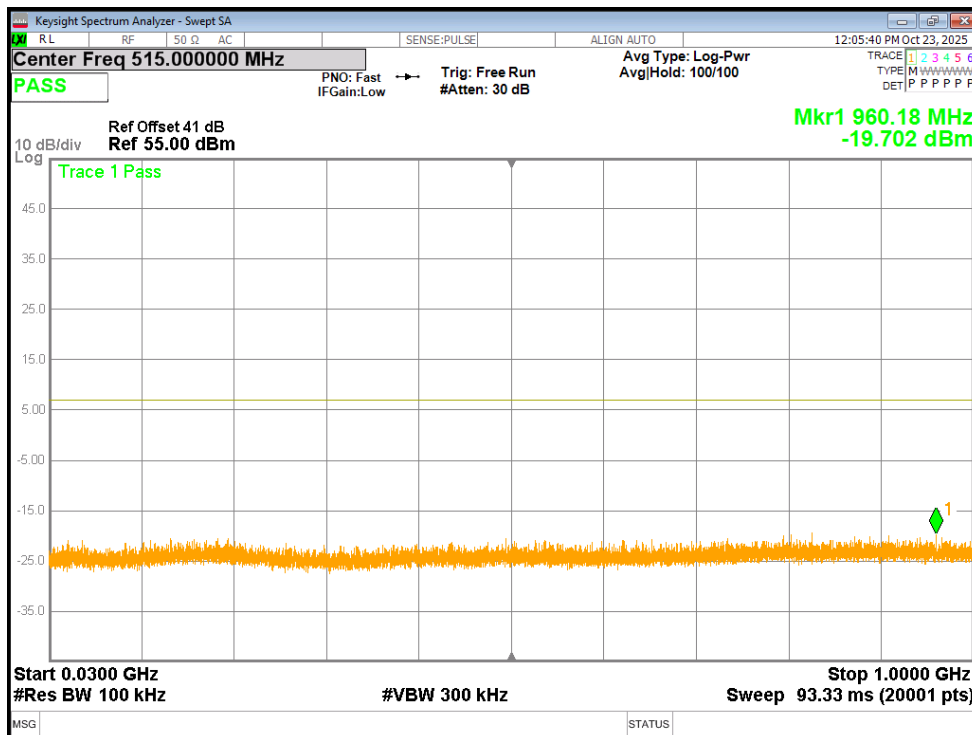


7.05MHz Conducted Spurious 150kHz-30MHz

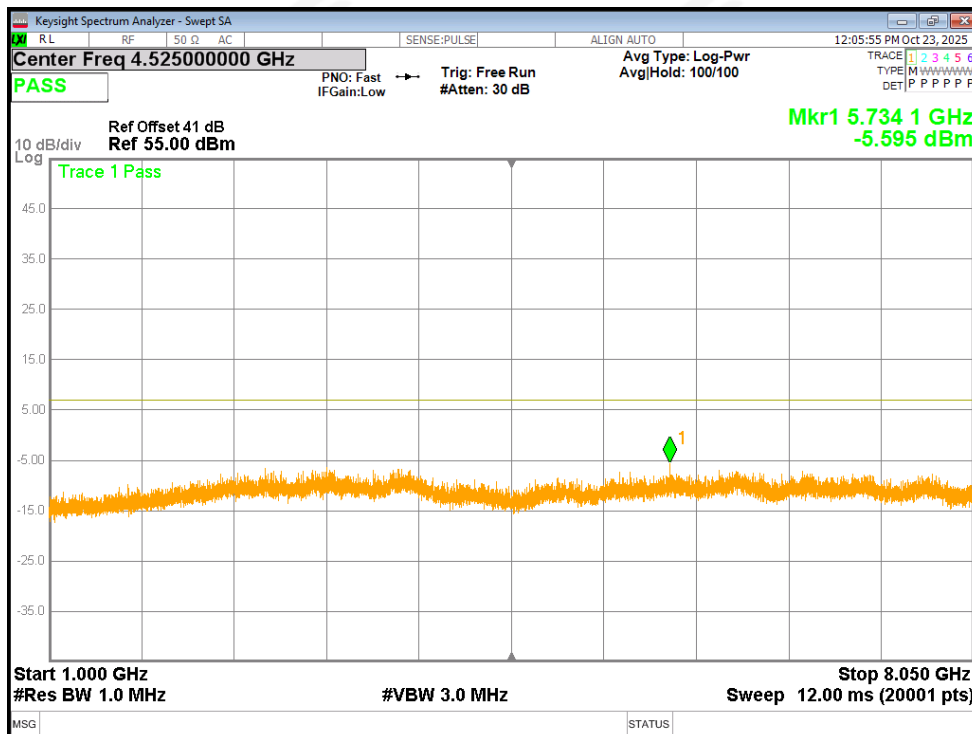




7.05MHz Conducted Spurious 30MHz-1000MHz

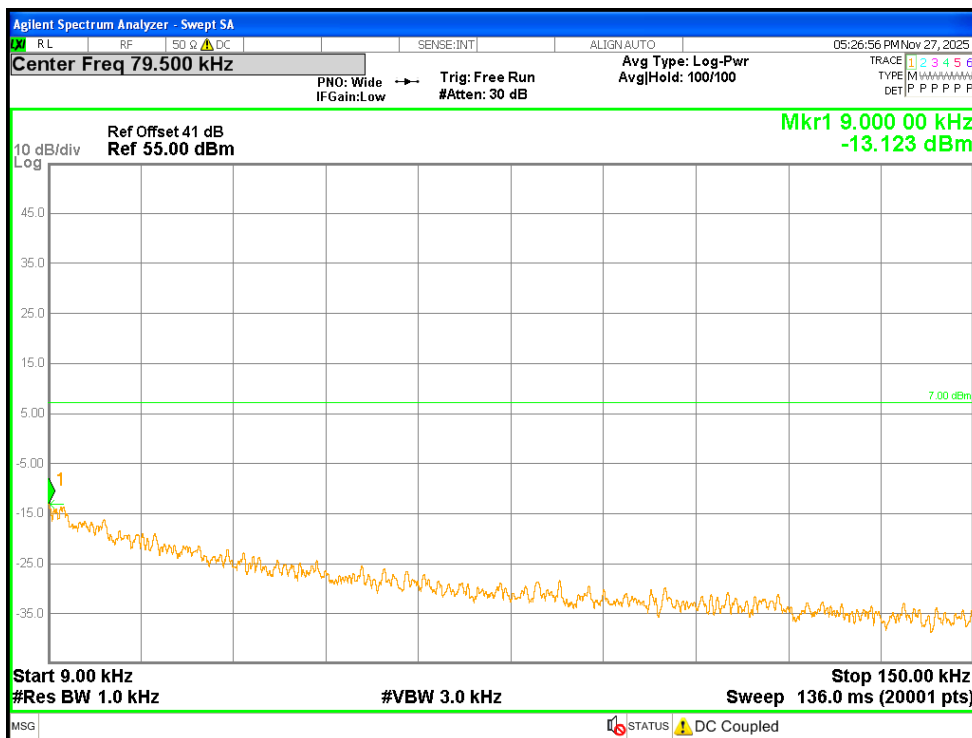


7.05MHz Conducted Spurious 1GHz-8.05GHz

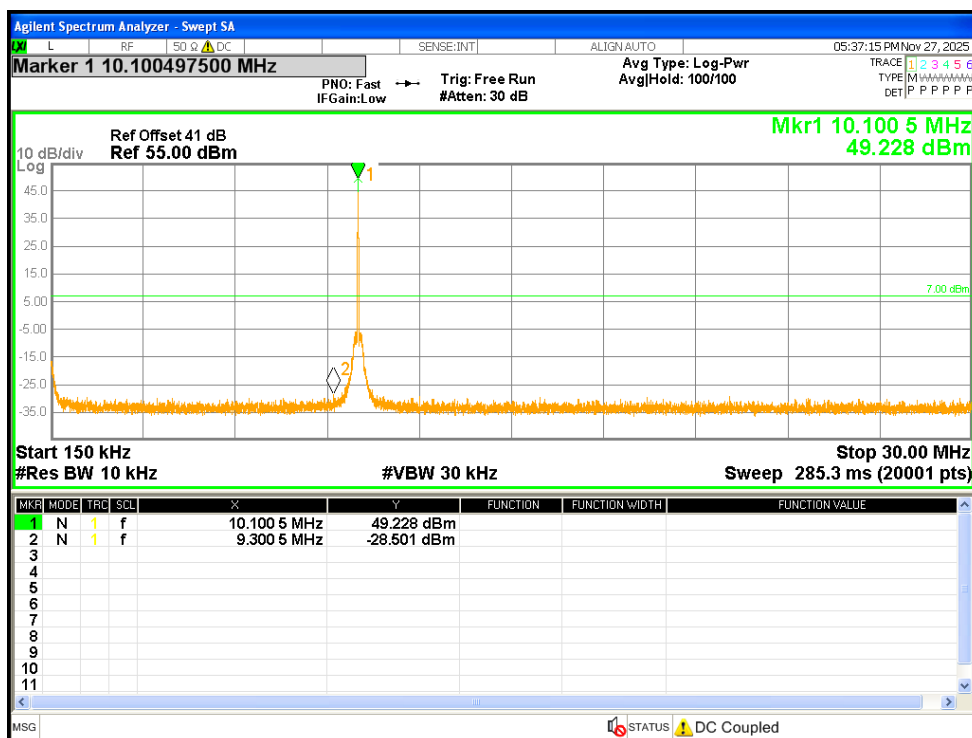




10.1MHz Conducted Spurious 9kHz-150kHz

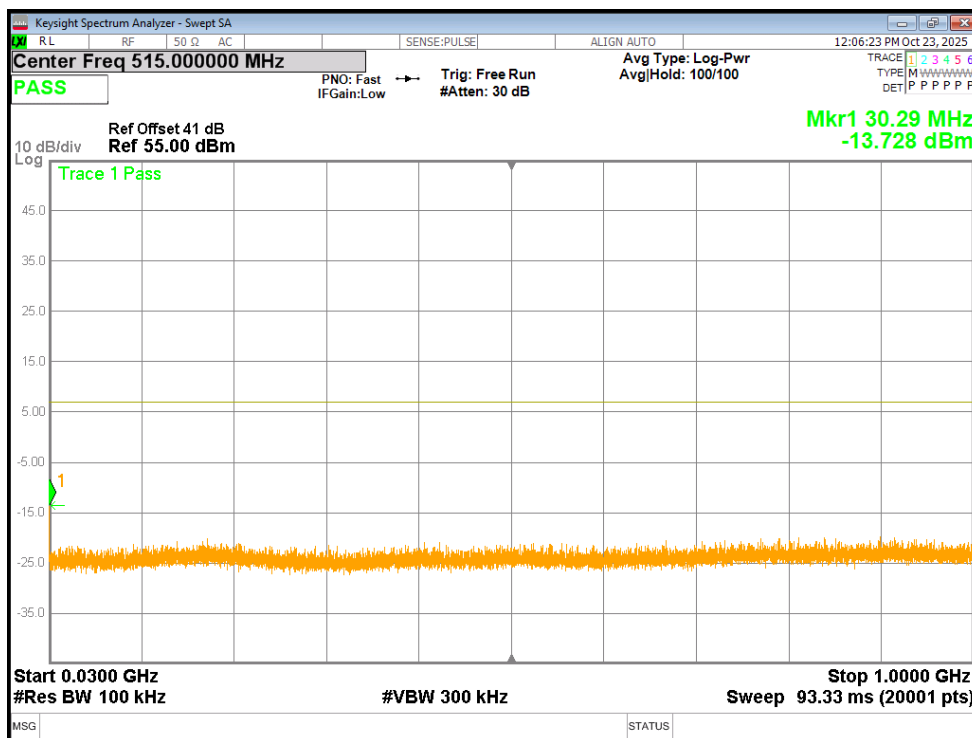


10.1MHz Conducted Spurious 150kHz-30MHz

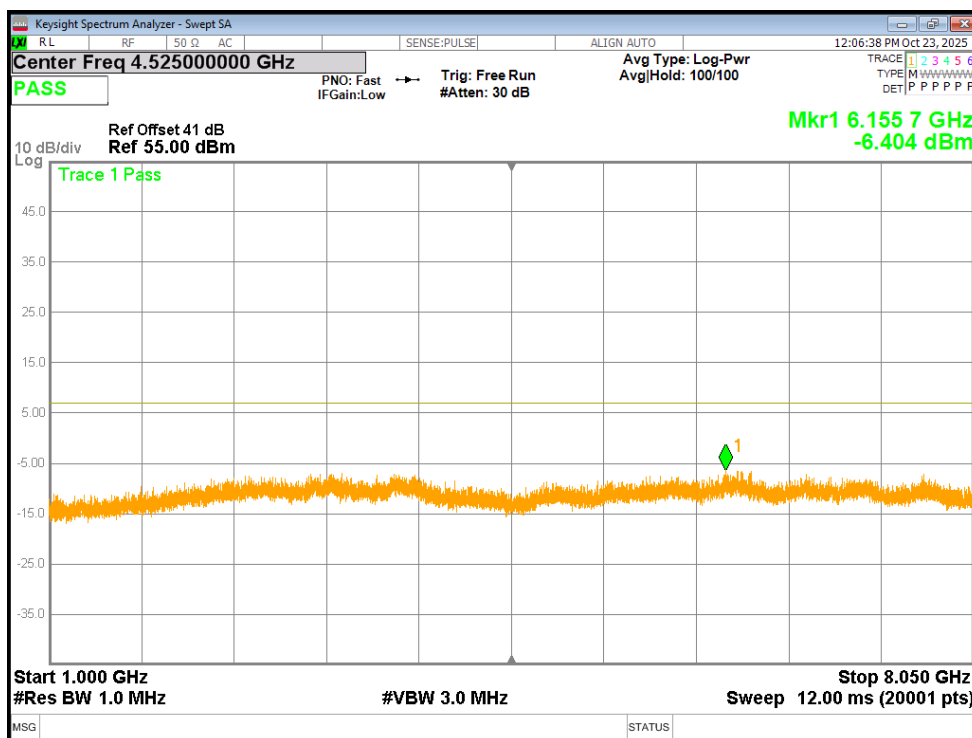




10.1MHz Conducted Spurious 30MHz-1000MHz

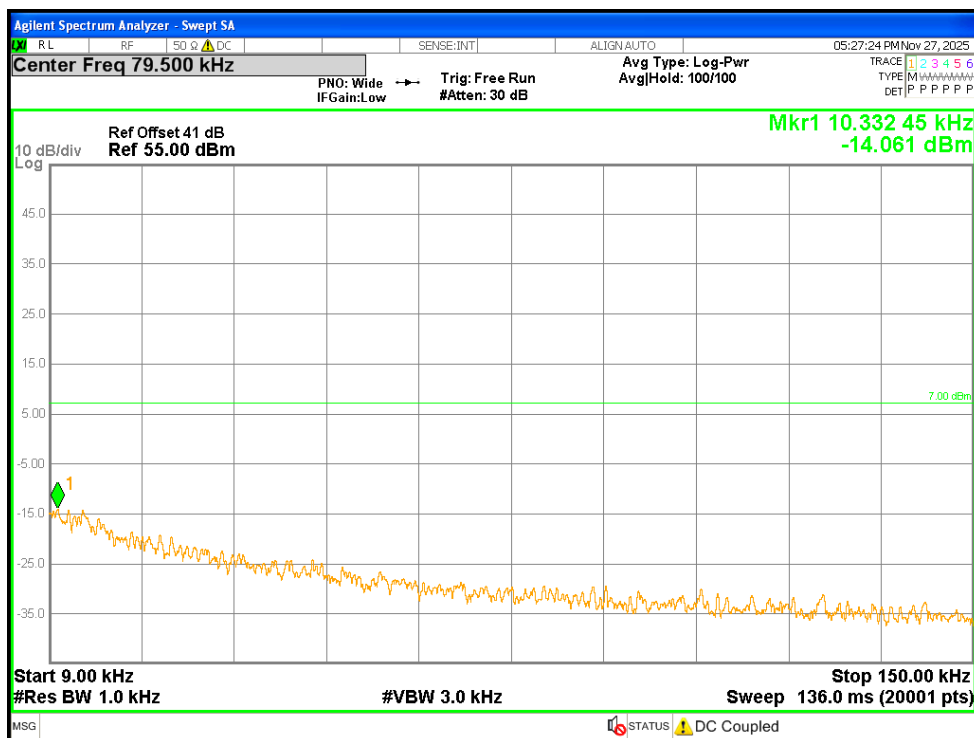


10.1MHz Conducted Spurious 1GHz-8.05GHz

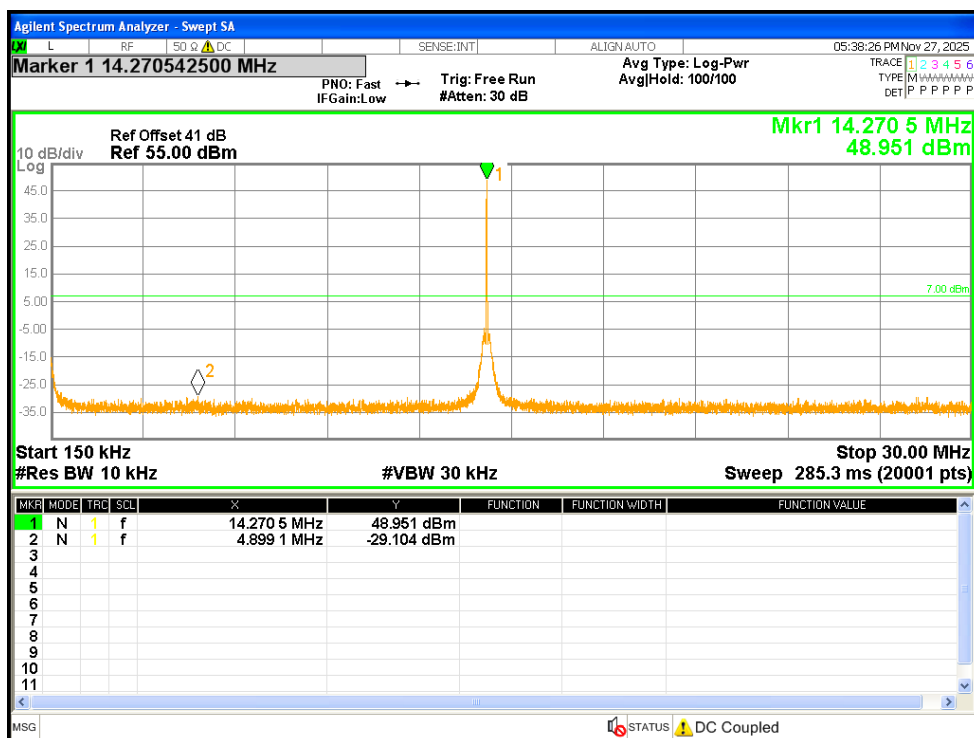




14.2705MHz Conducted Spurious 9kHz-150kHz

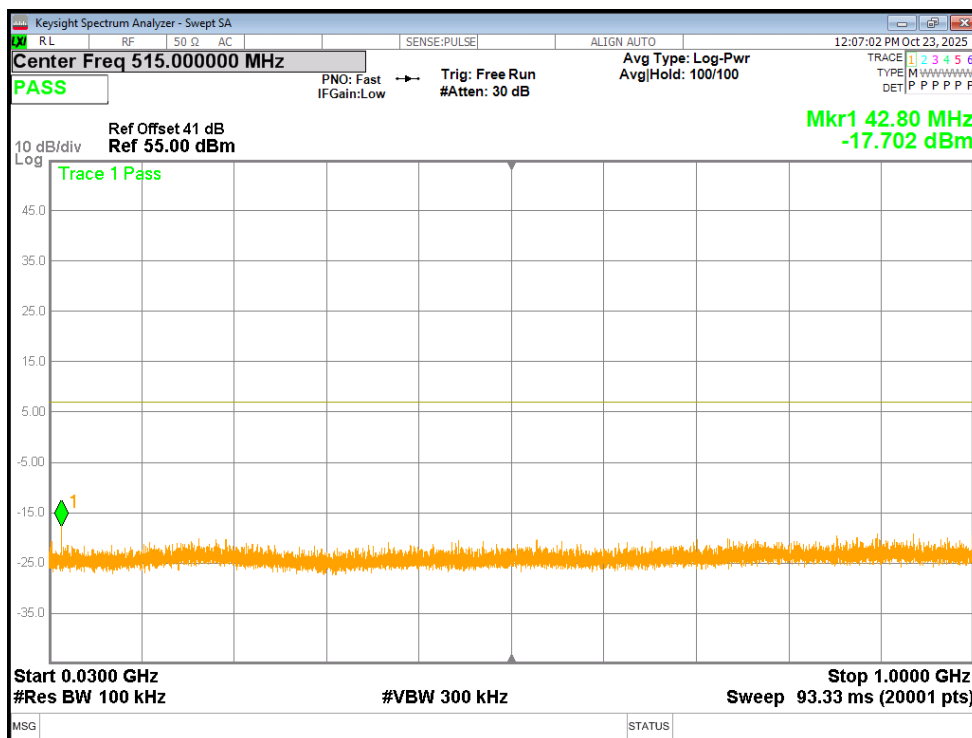


14.2705MHz Conducted Spurious 150kHz-30MHz

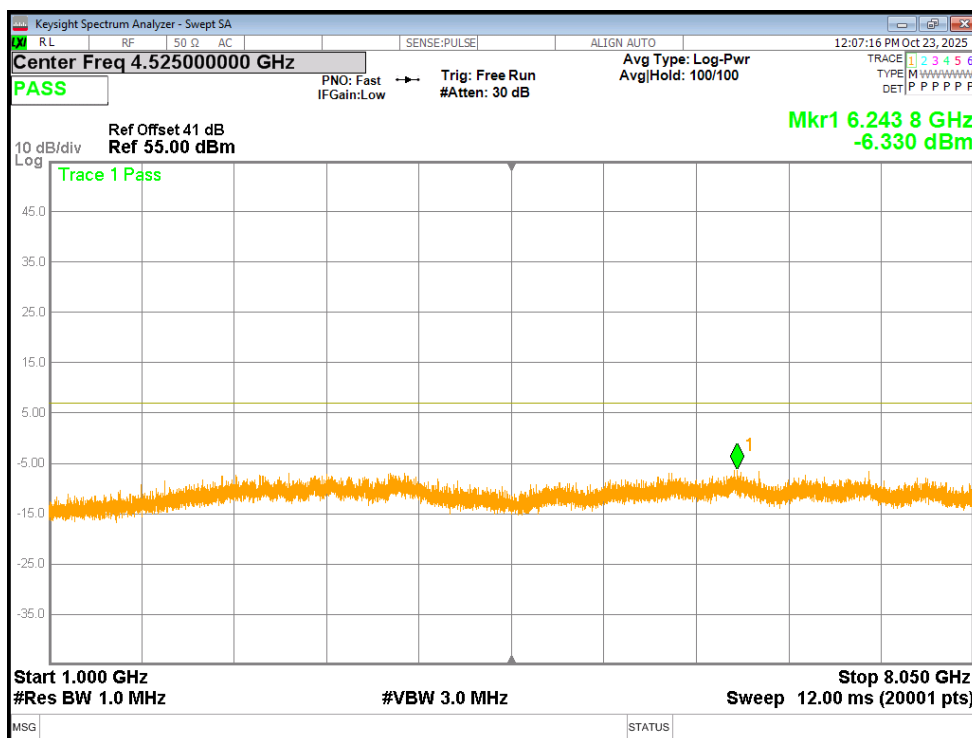




