

Testing Tomorrow's Technology

**CFR 47 FCC Part 2, Subpart J, and FCC Part 90, Subpart I
Certification for Private Land Mobile Radio Services,
Part 90.219 Use of signal boosters**

And

ANSI/TIA-603-E (2016), Equipment Measurement and Performance Standards

And

**Innovation, Science and Economic Development Canada, RSS-131, Spectrum
Management and Telecommunications Radio Standards Specification, Zone
Enhancers,
Clause 10 Equipment Standard specifications for zone enhancers working with
equipment certified under RSS-119**

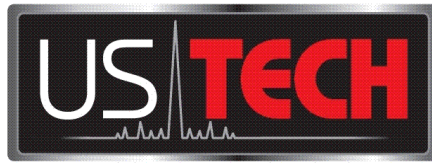
For the

**Safe-Com Wireless
Model: SAFE-1050**

**FCC ID: 2AKSM-SAFE5
IC: 22303-SAFE5**

**UST Project No: 25-0005
May 20, 2025**

**3505 Francis Circle Alpharetta, GA 30004
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I certify that I am authorized to sign for the Test Agency and that the statements in this report and in the Exhibits attached hereto are true and correct to the best of my knowledge and belief:

US Tech (Agent Responsible for Test):

By:

Name: Alan Ghasiani

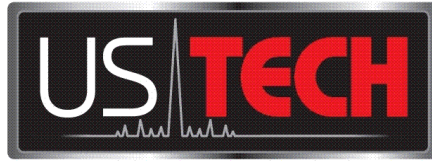
Title: Consulting Engineer/President

Date: May 20, 2025



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MEASUREMENT/TECHNICAL REPORT

This report concerns (check one): Original Grant X
Class II Change

Reevaluation

Equipment type: Part 90.219 Amplifier/Signal Booster (Class A)

Applicant /Manufacturer Name and Address:

FCC
Safe-Com Wireless
21 Longview Drive
Holmdel, NJ 07733
USA

ISED
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1 General Information

1.1 Product Description

The Equipment under Test (EUT) is the Safe-Com Wireless model SAFE-1050. The EUT is a signal booster and extends the radio coverage in areas where the propagation losses prevent reliable communication. The amplifier is designed to be used with already approved DSA systems. This defines the tuning for that the amp has been configured to operate in.

For FCC Part 90.219

769.0-775.0 MHz
788.0-805.0 MHz
806.0-849.0 MHz
851.0-869.0 MHz

For ISSED RSS-131

798.0-806.0 MHz
806.0-821.0 MHz
851.0-866.0 MHz
866.0-869.0 MHz

Zone Enhancer Details	
Nominal Gain	80 dB
Gain versus Frequency response	+/- 2 dB
Output signal coupling attenuation	N/A
Input and output port impedance	50 Ω

1.2 Related Submittal(s)/Grant(s)

There are no related submittals or grants associated with this project.

1.3 Summary of Tests

The following tests were performed:

Part	Test Description	Verdict
90.219(e)(1), 90.205(j)	RF Output Power	Pass
90.219(e)(3)	Conducted Spurious	Pass
90.219(e)(3)	Radiated Spurious	Pass
90.219(e)(4)	Input Output	Pass
KDB 935210 D05 v01r03 4.2	AGC Threshold	Recorded
KDB 935210 D05 v01r03 4.3	Out of band rejection	Recorded
90.219(e)(2)	Noise Figure	N/A
90.219(e)(4)(i)	Frequency Stability	Pass

2 Test and Measurements

2.1 Configuration of Tested System

A Block Diagram of the tested system is shown in Figure 1. All measurements are peak unless stated otherwise. The video filter associated with the spectrum analyzer was off or set to 3x the resolution bandwidth throughout the evaluation process. Interconnecting cables were manipulated as necessary to maximize emissions.

2.2 Characterization of Tested System

The samples used for testing were received by US Tech on February 10, 2025 in good condition.

2.3 Test Facility

Testing was performed at US Tech's measurement facility at 3505 Francis Circle, Alpharetta, GA. All radiated measurements were performed at US Tech's 3-meter EMC chamber measurement facility. Additional tests such as bench testing were also performed at US Tech's facility in Alpharetta, GA. This site has been fully described and registered by the FCC under Registration Number US5301. Additionally, this site has been fully described and submitted to Industry Canada (IC) and has been approved under file number 9900A-1. NVLAP code: 200162-0

2.4 Test Equipment

The test equipment used for this evaluation is listed in Table 2 below.

2.5 Modifications to Equipment under Test (EUT)

No modifications were made by US Tech to bring the EUT into compliance with the FCC limits for the transmitter portion of the EUT.

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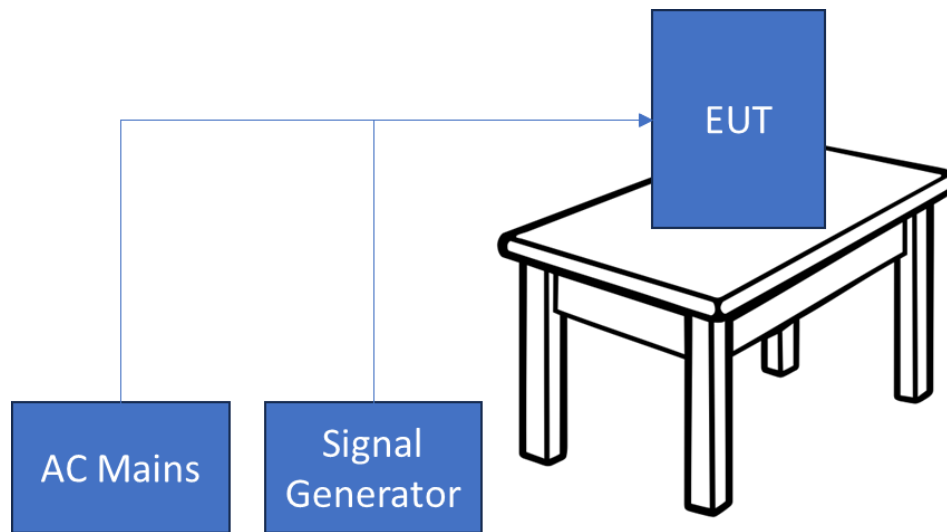


Figure 1. Block Diagram of Test Configuration

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Table 1. EUT and Peripherals

EUT MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID/ IC ID	CABLES P/D
EUT Safe-Com Wireless	SAFE-1050	Engineering Sample	FCC ID: 2AKSM-SAFE4 (Pending) IC: 22303-SAFE4 (Pending)	PU
Peripherals MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	FCC ID/ IC ID	CABLES P/D
Signal Generator Rohde & Schwarz	SMJ100A	*101567	None	P

U= Unshielded, S= Shielded, P= Power cable, D= Data cable

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Table 2. Test Instruments

EQUIPMENT	MANUFACTURER	MODEL NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
Spectrum Analyzer	Agilent	E4407B	US41442935	2/21/2026 2 yr.
Spectrum Analyzer	Agilent	E4440A	MY45304803	7/21/2025 2 yr.
Spectrum Analyzer	Rigol	DSA815	DSA8A180300138	2/22/2026 2yr
Rf Preamp 100 kHz to 1.3 GHz	Hewlett-Packard	8447D	1937A01611	6/17/2026
Rf Preamp > 1 GHz	Hewlett Packard	8449B	3008A00914	3/10/2026
Broadband Biconical Antenna	AARONIA .A.G	BicoLOG* 20100E	20400600036	9/25/2025 2 yr.
Horn Antenna	EMCO	3115	9107-3723	Extended 5/6/2025
Signal Generator	Rohde & Schwarz	SMJ100A	101567	3/29/2026
Signal Generator	Rohde & Schwarz	SMJ100A	101567	Verified with Rigol before use
50 dB Attenuator	Weinschel	44-50	BD5054	3/7/2026
30 dB Attenuator	Hewlett Packard	11078A	7543	3/11/2026
Terminator	ALAN	50LH25	101771	6/3/2025
Terminator	Decibel	DB4303G	None	6/3/2025
LISN	Solar Electronics	9247-50- TS-50-N	955824 and 955825	4/29/2026

Note: The calibration interval of the above test instruments is 12 months, and all calibrations are traceable to NIST/USA.

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2.6 Noise (FCC Section 90.219(e)(2) and RSS-131, 10.4)

The noise figure of a signal booster must not exceed 9 dB in either direction.

The EUT is a bi-directional amplifier designed for use with pre-certified Part 90 and RSS-119 systems such as DSA; this test was deemed not applicable.

2.7 Retransmitted Signals (FCC Section 90.219(e)(4) and RSS-131, 10.6)

A signal booster must be designed such that all signals when retransmitted meet the following requirements:

1. The signals are re-transmitted on the same channels as received. Minor departures from the exact provider or reference frequencies of the input signals are allowed provided that the re-transmitted signals meet the requirements of 90.213.

In this case, the EUT is exempt from meeting these requirements.

2. There is no change in the occupied bandwidth of the retransmitted signals.

The EUT meets this requirement; see the plots in the following section which show the input signal compared to the retransmitted signal.

3. The retransmitted signals continue to meet the unwanted emissions limits of Part 90.210 applicable to the corresponding received signal.

The EUT meets this requirement; see the emissions mask test data presented in the next section.

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2.8 Emission Mask Definitions (FCC Section 2.1049, 90.219(e)(4)(iii), 90.210, RSS-131, 10.6, RSS-119, 5.8)

The EUT is equipped with a low pass filter. Therefore, the emissions masks for equipment utilizing a low pass filter were applied.

2.8.1 Emission Mask B (FCC Part 90.210, 2.1051, RSS-119, 5.8)

Emission Mask B. For transmitters that are equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows:

- (1) On any frequency removed from the assigned frequency by more than 50 percent, but not more than 100 percent of the authorized bandwidth: At least 25 dB.
- (2) On any frequency removed from the assigned frequency by more than 100 percent, but not more than 250 percent of the authorized bandwidth: At least 35 dB.
- (3) On any frequency removed from the assigned frequency by more than 250 percent of the authorized bandwidth: At least $43 + 10 \log (P)$ dB.

2.9 RF Power Output (FCC Section 2.1046, 90.219(e)(1), RSS-131, 6.2)

The output power capability of a signal booster must be designed for deployments providing a radiated power not exceeding 5 Watts ERP for each retransmitted channel.

The EUT was connected to a spectrum analyzer through a 20 dB power attenuator. All cables and attenuator losses were input into the spectrum analyzer as either a reference level offset or an external preamp gain correction to ensure that accurate readings were obtained.

A CW signal was utilized and transmitted through the EUT. The RF input signal was set at least 0.2 dB below the AGC threshold. The spectrum analyzer was set to the following settings: RBW= 100 kHz, Video= 3x RBW, Span of 1 MHz.

The output power levels are recorded below:

Band	Tuned Frequency	Measured Output power (dBm)	FCC max Output Power limit (5 Watt)	Margin (dB) From the output limit
700/800 MHz	769.00 MHz	30.61	37 dBm	6.39
	775.00 MHz	31.08	37 dBm	5.92
	799.00 MHz	24.47	37 dBm	12.53
	808.00 MHz	28.38	37 dBm	8.62
	816.00 MHz	26.43	37 dBm	10.57
	851.00 MHz	31.21	37 dBm	5.79
	856.00 MHz	30.91	37 dBm	6.09
	861.00 MHz	31.28	37 dBm	5.72



Figure 2. RF Power Output Test Configuration

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
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Safe-Com Wireless
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2.10 Output Power Plots

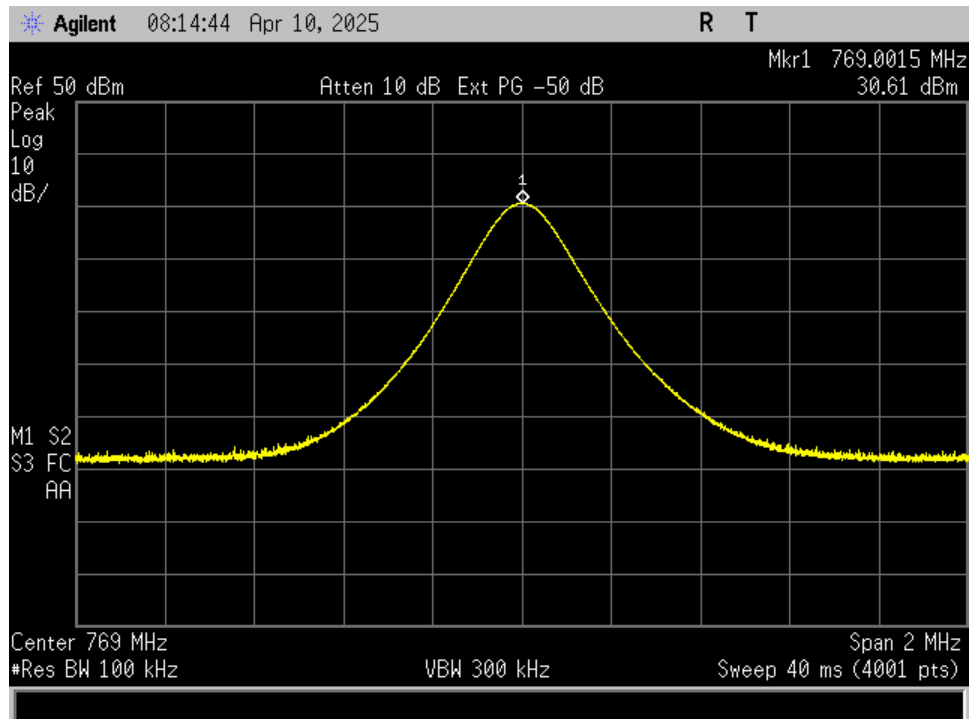


Figure 3. 769 MHz Output Power Plot

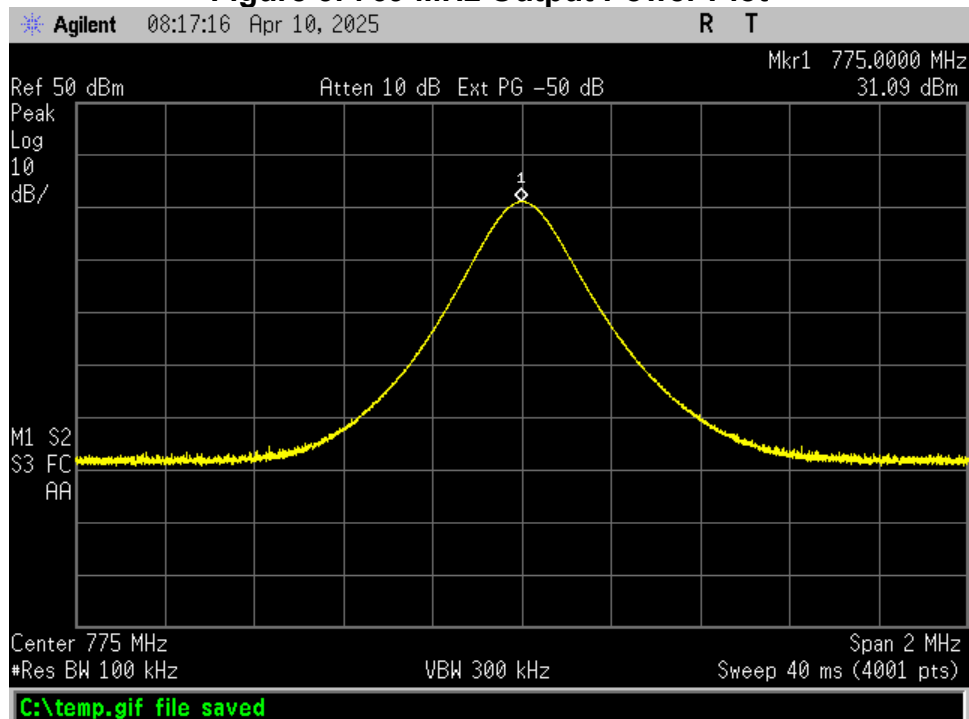


Figure 4. 775 MHz Output Power Plot

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

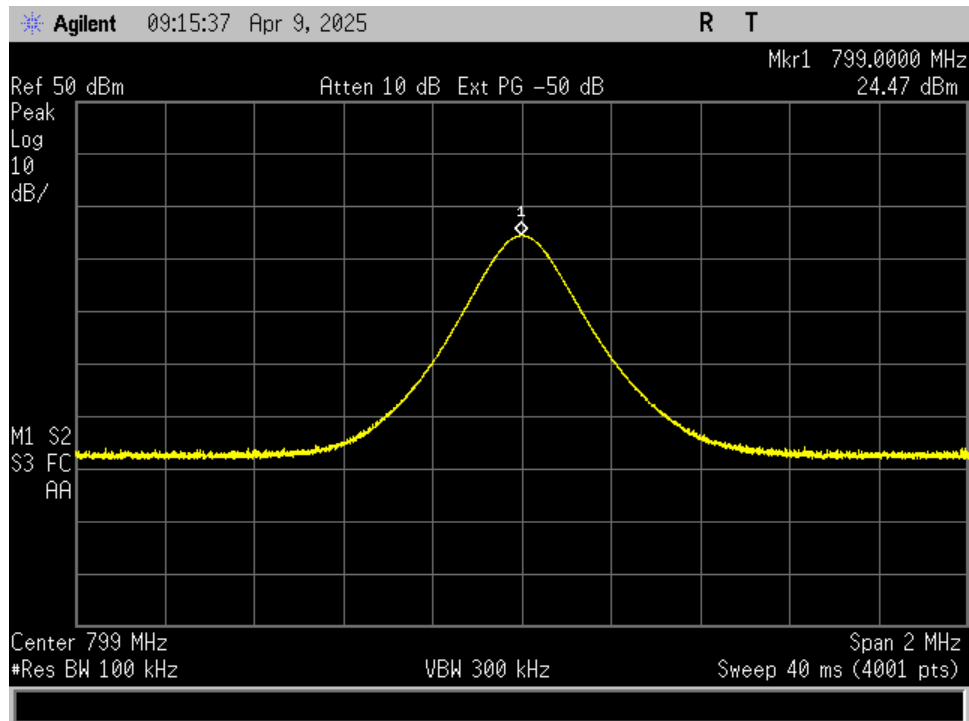


Figure 5. 799 MHz Output Power Plot

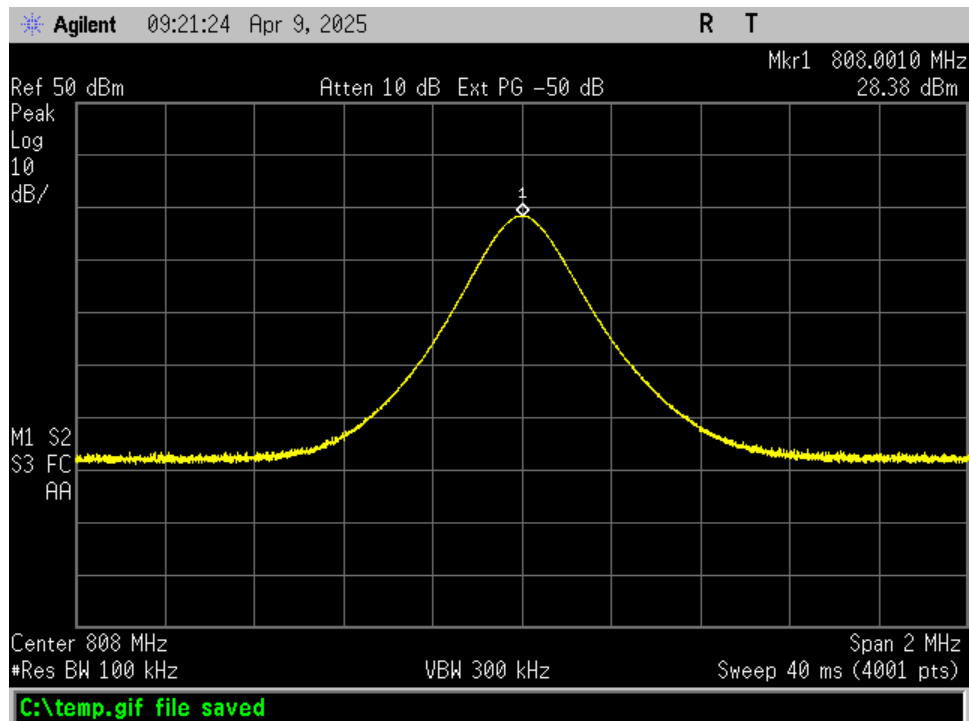


Figure 6. 808 MHz Output Power Plot

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

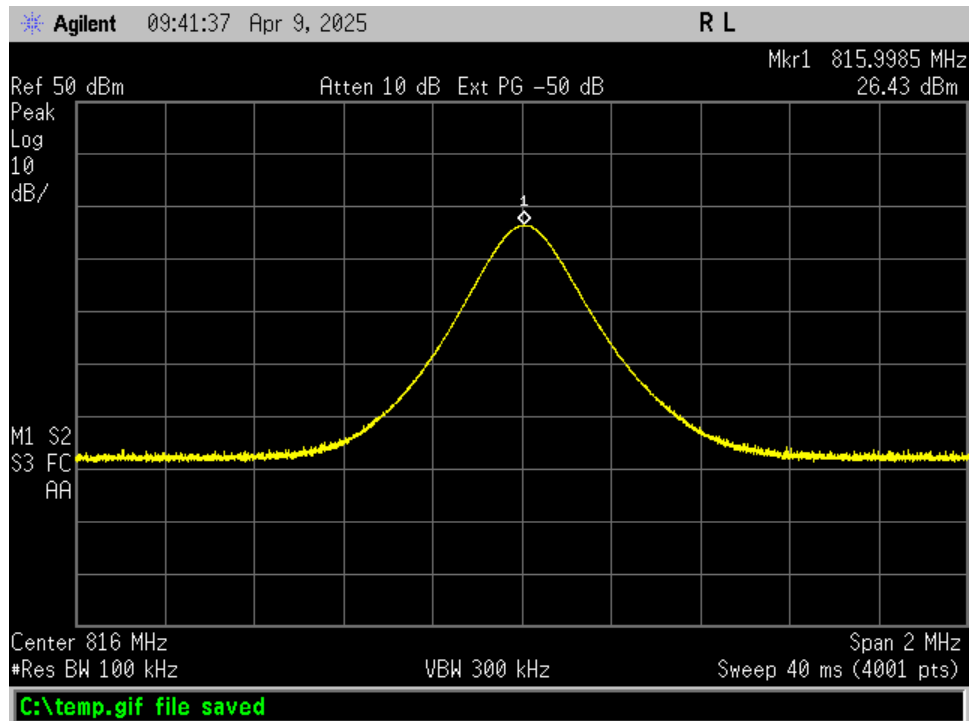


Figure 7. 816 MHz Output Power Plot

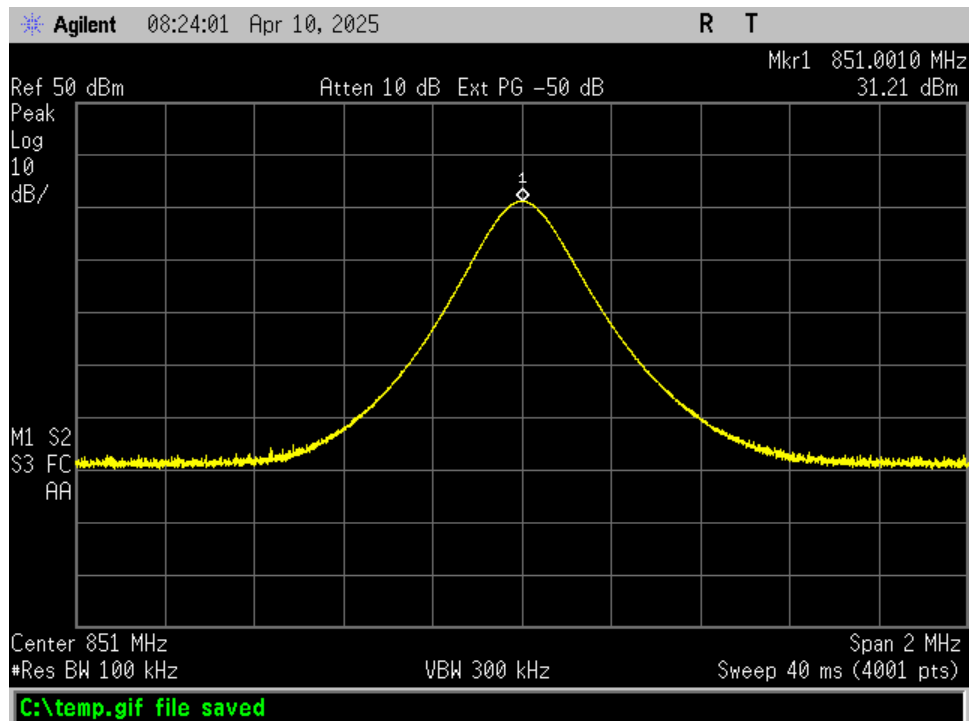


Figure 8. 851 MHz Output Power Plot

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

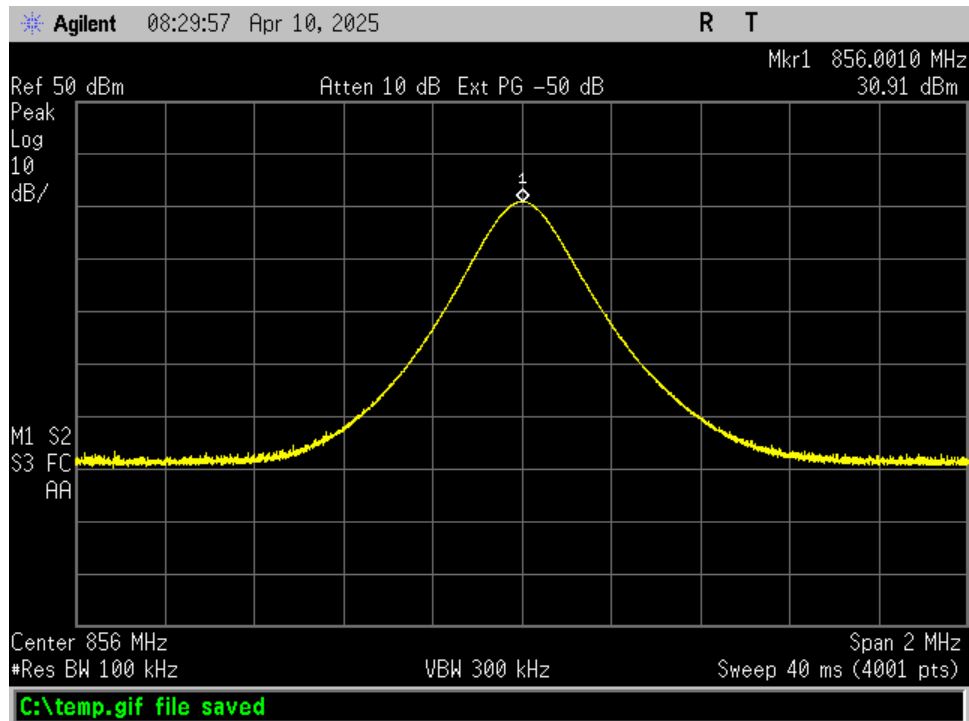


Figure 9. 856 MHz Output Power Plot

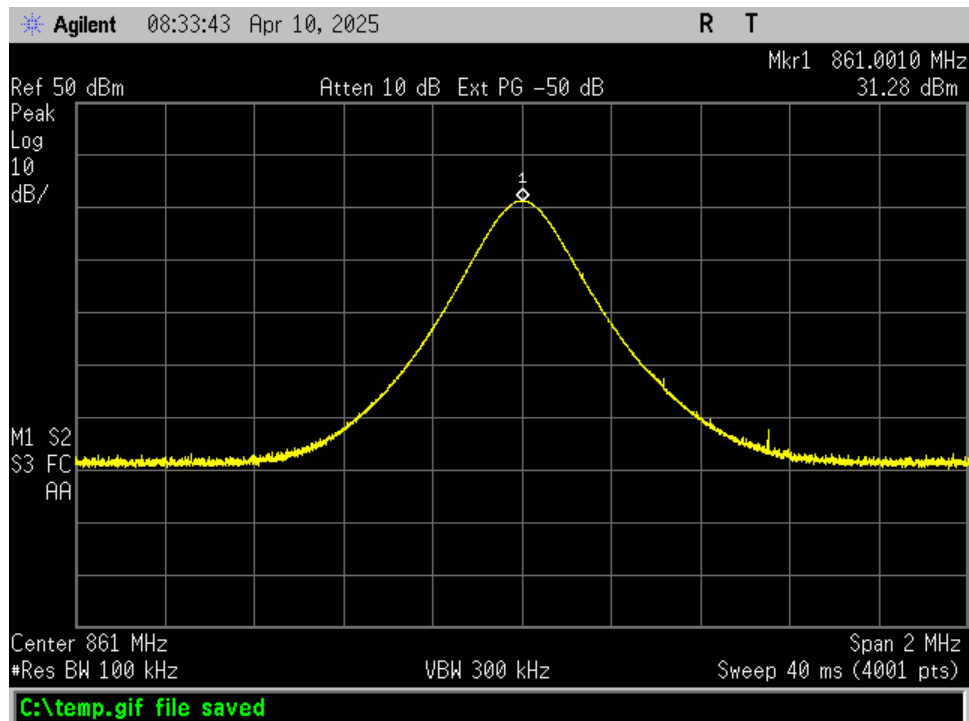


Figure 10. 861 MHz Output Power Plot

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
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SAFE-1050

2.11 Emission Mask and Retransmitted Signal Measurements

The EUT was connected to a spectrum analyzer through a 50 dB attenuator. All cable and attenuator losses were input into the spectrum analyzer as a combination of reference level offset and/or external correction factor offset to ensure accurate readings were obtained. Measurements were collected to verify that the EUT meets the required emissions mask parameters as cited in section 2.10 of this test report. A reference level plot is provided to show that the retransmitted signal meets the parameters as cited in section 2.10 of this test report.

The Emissions Mask were measured with the RF input set to at least 0.2 dB below the AGC level and then at +3.0 dB above the AGC level per KDB 935210 D03 V04.

Table 3. Test Signals for PLMRS Devices

Emissions Desinator	Modulation	Occupied Bandwidth	Channel Bandwidth	Audio Frequency
16K0F3E	FM	16 kHz	25 kHz	1 kHz
11K3F3E	FM	11.3 kHz	12.5 kHz	1 kHz
4K00F1E	FM	4 kHz	6.25 kHz	1 kHz
N/A	CW	N/A	N/A	N/A



Figure 11. Emissions Mask Test Configuration

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
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May 20, 2025
Safe-Com Wireless
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2.11.1 Up Link Channels

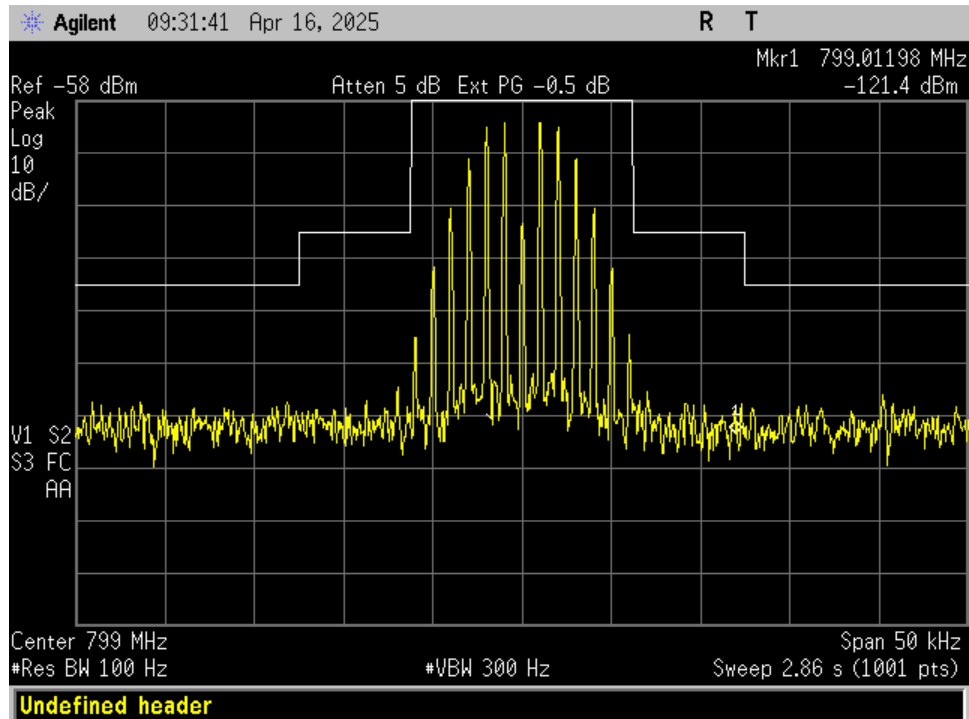


Figure 12. Input 799 MHz @ 12.5 kHz

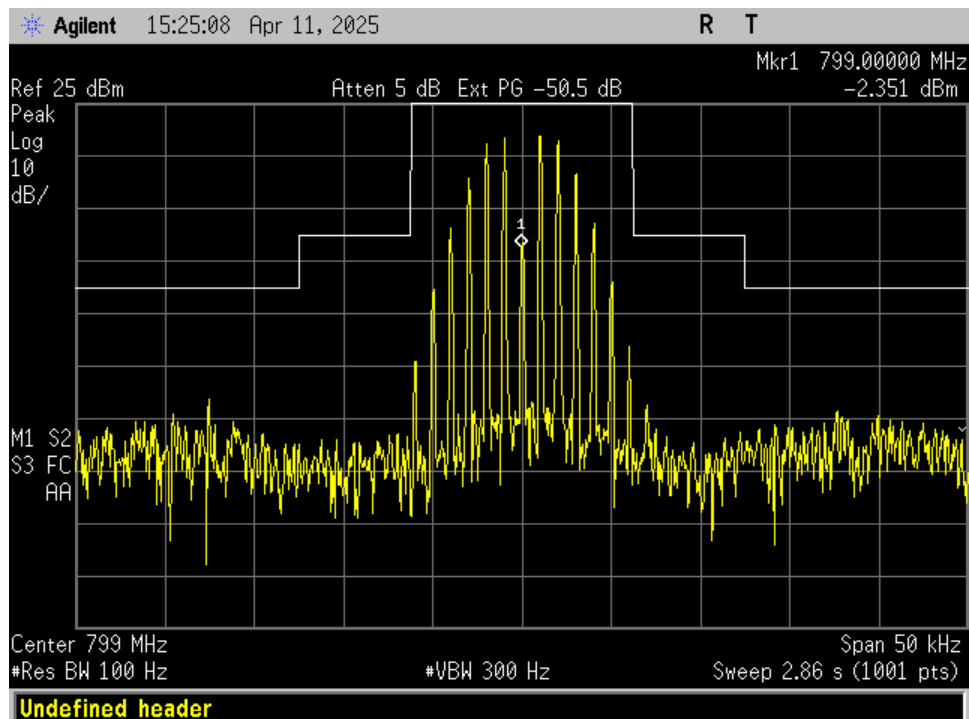


Figure 13. 799 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
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25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

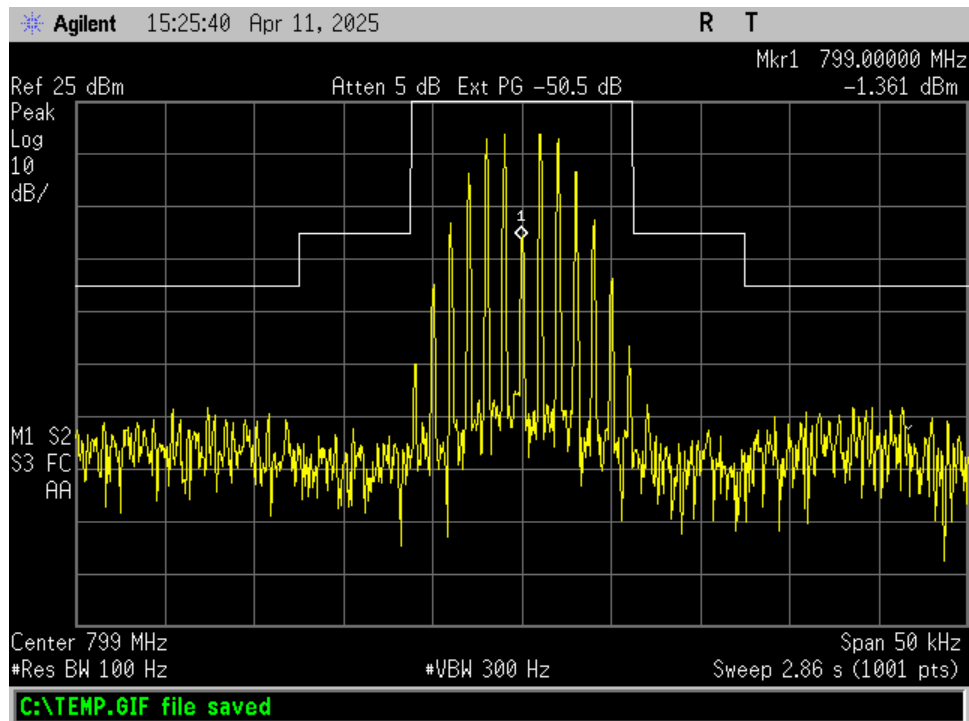


Figure 14. 799 MHz @ 12.5 kHz +3 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

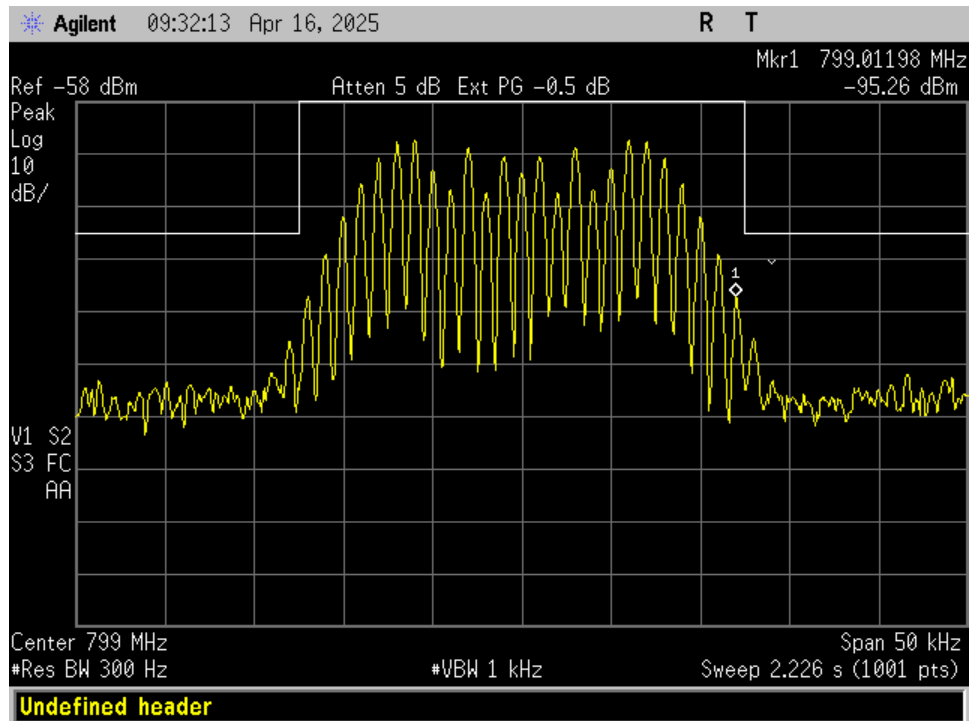


Figure 15. 799 Input 758 MHz @ 25 kHz

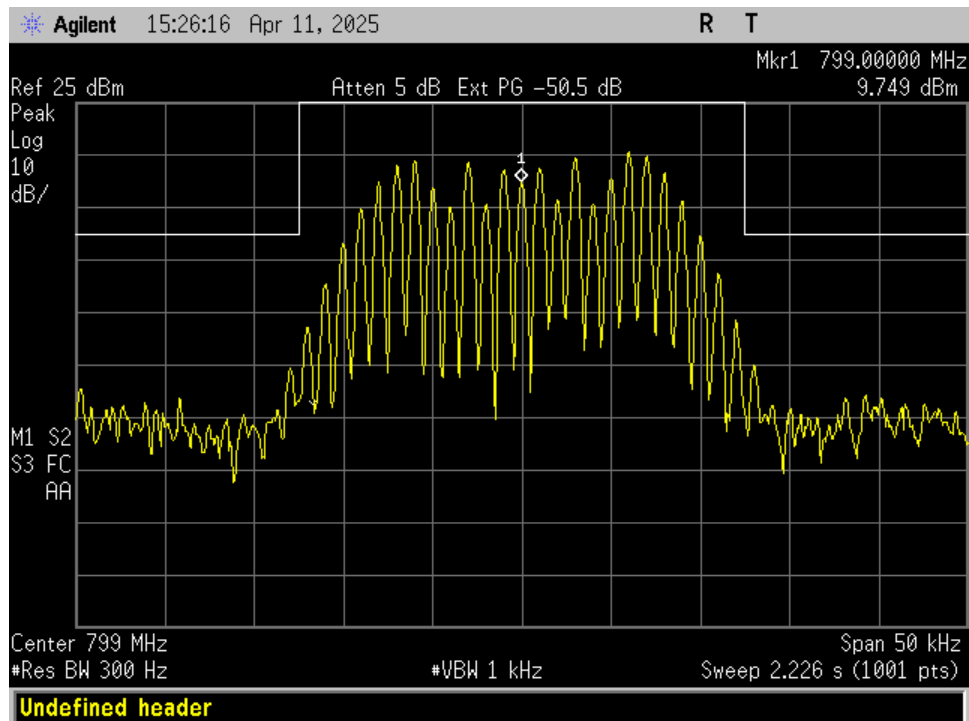


Figure 16. 799 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

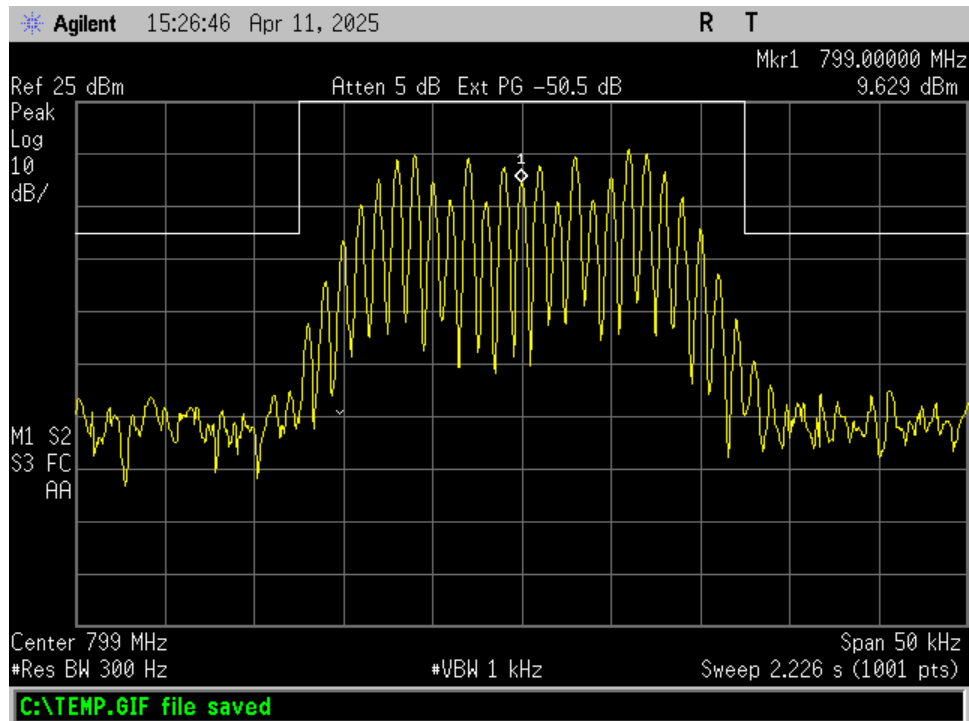


Figure 17. 799 MHz @ 25 kHz + 3 dB, Mask B

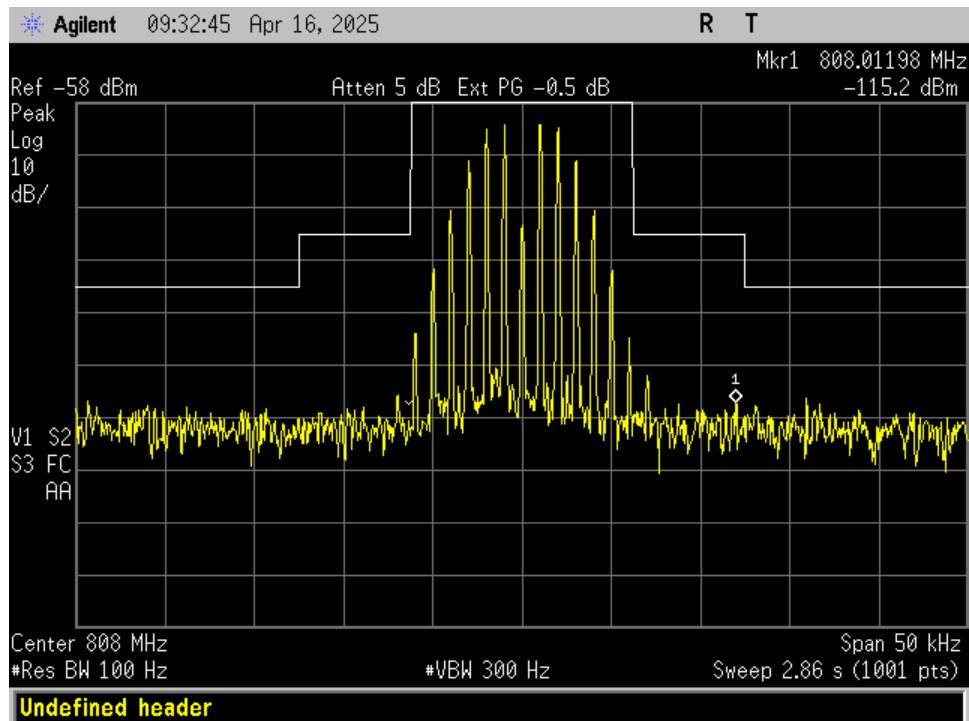


Figure 18. Input 808 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

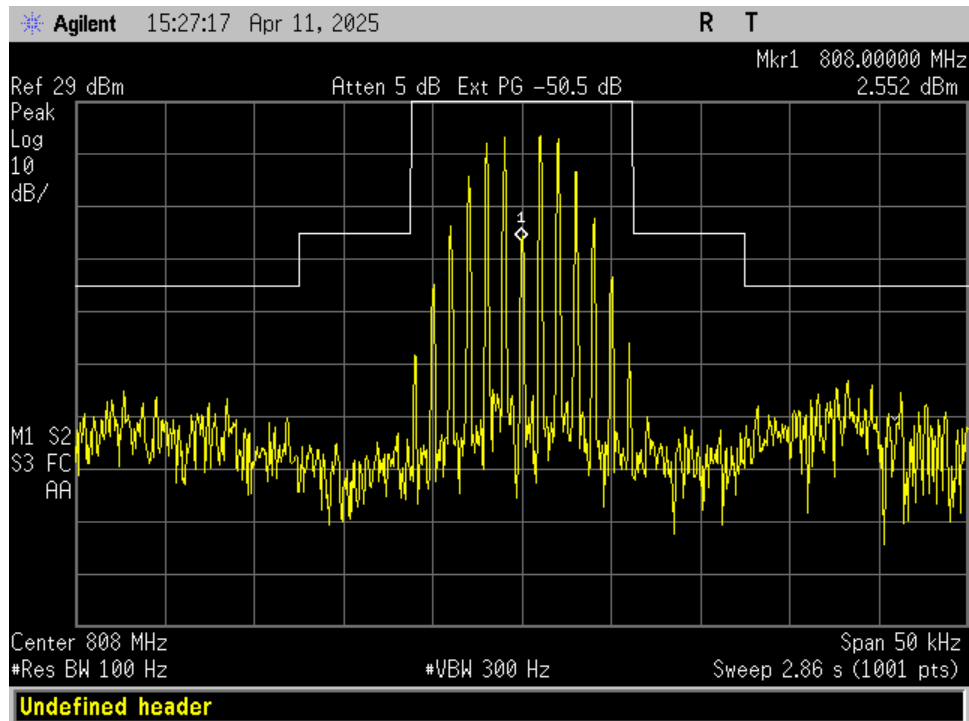


Figure 19. 808 MHz @ 12.5 kHz, Mask B

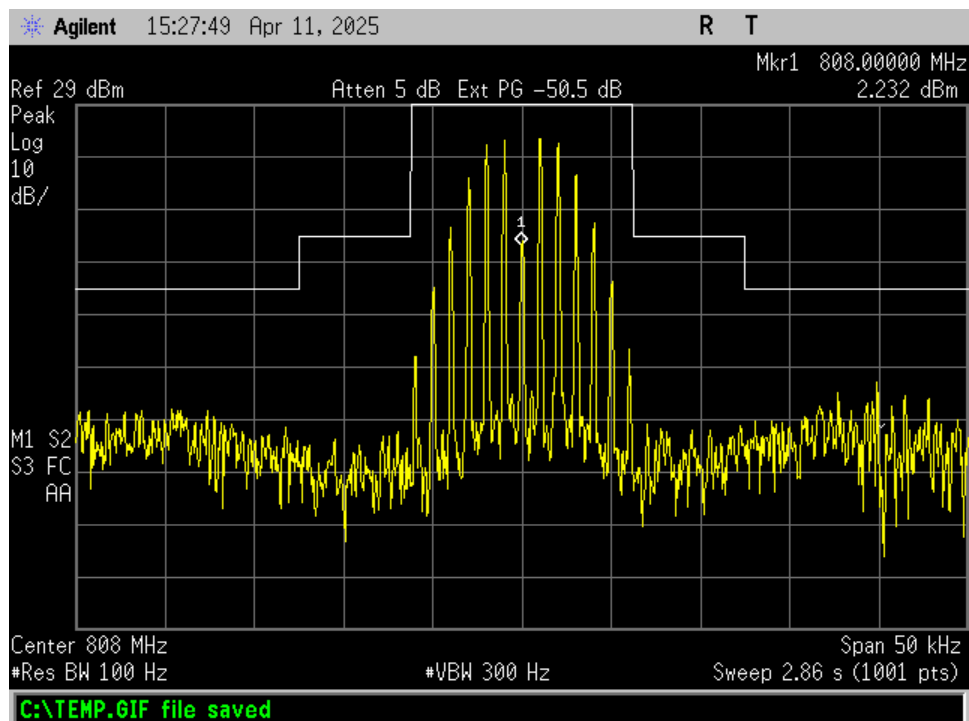


Figure 20. 808 MHz @ 12.5 kHz +3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

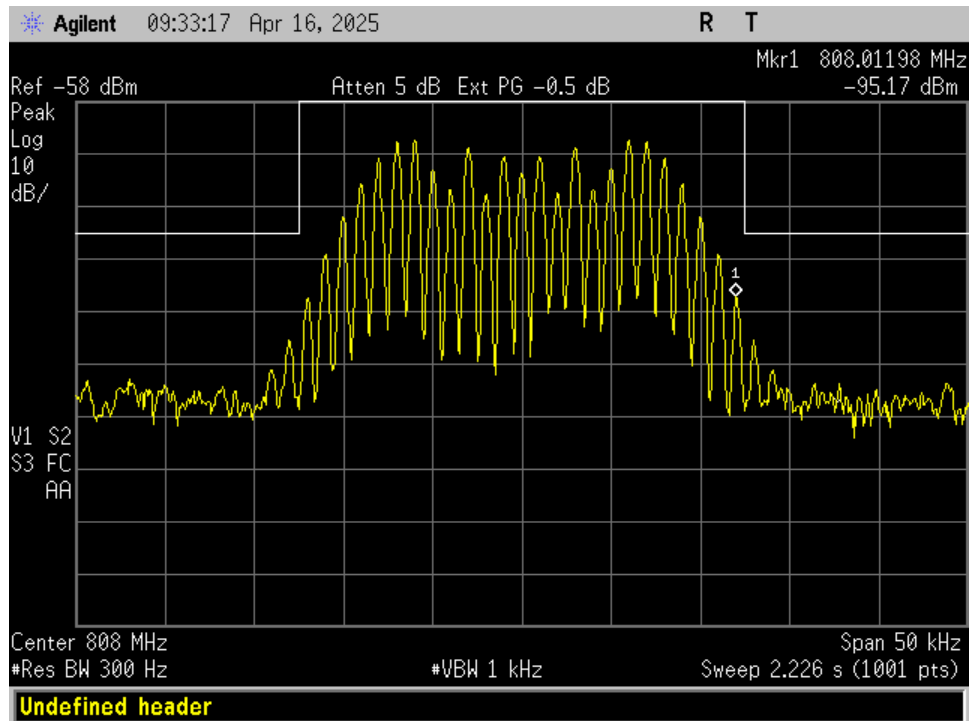


Figure 21. Input 808 MHz @ 25 kHz

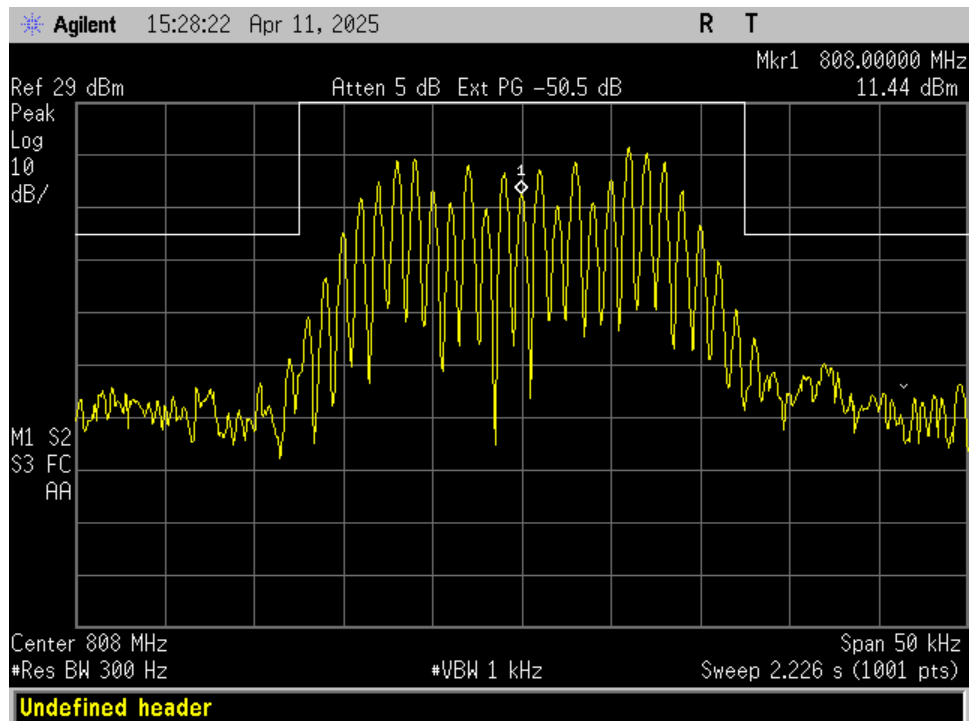


Figure 22. 808 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

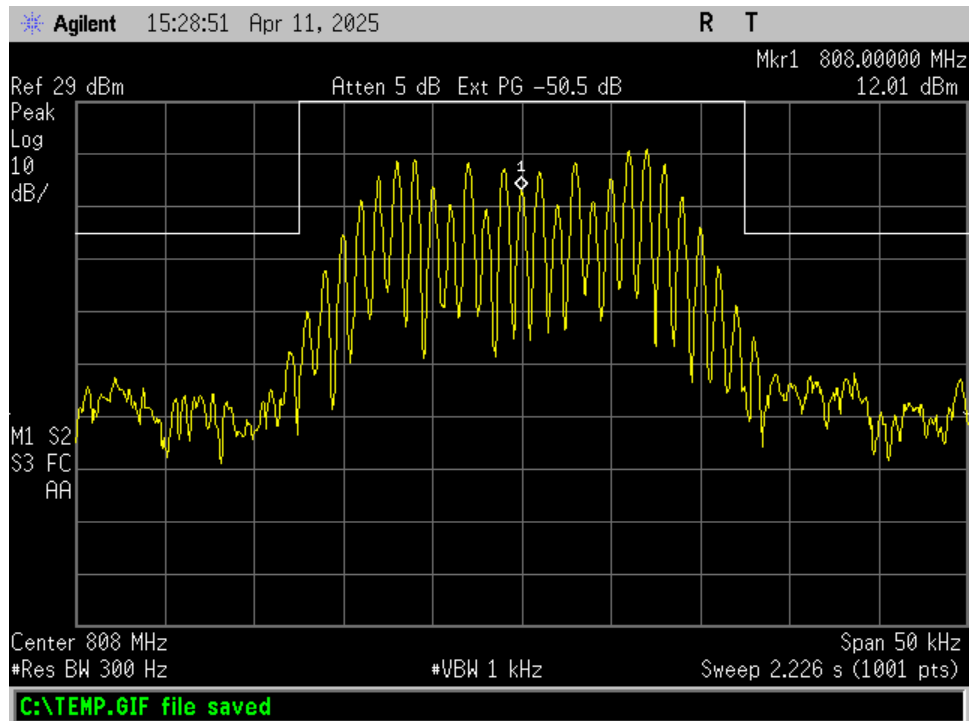


Figure 23. 808 MHz @ 25 kHz +3.0 dB, Mask B

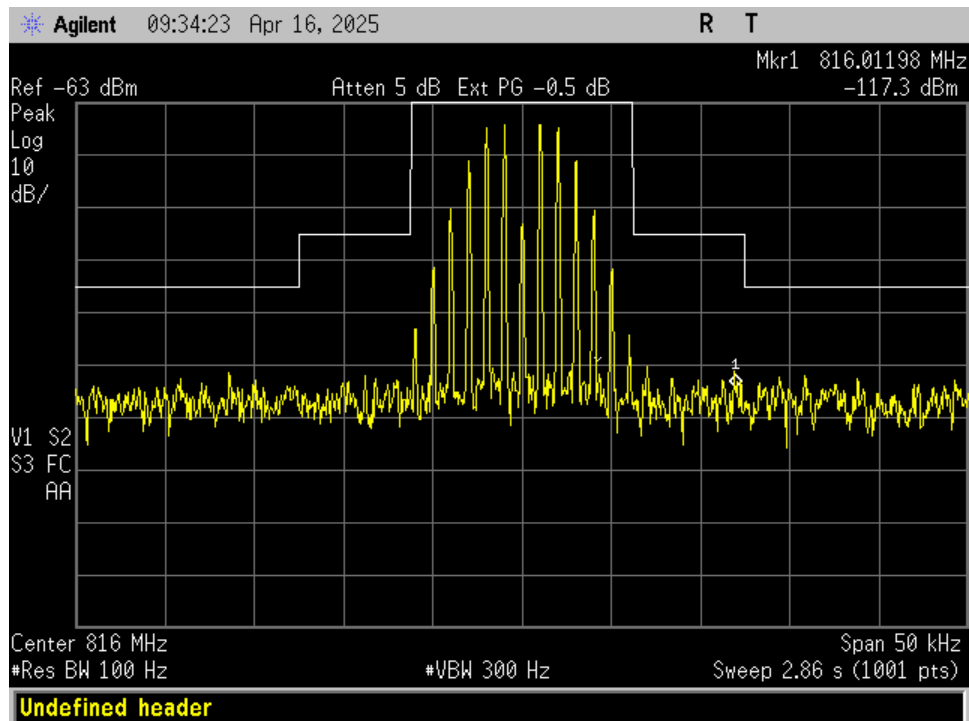


Figure 24. Input 816 MHz @ 12.5 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

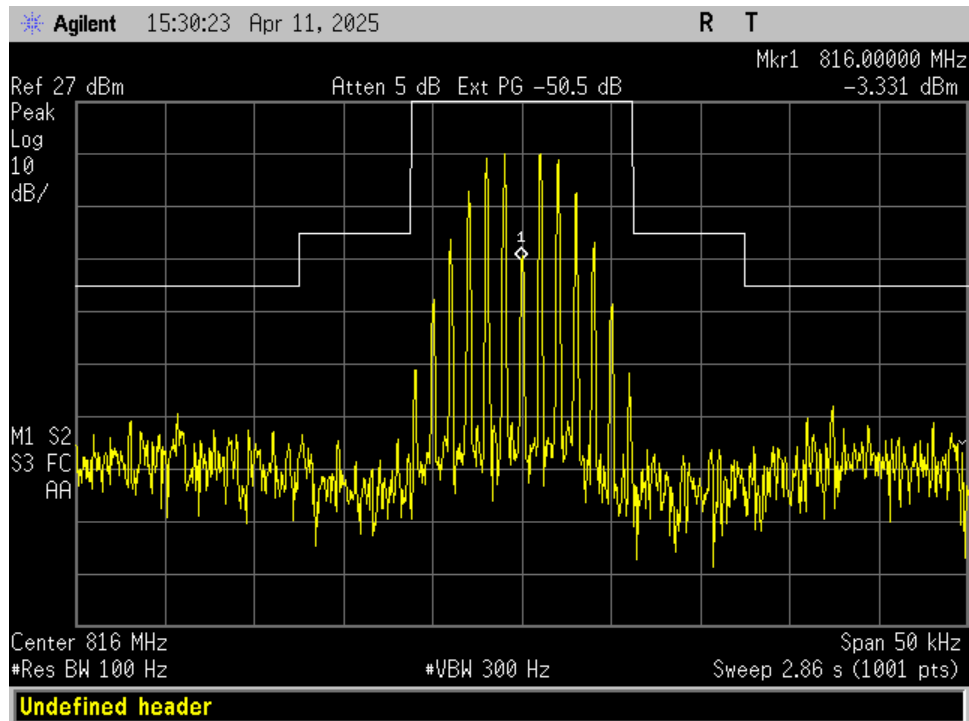


Figure 25. 816 MHz @ 12.5 kHz, Mask B

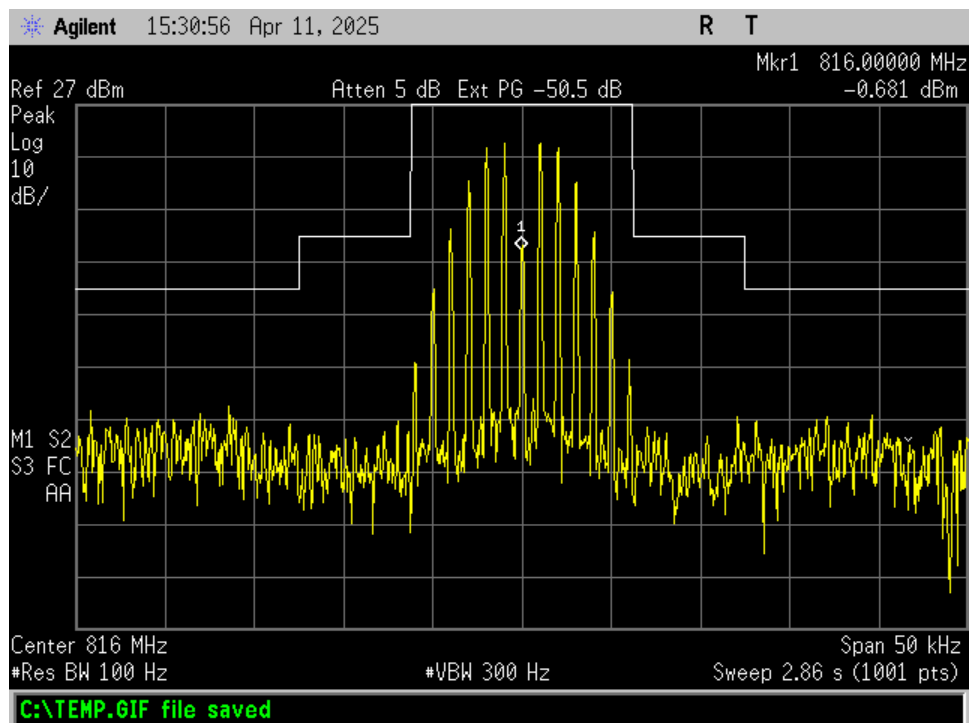


Figure 26. 816 MHz @ 12.5 kHz +3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

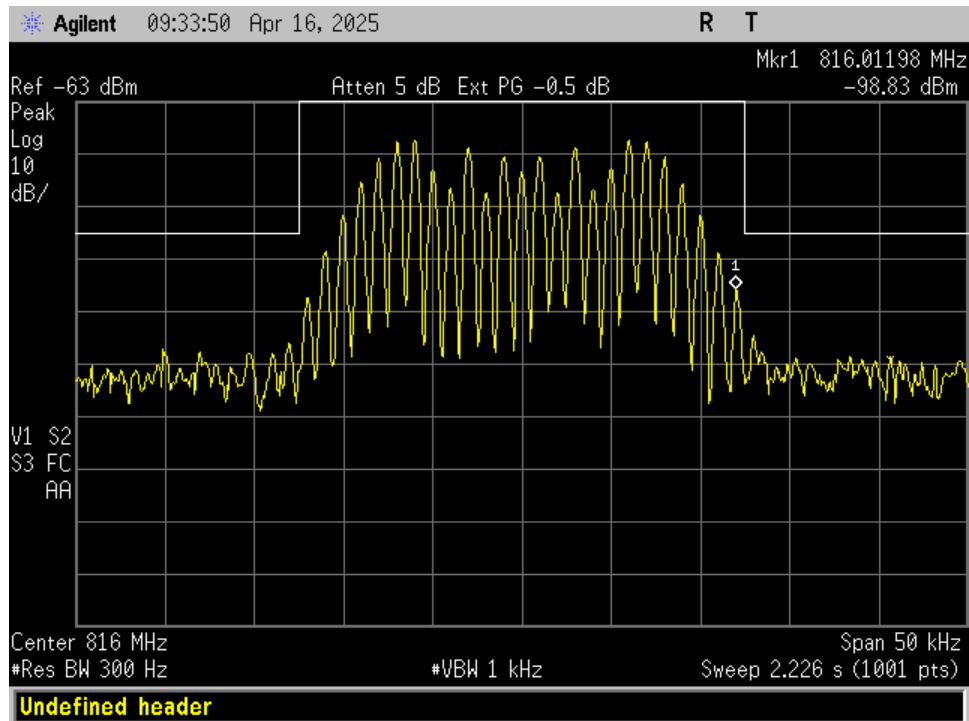


Figure 27. Input 816 MHz @ 25 kHz

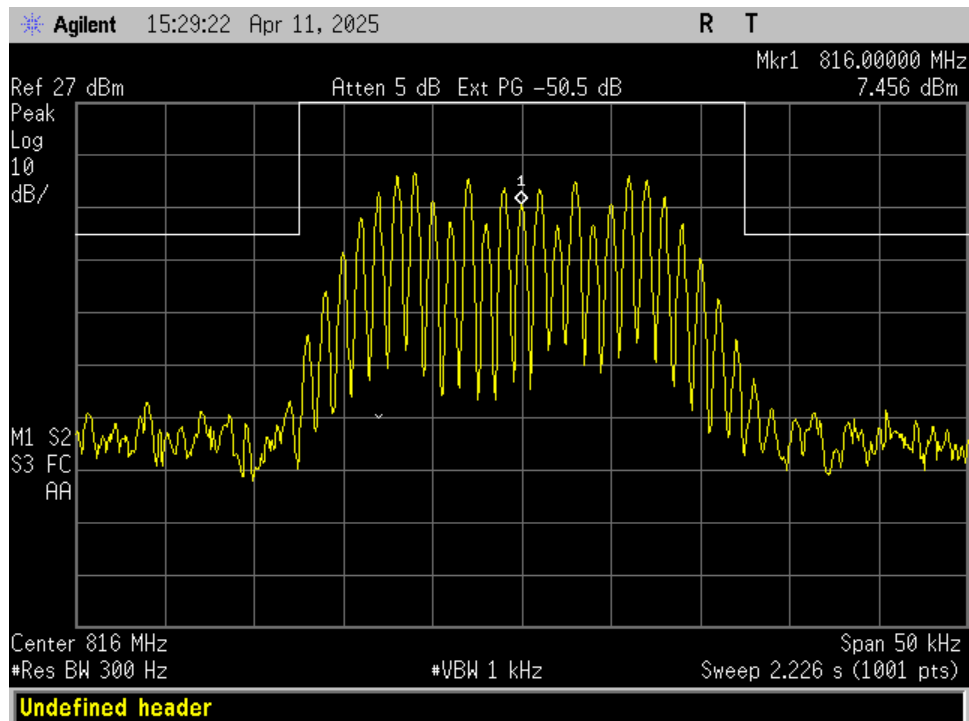


Figure 28. 816 MHz @ 25 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

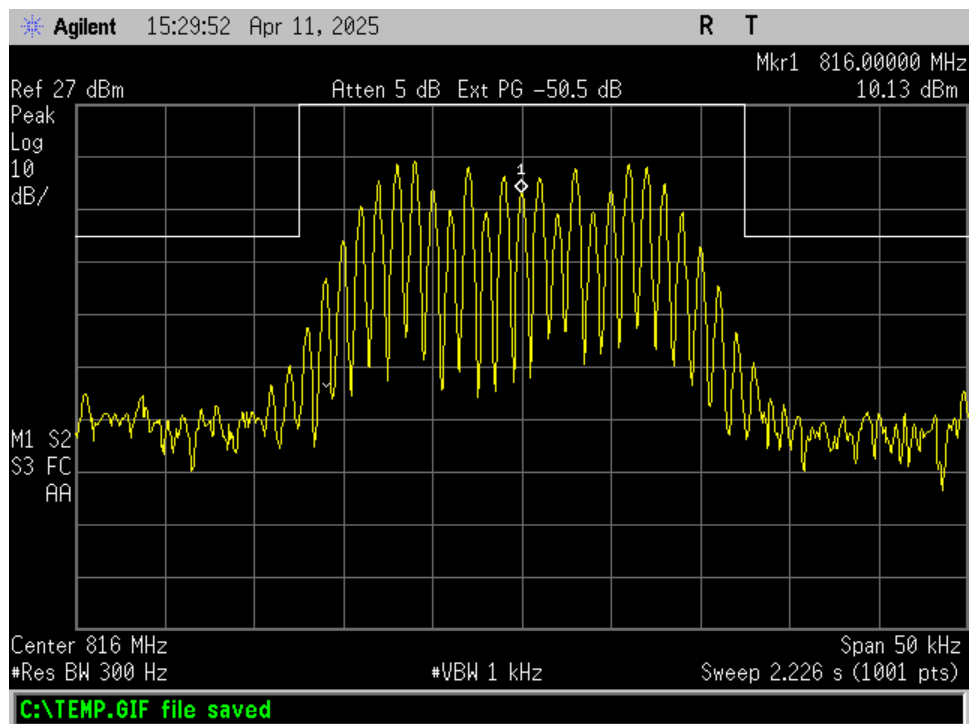


Figure 29. 816 MHz @ 25 kHz +3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
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Safe-Com Wireless
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2.11.2 Down Link Channels