14.2705MHz Conducted Spurious 30MHz-1000MHz

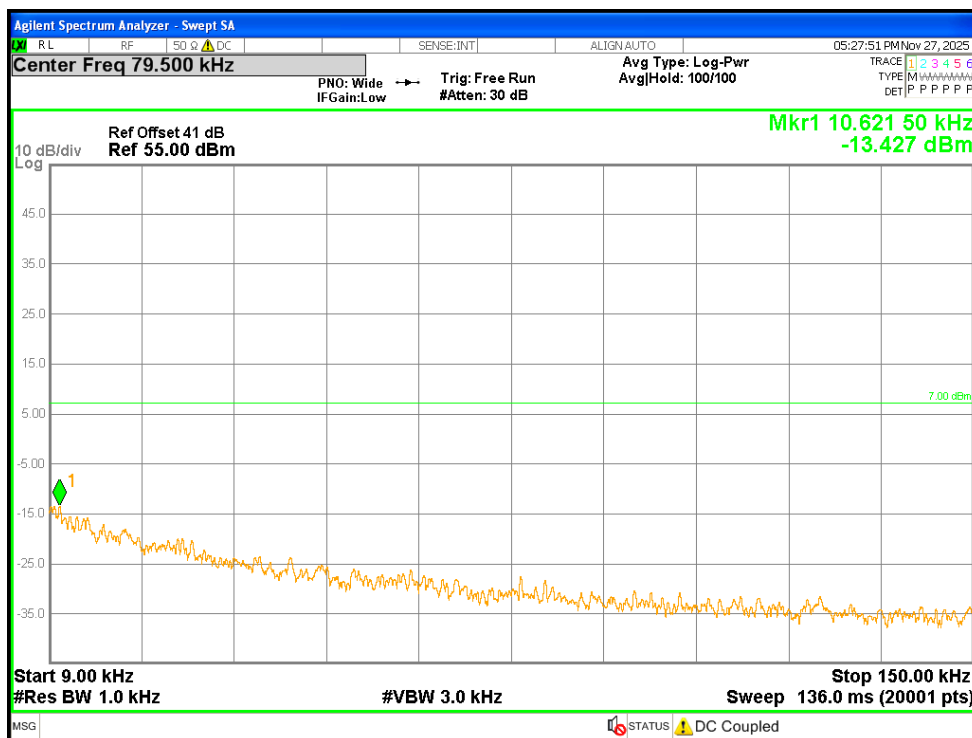


14.2705MHz Conducted Spurious 1GHz-8.05GHz

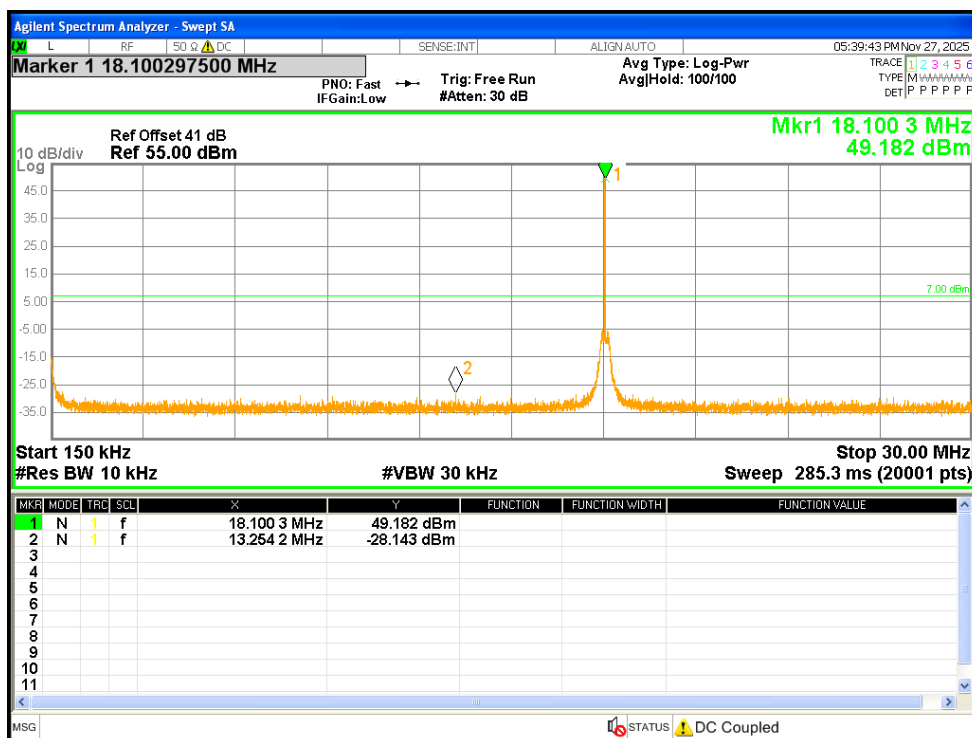




18.1MHz Conducted Spurious 9kHz-150kHz

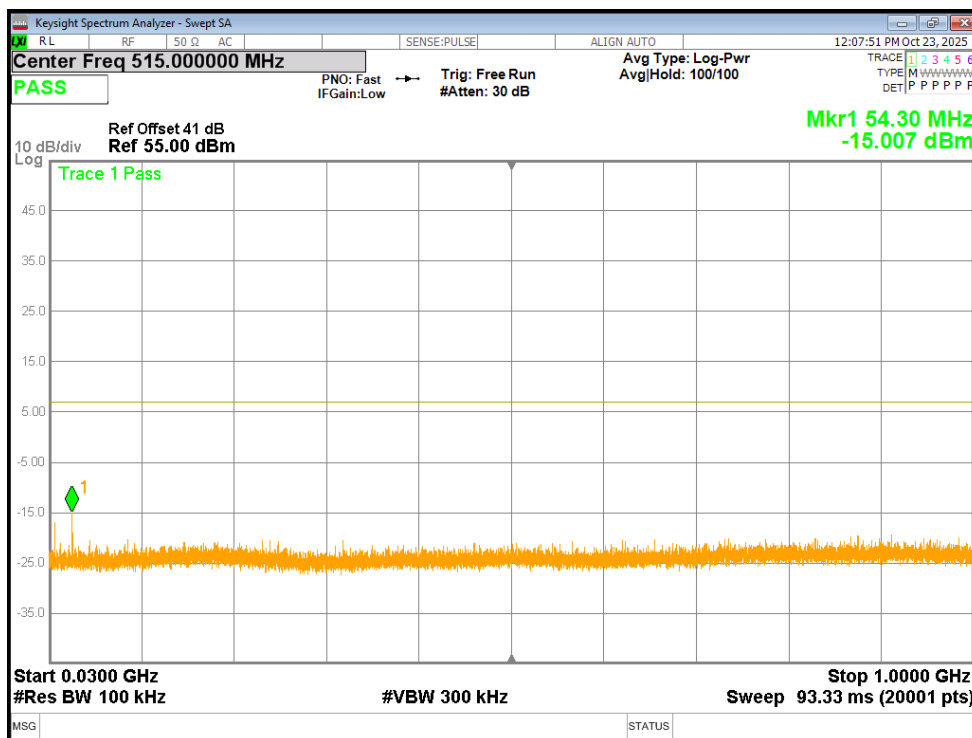


18.1MHz Conducted Spurious 150kHz-30MHz

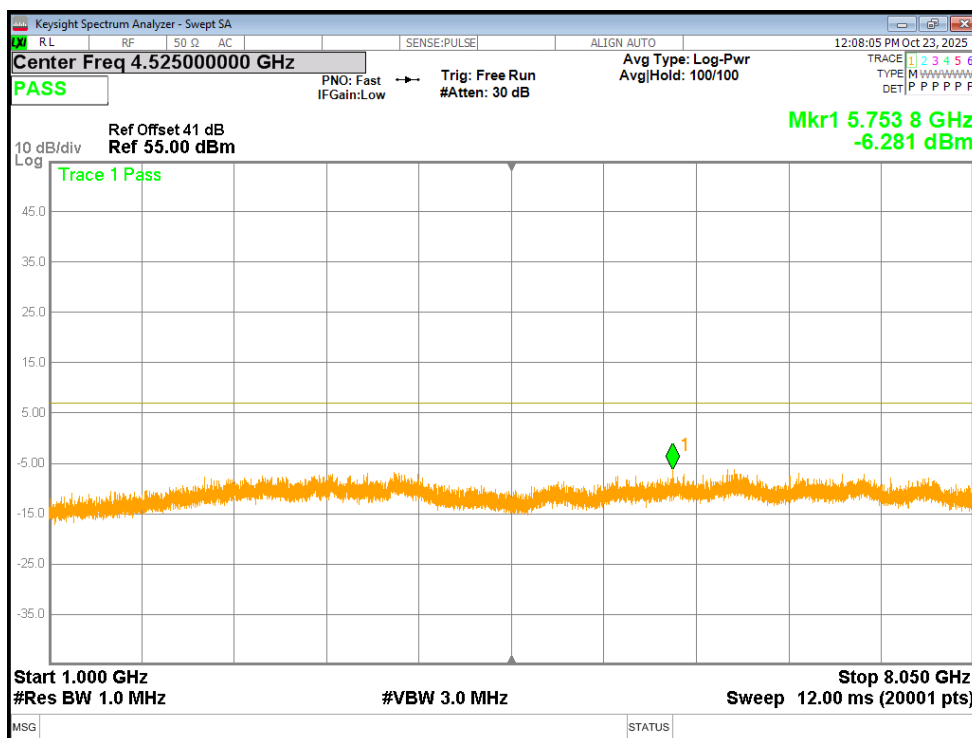




18.1MHz Conducted Spurious 30MHz-1000MHz

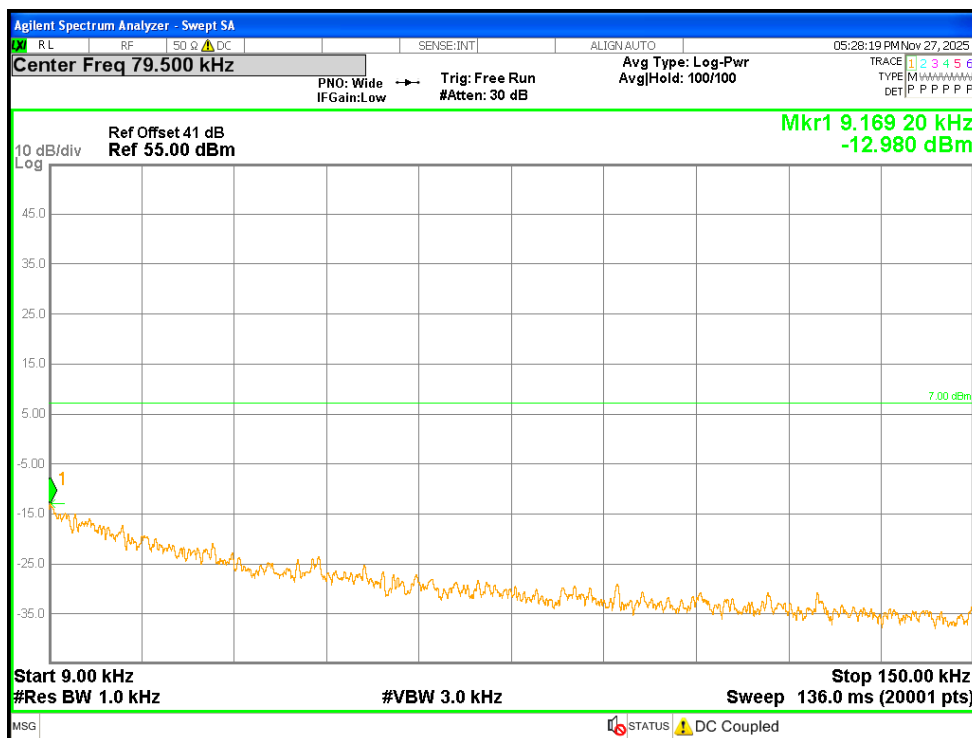


18.1MHz Conducted Spurious 1GHz-8.05GHz

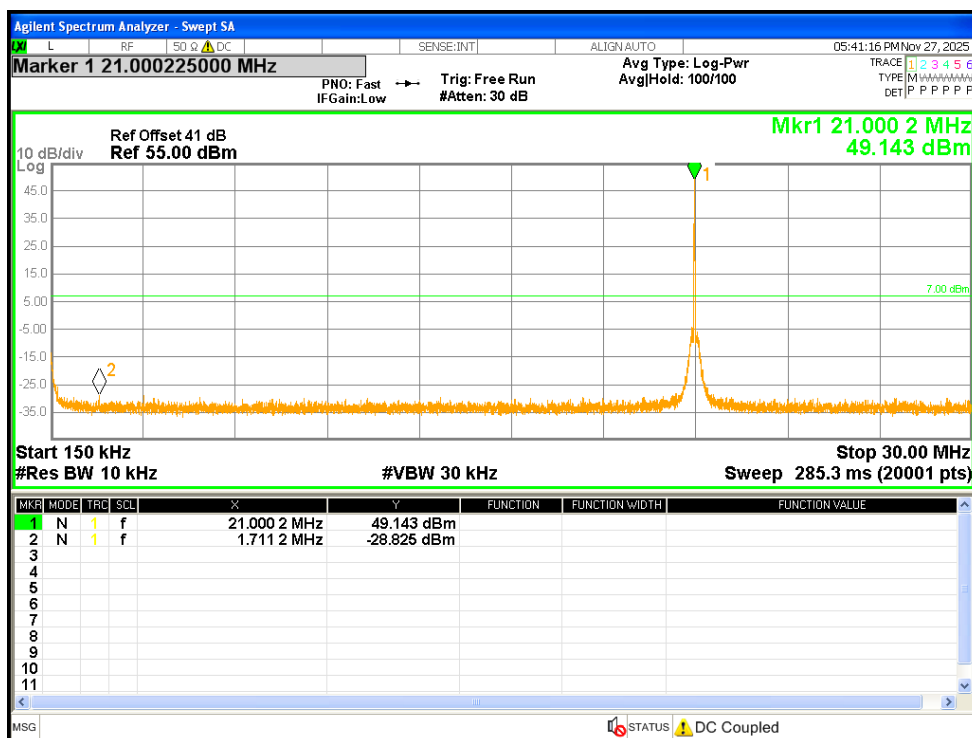




21MHz Conducted Spurious 9kHz-150kHz

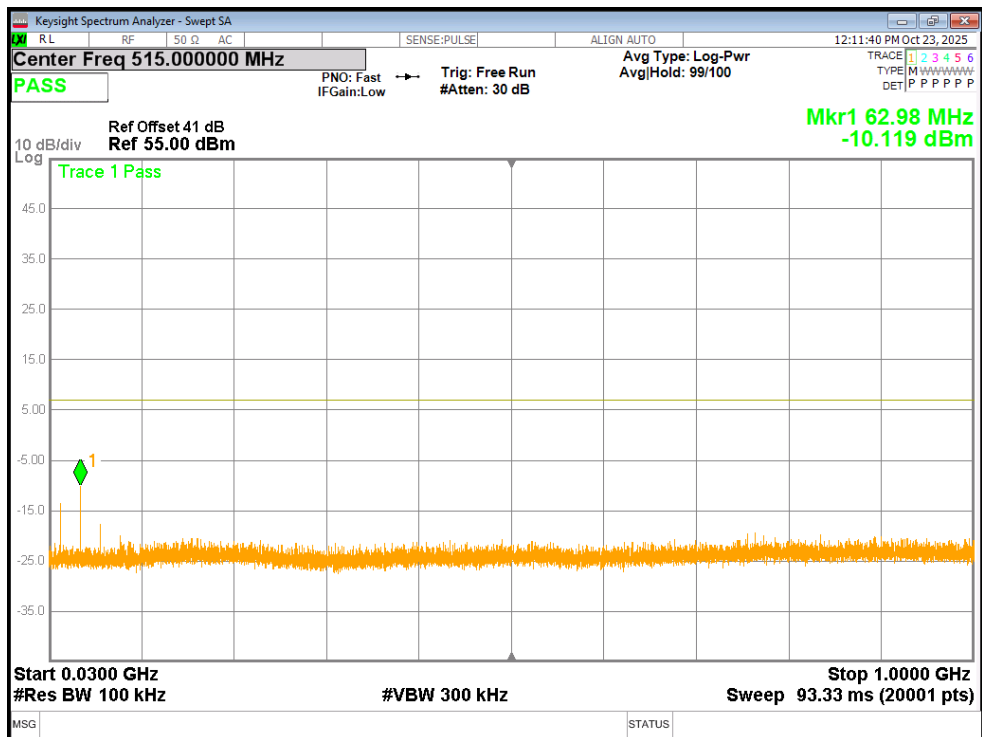


21MHz Conducted Spurious 150kHz-30MHz

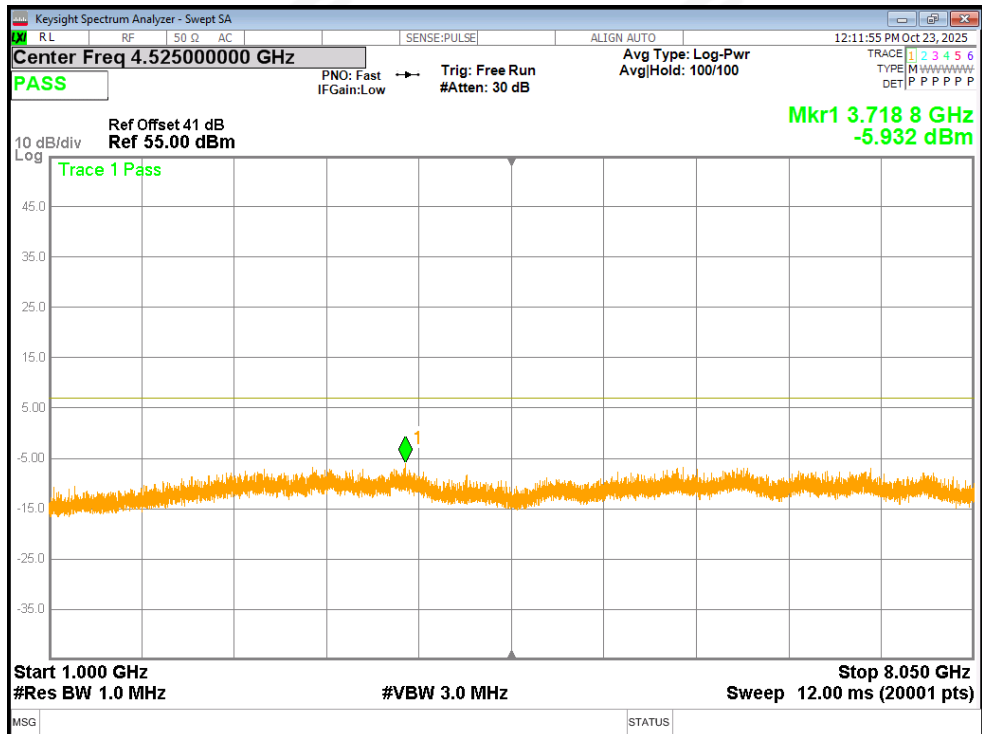




21MHz Conducted Spurious 30MHz-1000MHz

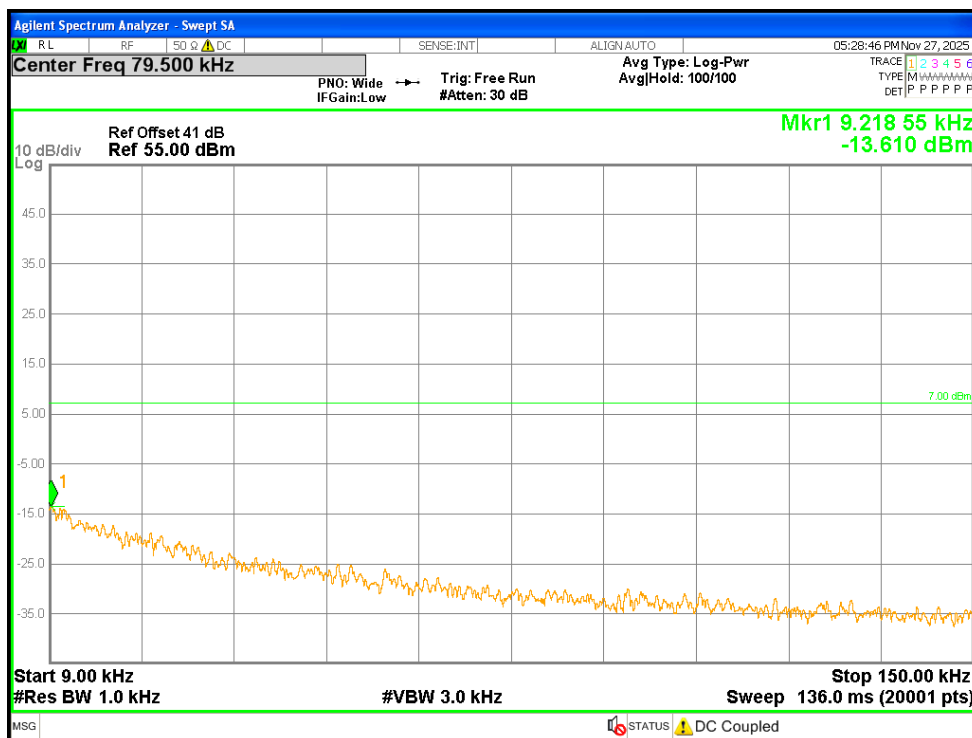


21MHz Conducted Spurious1GHz-8.05GHz