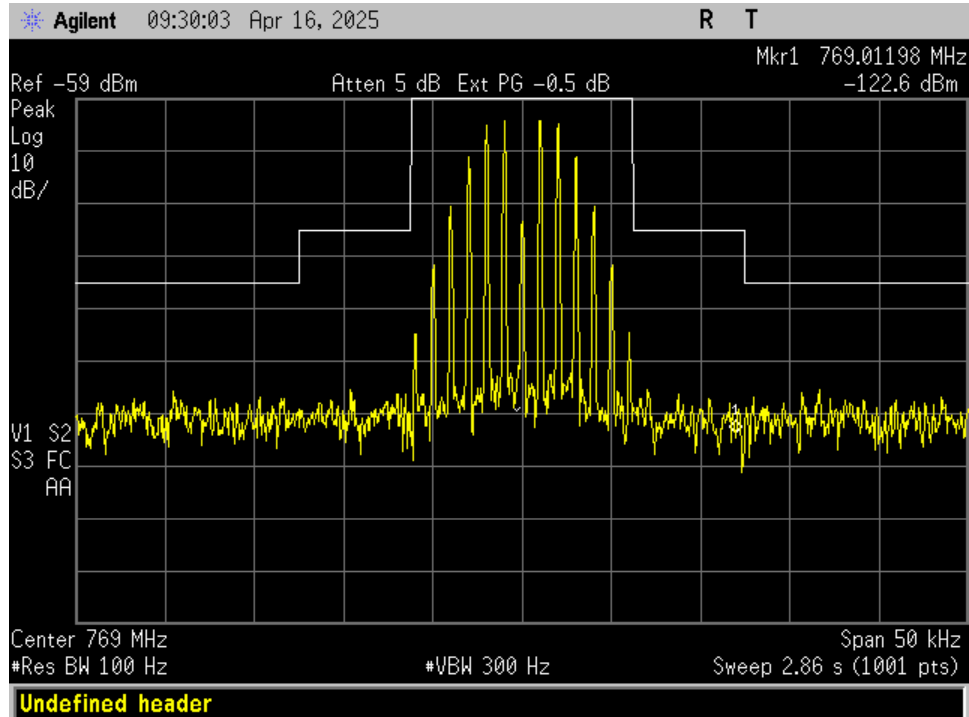


Figure 30. Input 769 MHz @ 12.5 kHz

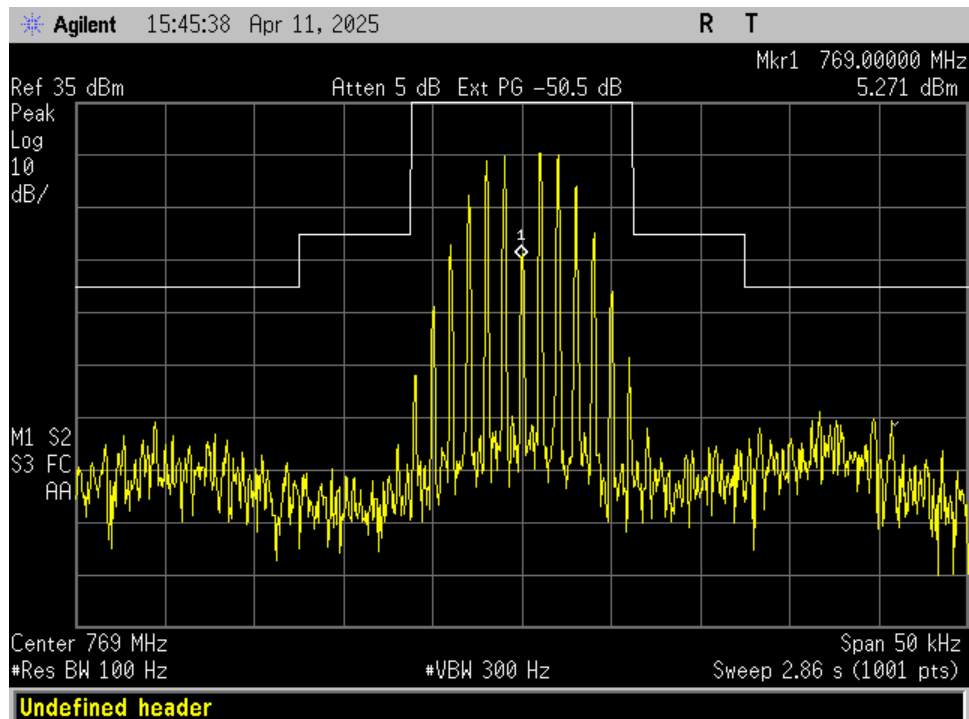


Figure 31. 769 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

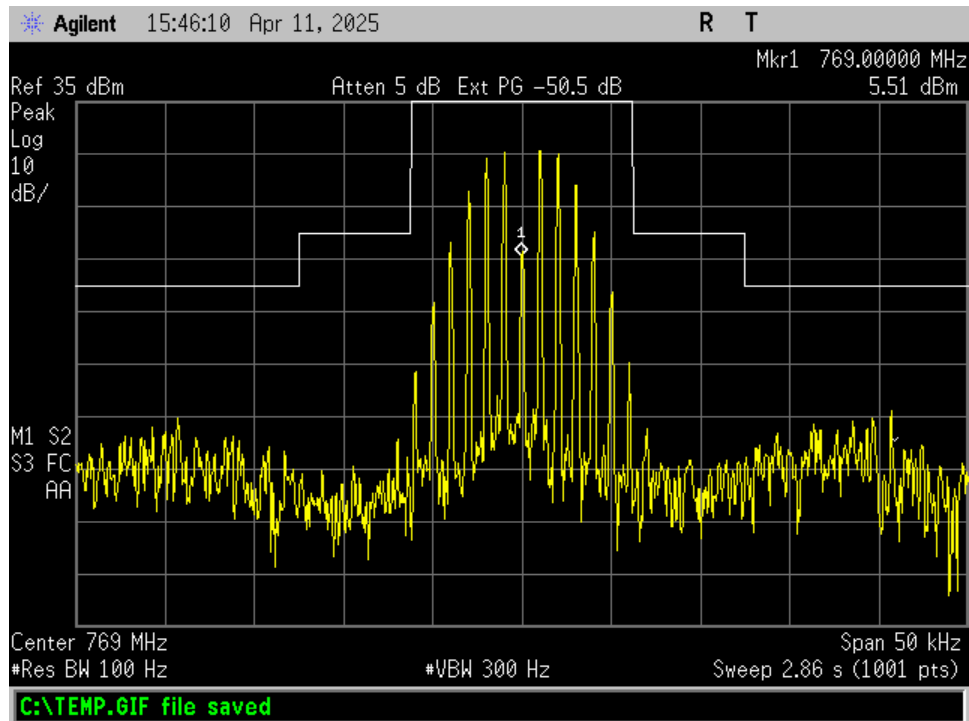


Figure 32. 769 MHz @ 12.5 kHz + 3.0 dB, Mask B

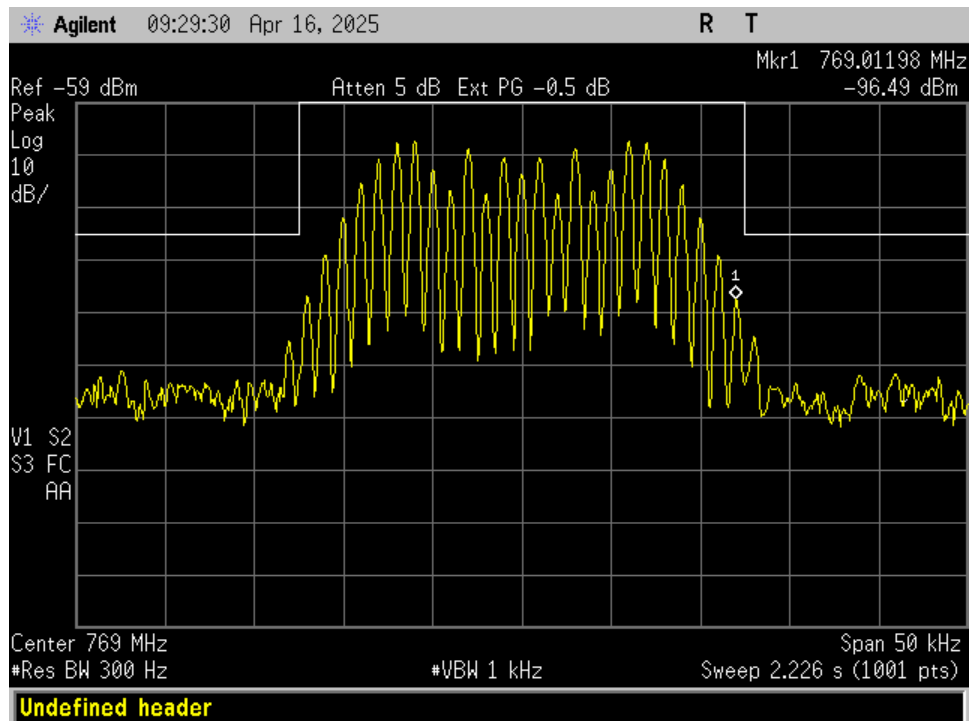


Figure 33. Input 769 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

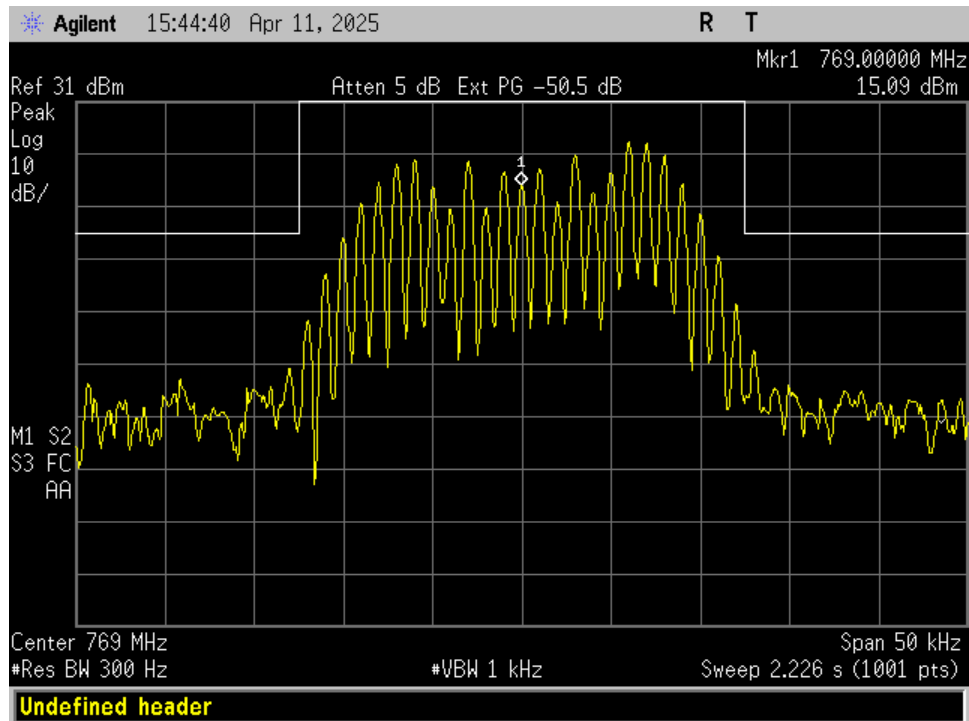


Figure 34. 769 MHz @ 25 kHz, Mask B

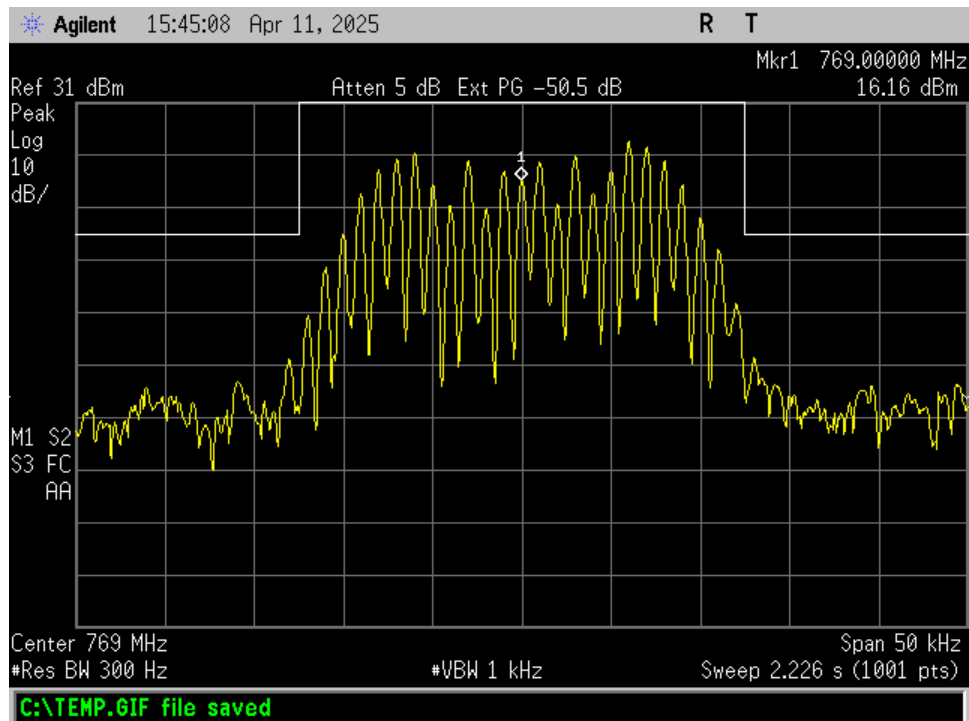


Figure 35. 769 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

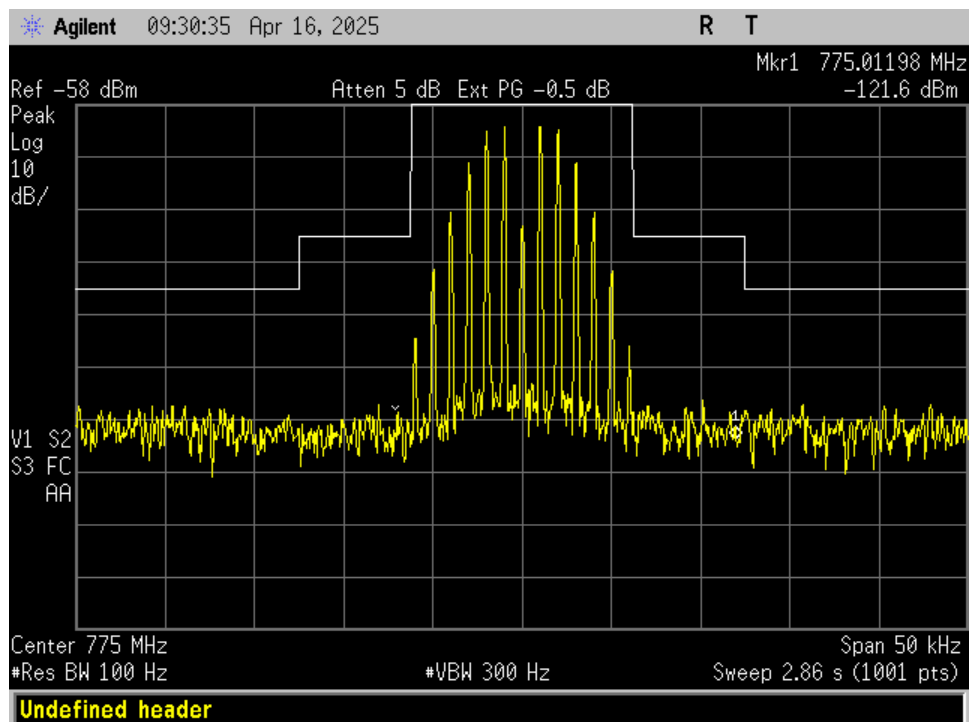


Figure 36. Input 775 MHz @ 12.5 kHz

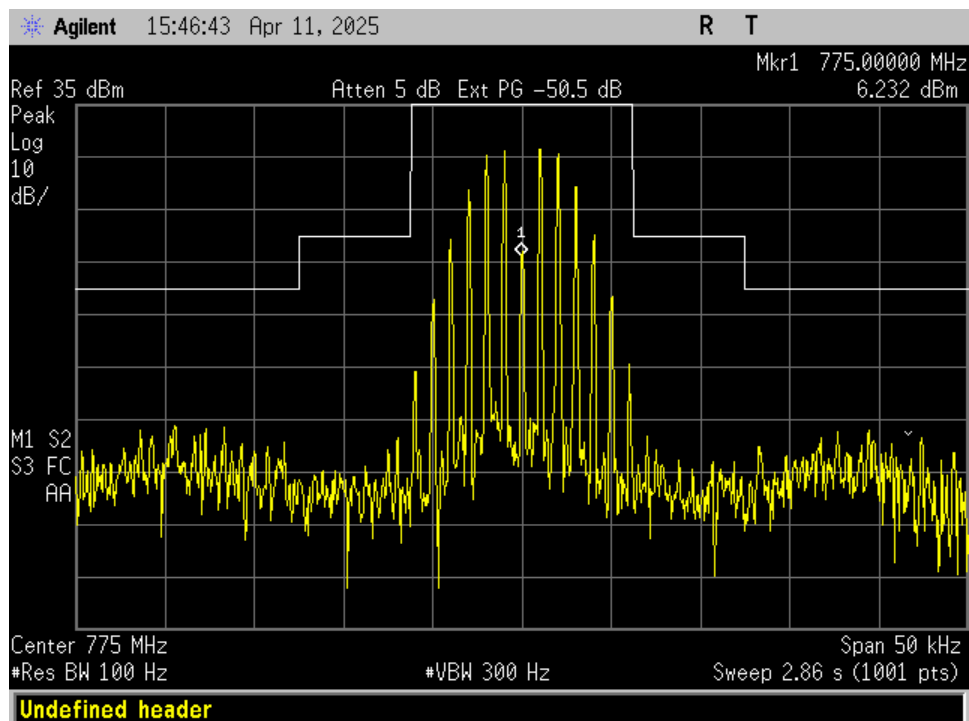


Figure 37. 775 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

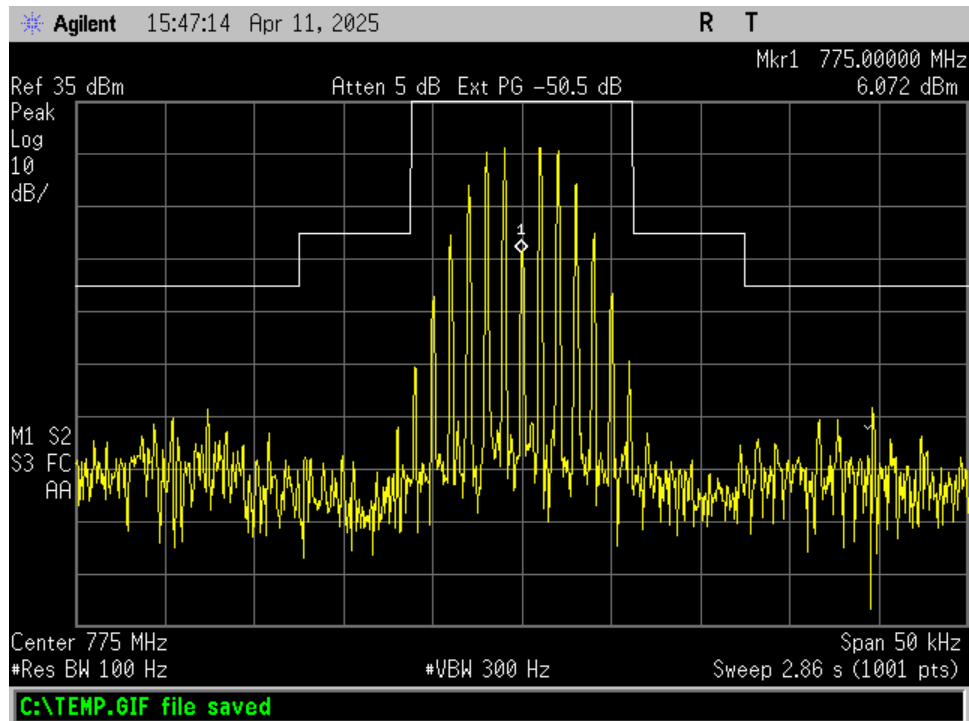


Figure 38. 775 MHz @ 12.5 kHz + 3.0 dB, Mask B

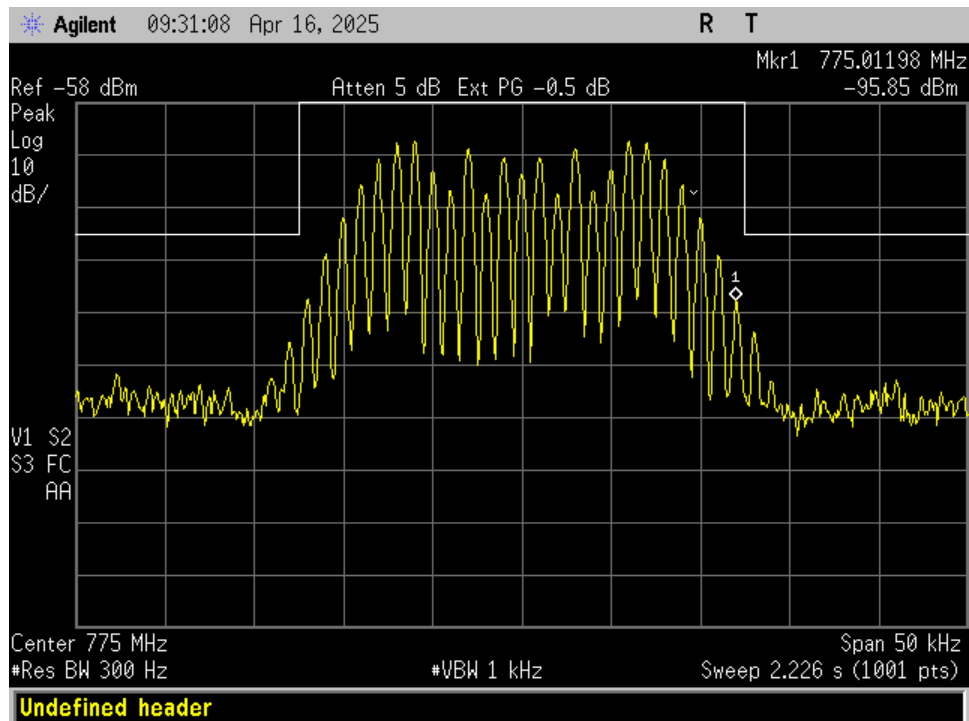


Figure 39. Input 775 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

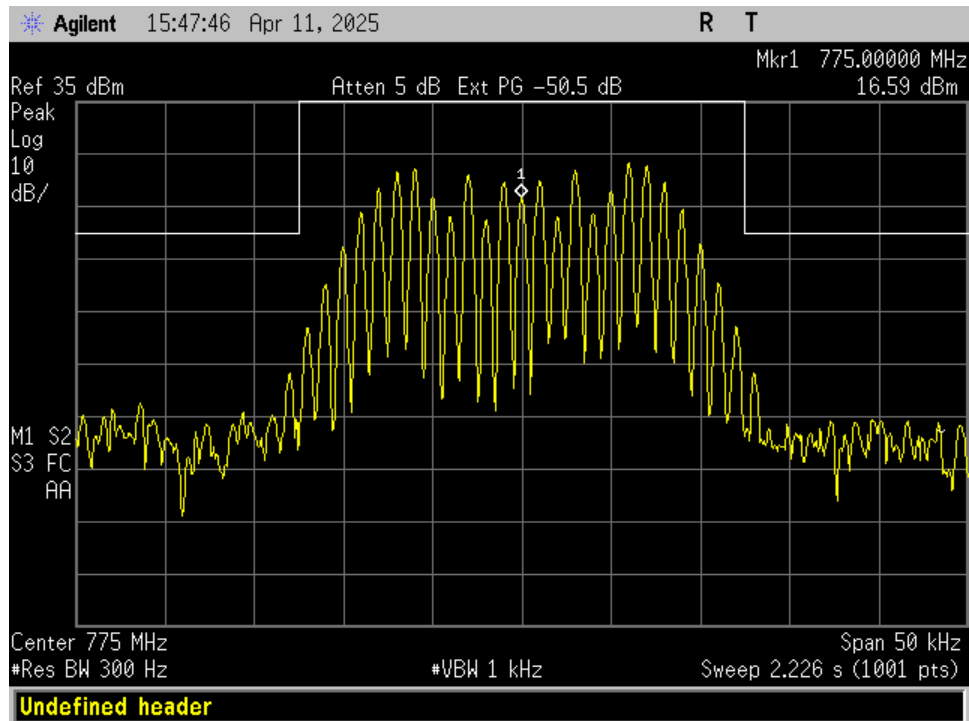


Figure 40. 775 MHz @ 25 kHz, Mask B

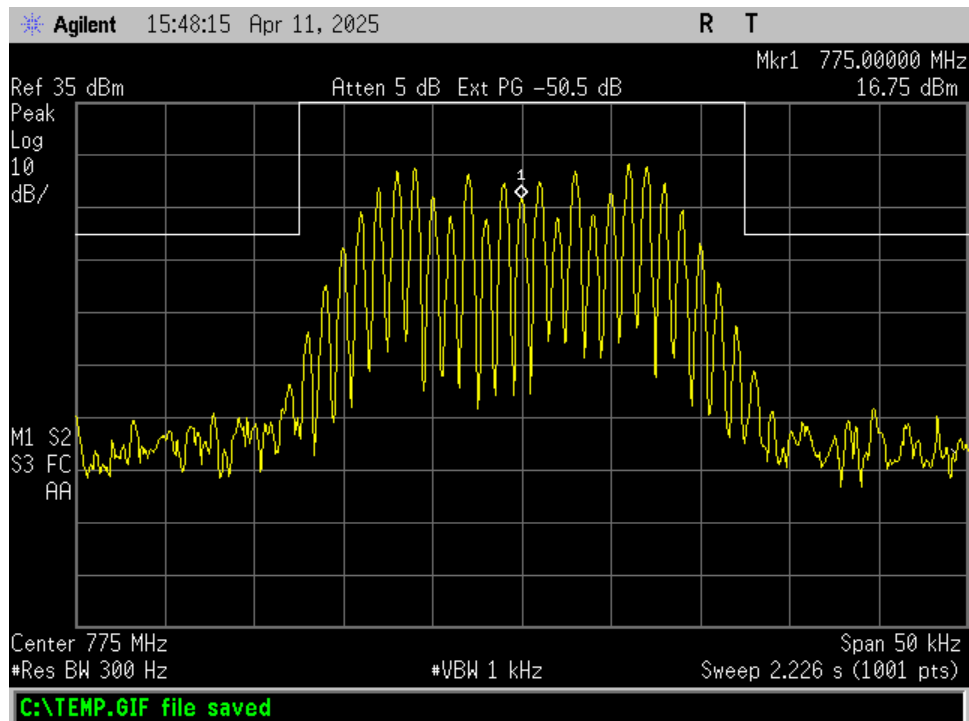


Figure 41. 775 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

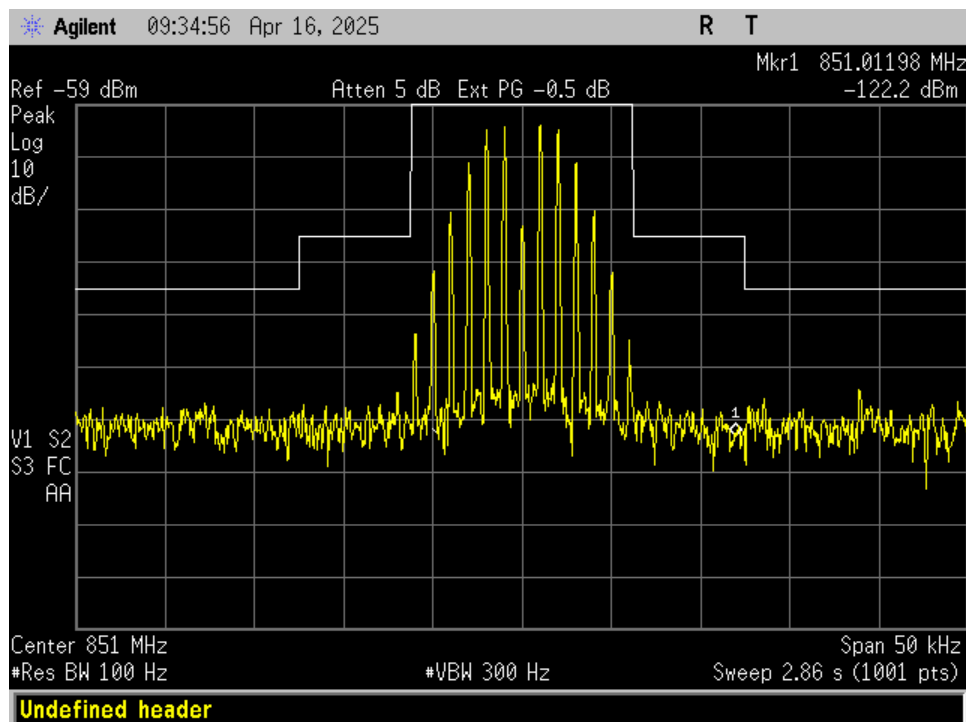


Figure 42. Input 851 MHz @ 12.5 kHz

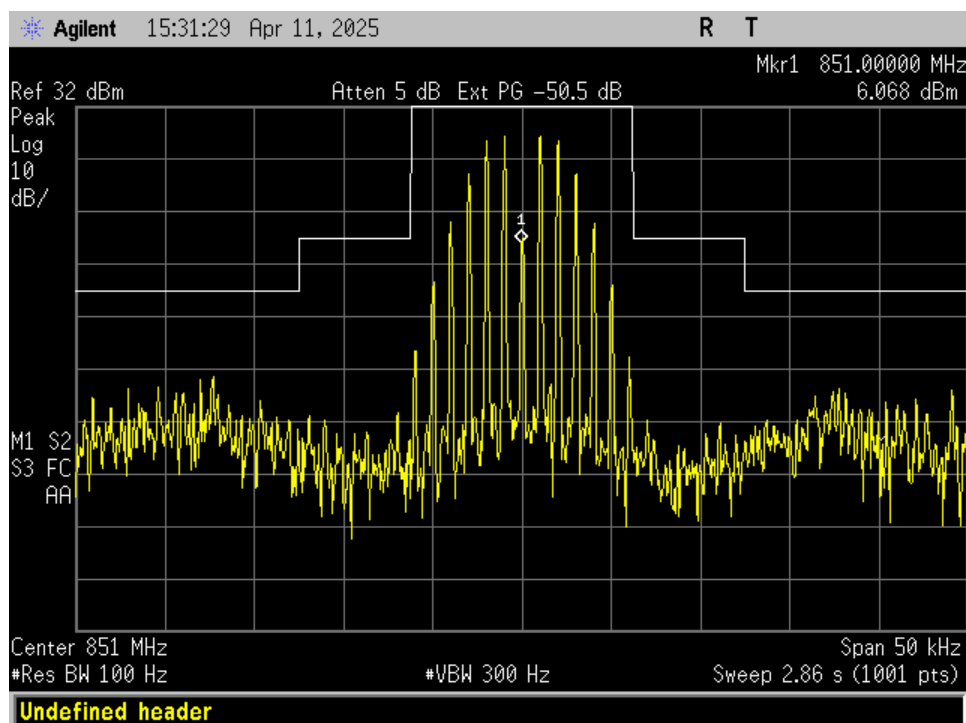


Figure 43. 851 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

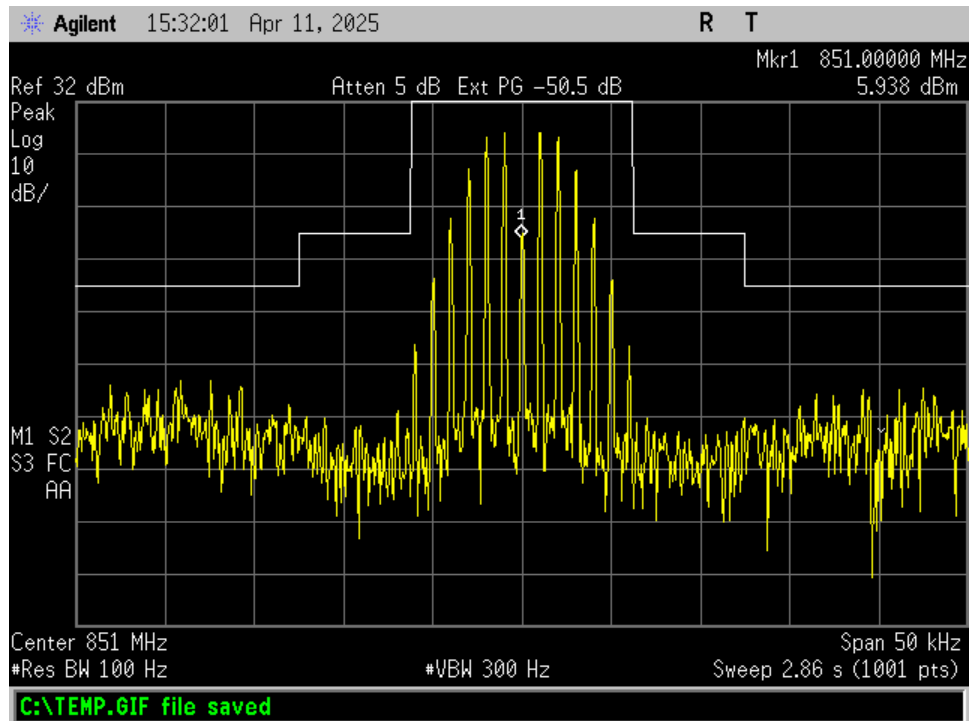


Figure 44. 851 MHz @ 12.5 kHz + 3.0 dB, Mask B

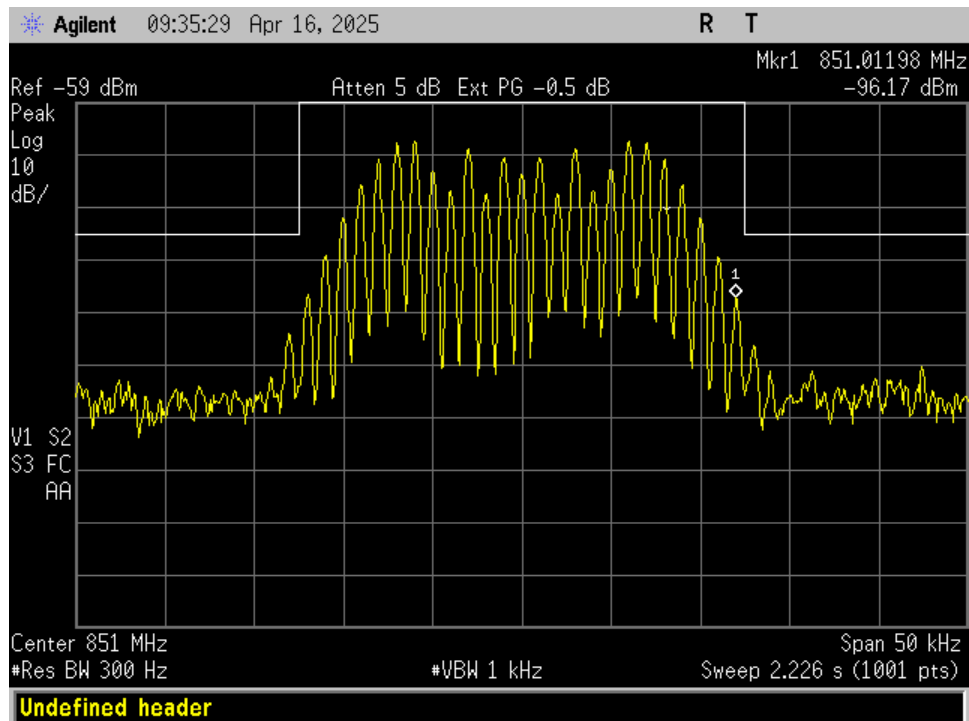


Figure 45. Input 851 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

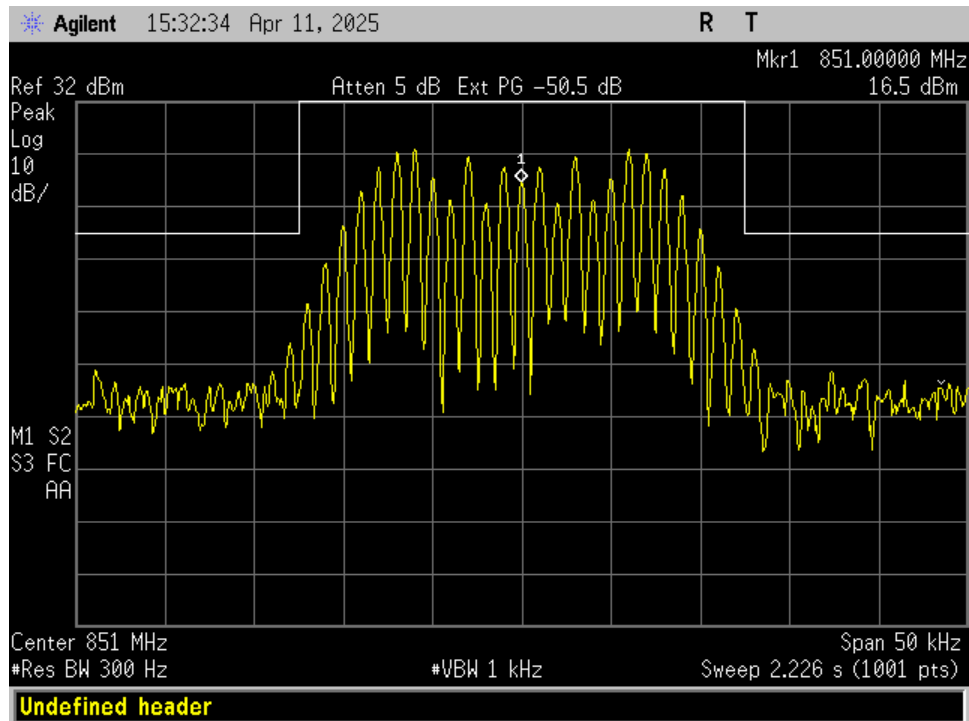


Figure 46. 851 MHz @ 25 kHz, Mask B

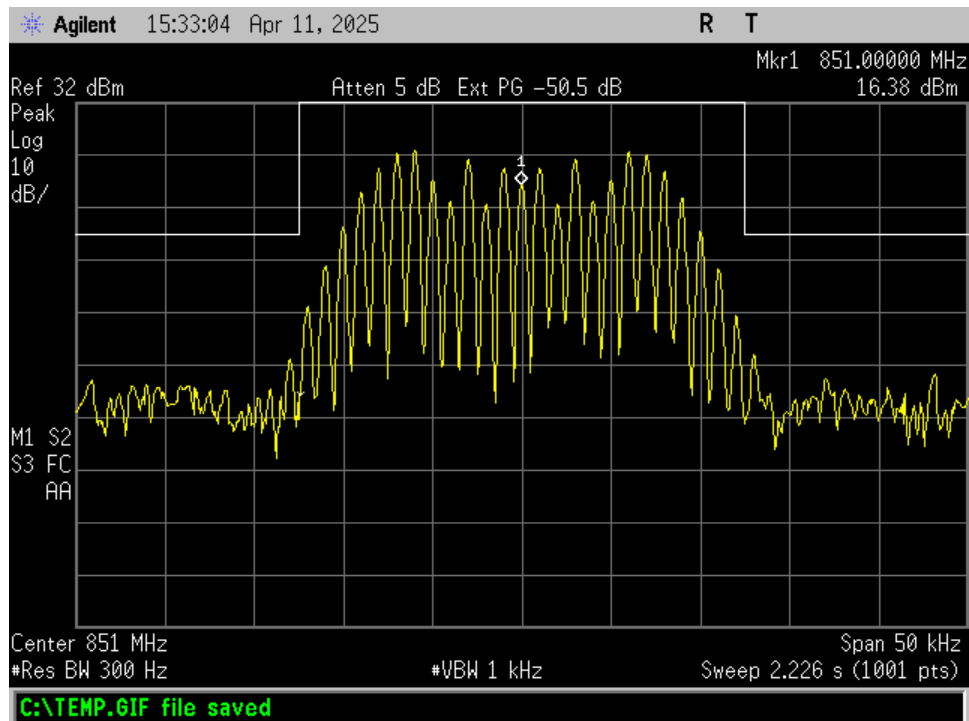


Figure 47. 851 MHz @ 25 kHz +3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

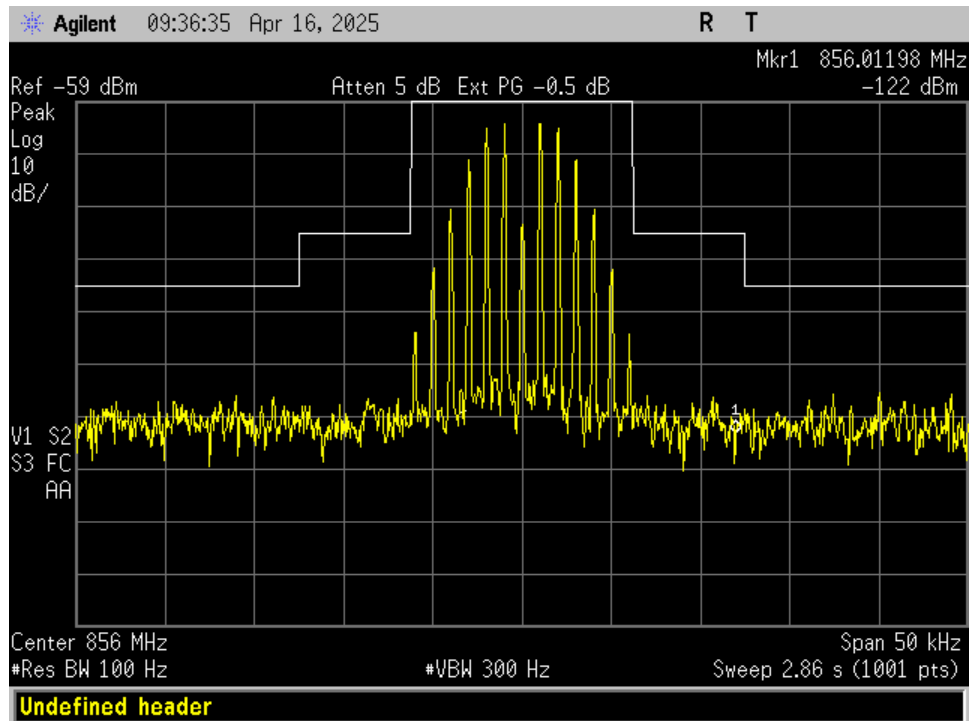


Figure 48. Input 856 MHz @ 12.5 kHz

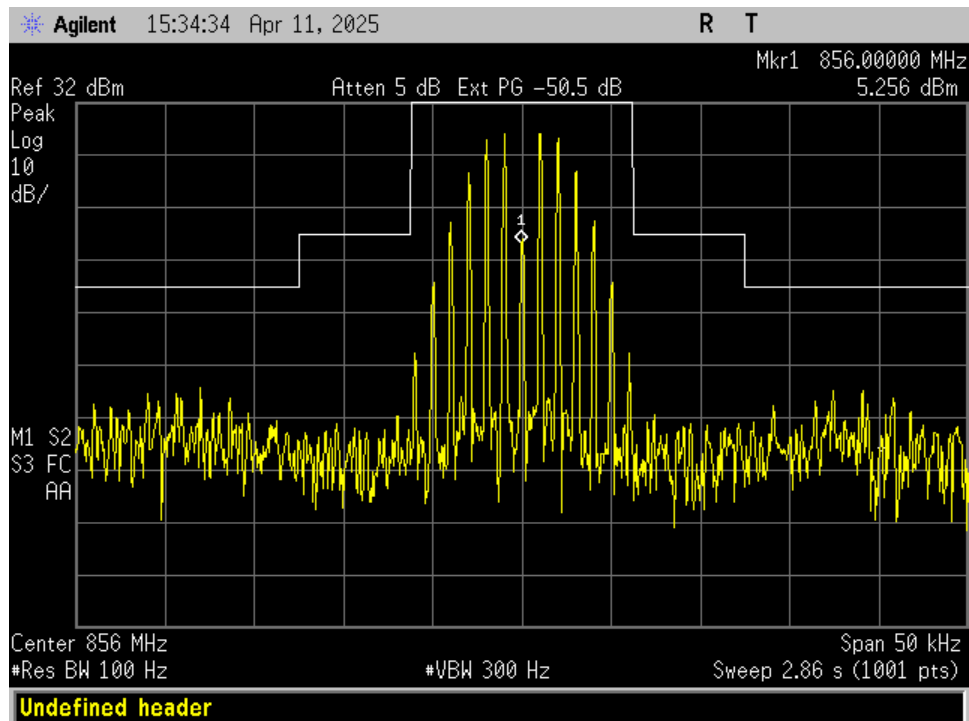


Figure 49. 856 MHz @ 12.5 kHz, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

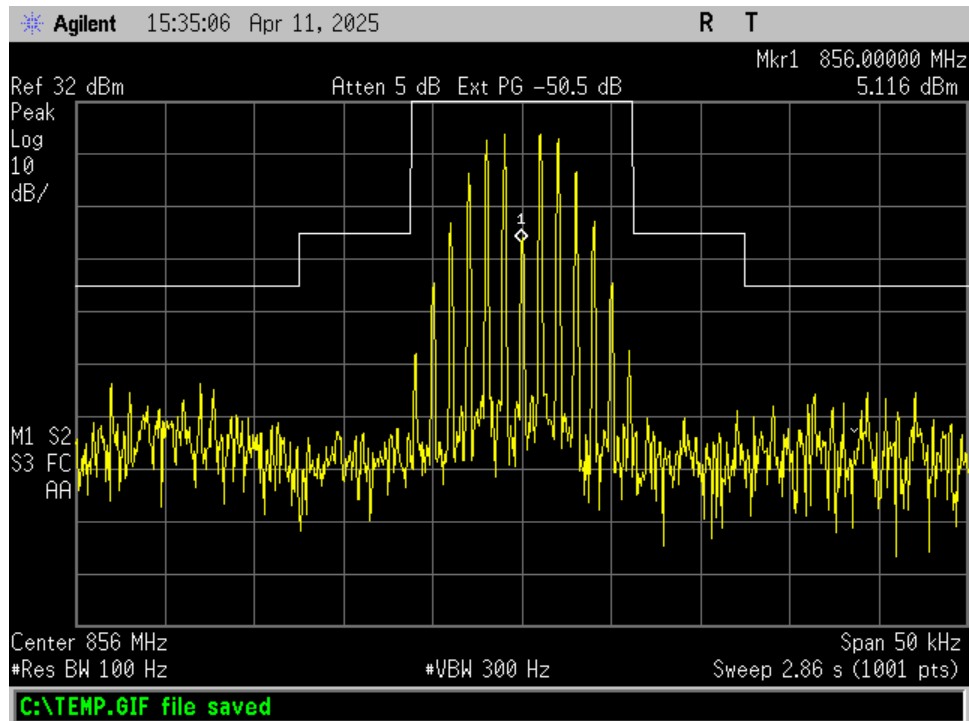


Figure 50. 856 MHz @ 12.5 kHz + 3.0 dB, Mask B

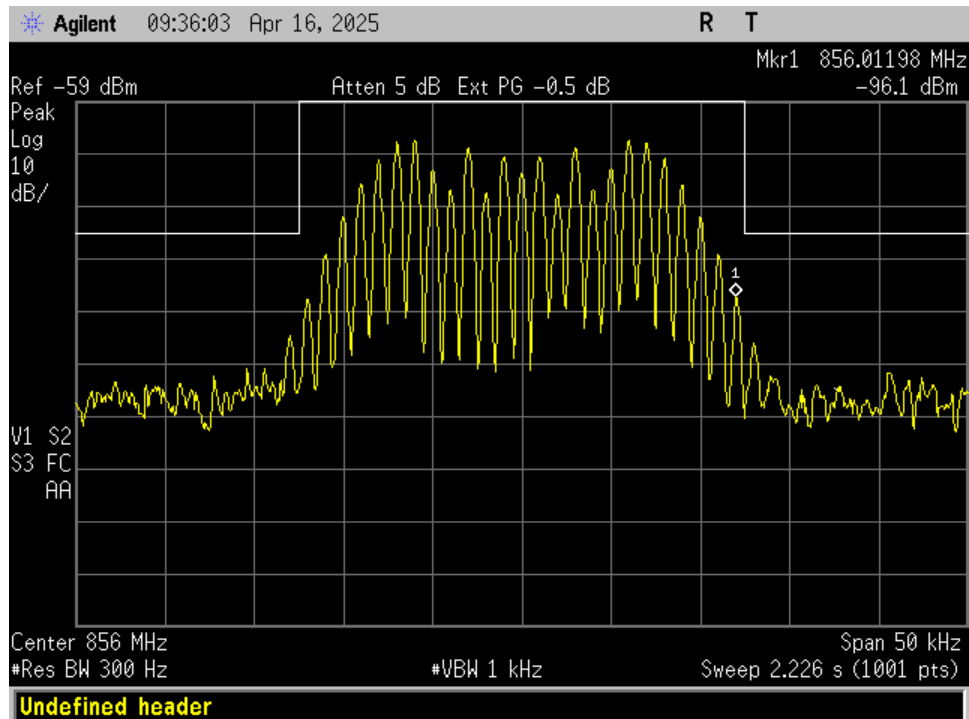


Figure 51. Input 856 MHz @ 25 kHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

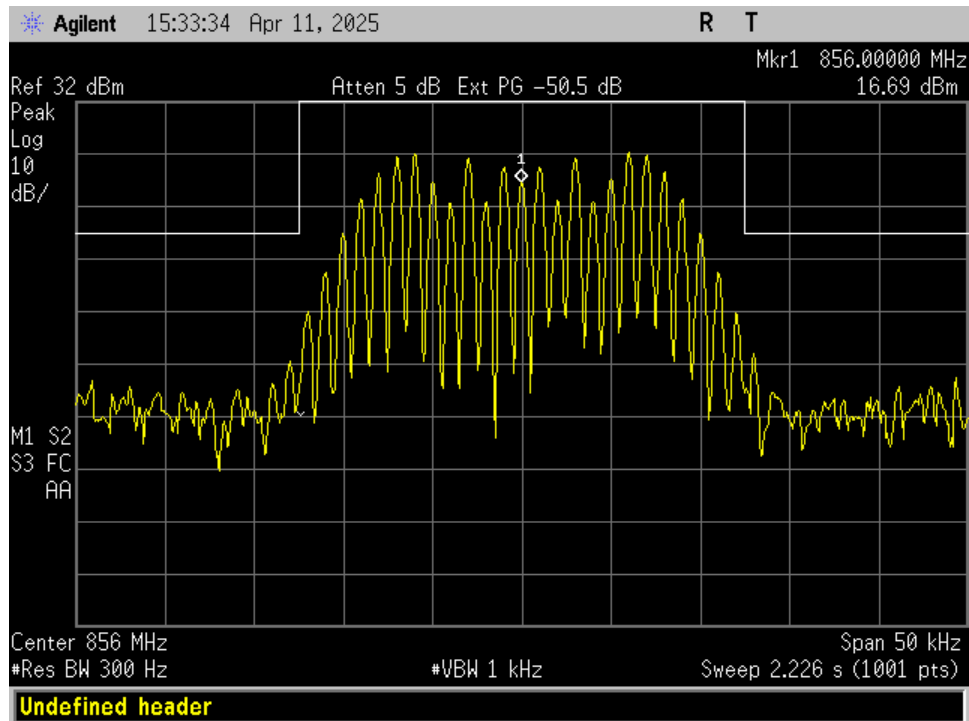


Figure 52. 856 MHz @ 25 kHz, Mask B

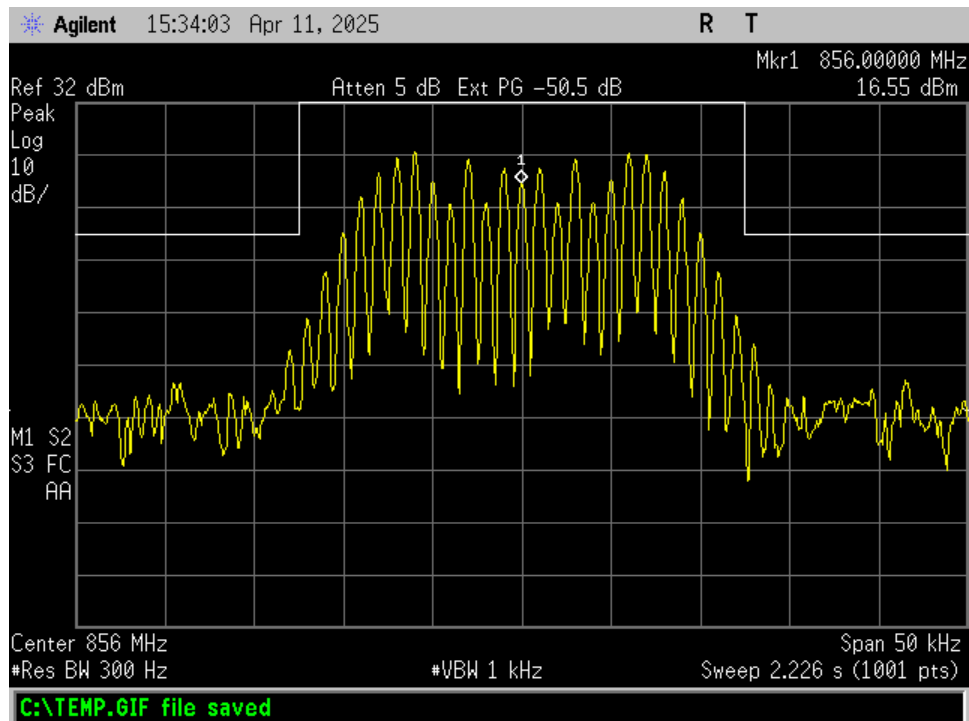


Figure 53. 856 MHz @ 25 kHz + 3.0 dB, Mask B

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
2AKSM-SAFE5
22303-SAFE5
25-0005
May 20, 2025
Safe-Com Wireless
SAFE-1050

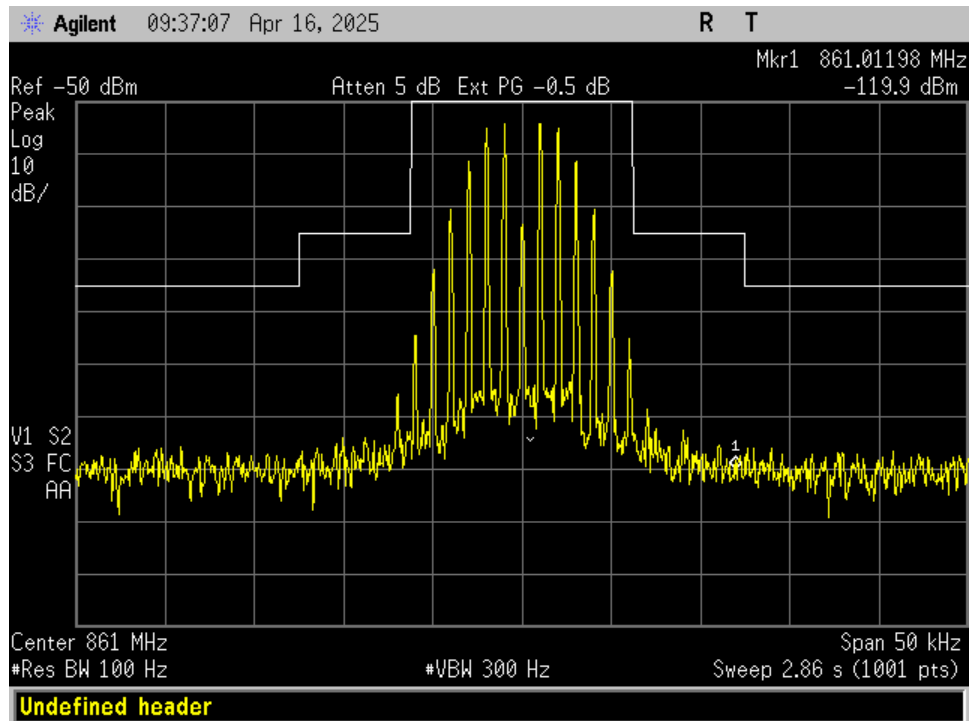


Figure 54. Input 861 MHz @ 12.5 kHz

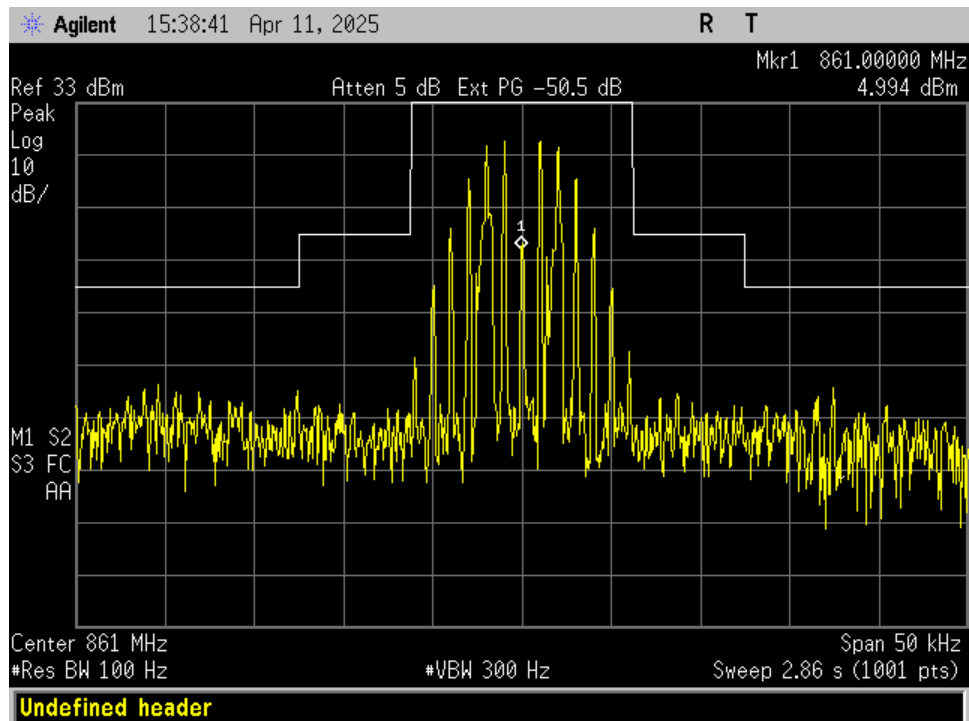


Figure 55. 861 MHz @ 12.5 kHz, Mask B

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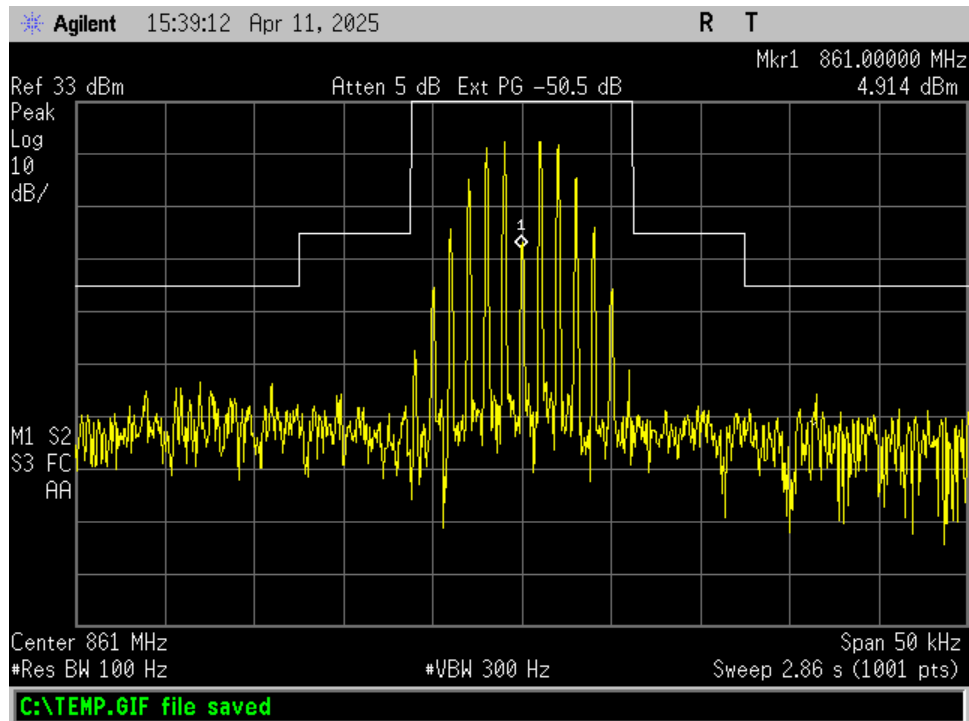


Figure 56. 861 MHz @ 12.5 kHz + 3.0 dB, Mask B

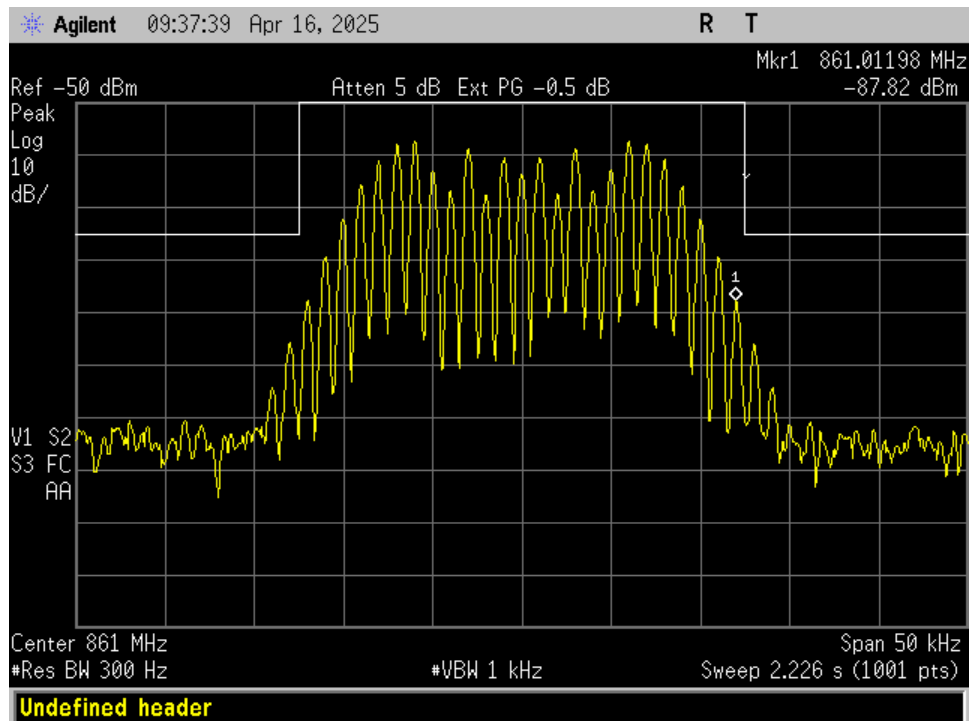


Figure 57. Input 861 MHz @ 25 kHz

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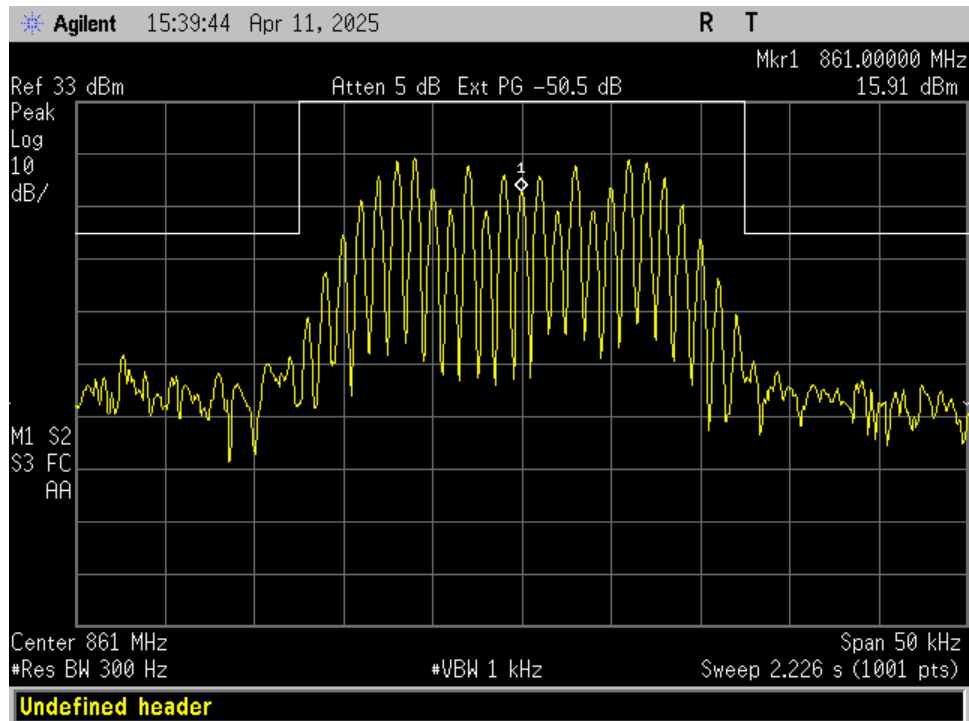


Figure 58. 861 MHz @ 25 kHz, Mask B

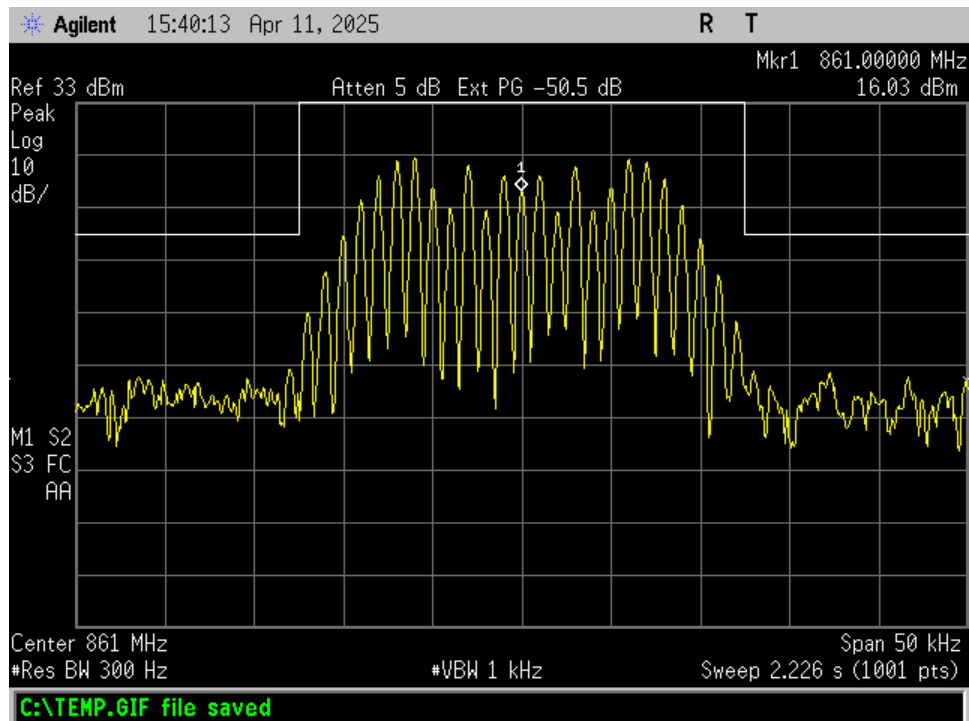


Figure 59. 861 MHz @ 25 kHz + 3.0 dB, Mask B

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2.12 Intermodulation (FCC Section 20.219(d)(3) and RSS-131, 10.5)

The EUT was tested in a per KDB 935210 DO5 V01r04. The EUT was configured as depicted in Figure 1. The EUT was set to its dual tone configuration for the duration of this test. Spectrum analyzer was used to measure the emissions and verify that the levels met the requirements for Conducted Emissions.