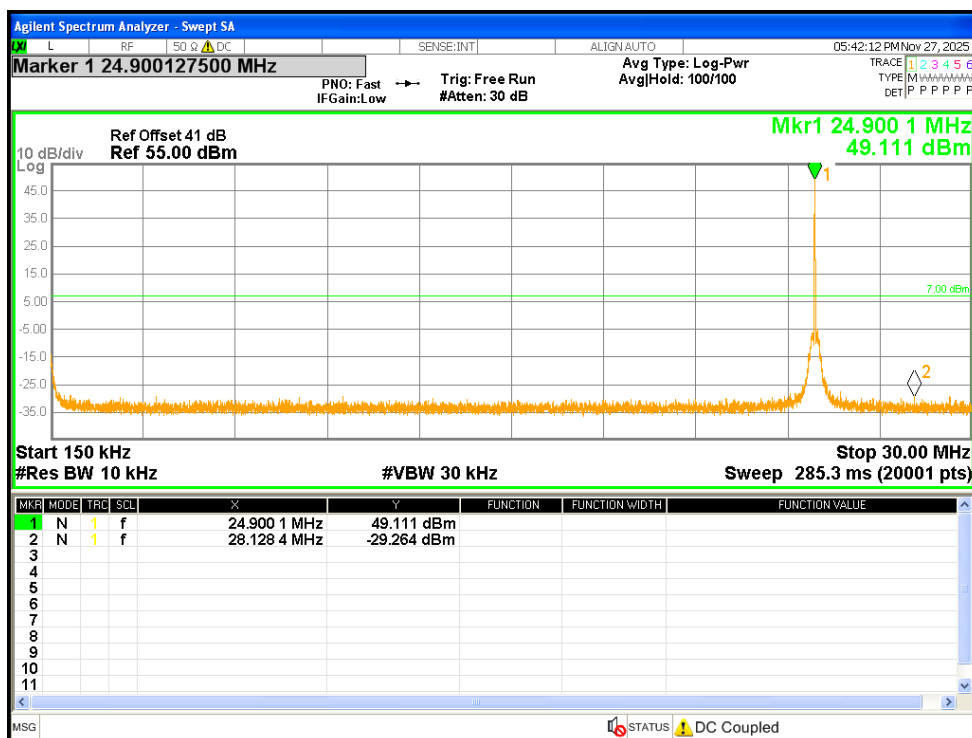




24.9MHz Conducted Spurious 9kHz-150kHz

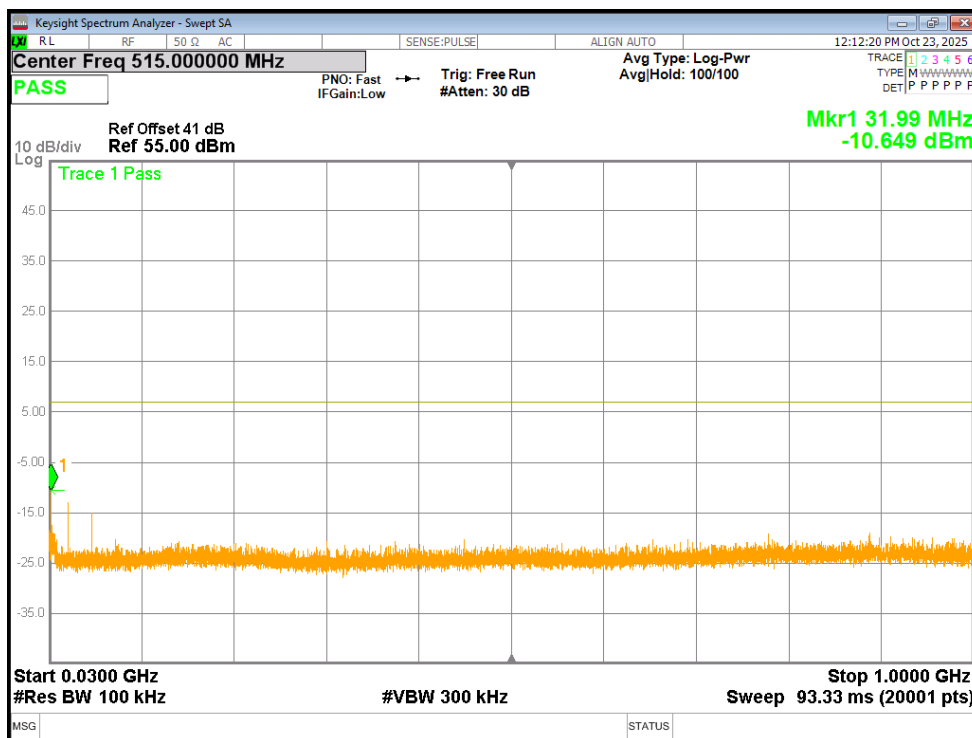


24.9MHz Conducted Spurious 150kHz-30MHz

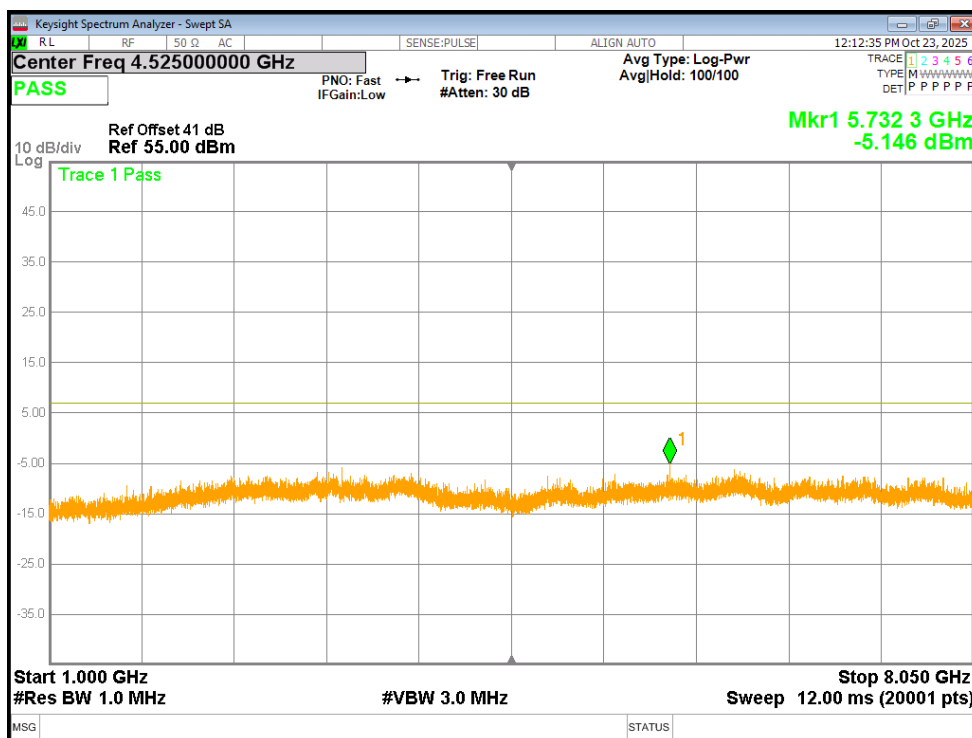




24.9MHz Conducted Spurious 30MHz-1000MHz

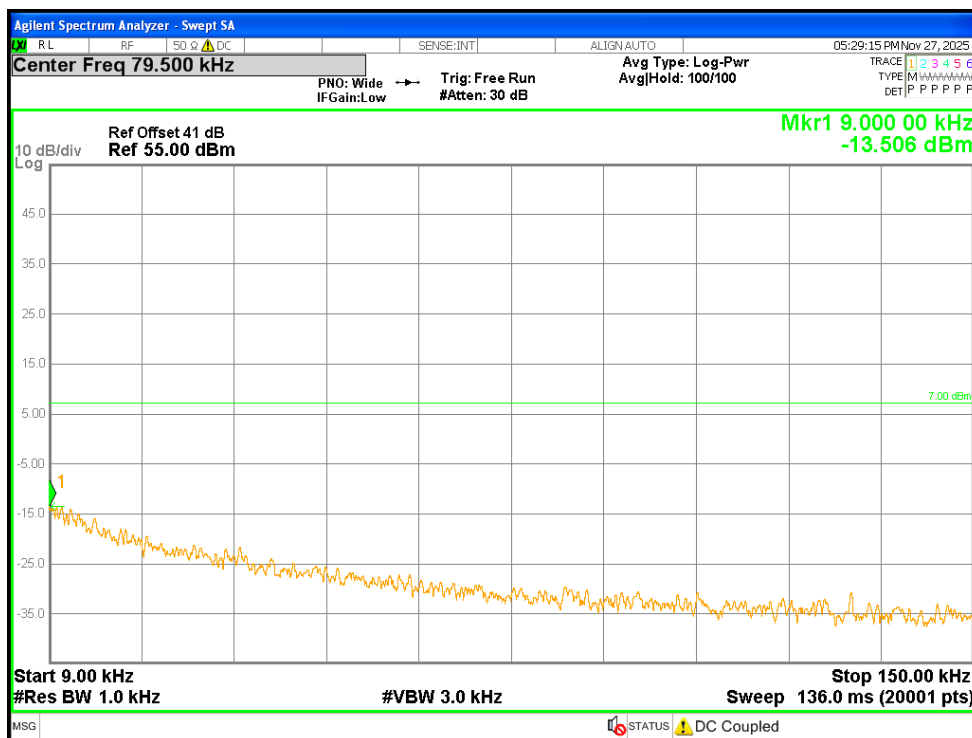


24.9MHz Conducted Spurious 1GHz-8.05GHz

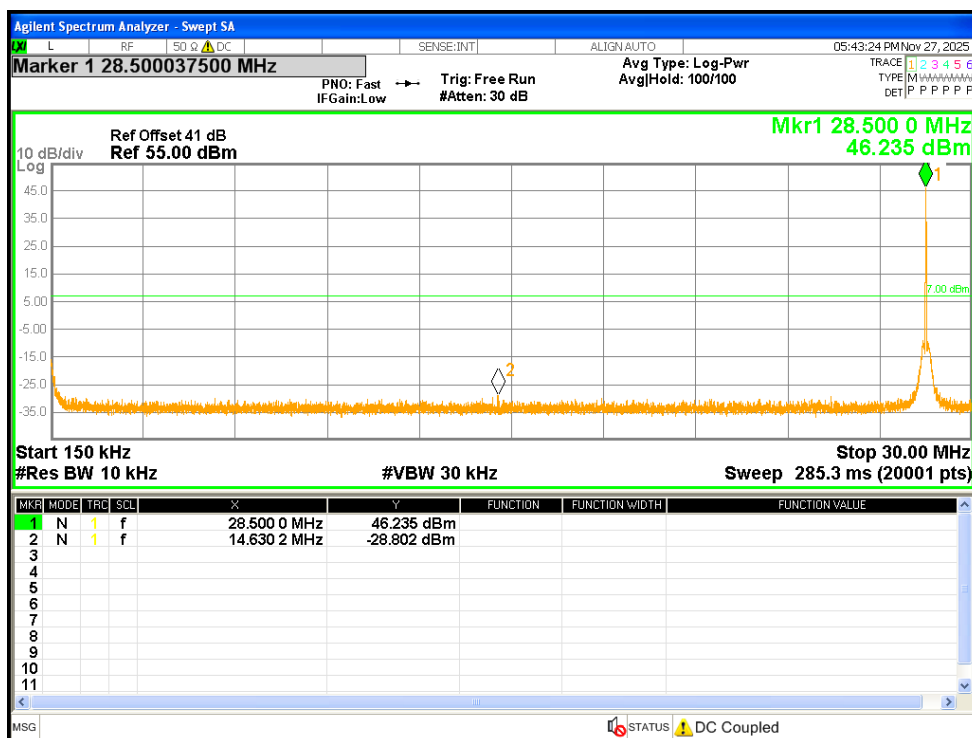




28.5MHz Conducted Spurious 9kHz-150kHz

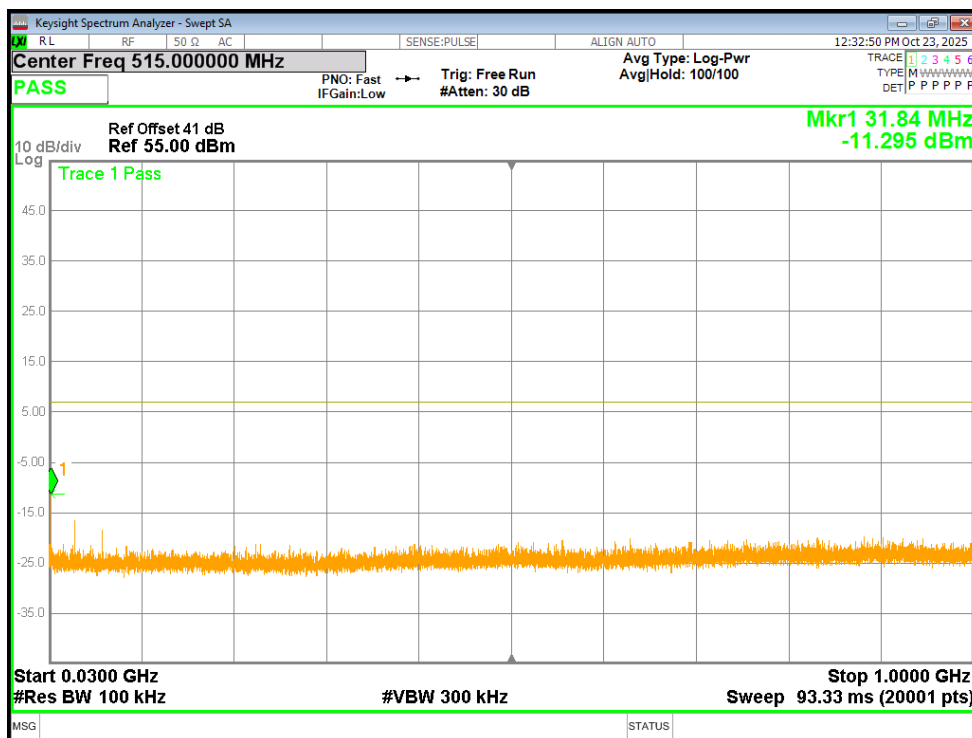


28.5MHz Conducted Spurious 150kHz-30MHz

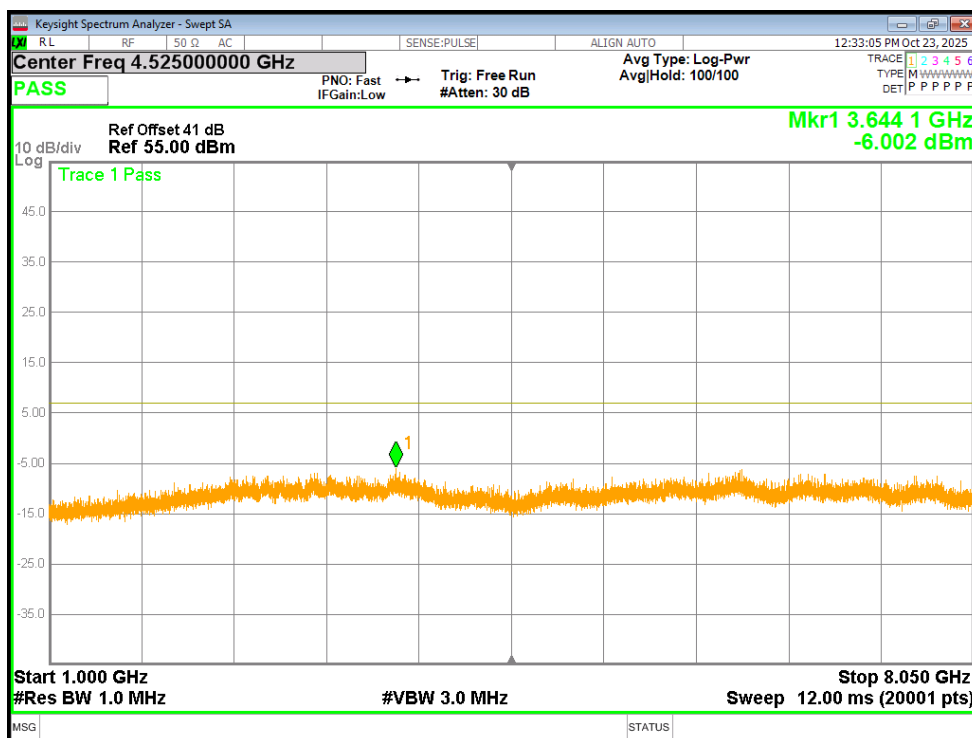




28.5MHz Conducted Spurious 30MHz-1000MHz

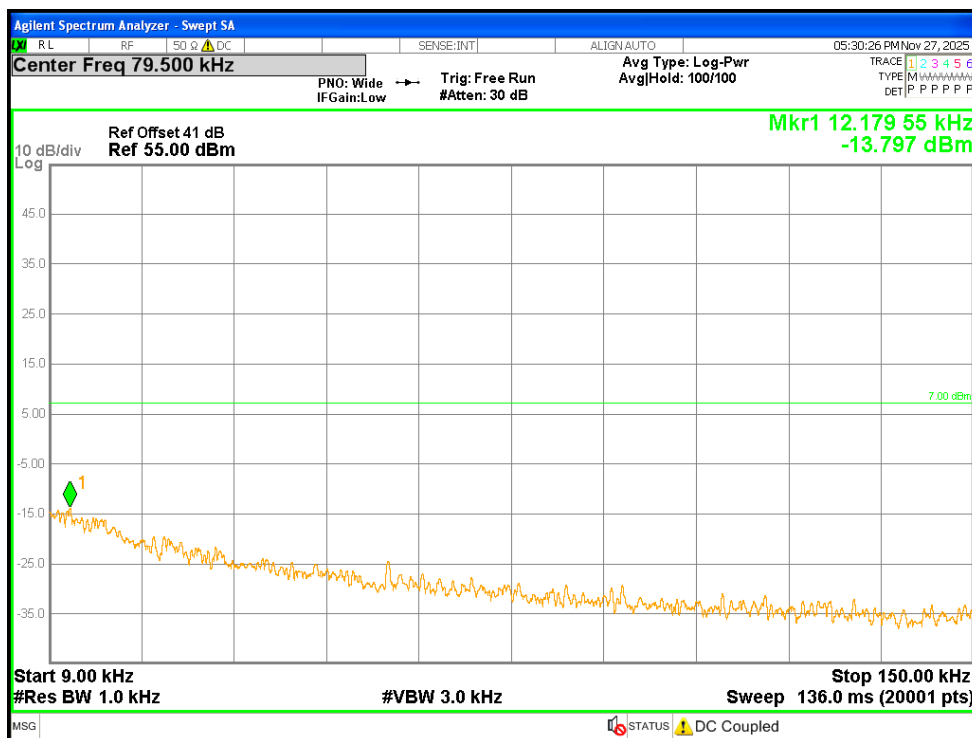


28.5MHz Conducted Spurious 1GHz-8.05GHz

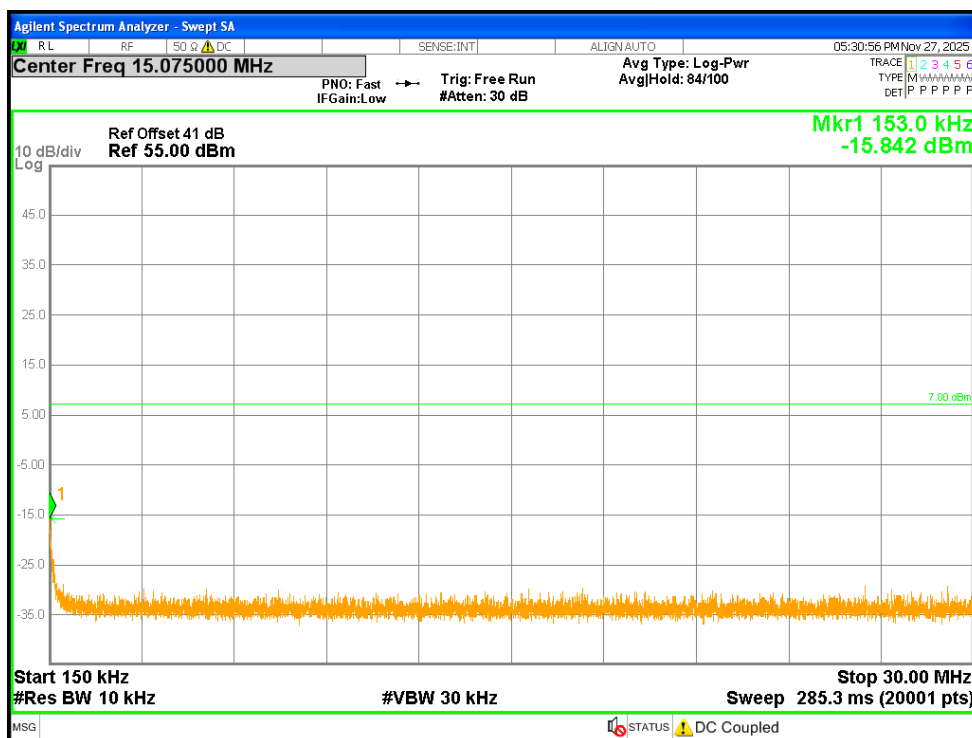




51MHz Conducted Spurious 9kHz-150kHz

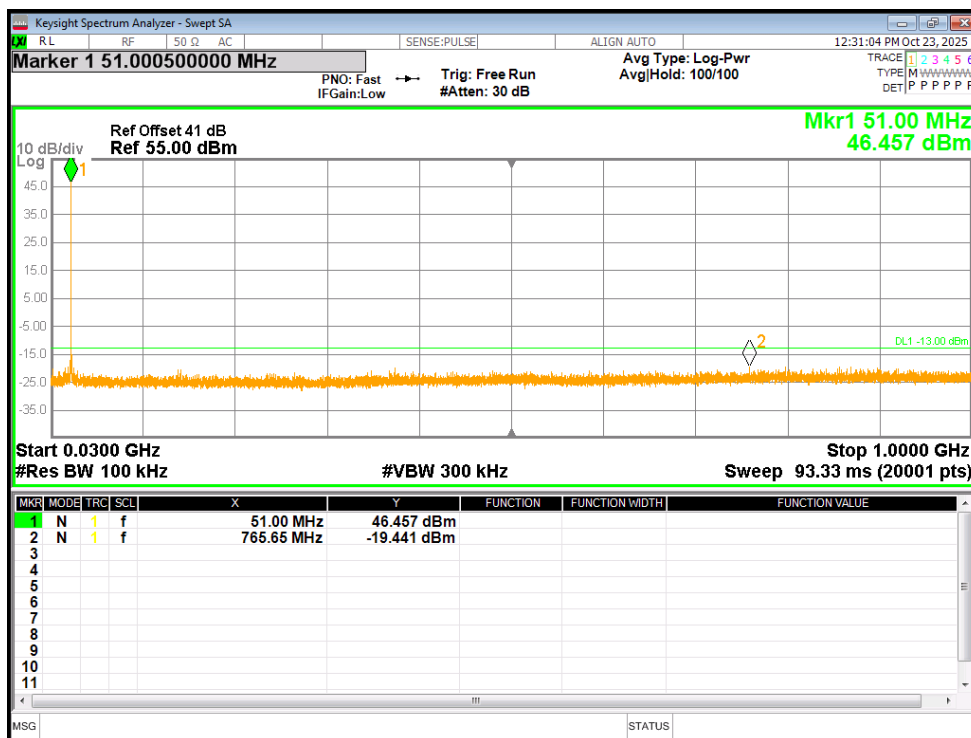


51MHz Conducted Spurious 150kHz-30MHz