The spectrum analyzer was set up with the following setting. The RBW was 300Hz and a VBW 3 times the RBW.

Limit = -30 dBm in 10 kHz measurement bandwidth. Converting to 300 Hz the limit is -14 dBm per 300 Hz. The conversion factor is $10 * \log_{10} \frac{\text{Bandwidth Limit}}{\text{Bandwidth Measured}}$

$$-30 + 10 * \log_{10} \frac{10 \text{ kHz}}{300 \text{ Hz}} = -14 \text{ dBm per 300 Hz}$$

This is represented in by the green line in the figures below.



Figure 60. Intermodulation Test Configuration

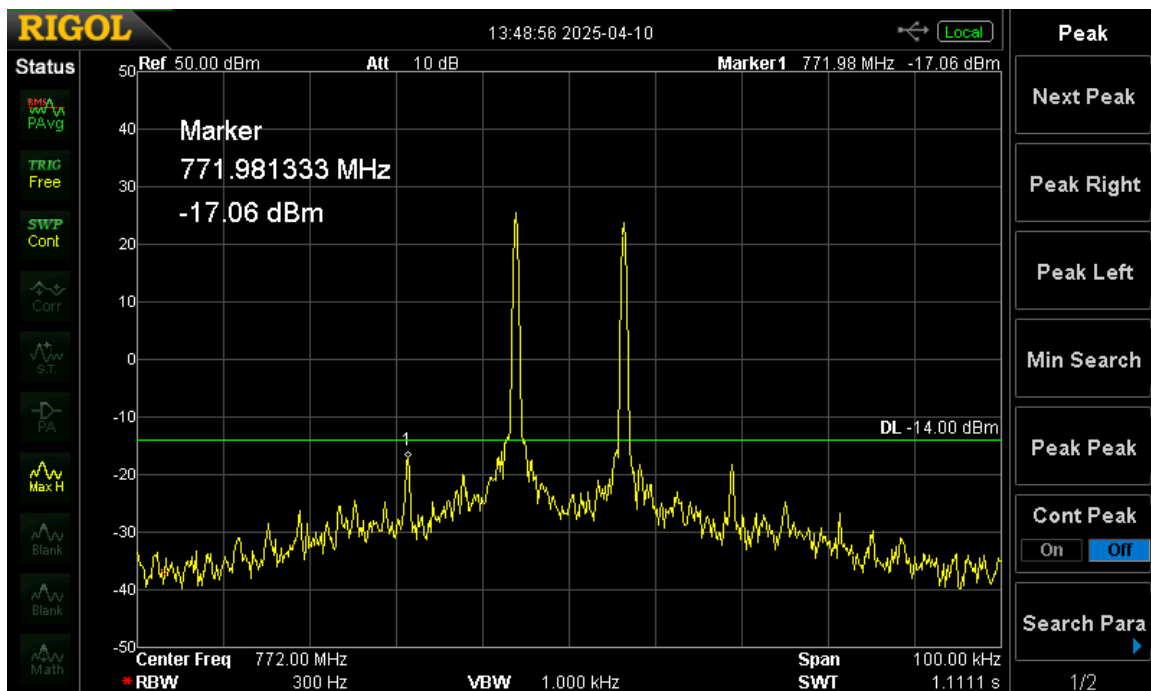


Figure 61. 769 – 775 MHz Intermodulation 12.5 kHz

U.S. Tech Test Report:

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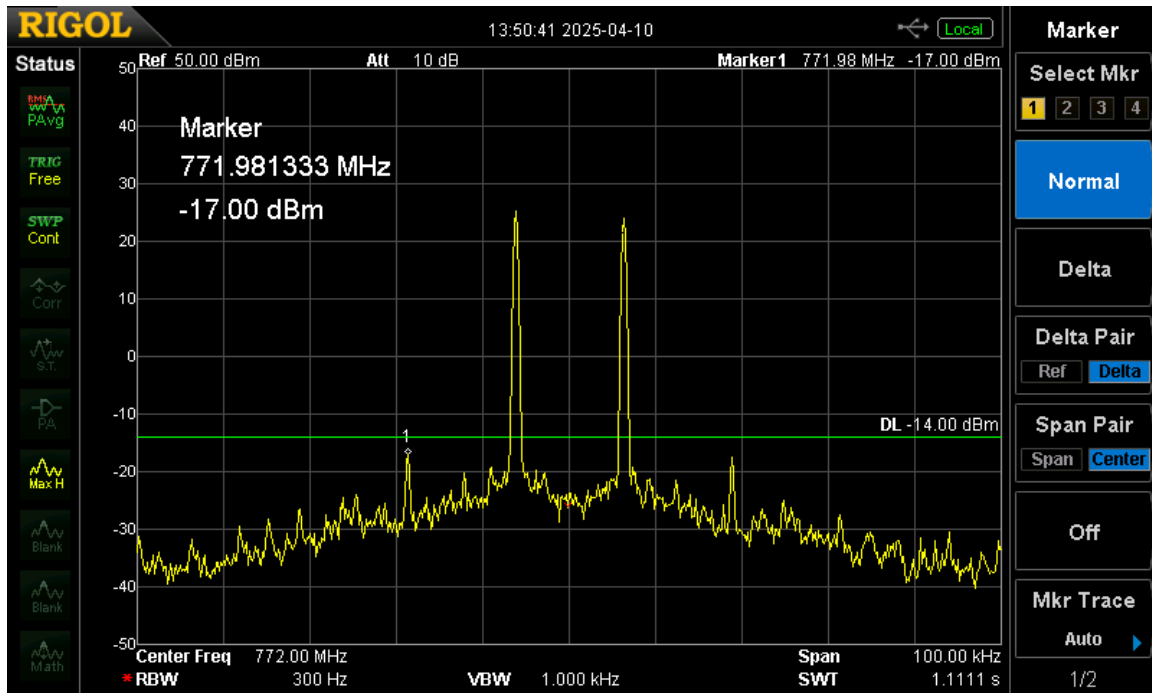


Figure 62. 769 – 775 MHz Intermodulation 12.5 kHz +3dB

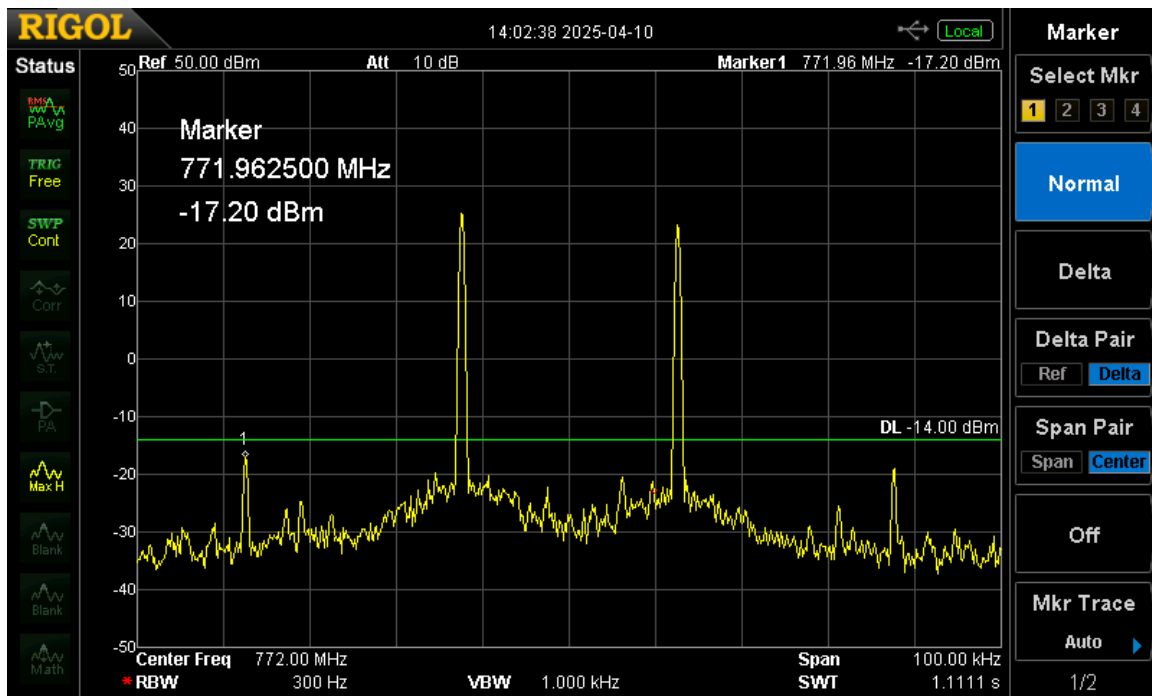


Figure 63. 769 - 775 MHz Intermodulation 25 kHz

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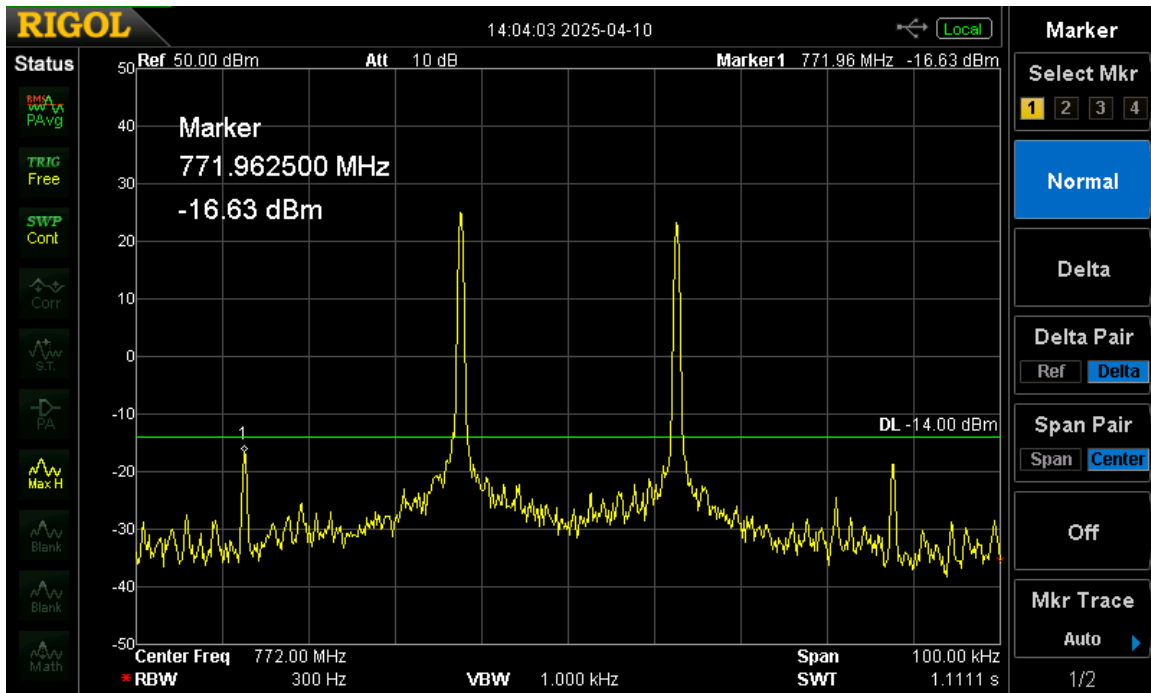


Figure 64. 769 – 775 MHz Intermodulation 25 kHz +3dB

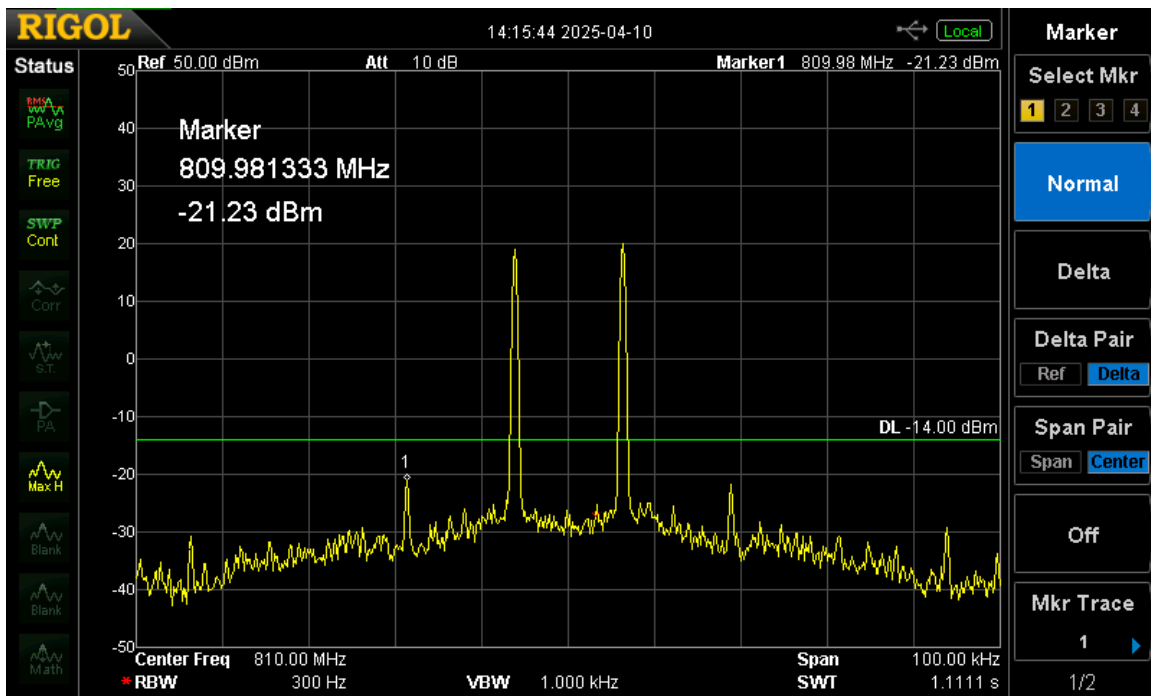


Figure 65. 799 – 816 MHz Intermodulation 12.5 kHz

U.S. Tech Test Report:
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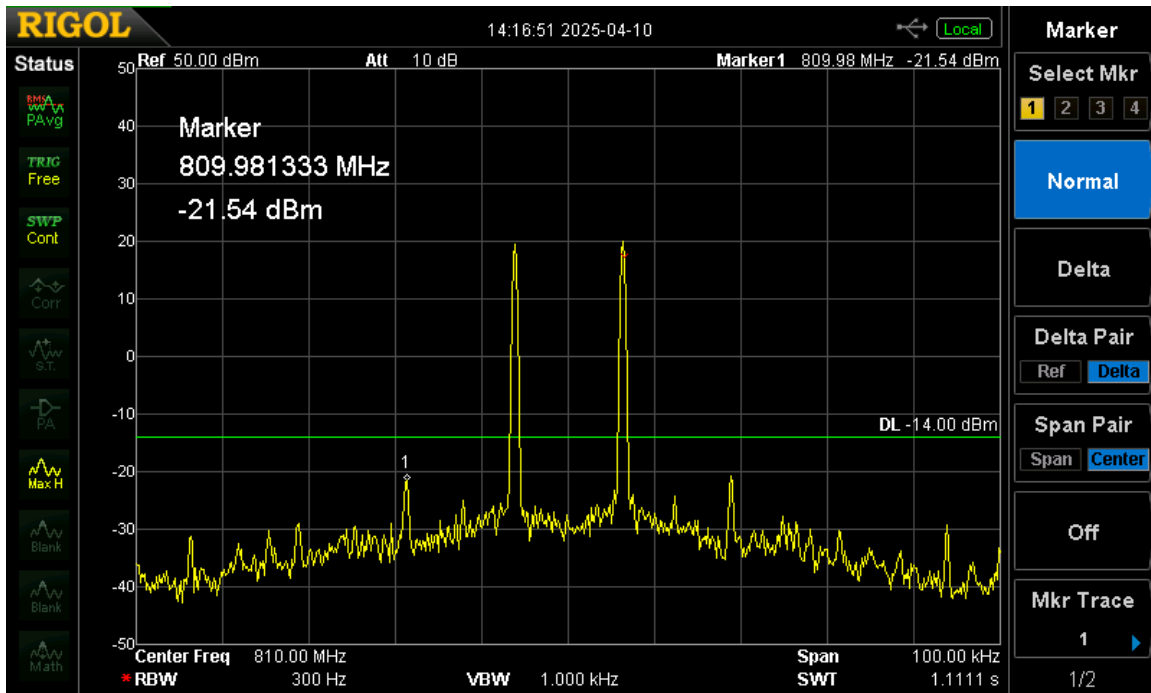


Figure 66. 799 – 816 MHz Intermodulation 12.5 kHz +3dB

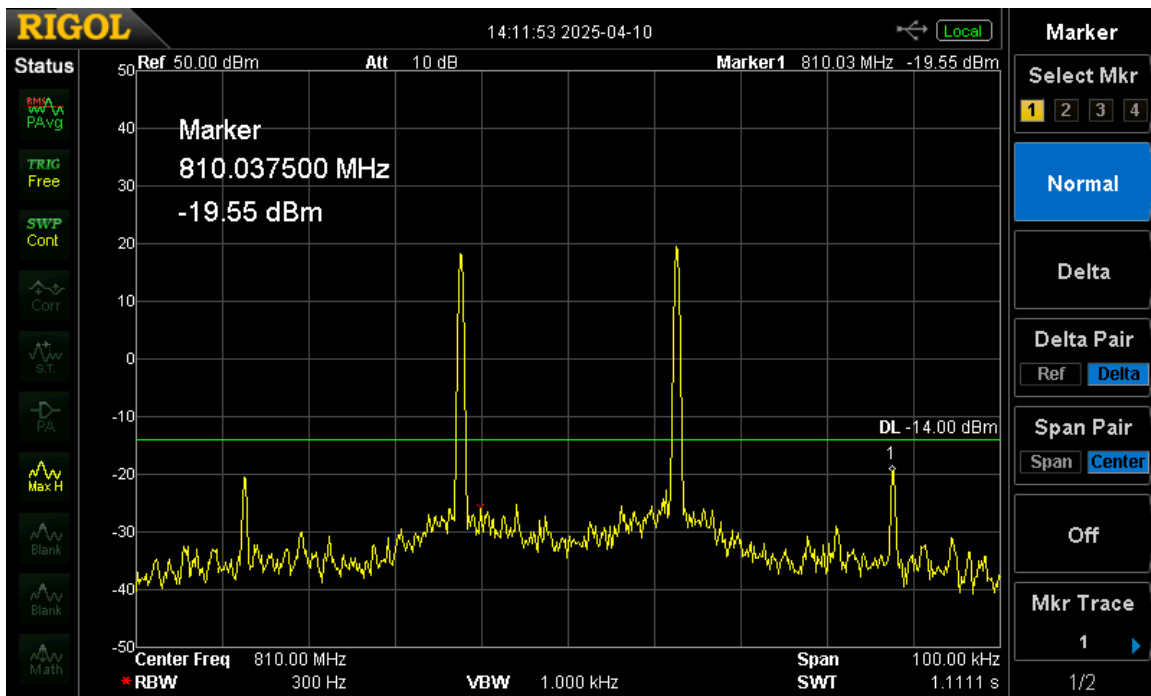


Figure 67. 799 – 816 MHz Intermodulation 25 kHz

U.S. Tech Test Report:
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Customer:
Model:

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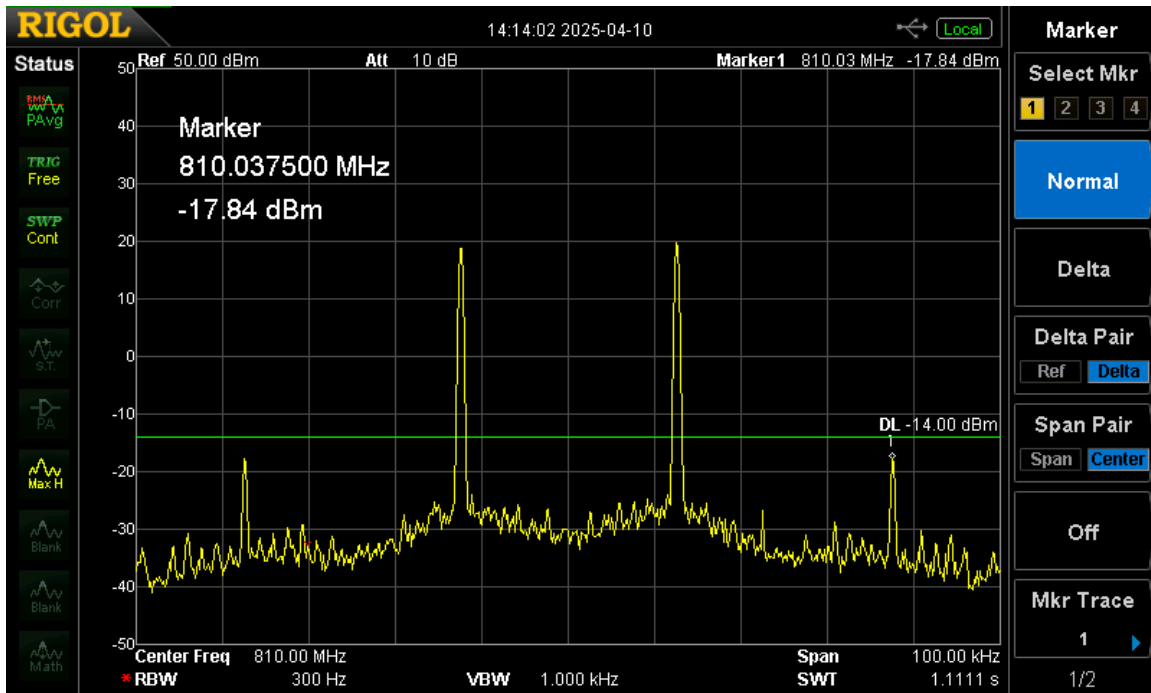


Figure 68. 799 – 816 MHz Intermodulation 25 kHz +3dB

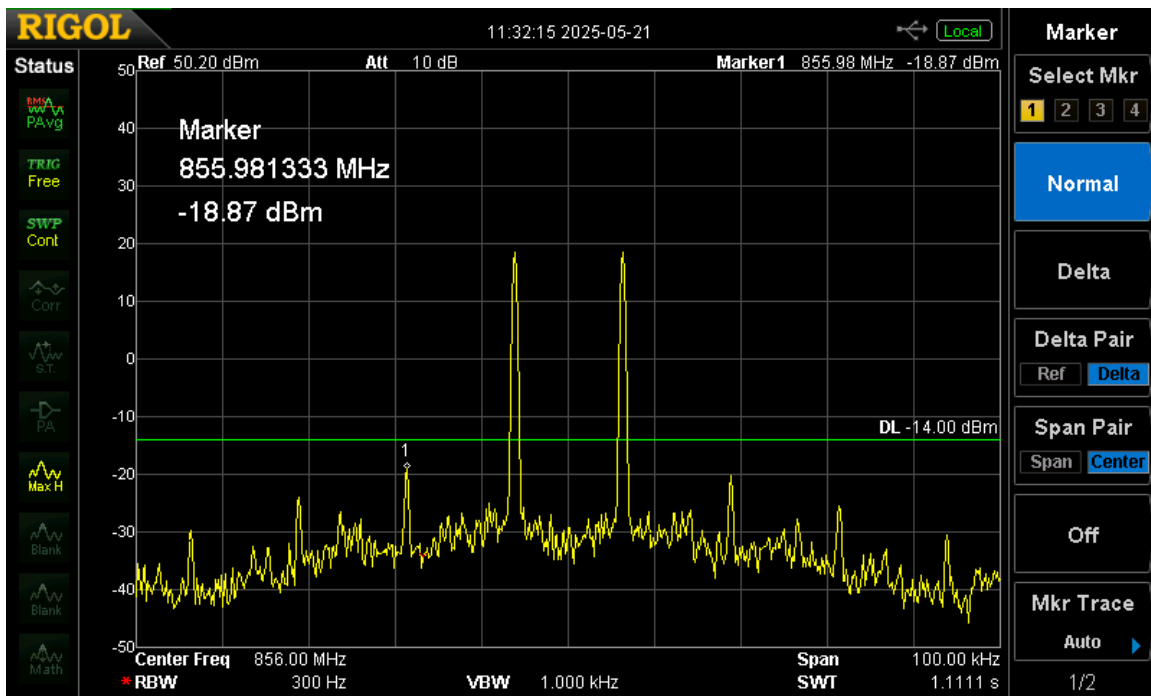


Figure 69. 851 – 861 MHz Intermodulation 12.5 kHz

U.S. Tech Test Report:
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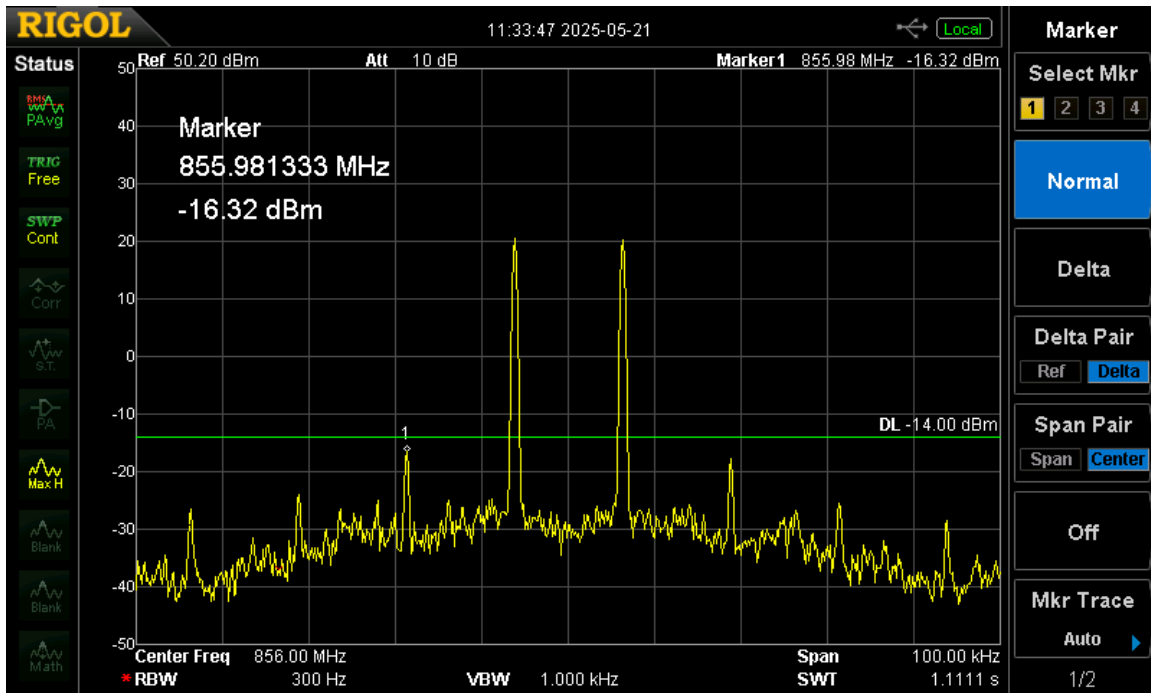


Figure 70. 851 – 861 MHz intermodulation 12.5 kHz +3dB

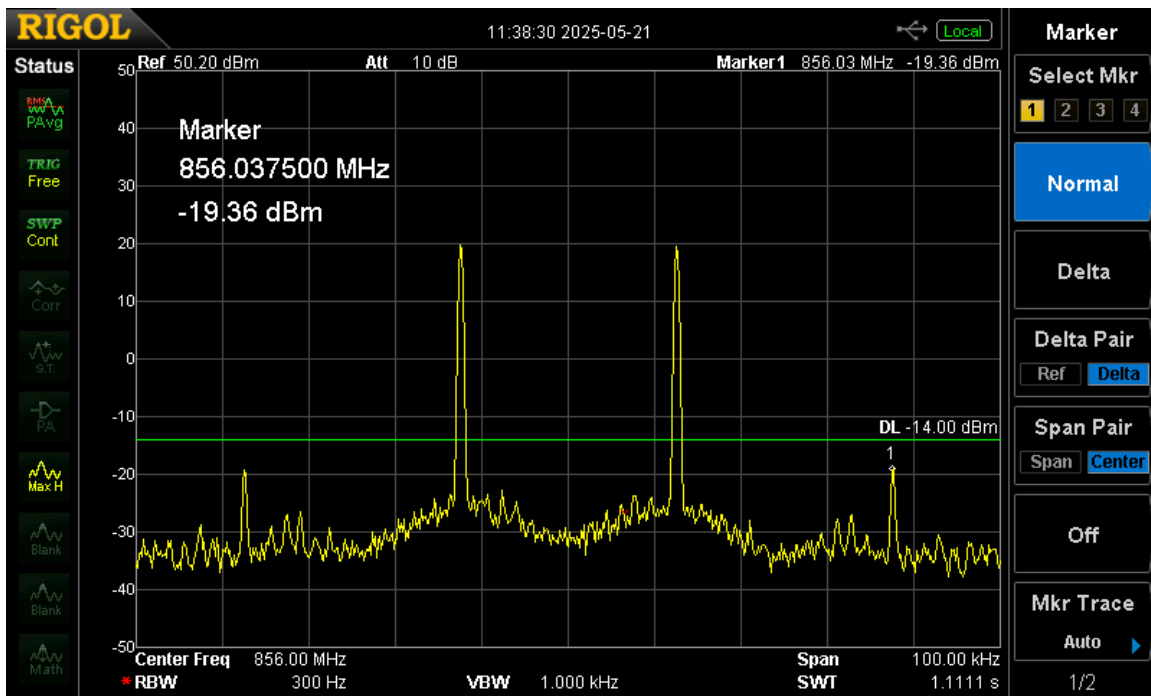


Figure 71 851 – 861 MHz Intermodulation 25 kHz

U.S. Tech Test Report:
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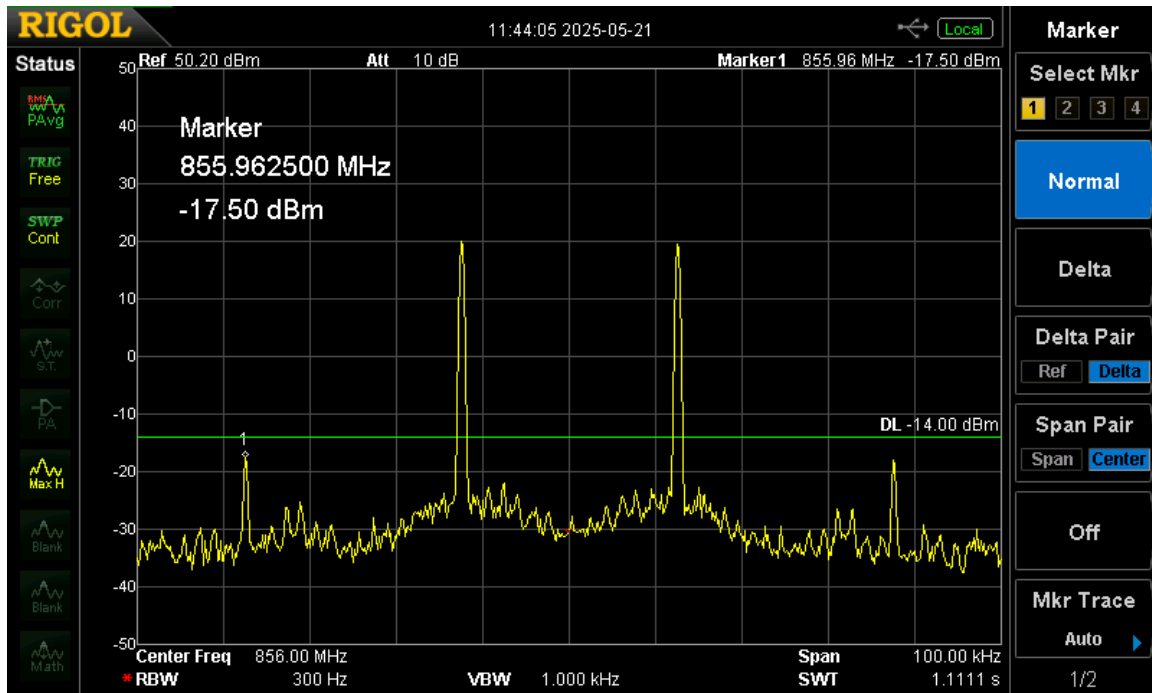


Figure 72. 851 – 861 MHz Intermodulation 25 kHz +3 dB

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2.13 Spurious Emissions (FCC Section 90.219(d)(e)(3) and RSS-131, 10.5)

Spurious Emissions from a signal booster must not exceed -13 dBm within any 100 kHz measurement bandwidth.

2.13.1 Radiated Spurious Emissions Measurement

The EUT was tested in a semi-anechoic chamber. The EUT was set on a turntable with the EUT positioned 3 m from the receiving antenna. A spectrum analyzer was used to measure the emissions and verify that the levels met the requirements for Radiated Emissions. The EUT was tested by rotating it 360° with the receiving antenna in both the vertical then horizontal position. The receive antenna was elevated from 1 m to 4 m to ensure that the maximum emission was captured. A signal generator was used to provide a signal to exercise the channel cards within the EUT. The EUT output was terminated with a 50 ohm non-radiating load.

The RBW was set to 100 KHz for measurements below 1 GHz and 1 MHz for measurements above 1 GHz. The VBW was 3 times the RBW.

FCC limit = -13 dBm (Assuming EIRP)

Radiated emission limit = -13 dBm - 20 log(3m) + 104.8 = 82.25 dBuV/m

The EUT has been evaluated in accordance with the requirements of Part 15, Subpart B, specifically the radiated emission limits outlined in §15.109 for Class A devices, in addition to the limits prescribed in this subpart. Given that the §15.109 Class A limits impose more stringent constraints than those specified within this subpart, compliance with the Class A limits was deemed sufficient. Consequently, it has been determined that if the EUT meets the requirements of §15.109 Class A, it inherently satisfies the applicable limits of this subpart. The detailed test results, including emission plots, are provided below.

The results show that the EUT meet both the limits for this subpart as well as the limits for Part 15 Subpart B, 15.109 Class A limits as a device operating in non-residential environments.

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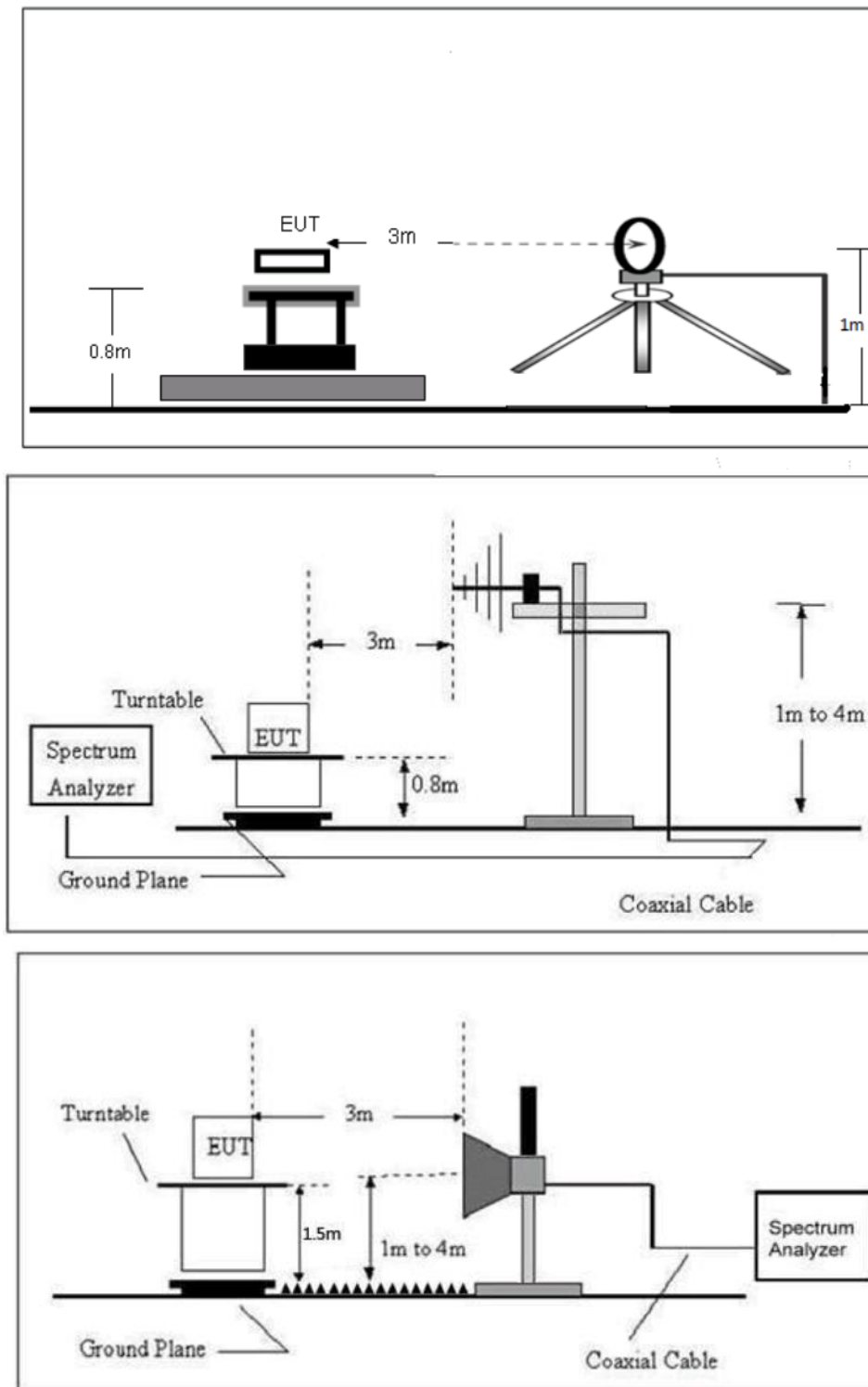


Figure 73. Radiated Spurious Emissions configurations

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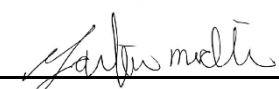
Table 4. Radiated Emissions Test Data Below 1000 MHz – EUT operating at 769 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
126.30	34.05	-16.19	17.86	43.5	3m./HORZ	25.6	PK
134.75	36.96	-16.75	20.22	43.5	3m./HORZ	23.3	PK
199.45	32.22	-17.38	14.84	43.5	3m./HORZ	28.7	PK
234.94	32.11	-16.58	15.53	46.4	3m./HORZ	30.9	PK
368.62	36.32	-11.09	25.23	46.4	3m./HORZ	21.2	PK
416.27	32.57	-10.21	22.36	46.4	3m./HORZ	24.0	PK
33.00	39.59	-7.01	32.58	39.0	3m./VERT	6.4	QP
134.75	42.56	-16.65	25.92	43.5	3m./VERT	17.6	PK
156.57	43.84	-17.53	26.31	43.5	3m./VERT	17.2	PK
184.46	35.73	-17.77	17.96	43.5	3m./VERT	25.5	PK
249.04	29.05	-16.16	12.89	46.4	3m./VERT	33.5	PK
407.90	32.77	-10.03	22.74	46.4	3m./VERT	23.7	PK
719.94	32.35	-3.28	29.07	46.4	3m./VERT	17.3	PK

Sample Calculation at 126.30 MHz:

Magnitude of Measured Frequency	34.05 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-16.19 dB/m
Corrected Result	17.86 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

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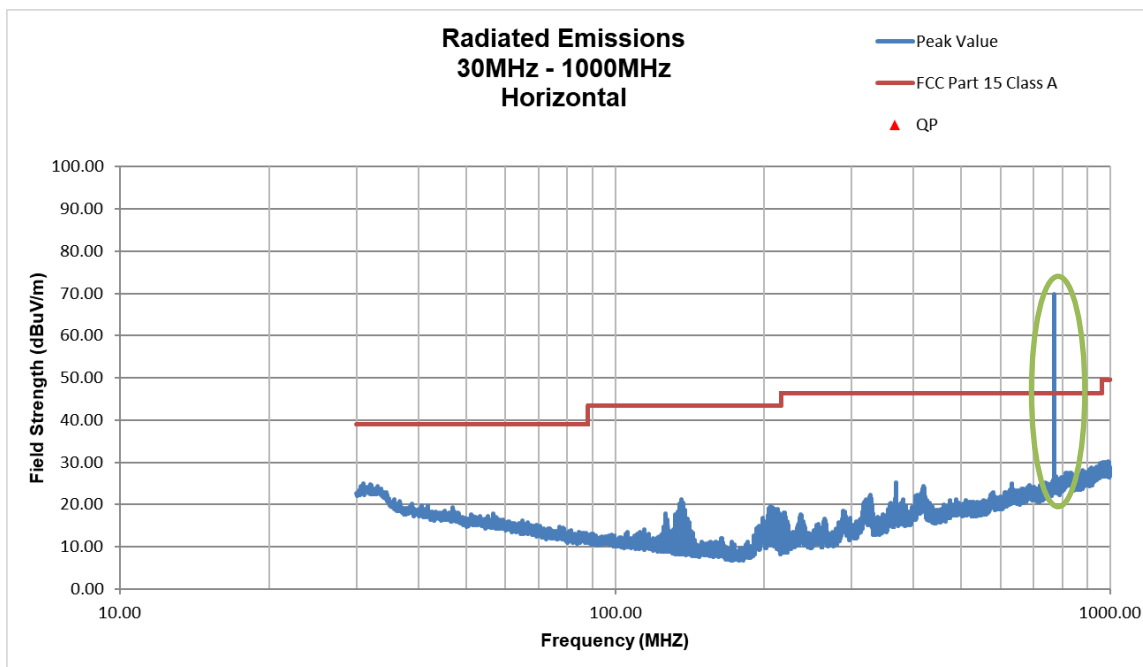


Figure 74. 769 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

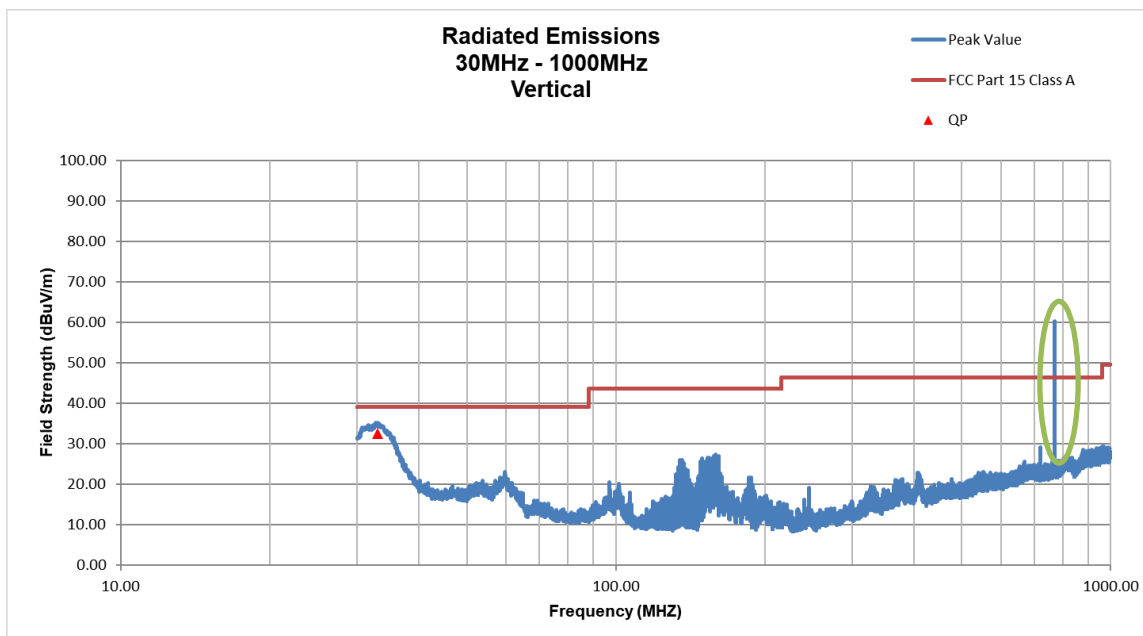


Figure 75. 769 MHz Vertical, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