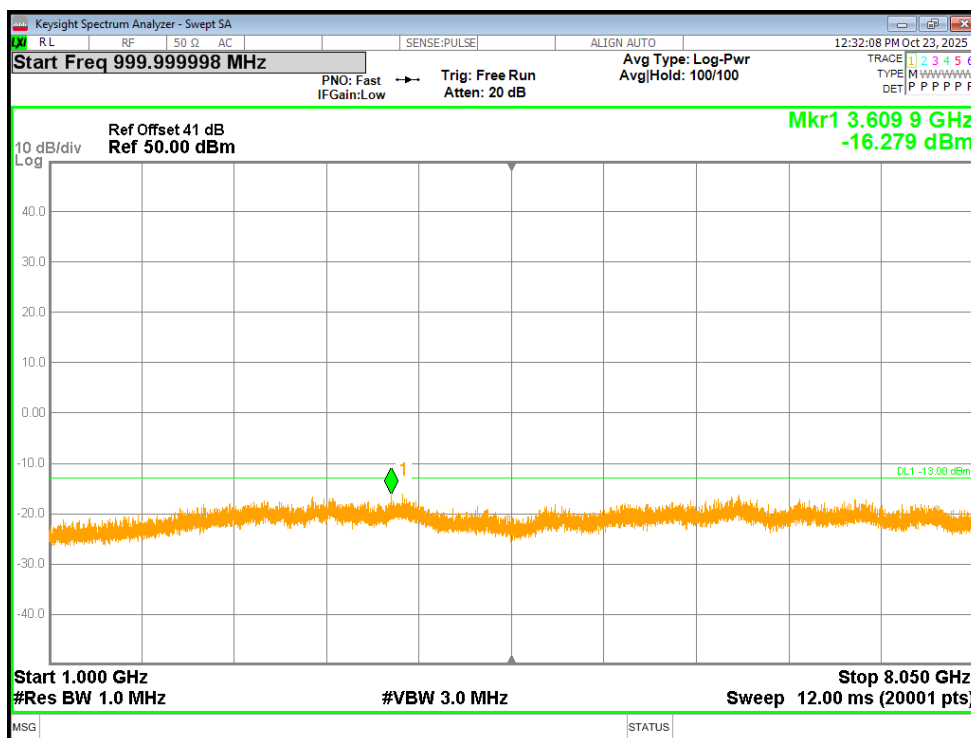




51MHz Conducted Spurious 30MHz-1000MHz



51MHz Conducted Spurious 1GHz-8.05GHz





4.4 RADIATED SPURIOUS EMISSION

Test Requirement

FCC §2.1053 & §97.307(d)(e)

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load, which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to teeth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001)-the absolute level



Test Data

Frequency (MHz)	Receiver Reading (dBμV)	Polar (H/V)	Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)	Absolute Level (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)
1.8 MHz									
3.60	31.59	V	-45.09	0.87	0.0	-45.96	-48.11	7.00	55.11
5.40	33.50	V	-45.38	0.87	0.0	-46.25	-48.40	7.00	55.40
7.20	33.27	V	-46.41	0.87	0.0	-47.28	-49.43	7.00	56.43
3.8 MHz									