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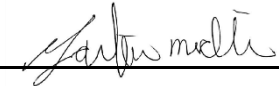
Table 5. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 769 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	52.68	-20.27	32.42	49.5	3.0m./HORZ	17.1	PK
1499.97	57.24	-20.64	36.60	49.5	3.0m./HORZ	12.9	PK
1400.47	49.29	-20.68	28.60	49.5	3.0m./HORZ	20.9	PK
2000.44	48.36	-17.47	30.88	49.5	3.0m./HORZ	18.6	PK
6288.17	44.67	-5.03	39.63	49.5	3.0m./HORZ	9.9	PK
1199.99	52.79	-23.11	29.68	49.5	3.0m./VERT	19.8	PK
1499.97	52.12	-20.58	31.54	49.5	3.0m./VERT	18.0	PK
1440.47	50.97	-20.74	30.24	49.5	3.0m./VERT	19.3	PK
1599.46	51.67	-19.74	31.93	49.5	3.0m./VERT	17.6	PK
1600.46	50.23	-19.69	30.54	49.5	3.0m./VERT	19.0	PK
1831.45	51.75	-17.60	34.15	49.5	3.0m./VERT	15.4	PK
3228.36	41.71	-13.13	28.58	49.5	3.0m./VERT	20.9	PK
4399.79	43.49	-10.50	32.99	49.5	3.0m./VERT	16.5	PK
6288.17	43.73	-5.06	38.67	49.5	3.0m./VERT	10.8	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.68 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.42 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

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Model:

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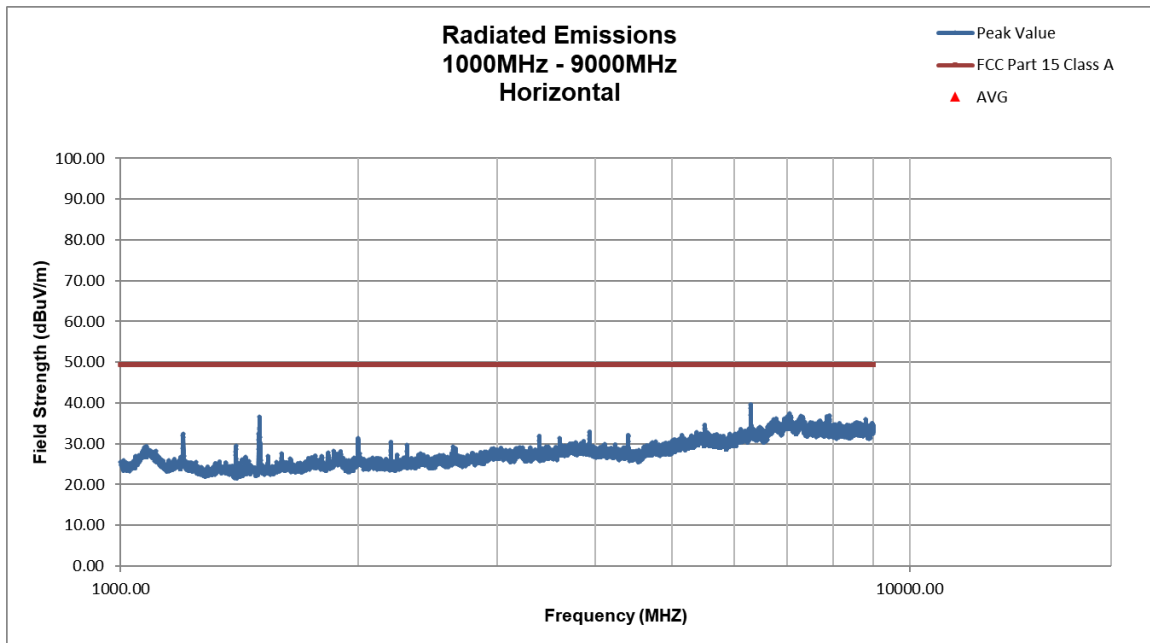


Figure 76. 769 MHz Horizontal, Above 1000 MHz

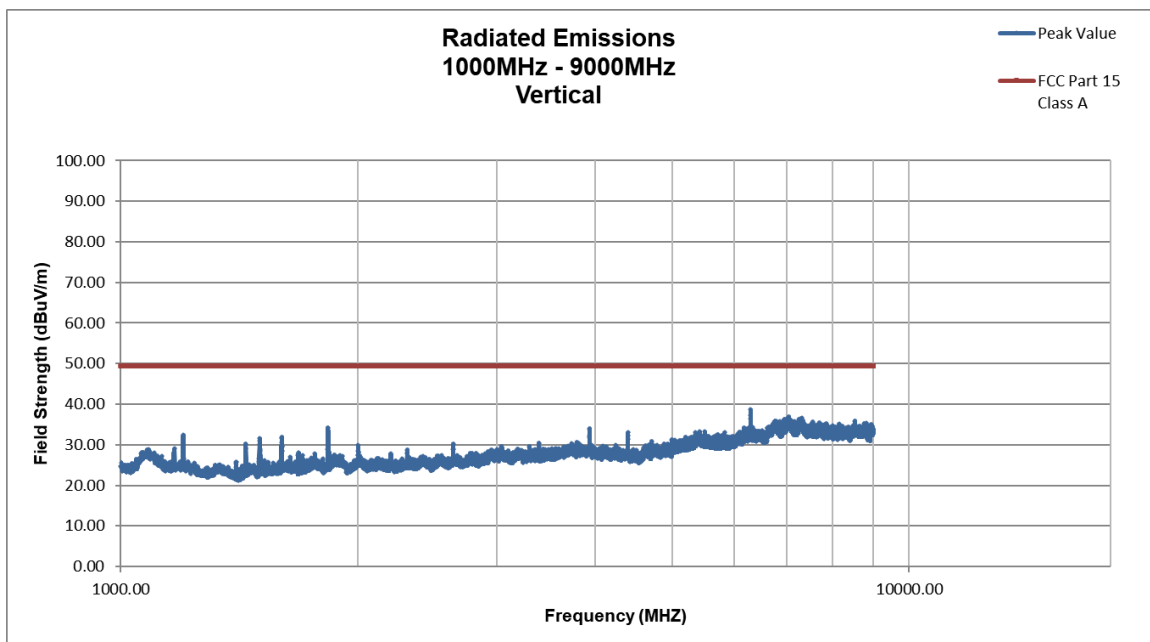


Figure 77. 769 MHz Vertical, Above 1000 MHz

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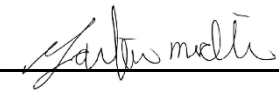
Table 6. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 775 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
97.09	35.80	-14.68	21.13	43.5	3m./HORZ	22.4	PK
126.39	36.21	-16.19	20.02	43.5	3m./HORZ	23.5	PK
179.97	37.39	-18.16	19.23	43.5	3m./HORZ	24.3	PK
180.90	42.50	-18.16	24.34	43.5	3m./HORZ	19.2	PK
198.44	37.42	-17.38	20.04	43.5	3m./HORZ	23.5	PK
32.99	39.51	-6.81	32.70	39.0	3m./VERT	6.3	QP
101.45	35.16	-14.88	20.28	43.5	3m./VERT	23.2	PK
135.92	44.92	-16.66	28.27	43.5	3m./VERT	15.2	PK
161.42	44.75	-17.71	27.03	43.5	3m./VERT	16.5	PK

Sample Calculation at 97.09 MHz:

Magnitude of Measured Frequency	35.80 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-14.68 dB/m
Corrected Result	21.13 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

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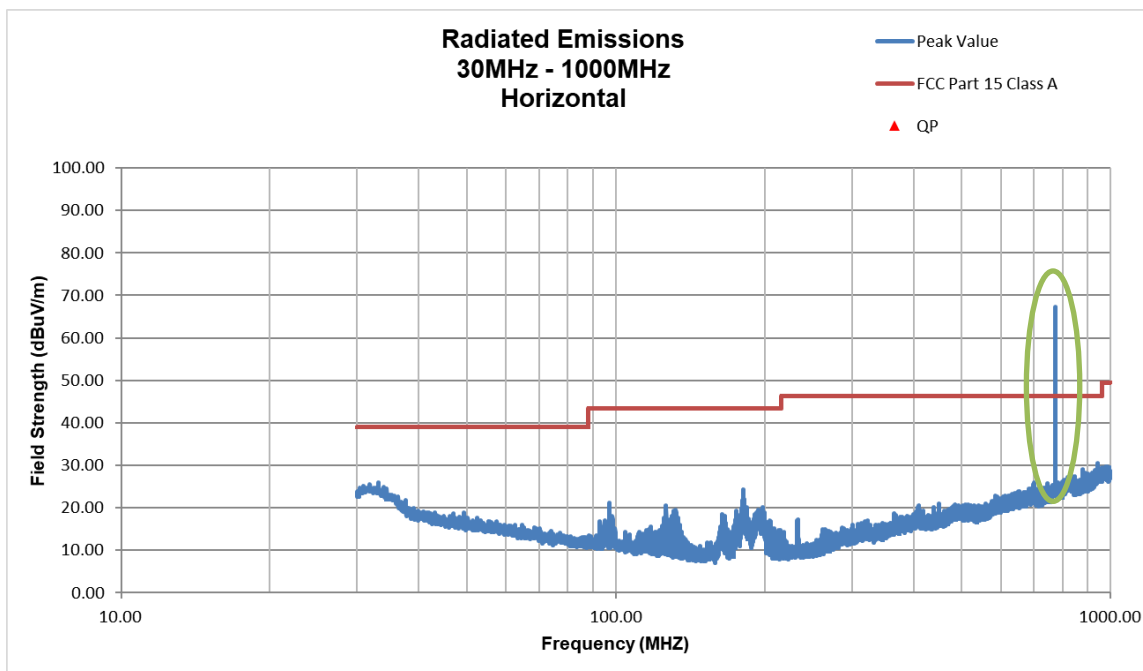


Figure 78. 775 MHz Horizontal, 30 - 1000 MHz

Note: Circle in green is Fundamental of input signal

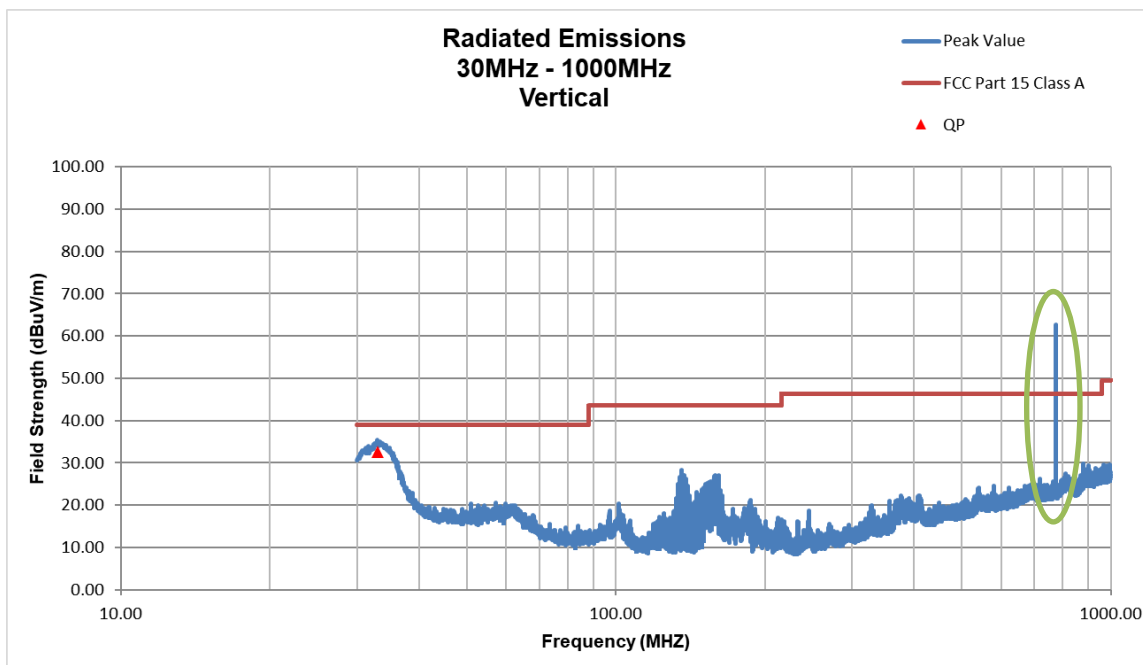


Figure 79. 775 MHz Vertical, 30 - 1000 MHz

Note: Circle in green is Fundamental of input signal

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Table 7. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 775 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	52.33	-20.27	32.06	49.5	3.0m./HORZ	17.4	PK
1499.97	56.30	-20.64	35.66	49.5	3.0m./HORZ	13.8	PK
1999.94	48.93	-17.45	31.48	49.5	3.0m./HORZ	18.0	PK
6288.17	45.09	-5.03	40.05	49.5	3.0m./HORZ	9.4	PK
1200.49	51.99	-20.65	31.34	49.5	3.0m./VERT	18.2	PK
1499.47	53.09	-20.58	32.51	49.5	3.0m./VERT	17.0	PK
1599.96	50.10	-19.74	30.36	49.5	3.0m./VERT	19.1	PK
2639.90	46.78	-16.05	30.73	49.5	3.0m./VERT	18.8	PK
3929.82	44.27	-10.36	33.90	49.5	3.0m./VERT	15.6	PK
6287.67	43.52	-5.06	38.46	49.5	3.0m./VERT	11.0	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.33 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.06 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

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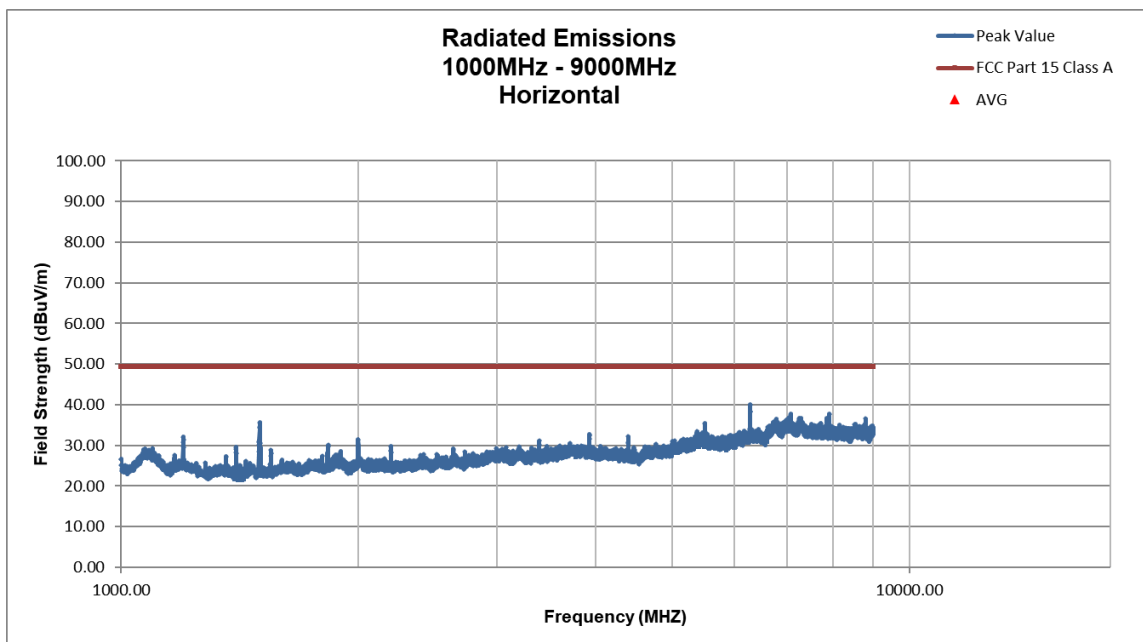


Figure 80. 775 MHz Horizontal, Above 1000 MHz

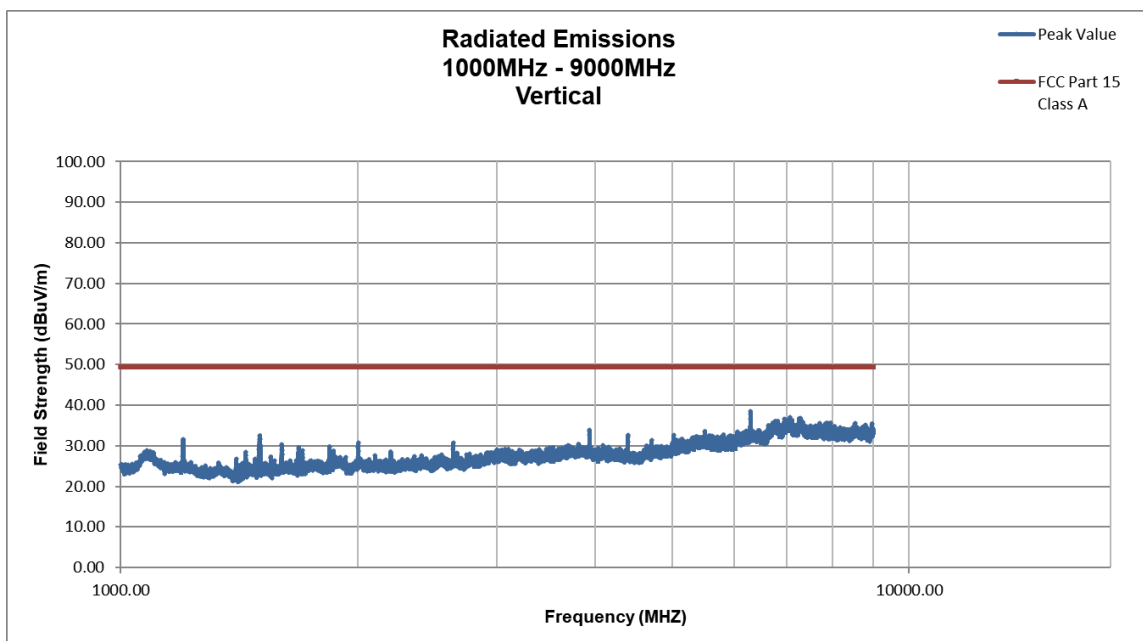


Figure 81. 775 MHz Vertical, Above 1000 MHz

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Table 8. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 851 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
133.54	45.20	-16.75	28.45	43.5	3m./HORZ	15.0	PK
150.51	40.45	-17.38	23.07	43.5	3m./HORZ	20.4	PK
192.58	36.55	-17.43	19.12	43.5	3m./HORZ	24.4	PK
245.73	36.26	-16.41	19.86	46.4	3m./HORZ	26.5	PK
409.60	31.91	-10.23	21.68	46.4	3m./HORZ	24.7	PK
701.18	32.61	-3.55	29.06	46.4	3m./HORZ	17.3	PK
30.69	38.05	-6.33	31.72	39.0	3m./VERT	7.3	QP
53.88	38.17	-11.08	27.09	39.0	3m./VERT	11.9	PK
151.68	45.32	-17.47	27.86	43.5	3m./VERT	15.6	PK
397.28	31.59	-9.66	21.93	46.4	3m./VERT	24.5	PK

Sample Calculation at 133.54 MHz:

Magnitude of Measured Frequency	45.20 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-16.75 dB/m
Corrected Result	28.45 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
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Model:

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2AKSM-SAFE5
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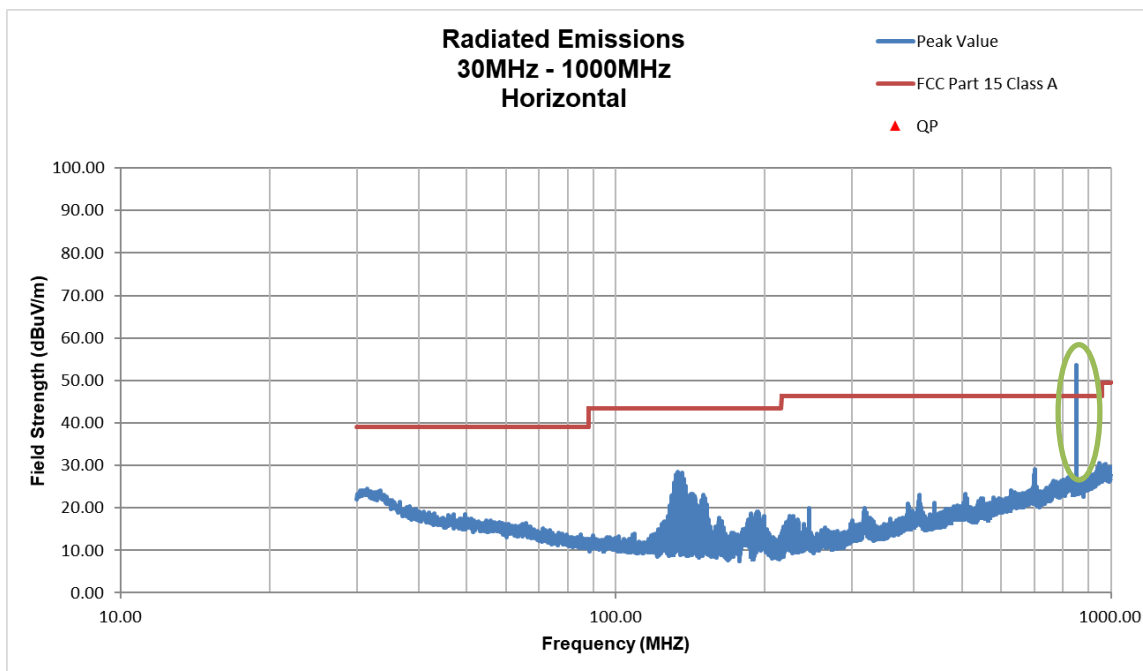


Figure 82. 851 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

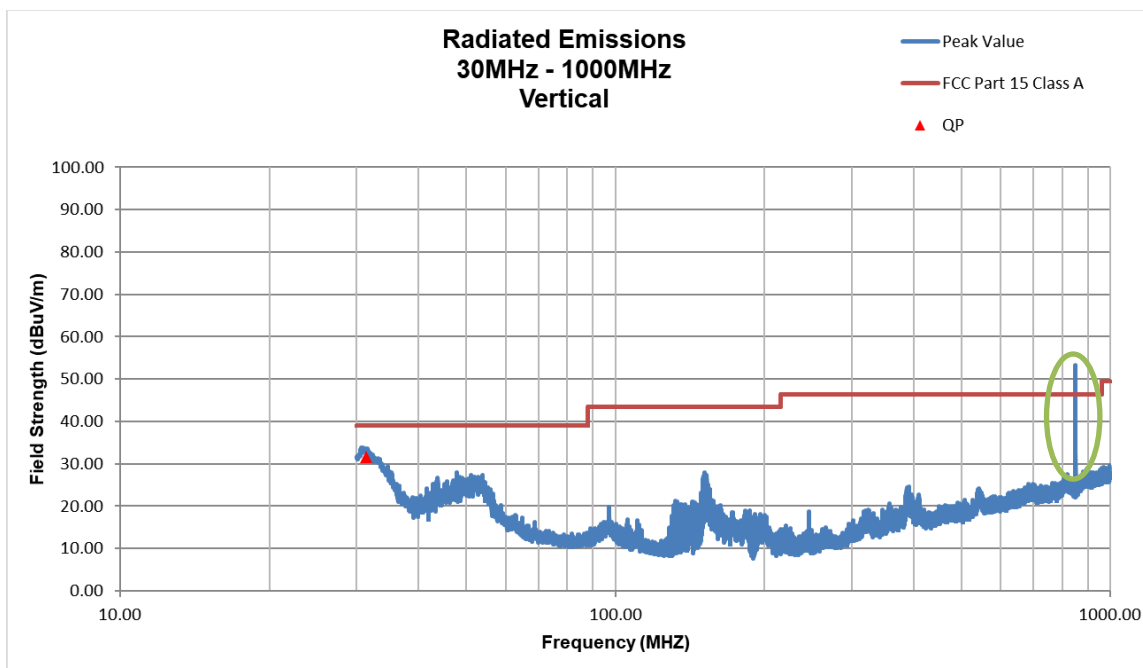


Figure 83. 851 MHz Vertical, 30 - 1000 MHz

Note: Circle in green is Fundamental of input signal

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Table 9. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 851 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.49	51.78	-20.27	31.52	49.5	3.0m./HORZ	18.0	PK
1499.97	56.28	-20.64	35.64	49.5	3.0m./HORZ	13.9	PK
1999.94	48.42	-17.45	30.98	49.5	3.0m./HORZ	18.5	PK
6288.17	44.53	-5.03	39.50	49.5	3.0m./HORZ	10.0	PK
6808.14	45.54	-5.05	40.48	49.5	3.0m./HORZ	9.0	PK
1199.99	52.52	-20.40	32.12	49.5	3.0m./VERT	17.4	PK
1498.97	54.72	-20.58	34.13	49.5	3.0m./VERT	15.4	PK
1600.46	50.01	-19.69	30.32	49.5	3.0m./VERT	19.2	PK
1837.45	52.20	-17.70	34.51	49.5	3.0m./VERT	15.0	PK
2639.90	46.32	-16.05	30.27	49.5	3.0m./VERT	19.2	PK
6808.14	45.79	-5.01	40.78	49.5	3.0m./VERT	8.7	PK

Sample Calculation at 1199.49 MHz:

Magnitude of Measured Frequency	51.78 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	31.52 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
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Customer:
Model:

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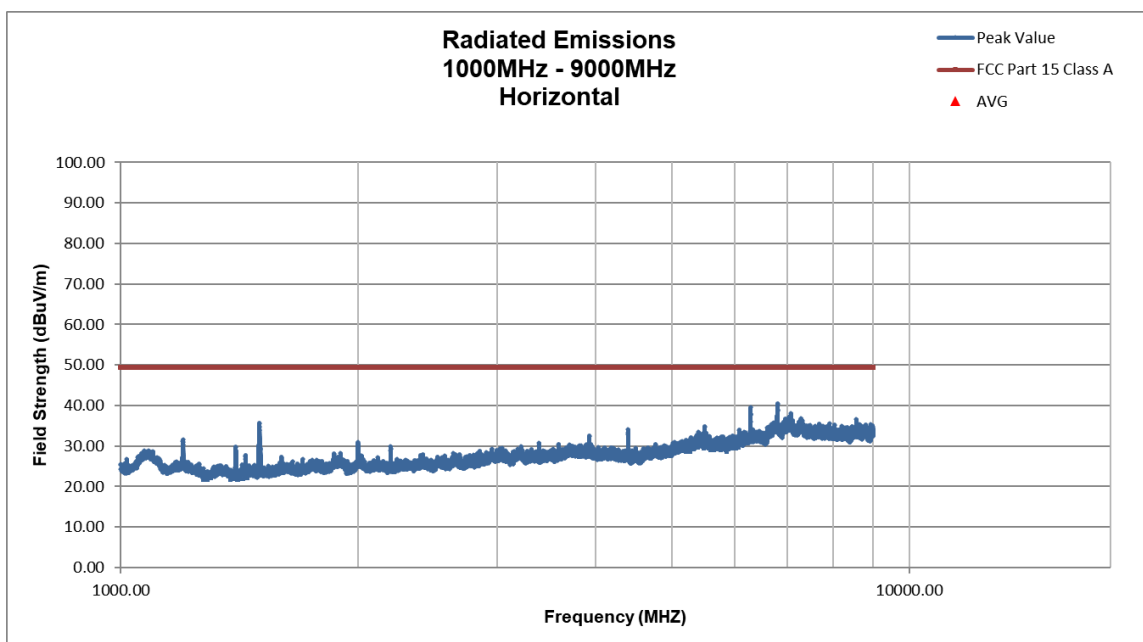


Figure 84. 851 MHz Horizontal, Above 1000 MHz

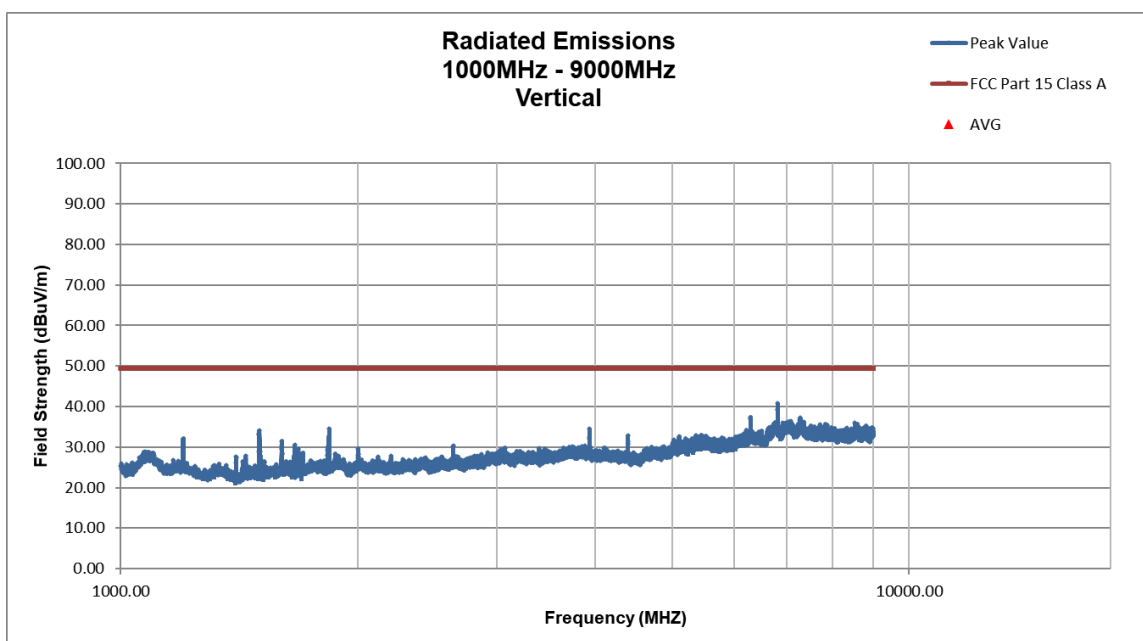


Figure 85. 851 MHz Vertical, Above 1000 MHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
 Issue Da
 Customer:
 Model:

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Table 10. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 856 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
133.54	46.35	-16.75	29.60	43.5	3m./HORZ	13.9	PK
150.47	40.12	-17.38	22.74	43.5	3m./HORZ	20.8	PK
190.20	34.03	-17.55	16.49	43.5	3m./HORZ	27.0	PK
408.11	29.49	-10.23	19.25	46.4	3m./HORZ	27.1	PK
701.47	32.25	-3.55	28.70	46.4	3m./HORZ	17.7	PK
31.33	38.93	-6.52	32.41	39.0	3m./VERT	6.6	PK
54.85	33.56	-11.37	22.19	39.0	3m./VERT	16.8	PK
131.88	28.07	-16.57	11.50	43.5	3m./VERT	32.0	PK
151.77	44.58	-17.47	27.11	43.5	3m./VERT	16.4	PK
386.65	31.97	-9.60	22.37	46.4	3m./VERT	24.0	PK

Sample Calculation at 133.54 MHz:

Magnitude of Measured Frequency	46.35 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-16.75 dB/m
Corrected Result	29.60 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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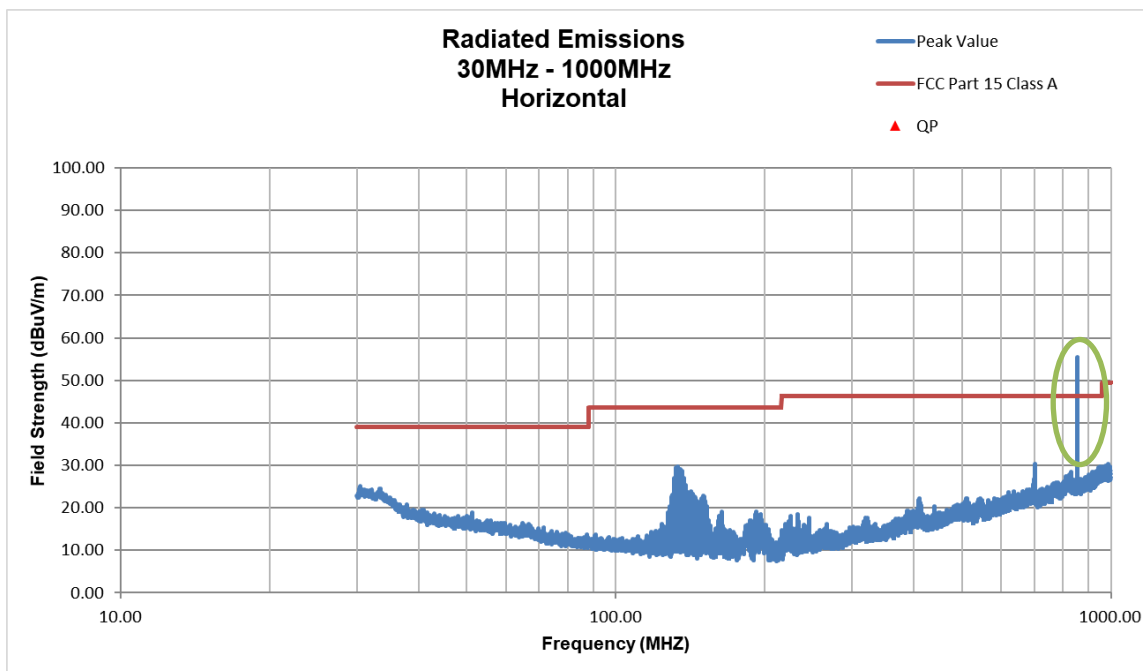


Figure 86. 856 MHz Horizontal, 30 - 1000 MHz

Note: Circle in green is Fundamental of input signal

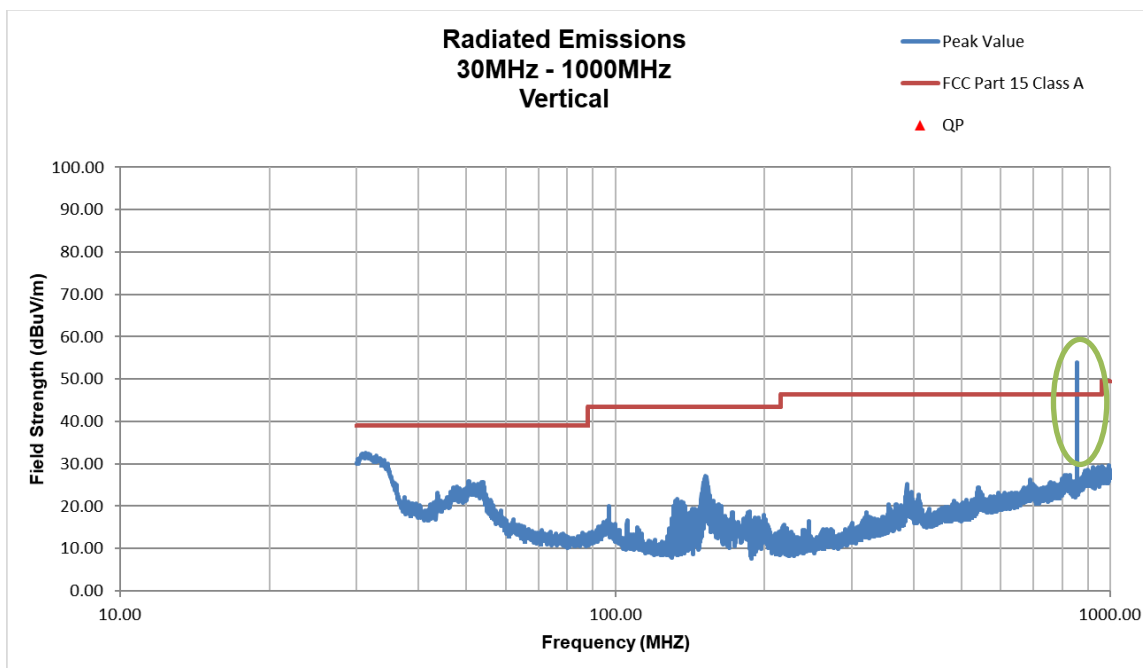


Figure 87. 856 MHz Vertical, 30 - 1000 MHz

U.S. Tech Test Report:
 FCC ID:
 IC:
 Report Number:
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 Customer:
 Model:

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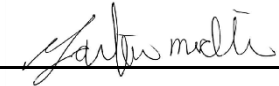
Table 11. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 856 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	51.73	-20.27	31.47	49.5	3.0m./HORZ	18.0	PK
1499.47	55.97	-20.64	35.33	49.5	3.0m./HORZ	14.2	PK
1999.94	49.61	-17.45	32.16	49.5	3.0m./HORZ	17.3	PK
4399.79	45.42	-10.50	34.92	49.5	3.0m./HORZ	14.6	PK
5992.19	44.79	-6.64	38.15	49.5	3.0m./HORZ	11.4	PK
6287.67	42.79	-5.03	37.76	49.5	3.0m./HORZ	11.7	PK
6848.13	47.11	-5.01	42.10	49.5	3.0m./HORZ	7.4	PK
1074.50	47.18	-24.01	23.17	49.5	3.0m./VERT	26.3	PK
1199.99	53.81	-23.11	30.71	49.5	3.0m./VERT	18.8	PK
1439.97	49.80	-21.10	28.70	49.5	3.0m./VERT	20.8	PK
1599.46	51.61	-20.07	31.54	49.5	3.0m./VERT	18.0	PK
2199.93	46.74	-17.06	29.69	49.5	3.0m./VERT	19.8	PK
4399.79	46.39	-10.80	35.59	49.5	3.0m./VERT	13.9	PK
6288.17	43.53	-2.91	40.62	49.5	3.0m./VERT	8.9	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	51.73 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	31.47 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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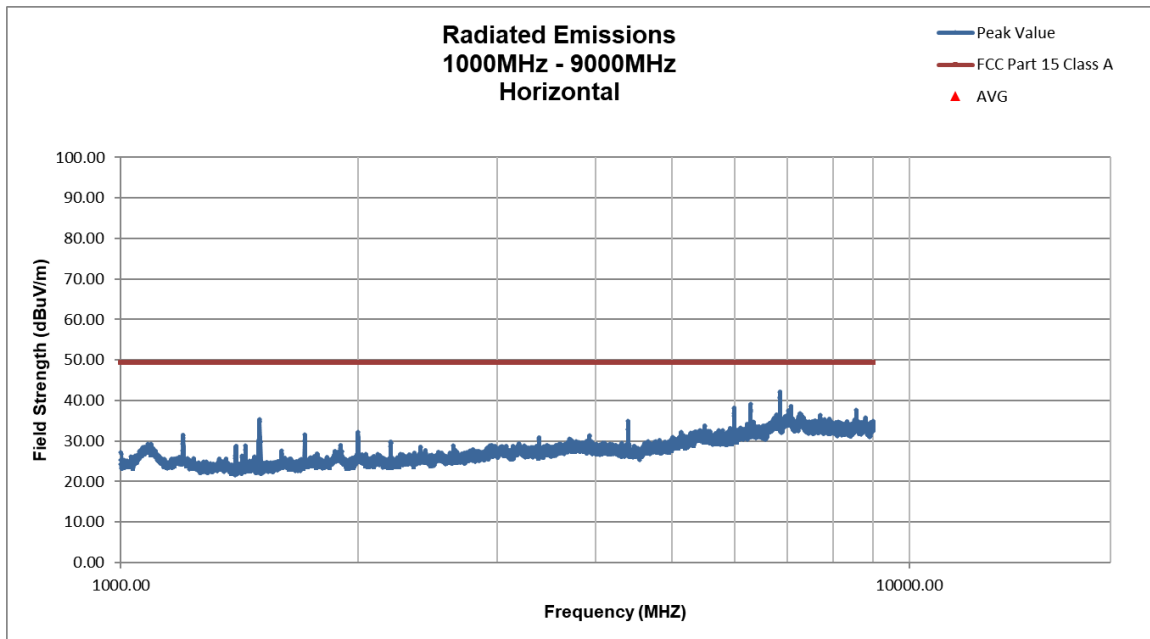


Figure 88. 856 MHz Horizontal, Above 1000 MHz

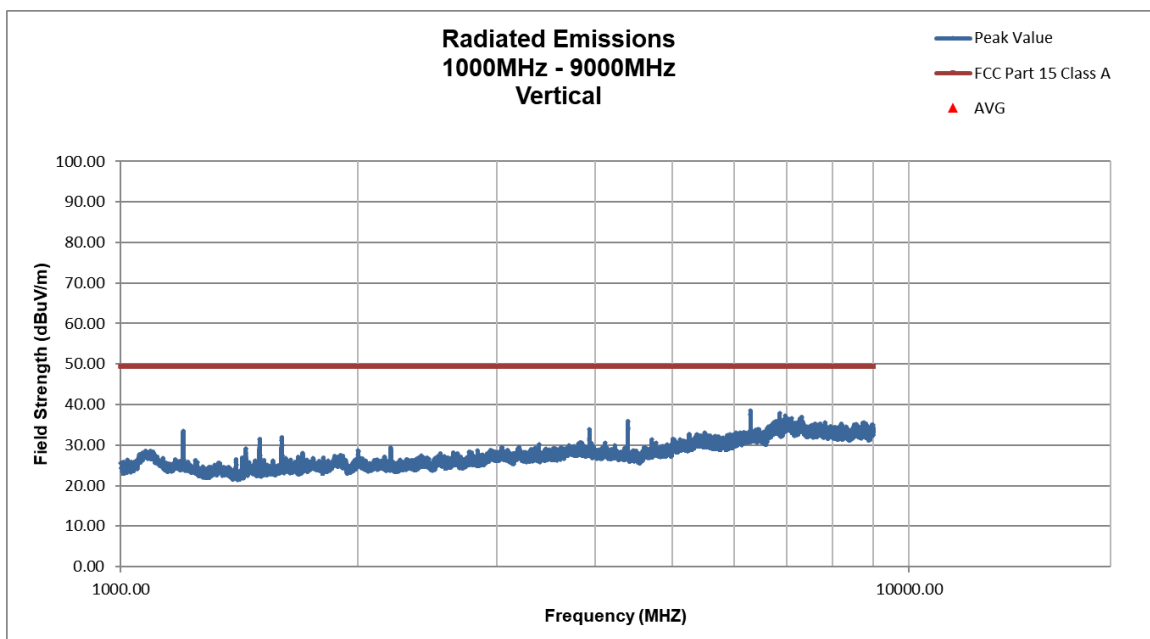


Figure 89. 856 MHz Vertical, Above 1000 MHz

U.S. Tech Test Report:
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 IC:
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 Customer:
 Model:

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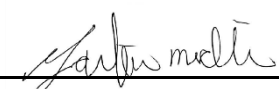
Table 12. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 861 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
133.54	46.29	-16.75	29.54	43.5	3m./HORZ	14.0	PK
144.09	34.72	-17.24	17.49	43.5	3m./HORZ	26.0	PK
192.50	37.63	-17.44	20.19	43.5	3m./HORZ	23.3	PK
407.82	30.53	-10.23	20.30	46.4	3m./HORZ	26.1	PK
701.71	30.98	-3.55	27.43	46.4	3m./HORZ	19.0	PK
30.00	33.83	-6.35	27.48	39.0	3m./VERT	11.5	QP
32.98	35.34	-6.81	28.53	39.0	3m./VERT	10.5	QP
143.24	38.88	-17.04	21.84	43.5	3m./VERT	21.7	PK
137.10	38.50	-16.75	21.75	43.5	3m./VERT	21.7	PK
183.29	38.63	-17.87	20.76	43.5	3m./VERT	22.7	PK
191.33	38.95	-17.65	21.30	43.5	3m./VERT	22.2	PK
698.19	32.83	-2.65	30.19	46.4	3m./VERT	16.2	PK
733.35	32.70	-3.10	29.60	46.4	3m./VERT	16.8	PK

Sample Calculation at 133.54 MHz:

Magnitude of Measured Frequency	46.29 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-16.75 dB/m
Corrected Result	29.654 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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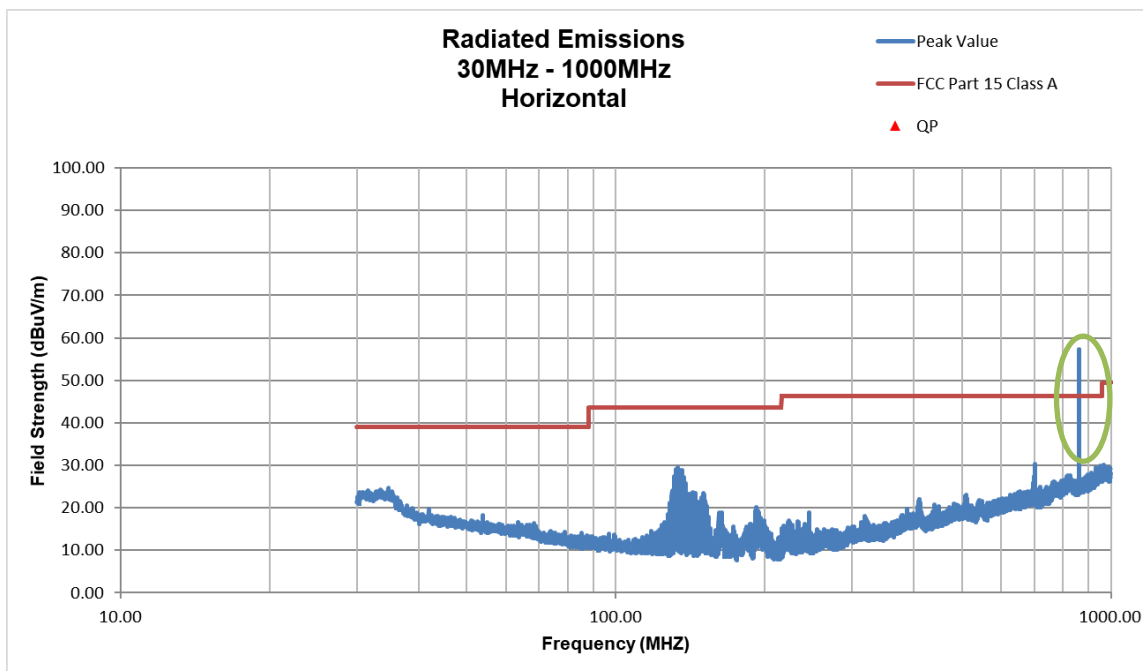


Figure 90. 861 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

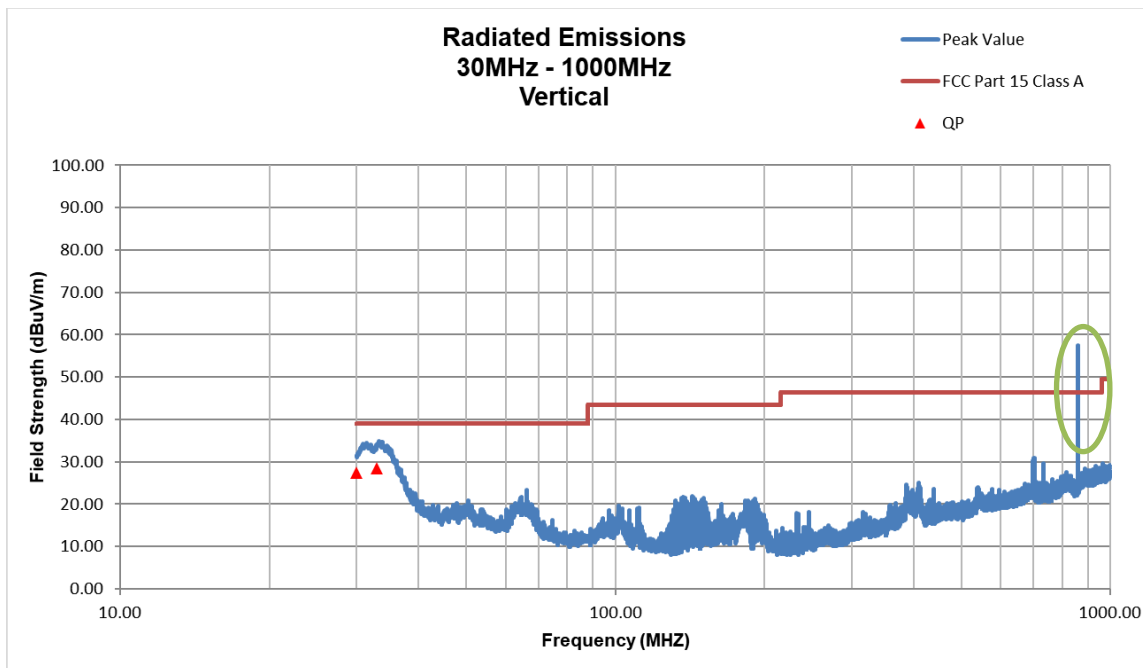


Figure 91. 861 MHz Vertical, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

U.S. Tech Test Report:
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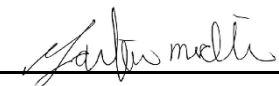
Table 13. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 861 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	52.35	-20.27	32.08	49.5	3.0m./HORZ	17.4	PK
1499.97	56.72	-20.64	36.08	49.5	3.0m./HORZ	13.4	PK
1721.95	51.08	-18.57	32.52	49.5	3.0m./HORZ	17.0	PK
1999.94	48.14	-17.45	30.69	49.5	3.0m./HORZ	18.8	PK
2200.42	46.10	-17.33	28.77	49.5	3.0m./HORZ	20.7	PK
4399.79	45.00	-10.50	34.50	49.5	3.0m./HORZ	15.0	PK
6288.17	44.38	-5.03	39.34	49.5	3.0m./HORZ	10.2	PK
6888.13	47.36	-5.18	42.18	49.5	3.0m./HORZ	7.3	PK
1199.99	52.28	-20.40	31.88	49.5	3.0m./VERT	17.6	PK
1399.98	47.35	-21.11	26.24	49.5	3.0m./VERT	23.3	PK
1499.97	53.53	-20.58	32.95	49.5	3.0m./VERT	16.6	PK
1999.94	46.99	-17.47	29.52	49.5	3.0m./VERT	20.0	PK
4399.79	45.61	-10.50	35.11	49.5	3.0m./VERT	14.4	PK
5998.69	38.01	-6.67	31.34	49.5	3.0m./VERT	18.2	PK
6288.17	44.69	-5.06	39.64	49.5	3.0m./VERT	9.9	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.35 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.08 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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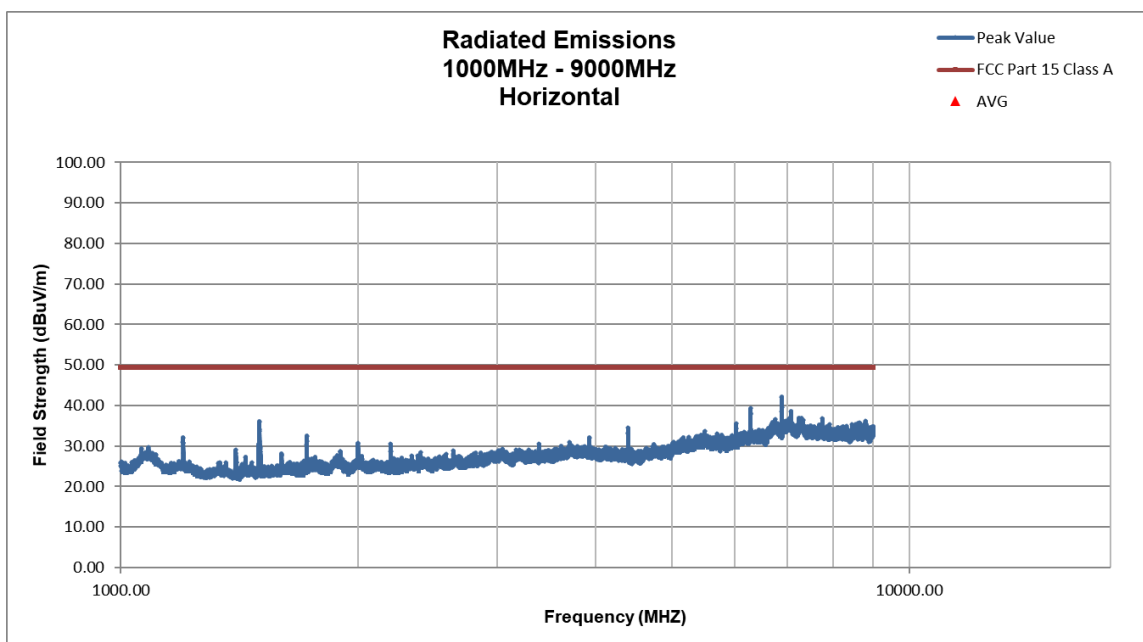


Figure 92. 861 MHz Horizontal, Above 1000 MHz

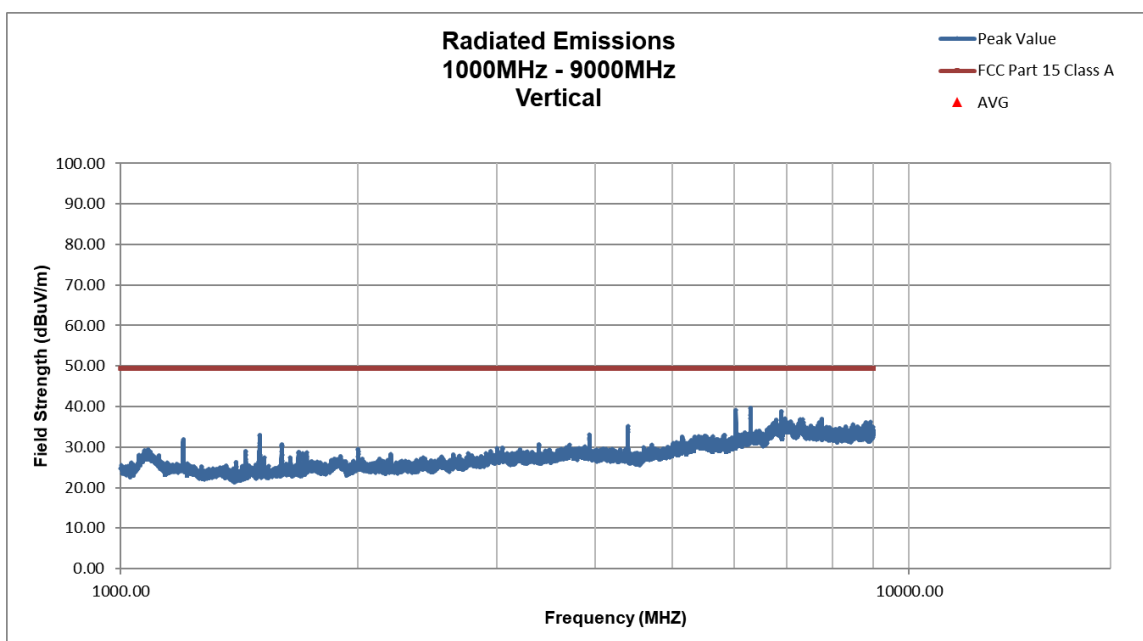


Figure 93. 861 MHz Vertical, Above 1000 MHz

U.S. Tech Test Report:
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Customer:
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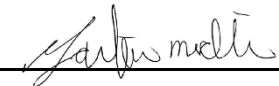
Table 14. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 799 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
33.59	32.58	-6.31	26.27	39.0	3m./HORZ	12.7	PK
126.22	36.49	-16.19	20.30	43.5	3m./HORZ	23.2	PK
173.58	39.78	-18.25	21.53	43.5	3m./HORZ	22.0	PK
720.05	31.13	-3.78	27.35	46.4	3m./HORZ	19.0	PK
32.71	39.19	-6.81	32.38	39.0	3m./VERT	6.6	PK
65.64	38.86	-13.17	25.69	39.0	3m./VERT	13.3	PK
131.07	32.19	-16.57	15.62	43.5	3m./VERT	27.9	PK
173.59	41.64	-18.05	23.59	43.5	3m./VERT	19.9	PK
720.01	34.72	-3.28	31.44	46.4	3m./VERT	15.0	PK

Sample Calculation at 33.59 MHz:

Magnitude of Measured Frequency	32.58 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-6.31 dB/m
Corrected Result	26.27 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
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Model:

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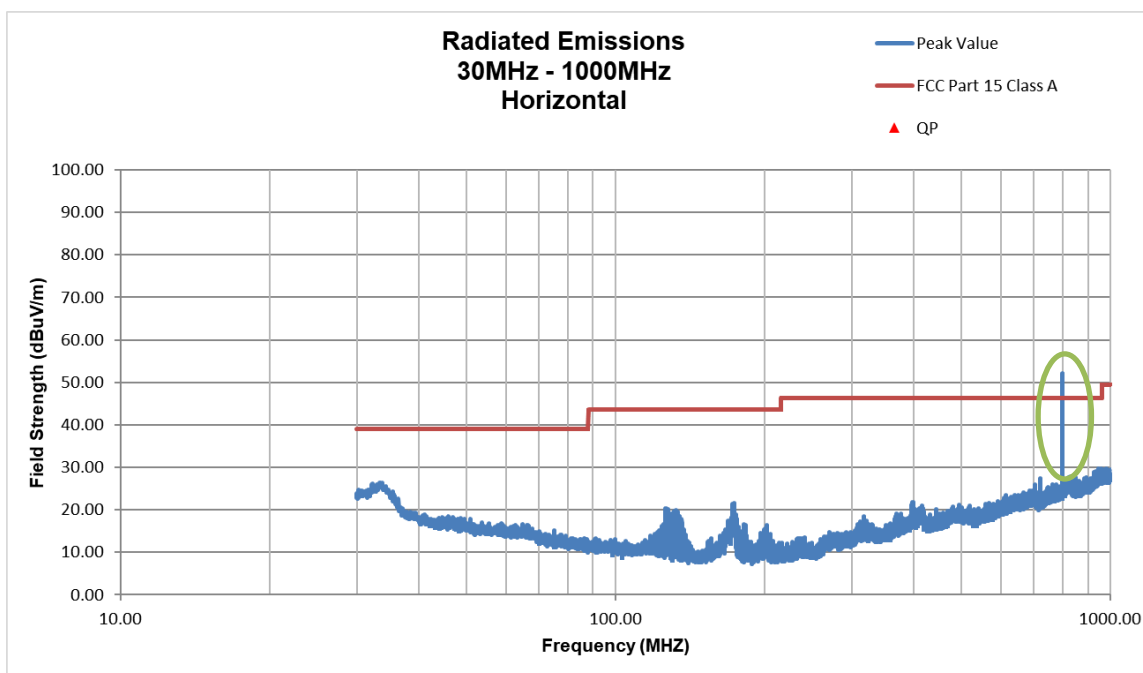


Figure 94. 799 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

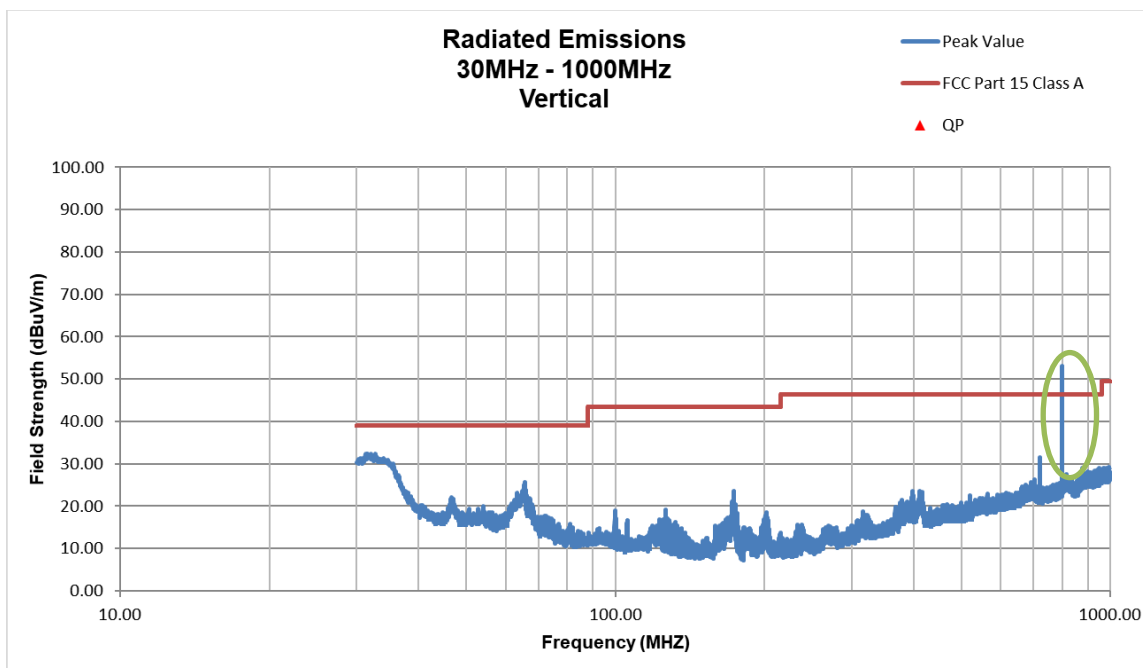


Figure 95. 799 MHz Vertical, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

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Table 15. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 799 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	51.71	-20.27	31.44	49.5	3.0m./HORZ	18.1	PK
1499.46	50.01	-20.64	29.37	49.5	3.0m./HORZ	20.1	PK
4240.79	46.61	-10.67	35.94	49.5	3.0m./HORZ	13.6	PK
6288.17	48.63	-5.03	43.60	49.5	3.0m./HORZ	5.9	PK
1084.49	48.29	-18.59	29.70	49.5	3.0m./VERT	19.8	PK
1499.96	50.03	-20.58	29.45	49.5	3.0m./VERT	20.1	PK
1832.44	46.97	-17.60	29.37	49.5	3.0m./VERT	20.1	PK
3629.81	46.35	-11.85	34.50	49.5	3.0m./VERT	15.0	PK
4399.78	49.34	-10.50	38.84	49.5	3.0m./VERT	10.7	PK
6288.16	46.09	-5.06	41.03	49.5	3.0m./VERT	8.5	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.35 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.08 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
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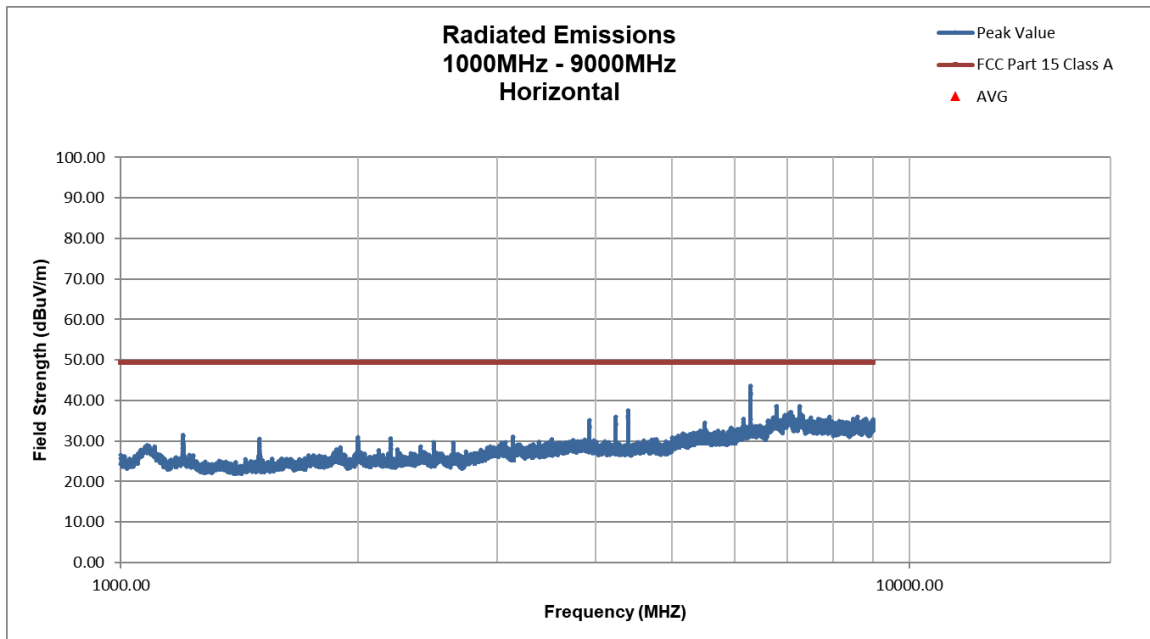


Figure 96. 799 MHz Horizontal, Above 1000 MHz

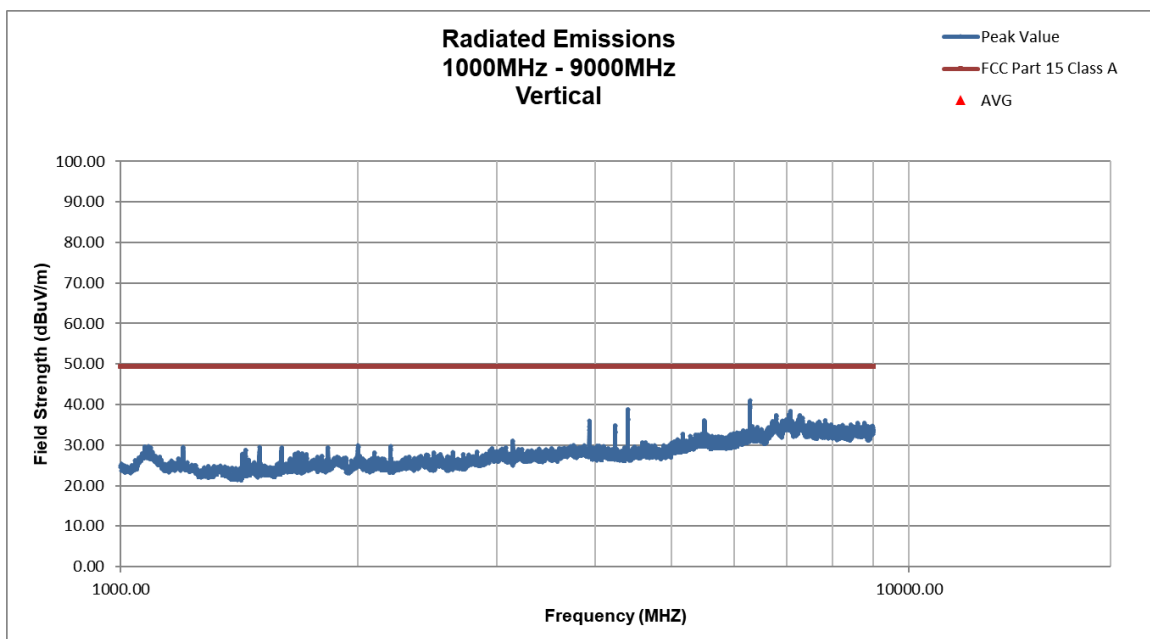


Figure 97. 799 MHz Vertical, Above 1000 MHz

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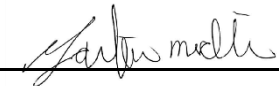
Table 16. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 808 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
34.65	33.18	-6.61	26.57	39.0	3m./HORZ	12.4	PK
131.07	36.93	-16.57	20.36	43.5	3m./HORZ	23.1	PK
173.55	39.86	-18.25	21.61	43.5	3m./HORZ	21.9	PK
412.55	31.29	-10.23	21.06	46.4	3m./HORZ	25.3	PK
720.02	31.44	-3.78	27.67	46.4	3m./HORZ	18.7	PK
32.22	38.94	-6.82	32.12	39.0	3m./VERT	6.9	PK
64.39	37.05	-13.07	23.97	39.0	3m./VERT	15.0	PK
173.63	41.07	-18.05	23.01	43.5	3m./VERT	20.5	PK
719.94	38.31	-3.28	35.03	46.4	3m./VERT	11.4	PK

Sample Calculation at 34.65 MHz:

Magnitude of Measured Frequency	33.18 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-6.61 dB/m
Corrected Result	26.57 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

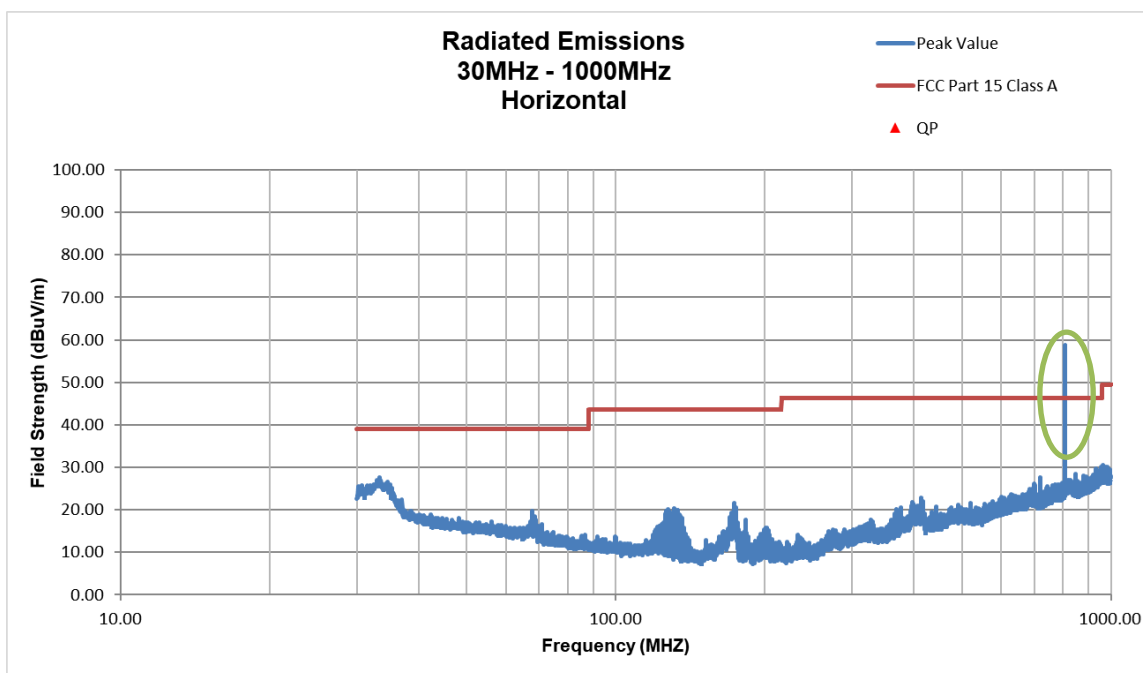


Figure 98. 808 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

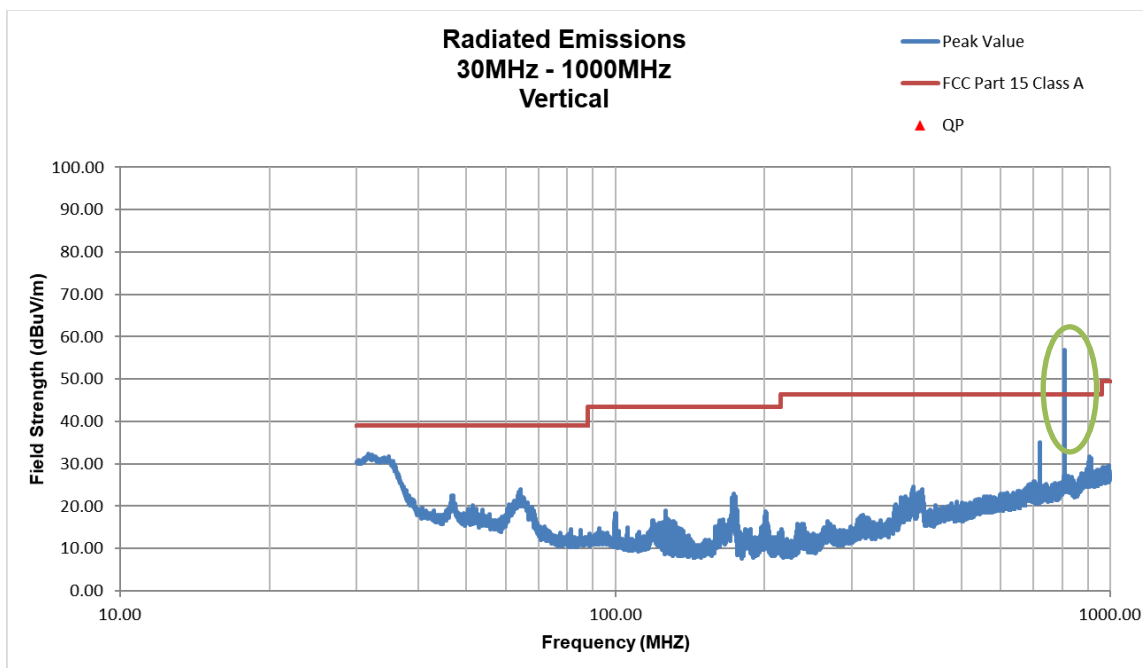


Figure 99. 808 MHz Vertical, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

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Table 17. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 808 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	52.68	-20.27	32.41	49.5	3.0m./HORZ	17.1	PK
1499.97	52.41	-20.64	31.78	49.5	3.0m./HORZ	17.7	PK
4240.80	46.06	-10.67	35.38	49.5	3.0m./HORZ	14.1	PK
4399.79	51.25	-10.50	40.75	49.5	3.0m./HORZ	8.7	PK
6288.17	48.60	-5.03	43.57	49.5	3.0m./HORZ	5.9	PK
1199.99	50.65	-20.40	30.25	49.5	3.0m./VERT	19.2	PK
1439.47	49.45	-20.78	28.66	49.5	3.0m./VERT	20.8	PK
1615.96	51.14	-19.60	31.54	49.5	3.0m./VERT	18.0	PK
3929.82	47.21	-10.36	36.85	49.5	3.0m./VERT	12.6	PK
4399.79	48.52	-10.50	38.02	49.5	3.0m./VERT	11.5	PK
6288.17	45.85	-5.06	40.80	49.5	3.0m./VERT	8.7	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.68 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.41 dBuV/m

Test Date: May 1, 2025

Tested by
Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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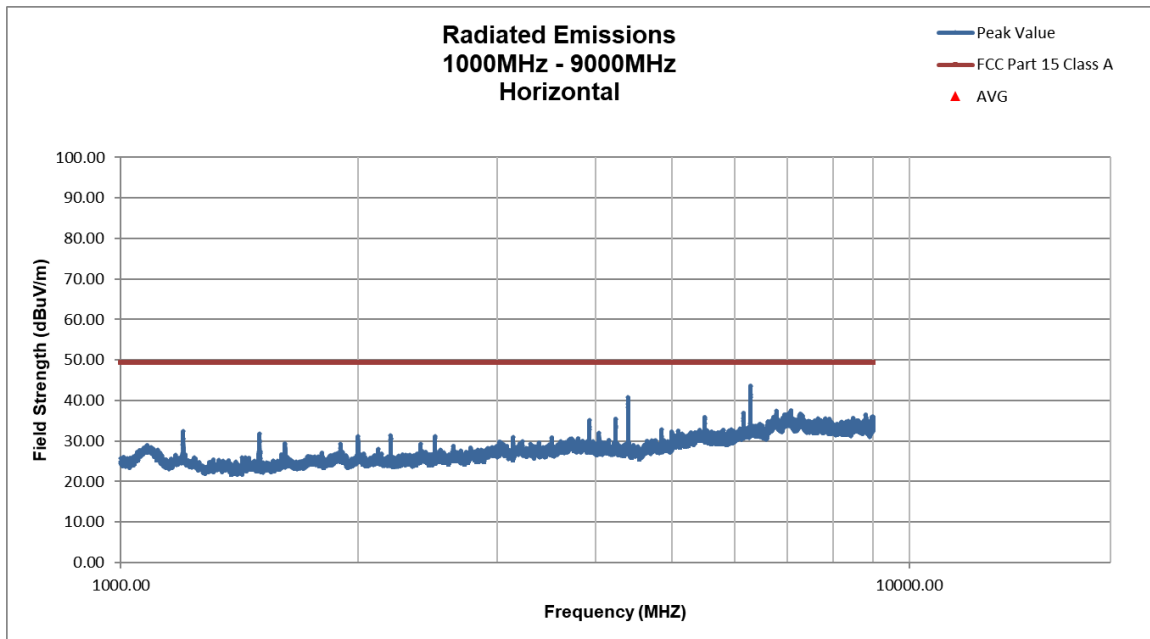


Figure 100. 808 MHz Horizontal, Above 1000 MHZ

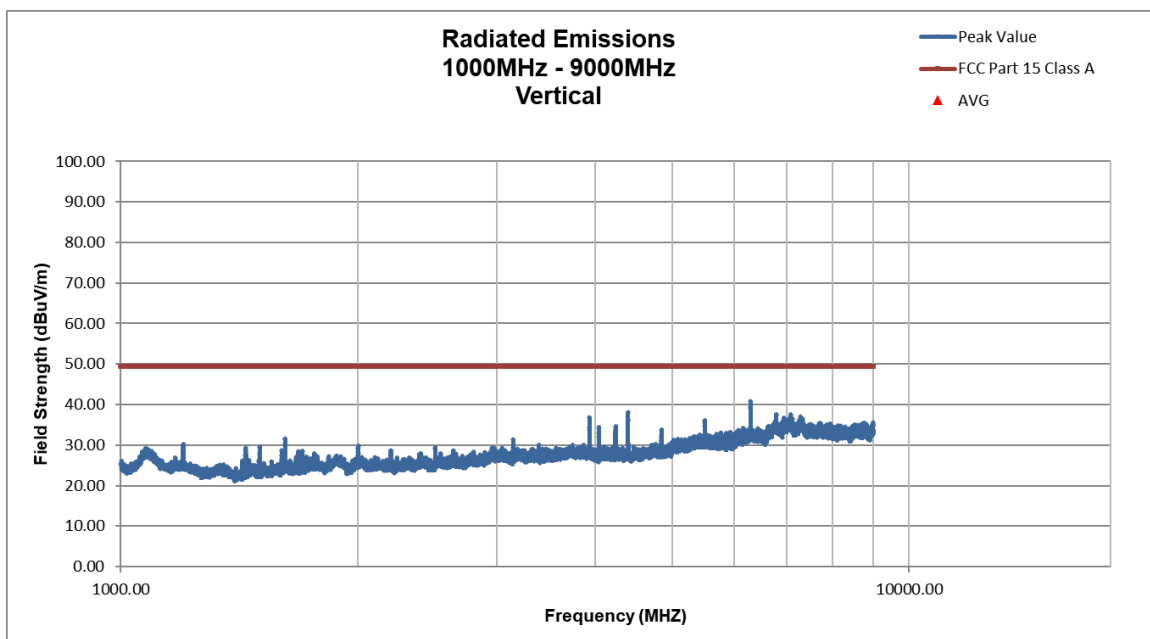


Figure 101. 808 MHz Vertical, Above 1000 MHZ

U.S. Tech Test Report:
 FCC ID:
 IC:
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 Issue Da
 Customer:
 Model:

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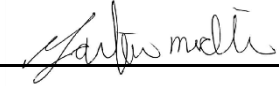
Table 18. Radiated Emissions Test Data Below 1000 MHz - EUT operating at 816 MHz band.

30 MHz to 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
33.48	32.56	-6.31	26.25	39.0	3m./HORZ	12.8	PK
127.44	35.98	-16.29	19.69	43.5	3m./HORZ	23.8	PK
169.95	35.49	-18.00	17.49	43.5	3m./HORZ	26.0	PK
183.00	33.28	-17.99	15.30	43.5	3m./HORZ	28.2	PK
201.84	33.42	-17.46	15.97	43.5	3m./HORZ	27.5	PK
173.63	42.69	-18.05	24.64	43.5	3m./VERT	18.9	PK
34.93	38.70	-7.21	31.49	39.0	3m./VERT	7.5	PK
63.87	36.84	-12.77	24.07	39.0	3m./VERT	14.9	PK
199.61	36.74	-17.58	19.16	43.5	3m./VERT	24.3	PK
719.98	33.03	-3.28	29.76	46.4	3m./VERT	16.6	PK

Sample Calculation at 33.48 MHz:

Magnitude of Measured Frequency	32.56 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-6.31 dB/m
Corrected Result	26.25 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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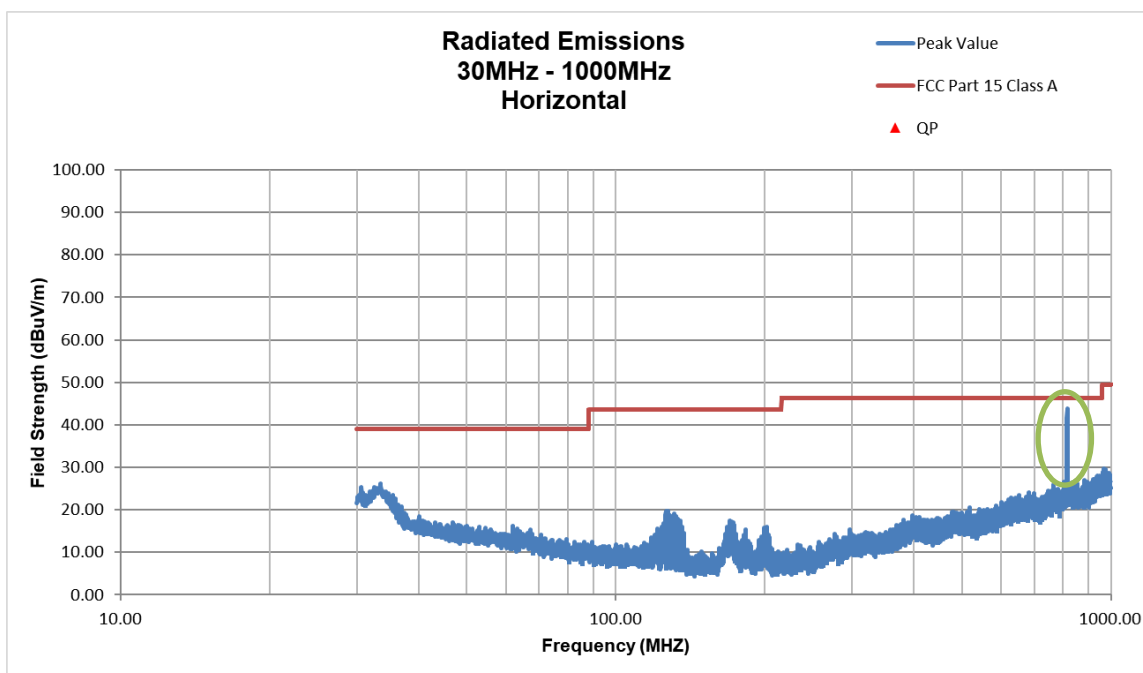


Figure 102. 816 MHz Horizontal, 30 – 1000 MHz

Note: Circle in green is Fundamental of input signal

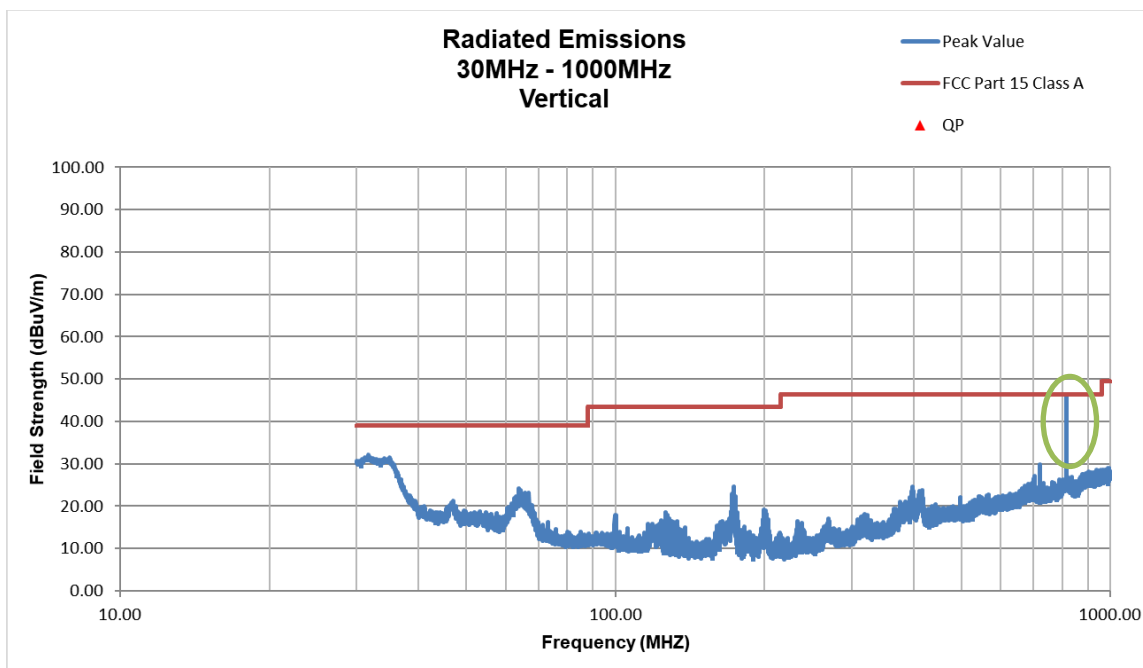


Figure 103. 816 MHz Vertical, 30 - 1000 MHz

Note: Circle in green is Fundamental of input signal

U.S. Tech Test Report:
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Table 19. Radiated Emissions Test Data Above 1000 MHz - EUT operating at 808 MHz band.

Above 1000 MHz with Class A Limits							
Frequency (MHz)	Test Data (dBuV)	AF+CA-AMP (dB/m)	Results (dBuV/m)	QP Limits (dBuV/m)	Antenna Distance/ Polarization	Margin (dB)	Detector PK, or QP
1199.99	52.65	-20.27	32.39	49.5	3.0m./HORZ	17.1	PK
1499.97	53.13	-20.64	32.49	49.5	3.0m./HORZ	17.0	PK
4399.79	50.49	-10.50	39.99	49.5	3.0m./HORZ	9.5	PK
6288.17	48.29	-5.03	43.26	49.5	3.0m./HORZ	6.2	PK
1199.99	50.36	-20.40	29.96	49.5	3.0m./VERT	19.5	PK
1439.47	49.50	-20.78	28.71	49.5	3.0m./VERT	20.8	PK
1600.46	48.23	-19.69	28.54	49.5	3.0m./VERT	21.0	PK
2000.44	47.94	-17.44	30.50	49.5	3.0m./VERT	19.0	PK
4399.79	47.65	-10.50	37.15	49.5	3.0m./VERT	12.3	PK
6288.17	45.82	-5.06	40.77	49.5	3.0m./VERT	8.7	PK

Sample Calculation at 1199.99 MHz:

Magnitude of Measured Frequency	52.65 dBuV
+Antenna Factor + Cable Loss - Amplifier Gain	-20.27 dB/m
Corrected Result	32.39 dBuV/m

Test Date: May 1, 2025

Tested by
 Signature: 

Name: Gabriel Medina

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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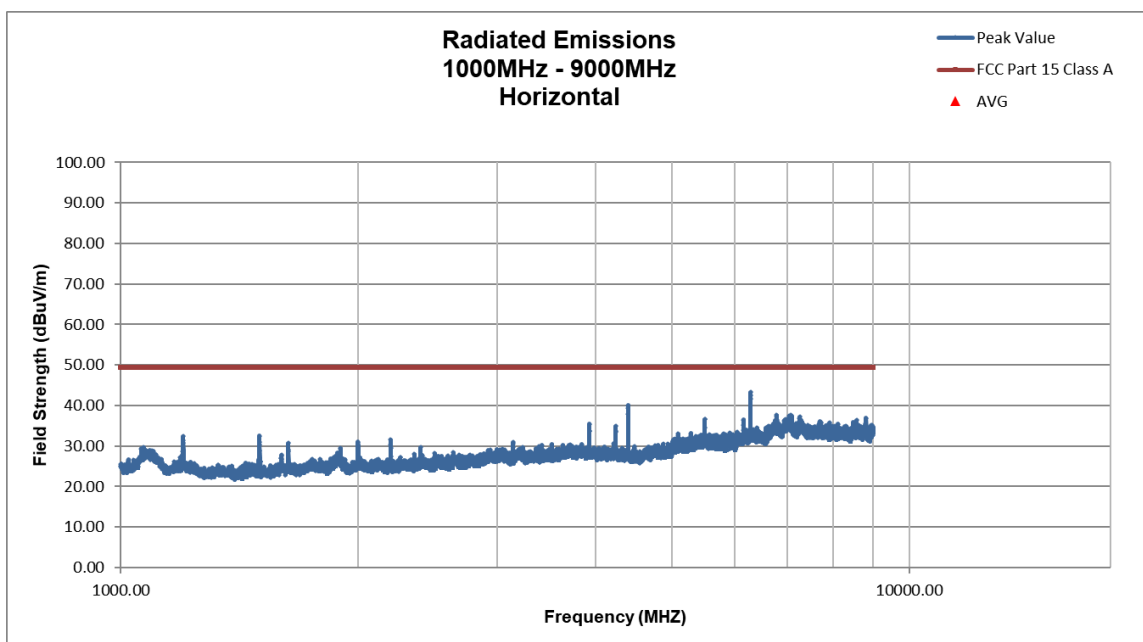


Figure 104. 816 MHz Horizontal, Above 1000 MHz

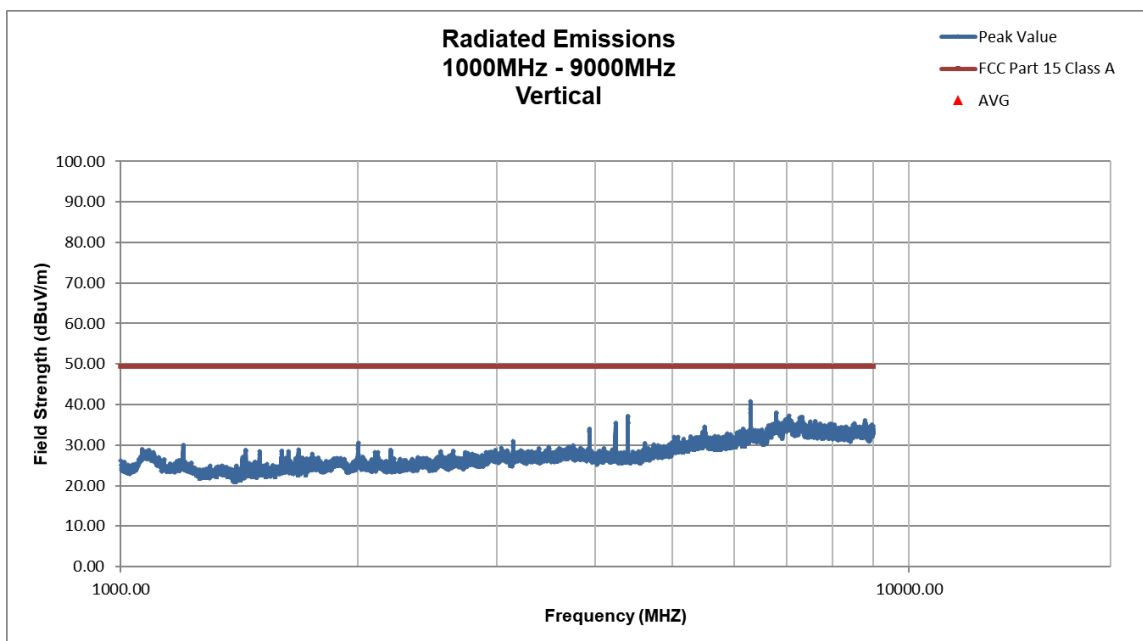


Figure 105. 816 MHz Vertical, Above 1000 MHz

2.13.2 Conducted Spurious Emissions Measurement (90.219(e)(4), RSS-131, 10.5)

The EUT was connected to a spectrum analyzer through a 20 dB attenuator. All cable and attenuator losses were input into the spectrum analyzer as a combination of reference level offset and/or correction factors as needed to ensure the accuracy of the readings obtained.

A CW signal was used to set the center frequency of the transmitter. The RF input signal level was set to at least 0.2 dB below the ACG threshold. The RBW was set to 100 KHz for measurements below 1 GHz and 1 MHz for measurements above 1 GHz. The VBW was 3 times the RBW.

Limit = -13 dBm (Display line set to represent the limit)

Emissions were investigated from 30 MHz to the 10th harmonic of the applicable frequency band of concern. The following plots show the worst-case measurements.