7.60	30.89	V	-44.98	0.87	0.0	-45.85	-48.00	7.00	55.00
11.40	33.69	V	-45.49	0.87	0.0	-46.36	-48.51	7.00	55.51
15.20	33.70	V	-45.23	0.87	0.0	-46.10	-48.25	7.00	55.25
5.4 MHz									
10.80	31.80	V	-44.89	0.87	0.0	-45.76	-47.91	7.00	54.91
16.20	34.12	V	-44.16	0.87	0.0	-45.03	-47.18	7.00	54.18
21.60	29.58	V	-45.03	0.87	0.0	-45.90	-48.05	7.00	55.05
7.05 MHz									
14.10	42.81	V	-36.53	0.87	0.0	-37.40	-39.55	7.00	46.55
21.15	31.82	V	-43.75	0.87	0.0	-44.62	-46.77	7.00	53.77
28.20	33.86	V	-42.99	0.87	0.0	-43.86	-46.01	7.00	53.01
10.1 MHz									
20.2	33.40	V	-45.79	0.87	0.0	-46.66	-48.81	7.00	55.81
30.3	33.46	H	-51.90	0.87	0.0	-52.77	-54.92	-10.00	44.92
30.3	32.48	V	-42.90	0.87	0.0	-43.77	-45.92	-10.00	35.92
40.4	32.35	H	-54.15	0.87	0.0	-55.02	-57.17	-10.00	47.17
40.4	32.84	V	-47.42	0.87	0.0	-48.29	-50.44	-10.00	40.44
14.2705 MHz									
28.541	32.69	V	-43.73	0.87	0.0	-44.60	-46.75	7.00	53.75
42.812	32.42	H	-52.57	0.87	0.0	-53.44	-55.59	-10.00	45.59
42.812	34.04	V	-44.55	0.87	0.0	-45.42	-47.57	-10.00	37.57
57.082	31.27	H	-49.81	0.87	0.0	-50.68	-52.83	-10.00	42.83
57.082	30.20	V	-45.43	0.87	0.0	-46.30	-48.45	-10.00	38.45
18.1 MHz									
36.2	54.06	H	-60.11	0.87	0.0	-60.98	-63.13	-10.00	53.13
36.2	57.18	V	-48.47	0.87	0.0	-49.34	-51.49	-10.00	41.49
54.3	33.97	H	-82.05	0.87	0.0	-82.92	-85.07	-10.00	75.07
54.3	33.24	V	-73.27	0.87	0.0	-74.14	-76.29	-10.00	66.29
72.4	32.42	H	-83.83	0.87	0.0	-84.70	-86.85	-10.00	76.85
72.4	33.56	V	-77.74	0.87	0.0	-78.61	-80.76	-10.00	70.76



Frequency (MHz)	Receiver Reading (dBμV)	Polar (H/V)	Substituted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi/dBd)	Absolute Level (dBm)	ERP (dBm)	Limit (dBm)	Margin (dB)