Figure 106. Conducted Spurious Test Configuration

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2.13.2.1 Up Link Conducted Spurious Emissions

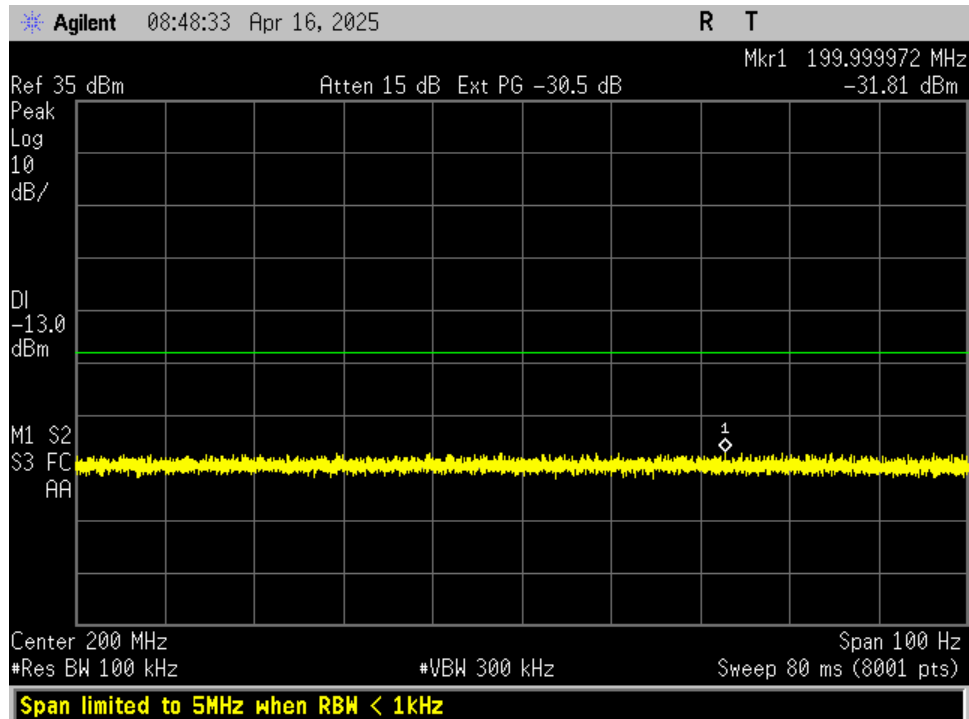


Figure 107. MHz 30 - 200 MHz

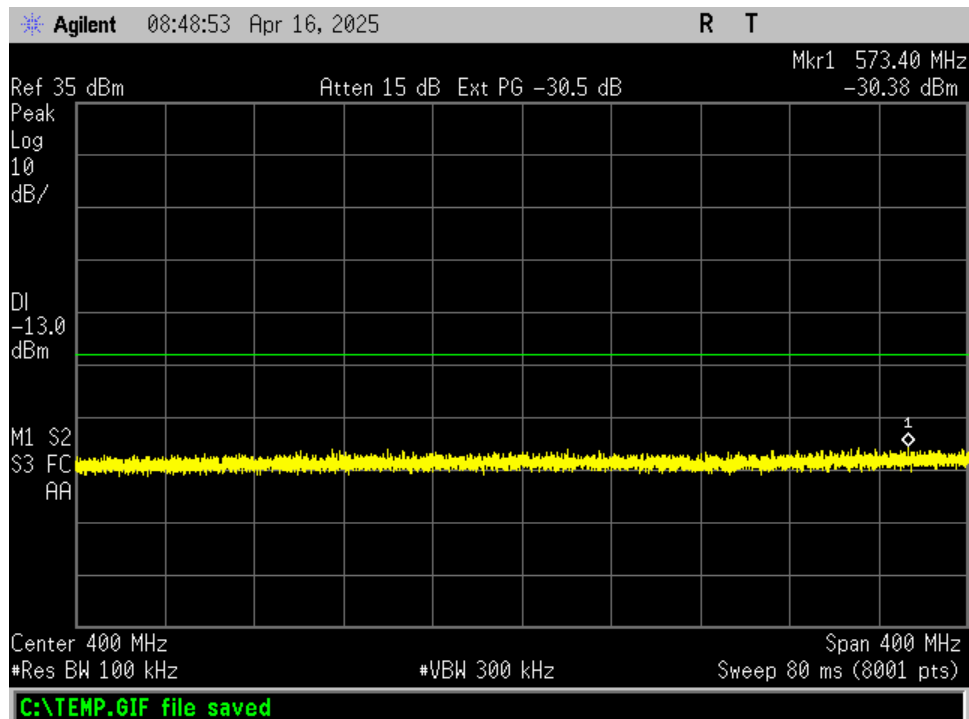


Figure 108. 799 MHz, 200 – 600 MHz

U.S. Tech Test Report:
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Issue Da
Customer:
Model:

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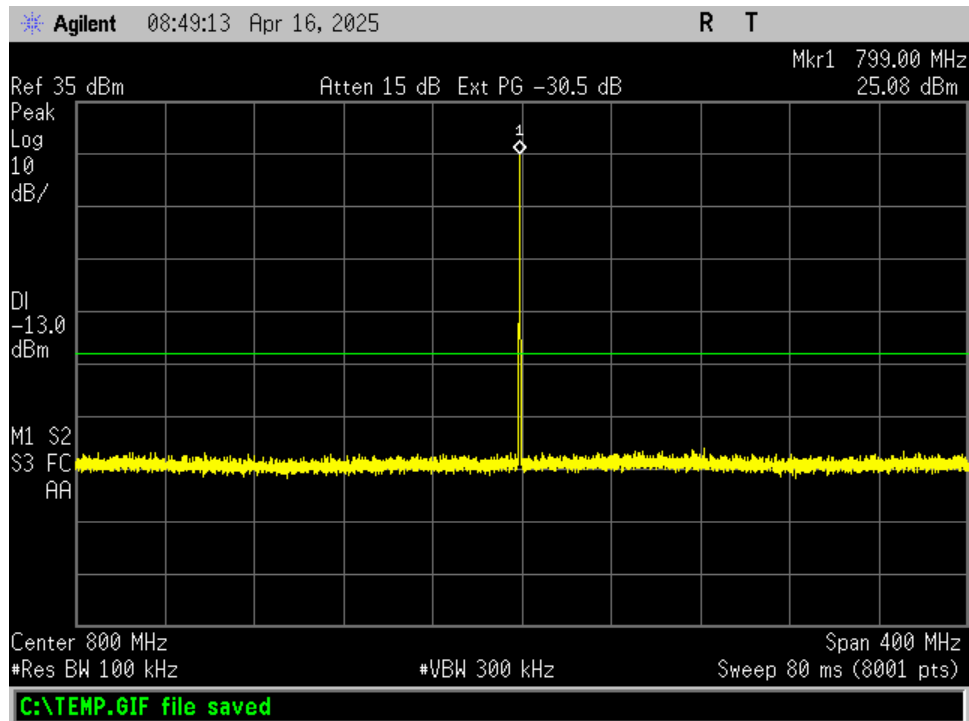


Figure 109. 799 MHz 600 - 1000 MHz

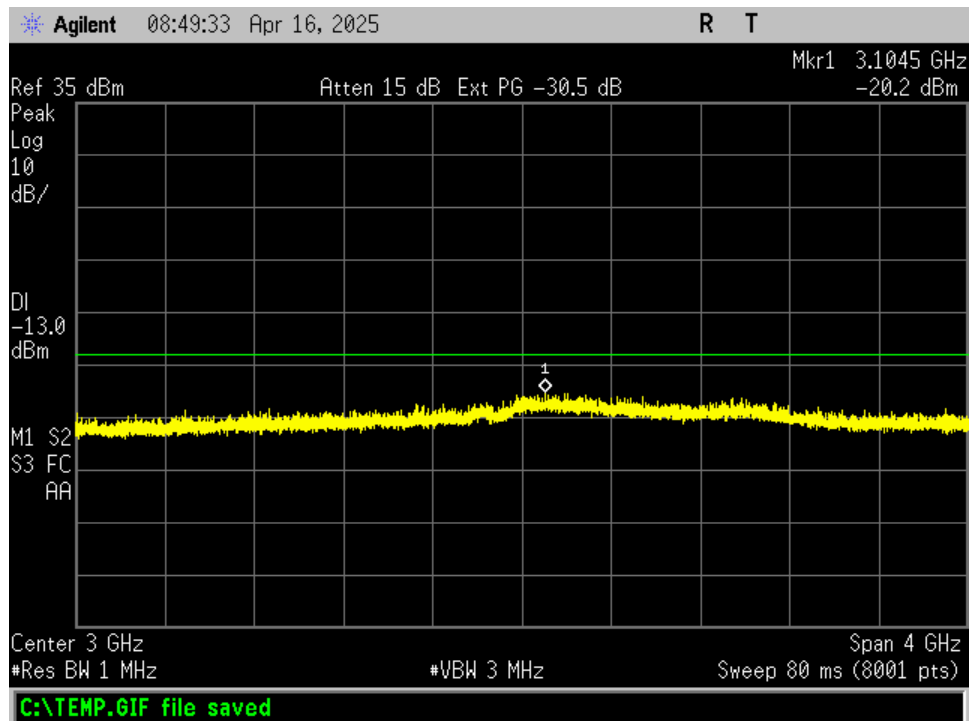


Figure 110. 799 MHz, 1 - 5 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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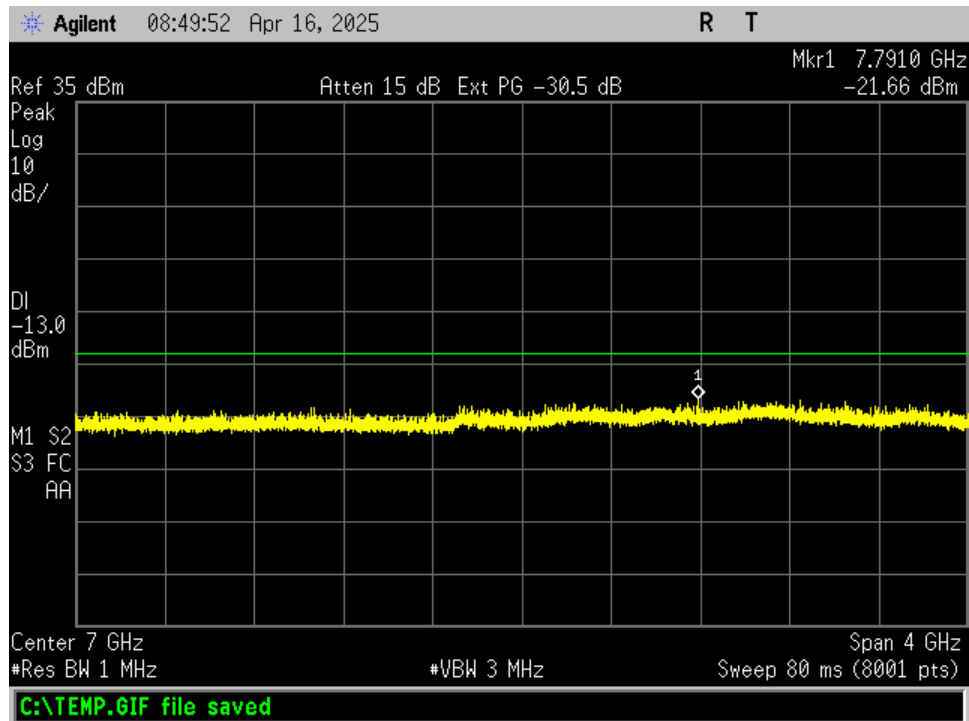


Figure 111. 799 MHz, 5 - 9 GHz

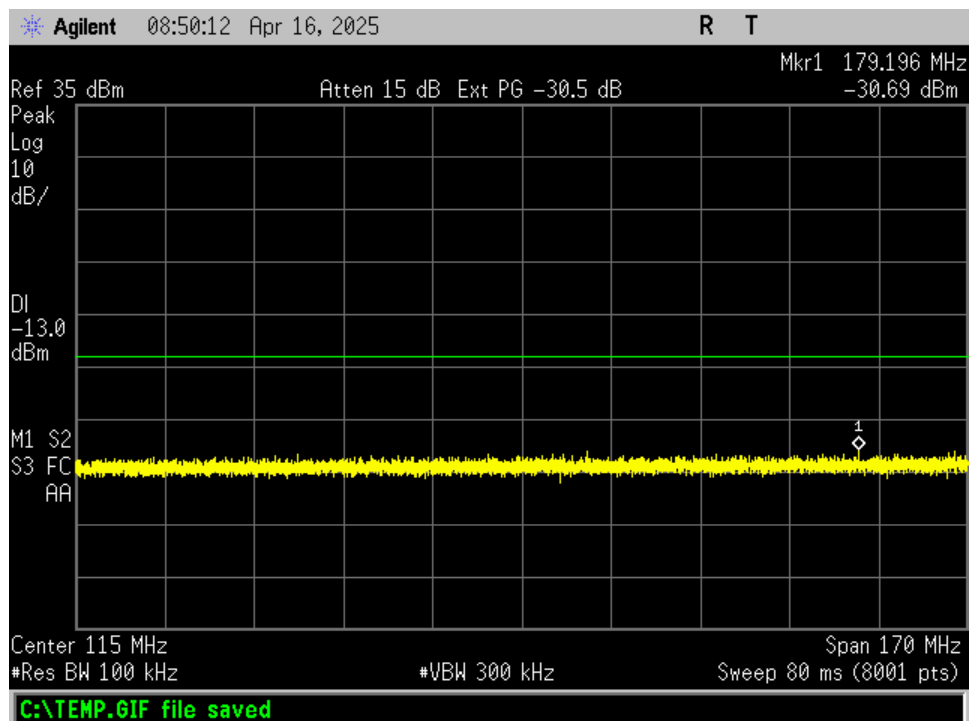


Figure 112. 808 MHz 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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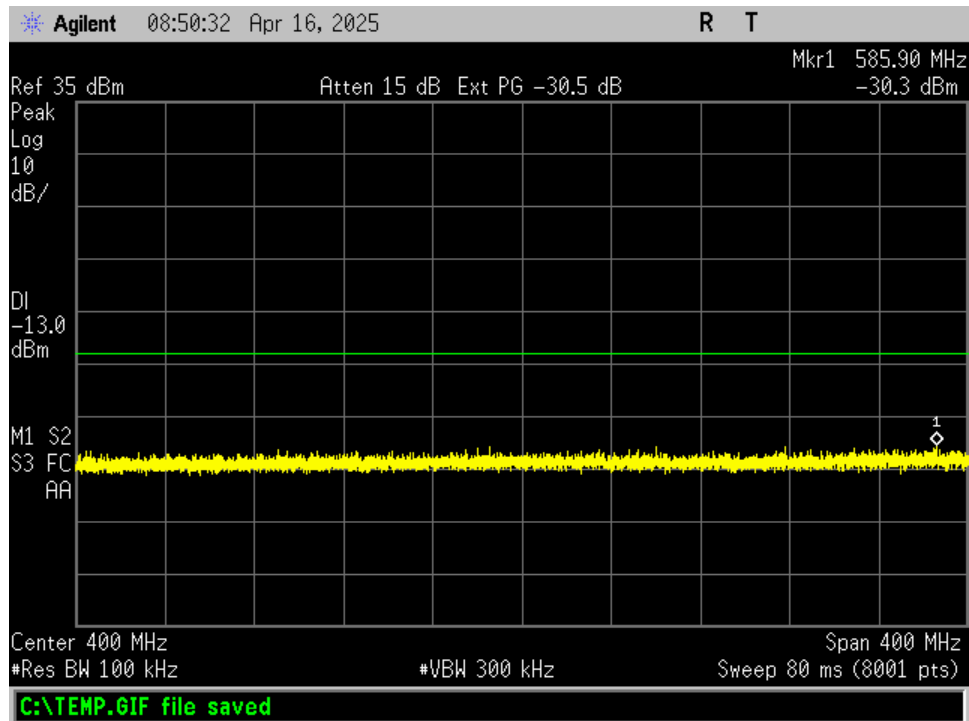


Figure 113. 808 MHz, 200 – 600 MHz

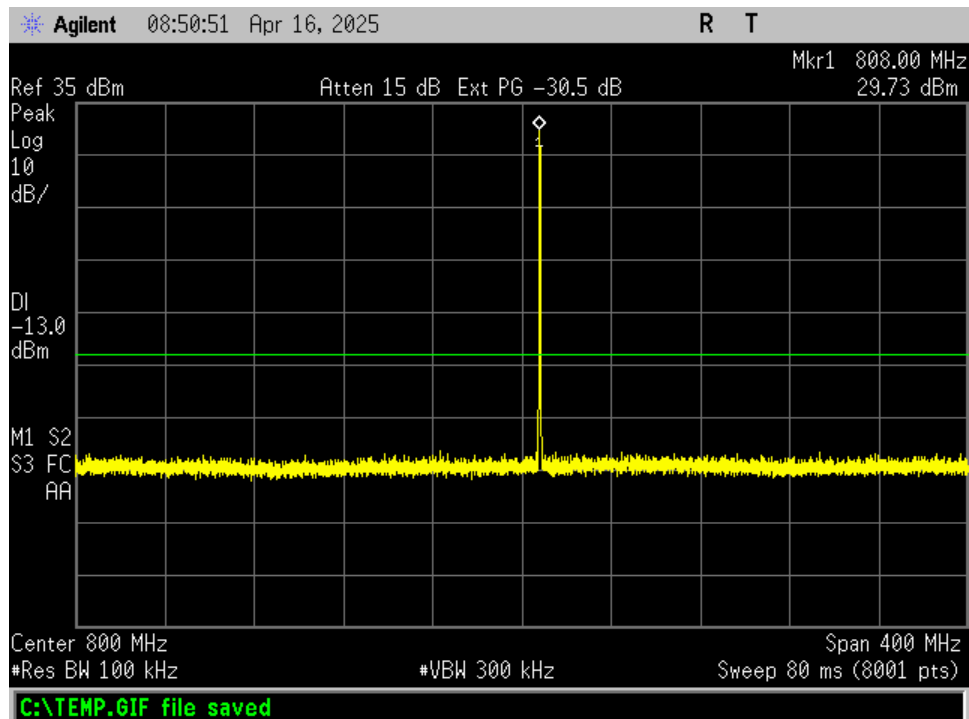


Figure 114. 808 MHz 600 - 1000 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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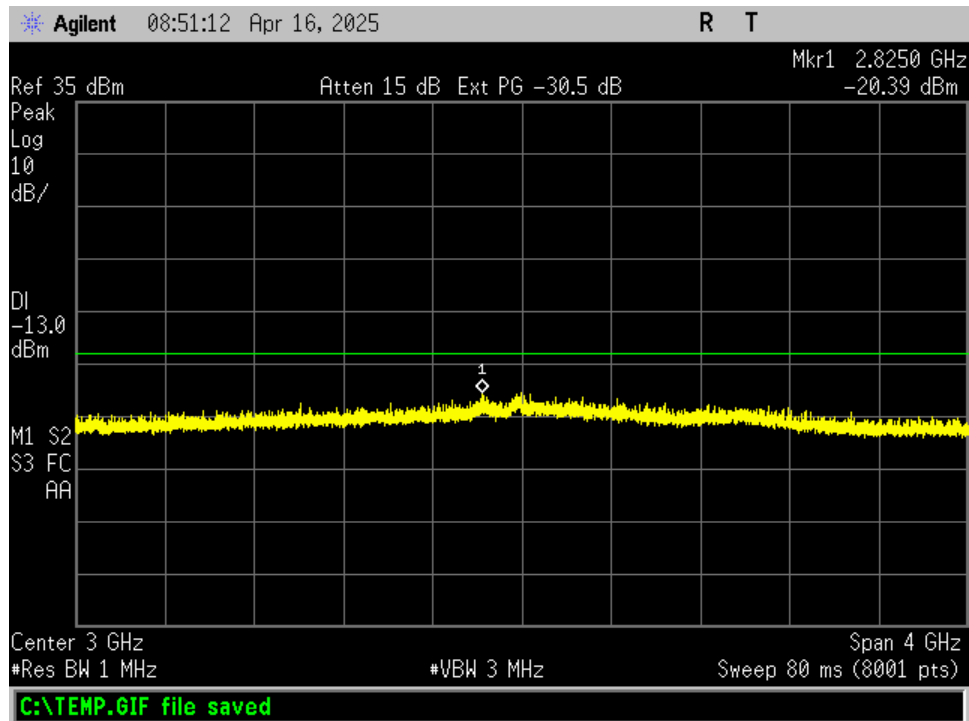


Figure 115. 808 MHz, 1 - 5 GHz

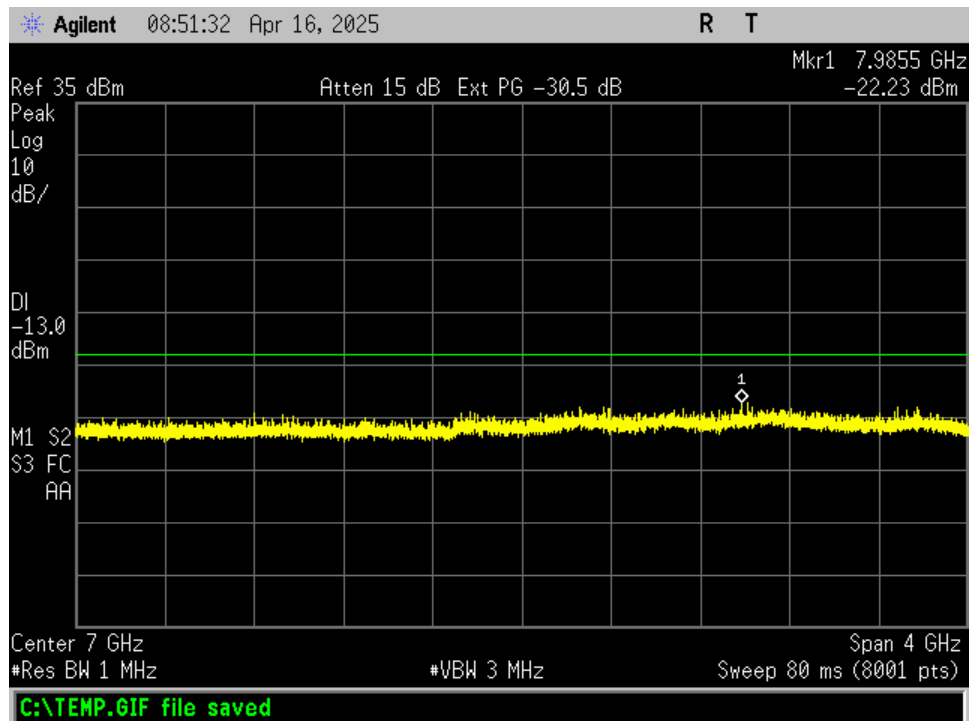


Figure 116. 808 MHz, 5 - 9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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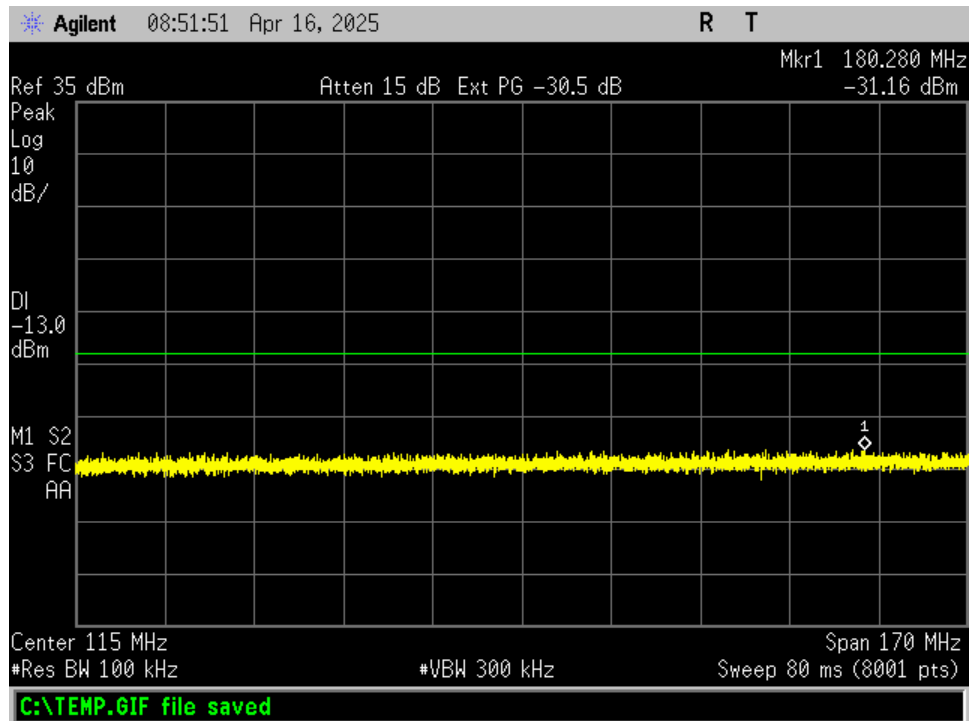


Figure 117. 816 MHz 30 - 200 MHz

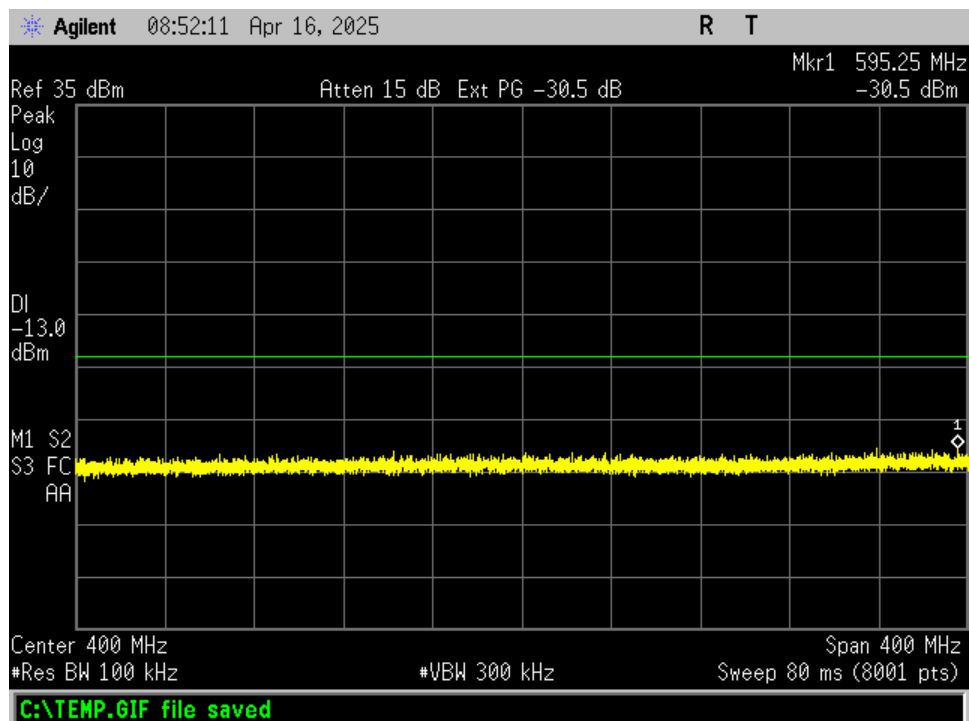


Figure 118. 816 MHz, 200 – 600 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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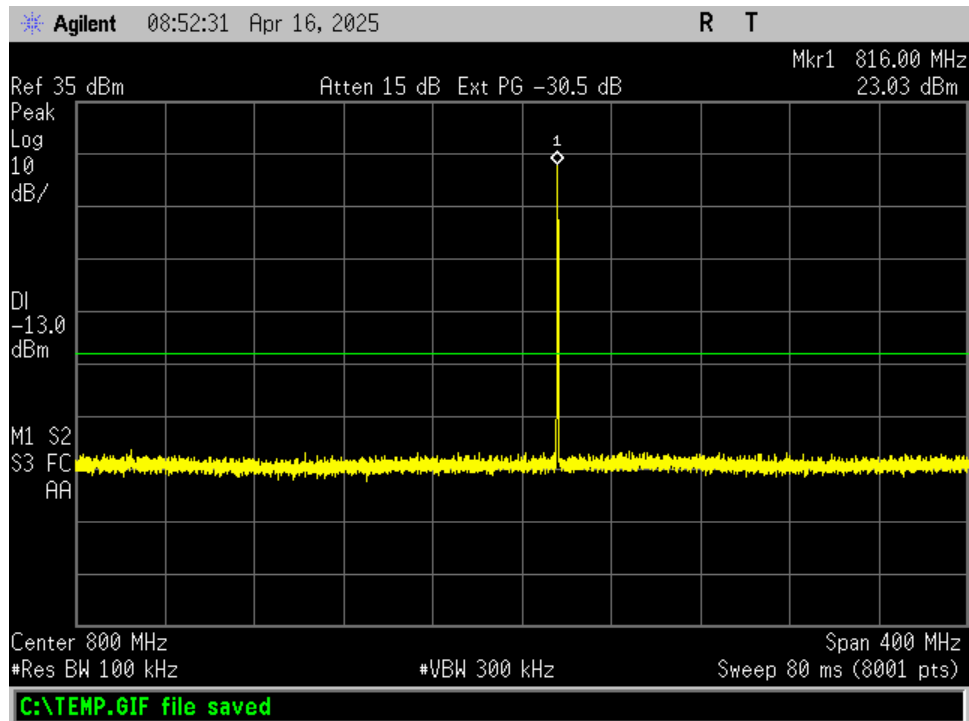


Figure 119. 816 MHz 600 - 1000 MHz

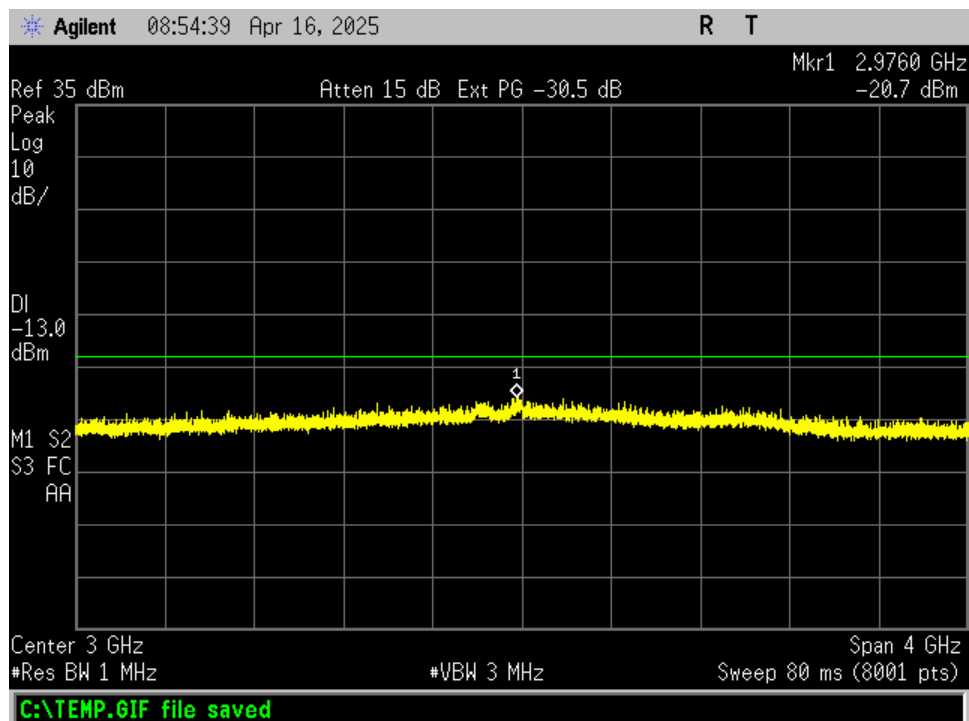


Figure 120. 816 MHz, 1 - 5 GHz

U.S. Tech Test Report:
FCC ID:
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Report Number:
Issue Da
Customer:
Model:

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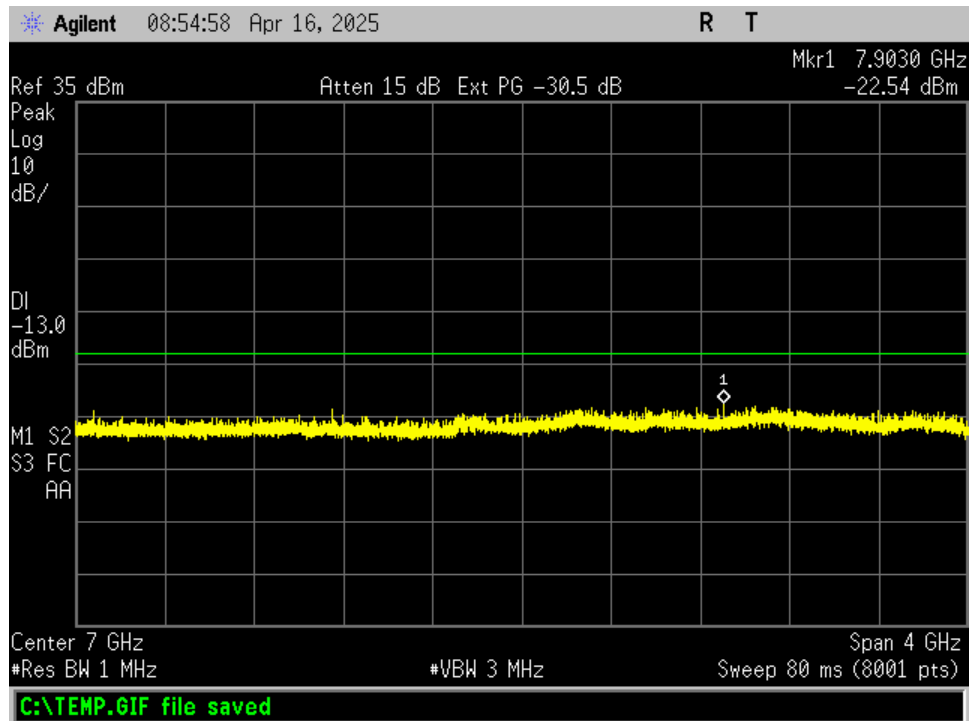


Figure 121. 816 MHz, 5 - 9 GHz

2.13.2.2 Down Link Conducted Spurious Emissions

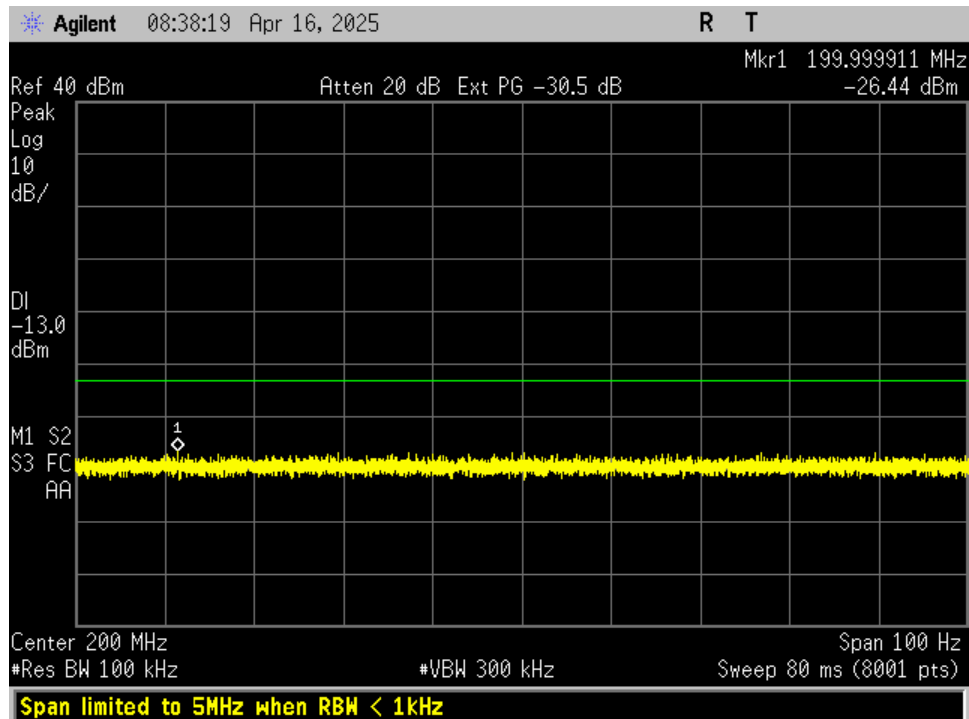


Figure 122. 769 MHz 30 - 200 MHz

U.S. Tech Test Report:
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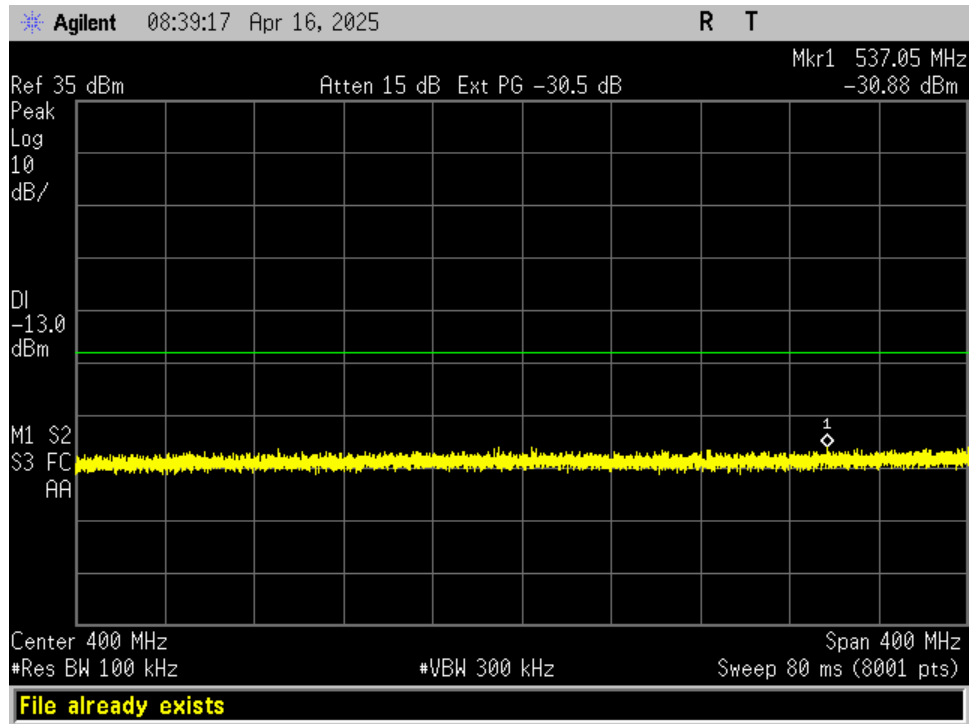


Figure 123. 769 MHz, 200 – 600 MHz

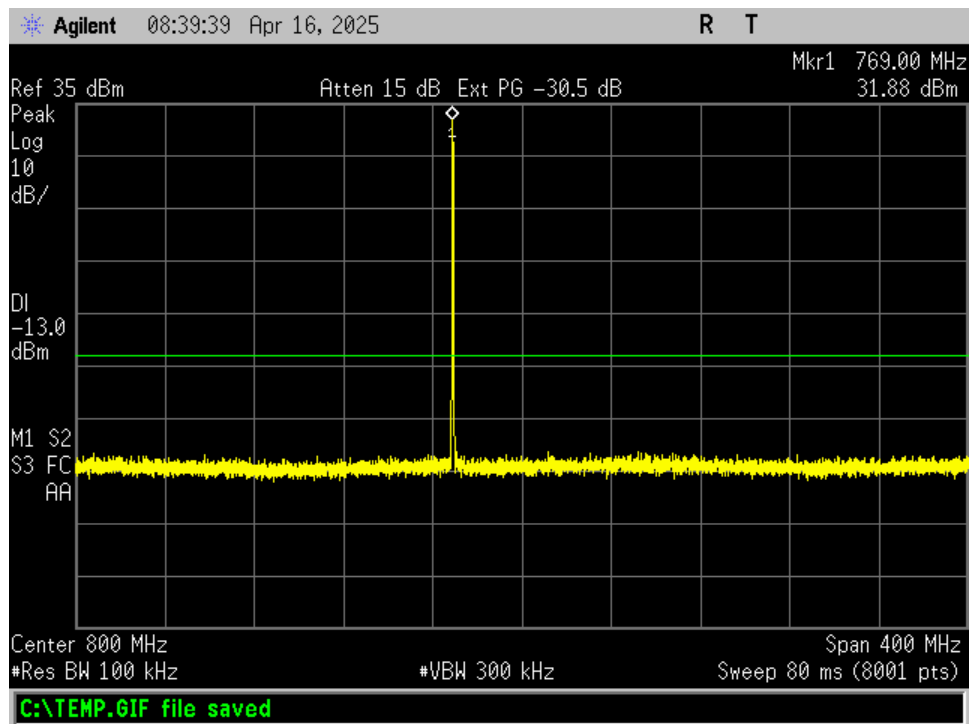


Figure 124. 769 MHz 600 - 1000 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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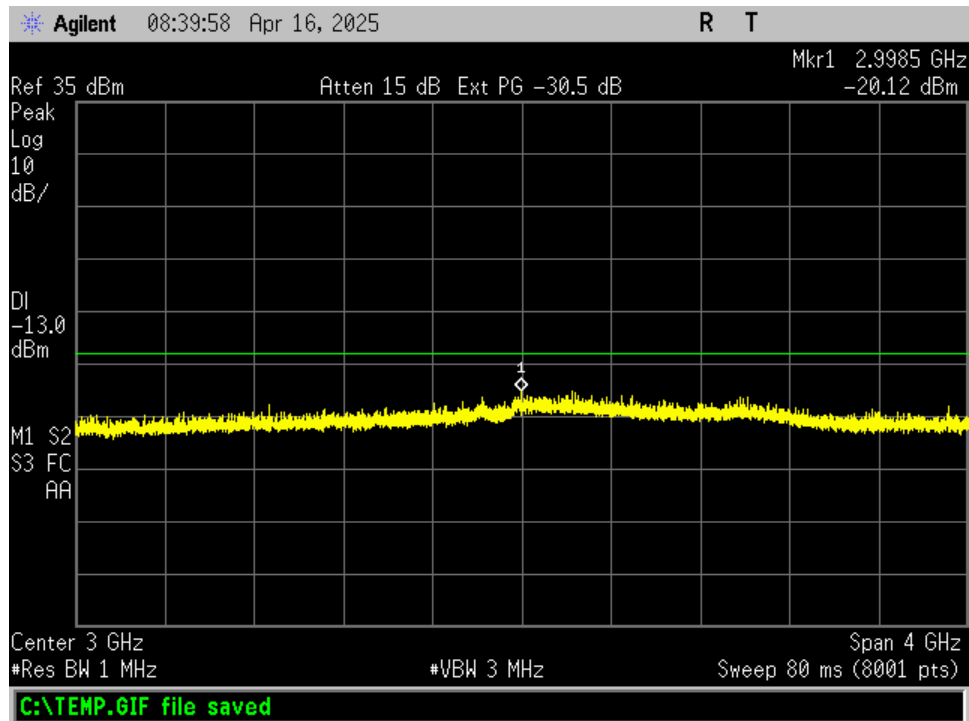


Figure 125. 769 MHz, 1 - 5 GHz

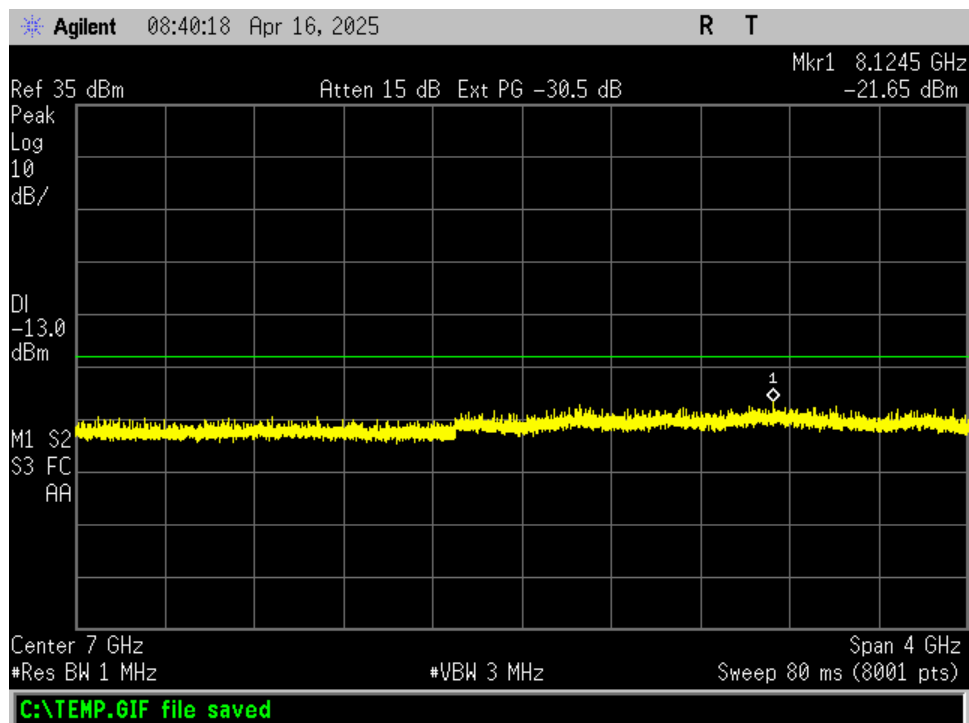


Figure 126. 769 MHz, 5 – 9 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
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25-0005
May 20, 2025
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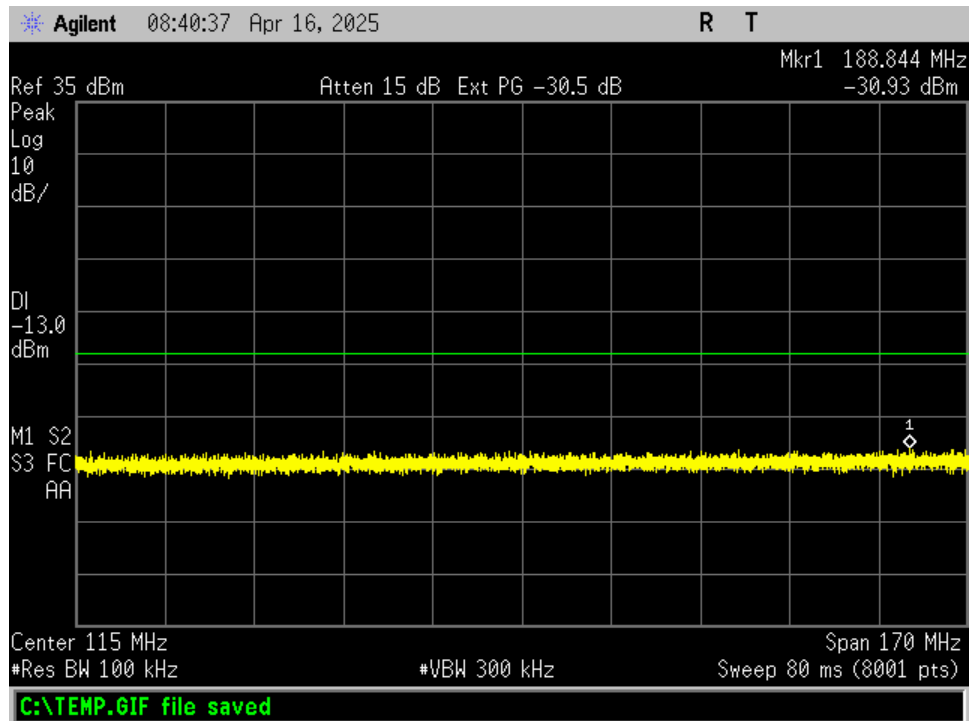