21 MHz									
42.0	40.95	H	-72.77	0.87	0.0	-73.64	-75.79	-10.00	65.79
42.0	47.96	V	-58.49	0.87	0.0	-59.36	-61.51	-10.00	51.51
63.0	44.68	H	-69.70	0.87	0.0	-70.57	-72.72	-10.00	62.72
63.0	50.85	V	-58.61	0.87	0.0	-59.48	-61.63	-10.00	51.63
84.0	36.98	H	-77.51	0.87	0.0	-78.38	-80.53	-10.00	70.53
84.0	42.56	V	-62.07	0.87	0.0	-62.94	-65.09	-10.00	55.09
24.9 MHz									
49.8	34.88	H	-77.46	0.87	0.0	-78.33	-80.48	-10.00	70.48
49.8	46.04	V	-60.42	0.87	0.0	-61.29	-63.44	-10.00	53.44
74.7	48.84	H	-66.34	0.87	0.0	-67.21	-69.36	-10.00	59.36
74.7	61.54	V	-46.91	0.87	0.0	-47.78	-49.93	-10.00	39.93
99.6	42.23	H	-72.00	0.87	0.0	-72.87	-75.02	-10.00	65.02
99.6	53.66	V	-51.10	0.87	0.0	-51.97	-54.12	-10.00	44.12
28.5 MHz									
57.0	38.77	H	-75.06	0.87	0.0	-75.93	-78.08	-10.00	68.08
57.0	41.75	V	-65.05	0.87	0.0	-65.92	-68.07	-10.00	58.07
85.5	63.04	H	-52.64	0.87	0.0	-53.51	-55.66	-10.00	45.66
85.5	72.73	V	-36.05	0.87	0.0	-36.92	-39.07	-10.00	29.07
114.0	58.03	H	-56.50	0.87	0.0	-57.37	-59.52	-10.00	49.52
114.0	65.61	V	-41.69	0.87	0.0	-42.56	-44.71	-10.00	34.71
51 MHz									
102.0	70.74	H	-41.96	0.87	0.0	-42.83	-44.98	-10.00	34.98
102.0	73.99	V	-32.63	0.87	0.0	-33.50	-35.65	-10.00	25.65
153.0	75.50	H	-39.43	0.87	0.0	-40.30	-42.45	-10.00	32.45
153.0	78.10	V	-31.45	0.87	0.0	-32.32	-34.47	-10.00	24.47
204.0	68.67	H	-46.70	0.87	0.0	-47.57	-49.72	-10.00	39.72
204.0	66.53	V	-41.26	0.87	0.0	-42.13	-44.28	-10.00	34.28



5.APPENDIX 1- EUT TEST PHOTO

Note: See test photos in setup photo document for the actual connections between Product and support equipment.

***** END OF THE REPORT*****