Figure 127. 775 MHz 30 - 200 MHz

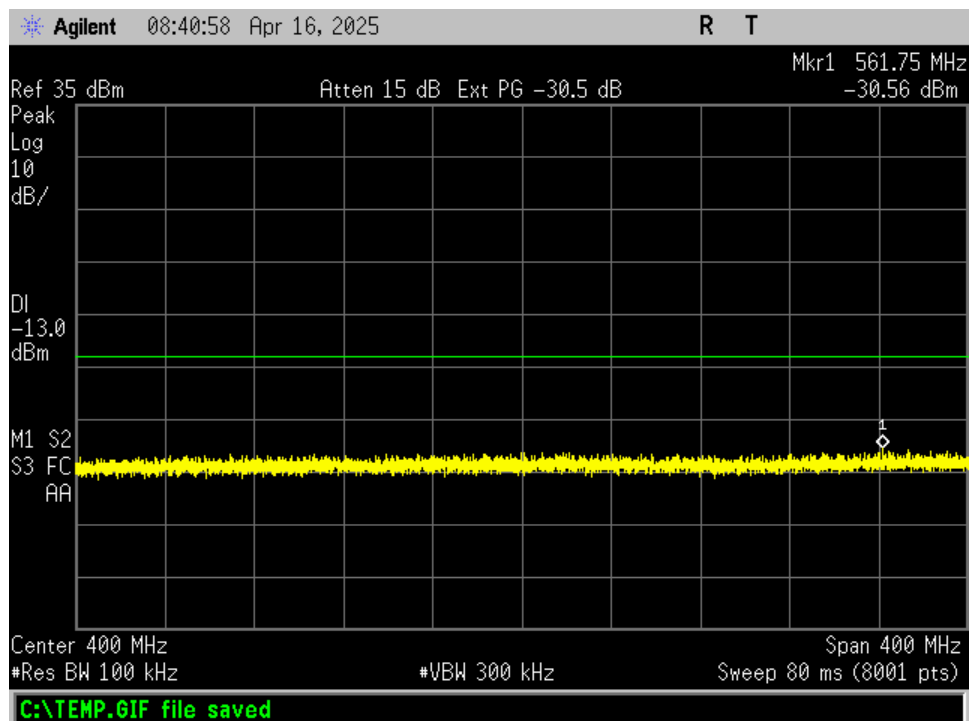


Figure 128. 775 MHz, 200 – 600 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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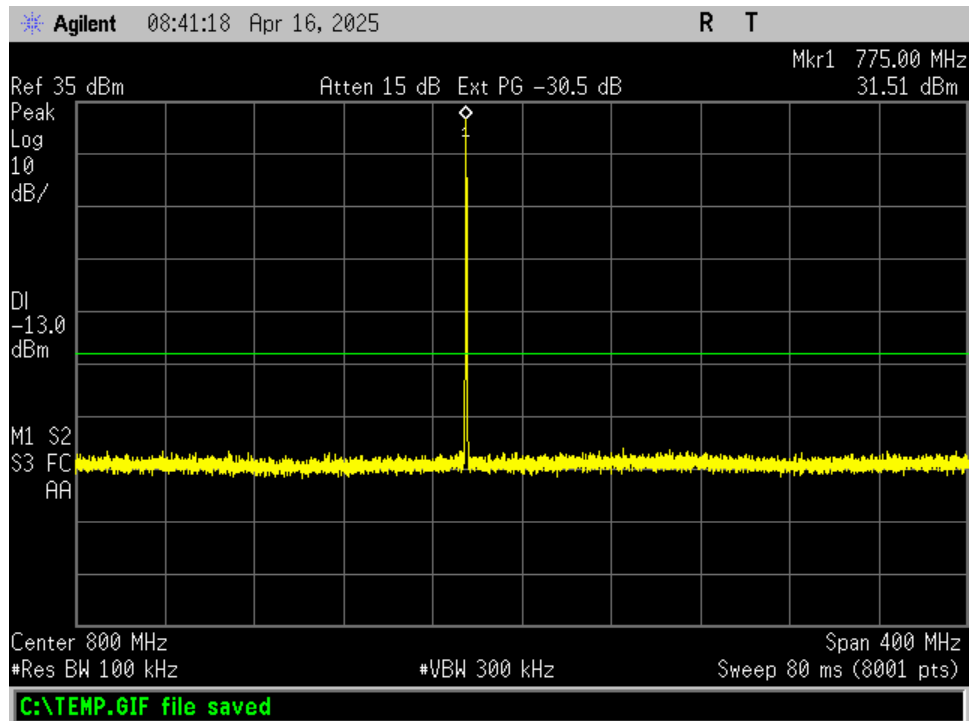


Figure 129. 775 MHz 600 - 1000 MHz

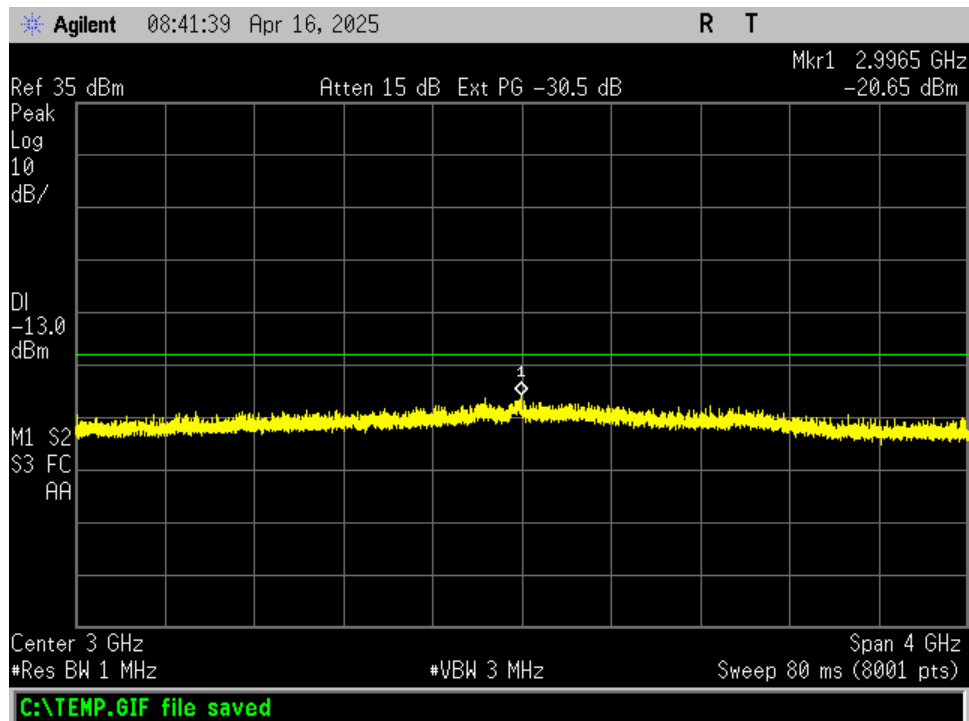


Figure 130. 775 MHz, 1 - 5 GHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

FCC Part 90 Certification
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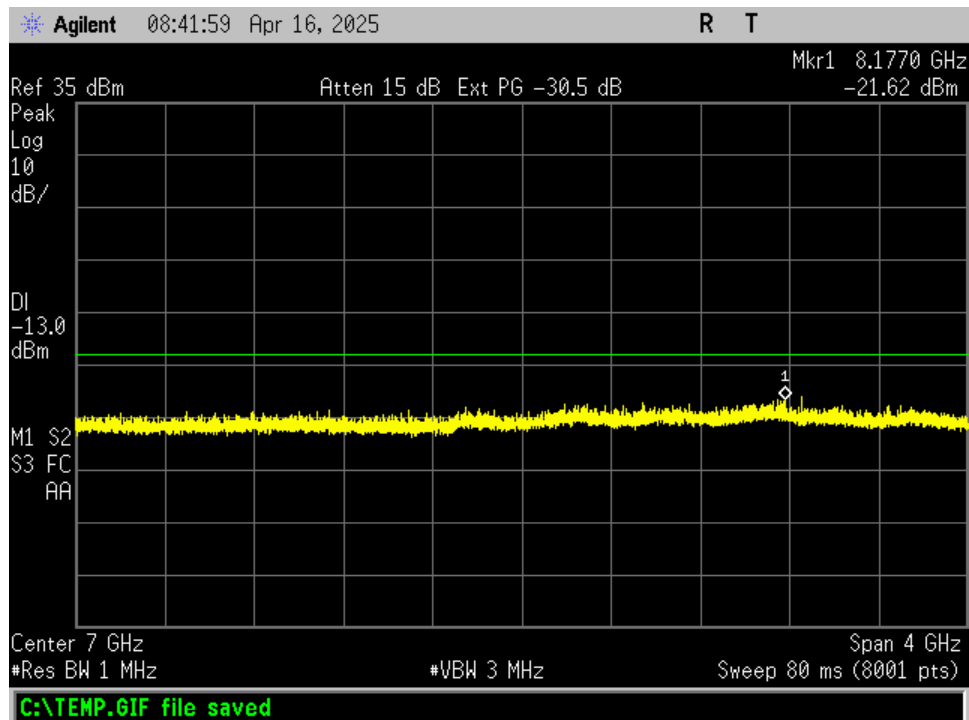


Figure 131. 775 MHz, 5 – 9 GHz

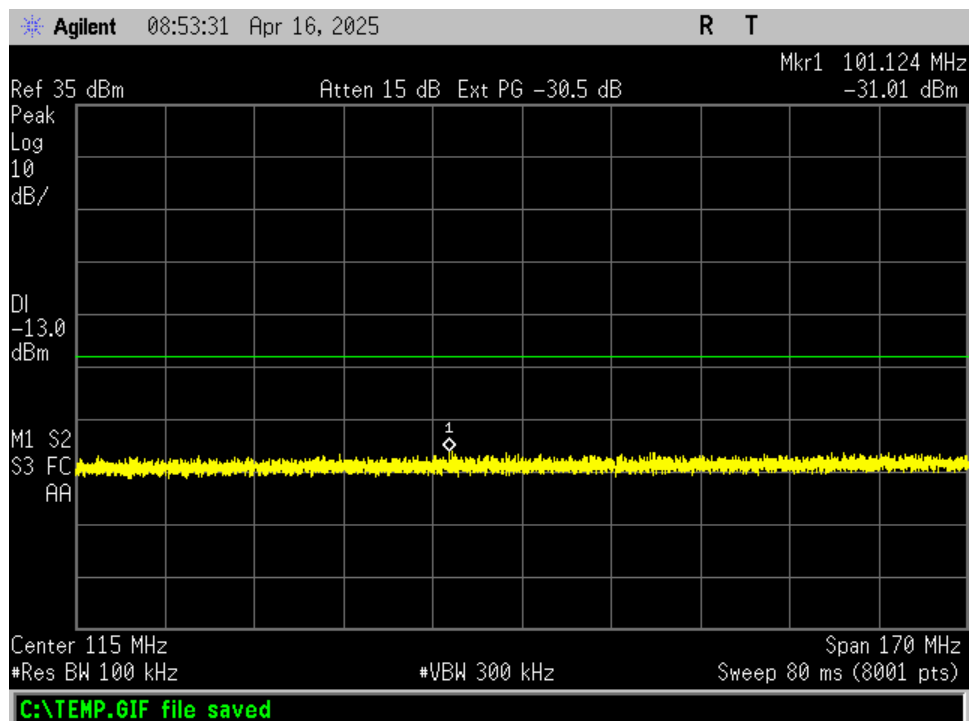


Figure 132. 851 MHz 30 - 200 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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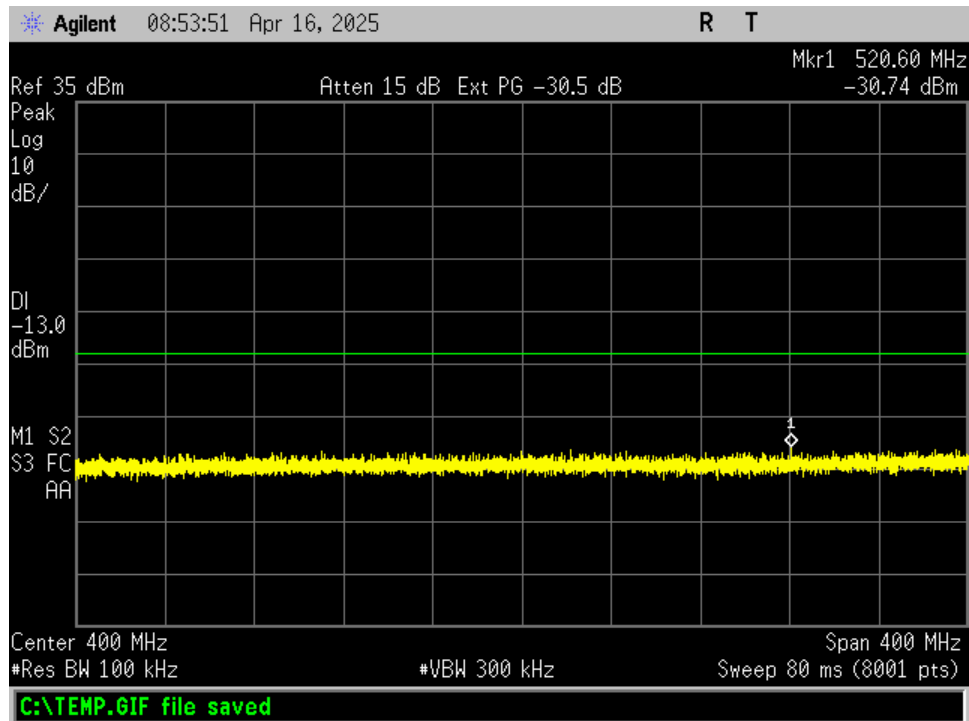


Figure 133. 851 MHz, 200 – 600 MHz

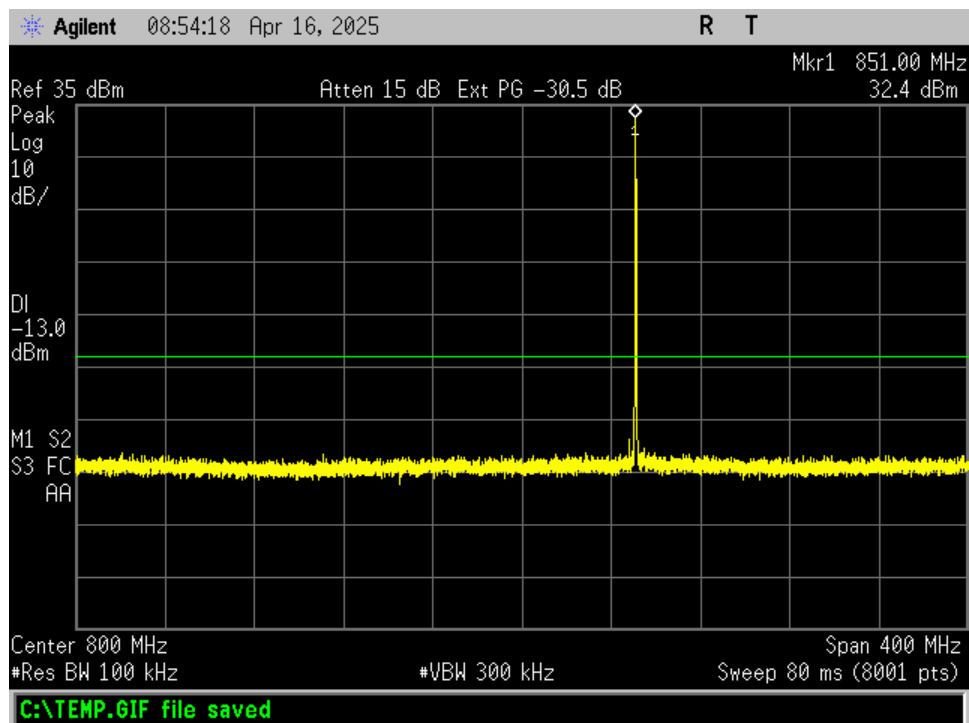


Figure 134. 851 MHz 600 - 1000 MHz

U.S. Tech Test Report:
FCC ID:
IC:
Report Number:
Issue Da
Customer:
Model:

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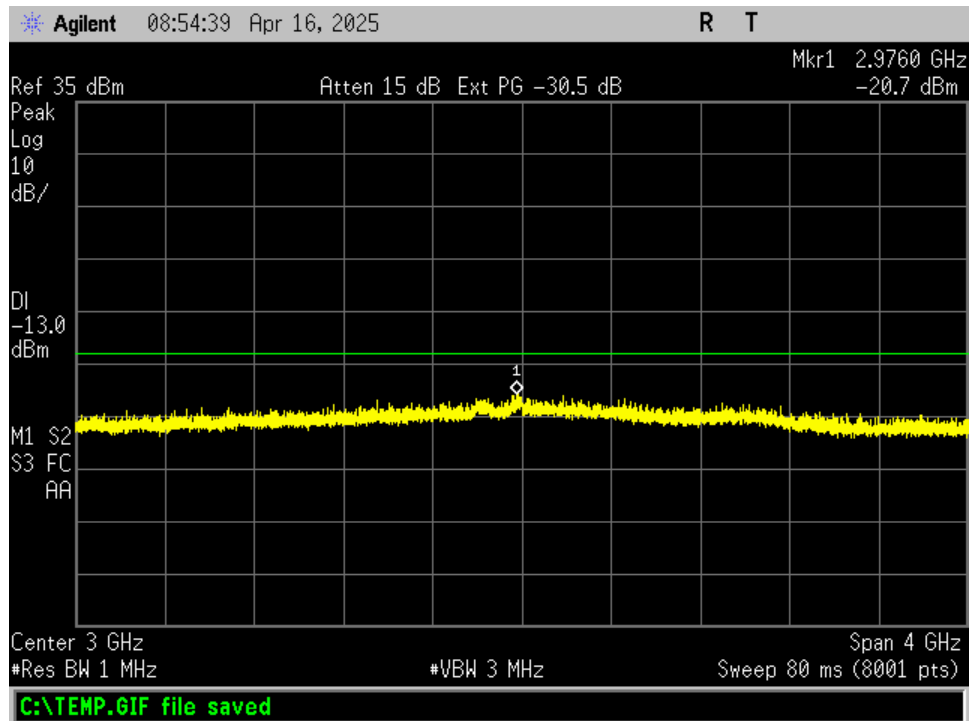


Figure 135. 851 MHz, 1 - 5 GHz

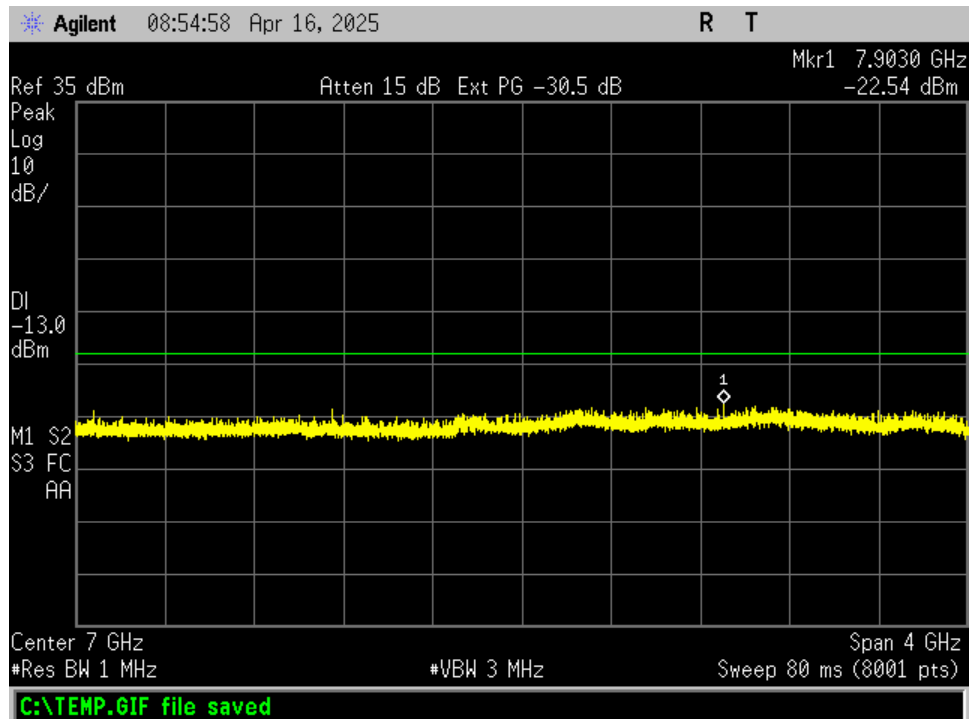


Figure 136. 851 MHz, 5 - 9 GHz

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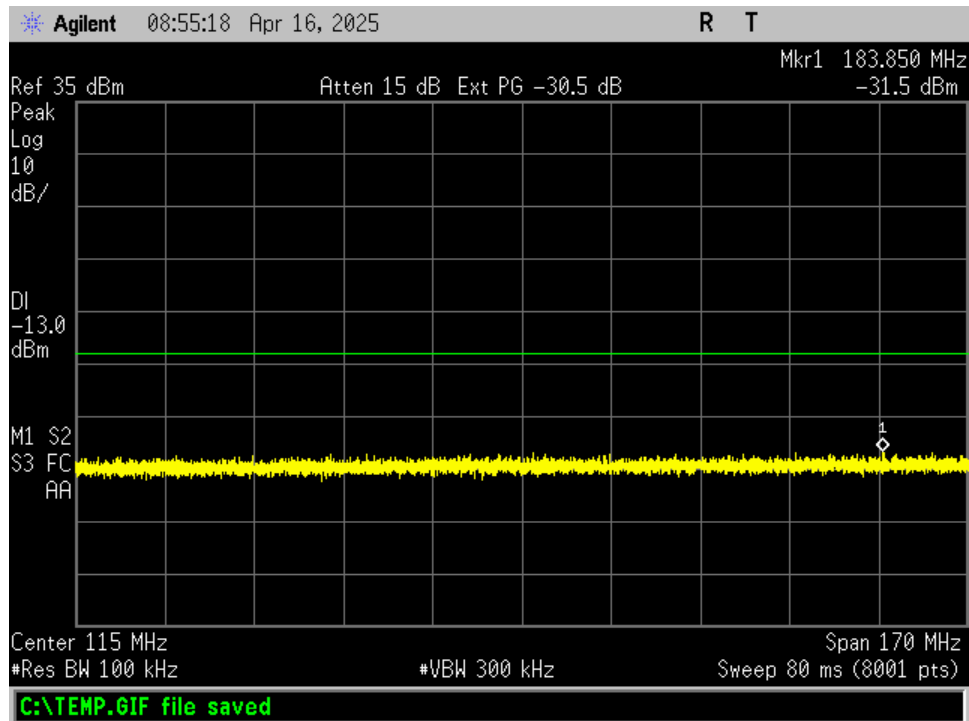


Figure 137. 856 MHz 30 - 200 MHz

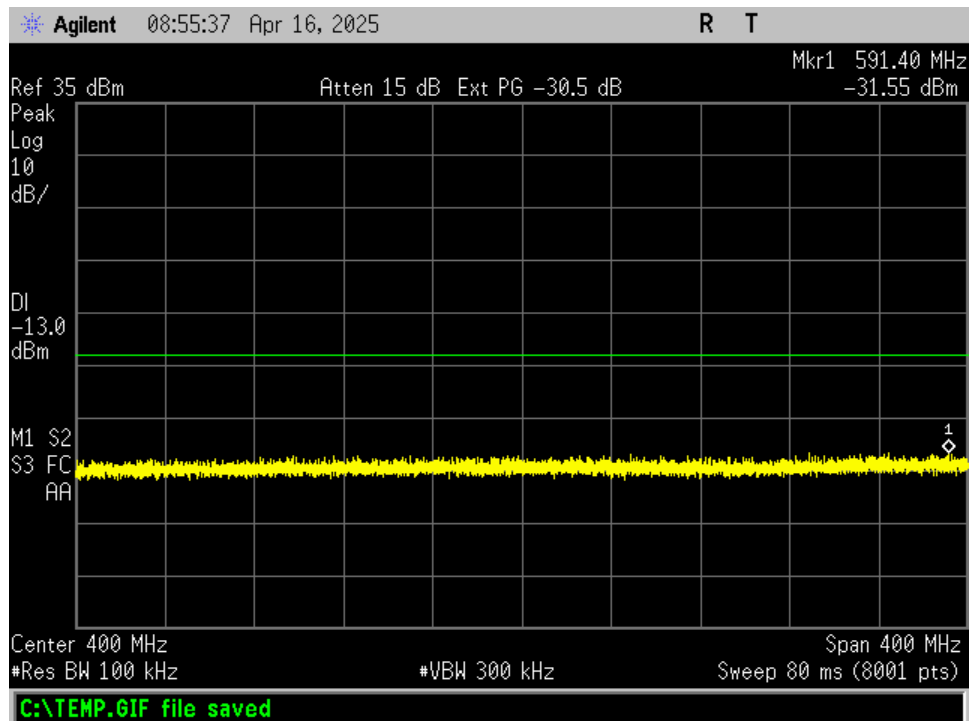


Figure 138. 856 MHz, 200 – 600 MHz

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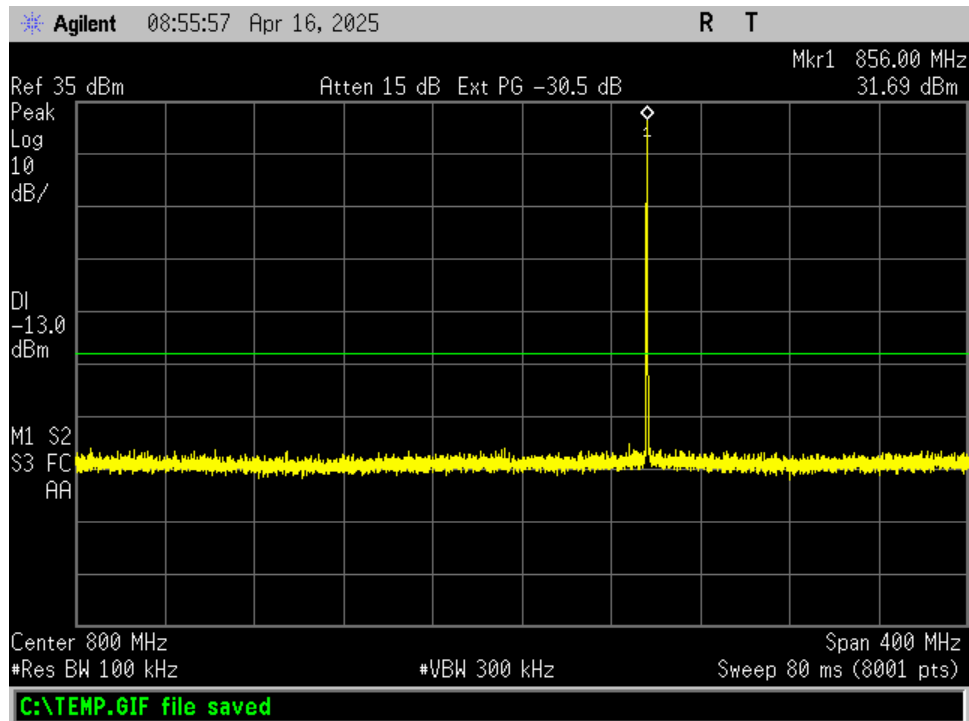


Figure 139. 856 MHz 600 - 1000 MHz

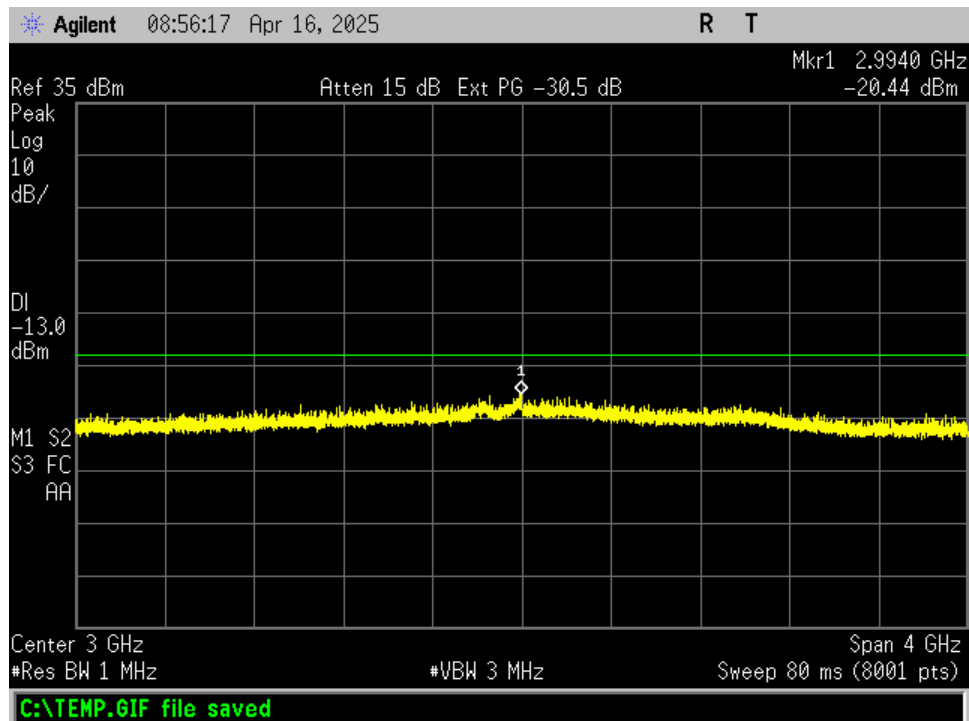


Figure 140. 856 MHz, 1 - 5 GHz

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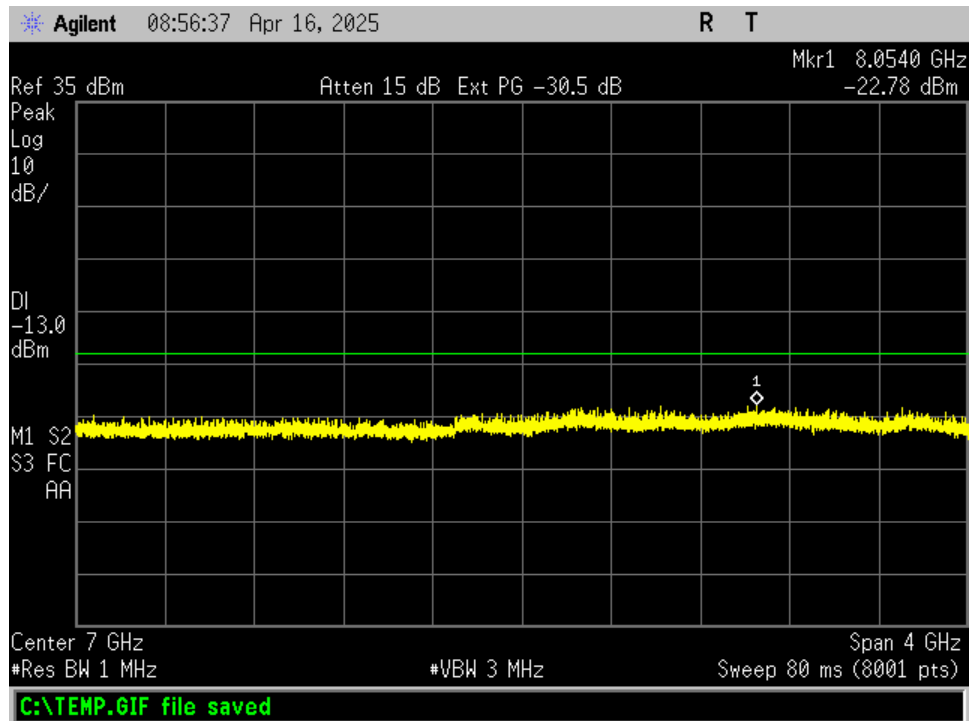


Figure 141. 856 MHz, 5 - 9 GHz

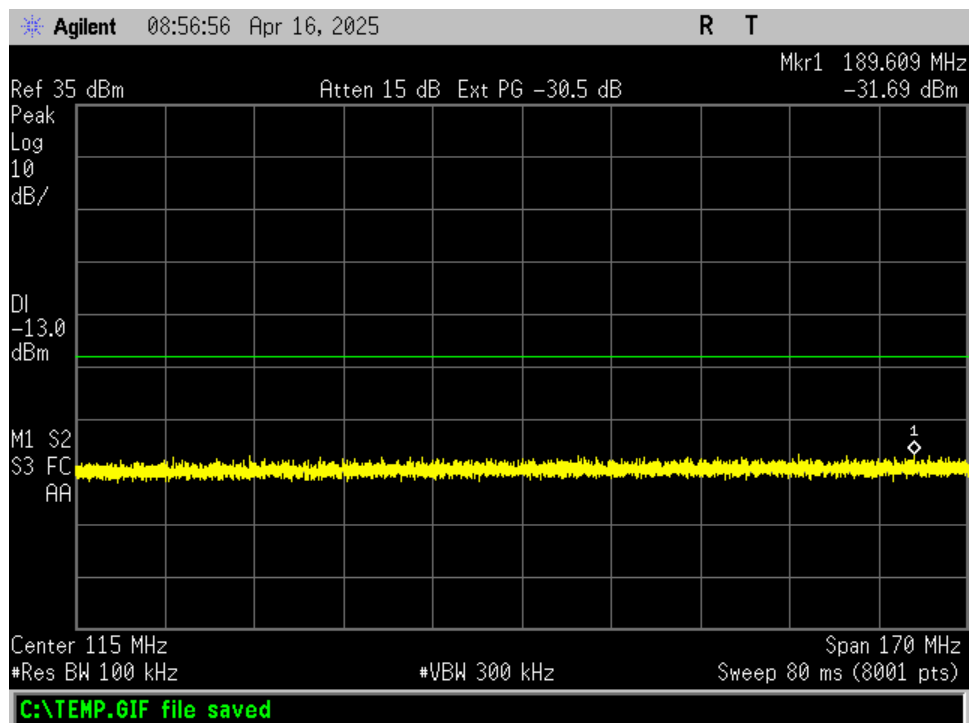


Figure 142. 861 MHz 30 - 200 MHz

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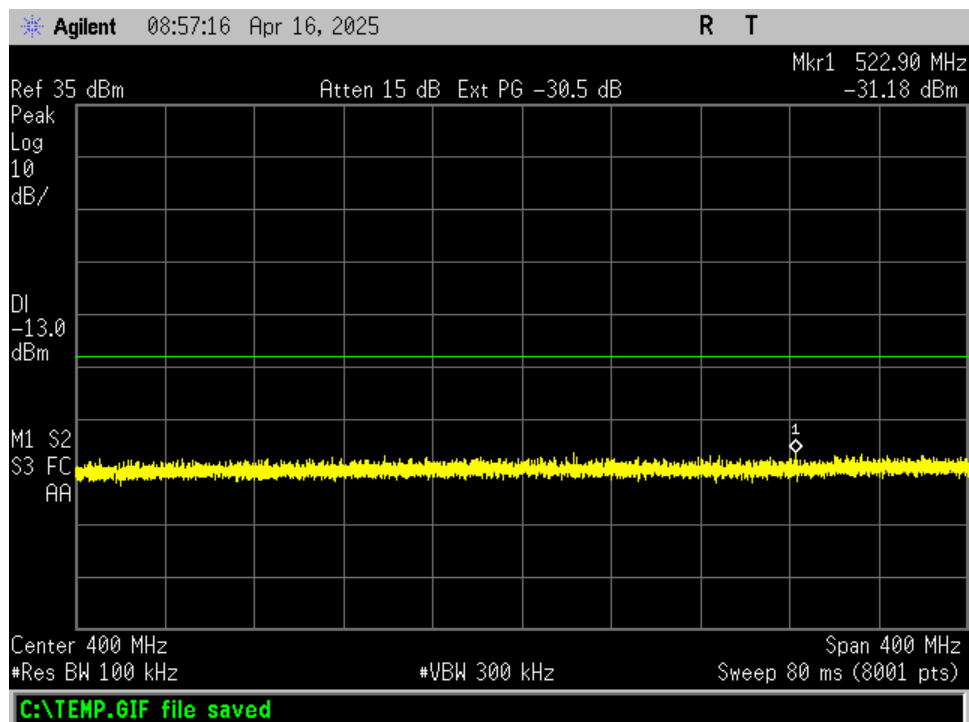


Figure 143. 861 MHz, 200 – 600 MHz

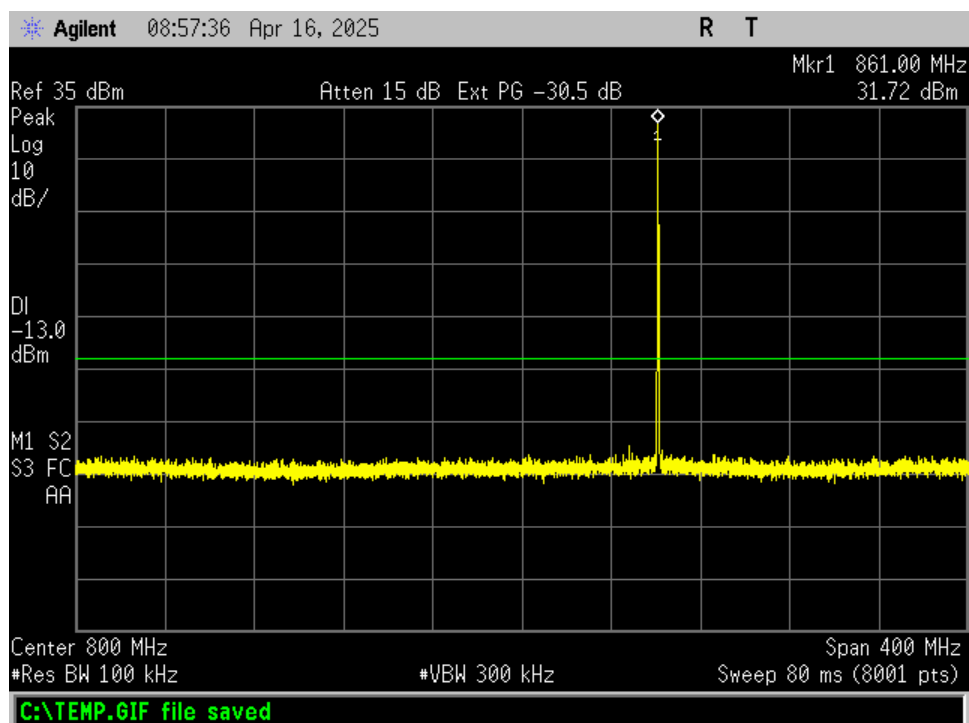


Figure 144. 861 MHz 600 - 1000 MHz

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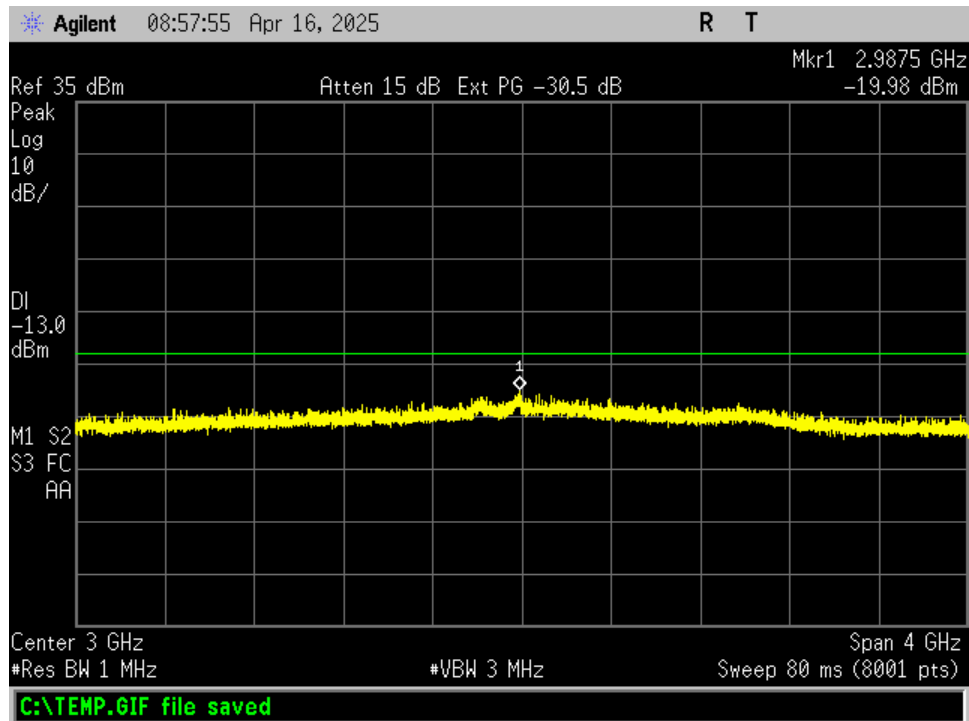


Figure 145. 861 MHz, 1 - 5 GHz

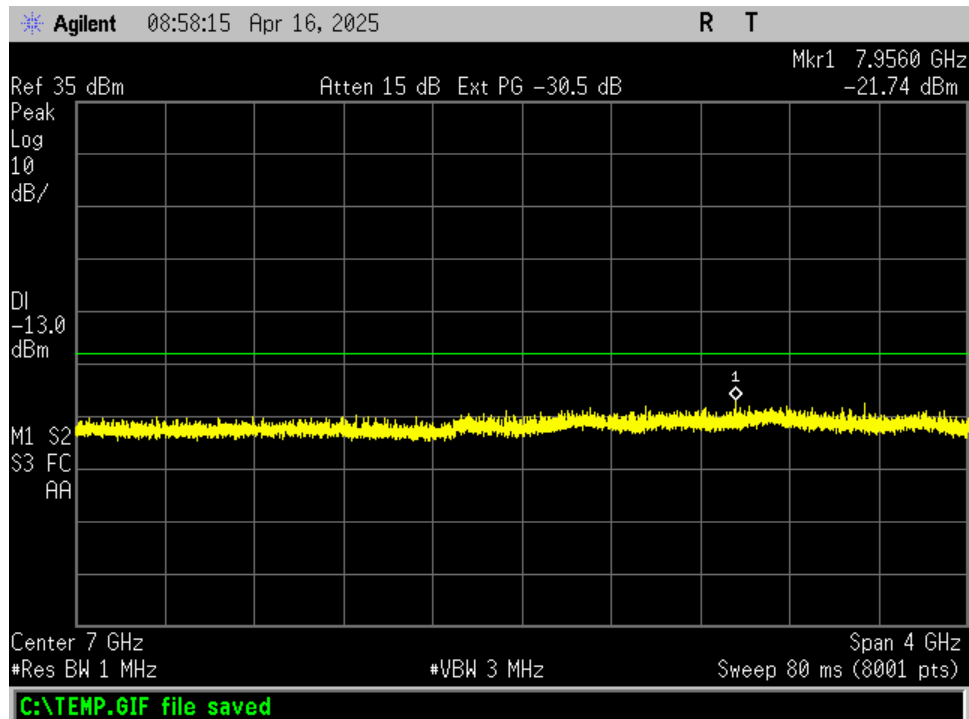


Figure 146. 861 MHz, 5 - 9 GHz

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2.14 AGC Threshold (KDB 935210 D05 v01r04 4.2)

The AGC Threshold data below is provide for recording purpose per KDB 935210.

2.14.1 Measuring AGC Threshold

The AGC threshold shall be determined by applying the procedure of 3.2 of KDB 953210 D05 v01r04 but with the signal generator configured to produce a test signal defined in Table 1 of the KDB document, a CW input signal or digitally modulated signal. In this case, a CW input signal with no modulation was used.

FREQ (MHz)	AGC Input (dBm)	Measured Output (dBm)	Gain (dB)	BAND
799	-56.2	24.47	80.67	Up Link
808	-56.2	28.38	84.58	
816	-61.2	26.43	87.63	
769	-57.2	30.61	87.81	Down Link
775	-56.2	31.08	87.28	
851	-57.2	31.21	88.41	
856	-57.2	30.91	88.11	
861	-50.2	31.28	81.48	



Figure 147. AGC Threshold & OOB Rejection Test Configuration

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2.15 Out-of-Band Rejection (KDB 935210 D05 v01r04 4.3)

The Out-of-Band Rejection data below is provided for recording purposes per KDB 935210.

2.15.1 Out-of-Band Rejection Measurement

The procedure detailed in 4.3 of the KDB was used to perform these measurements. Plots of the test results are provided below.

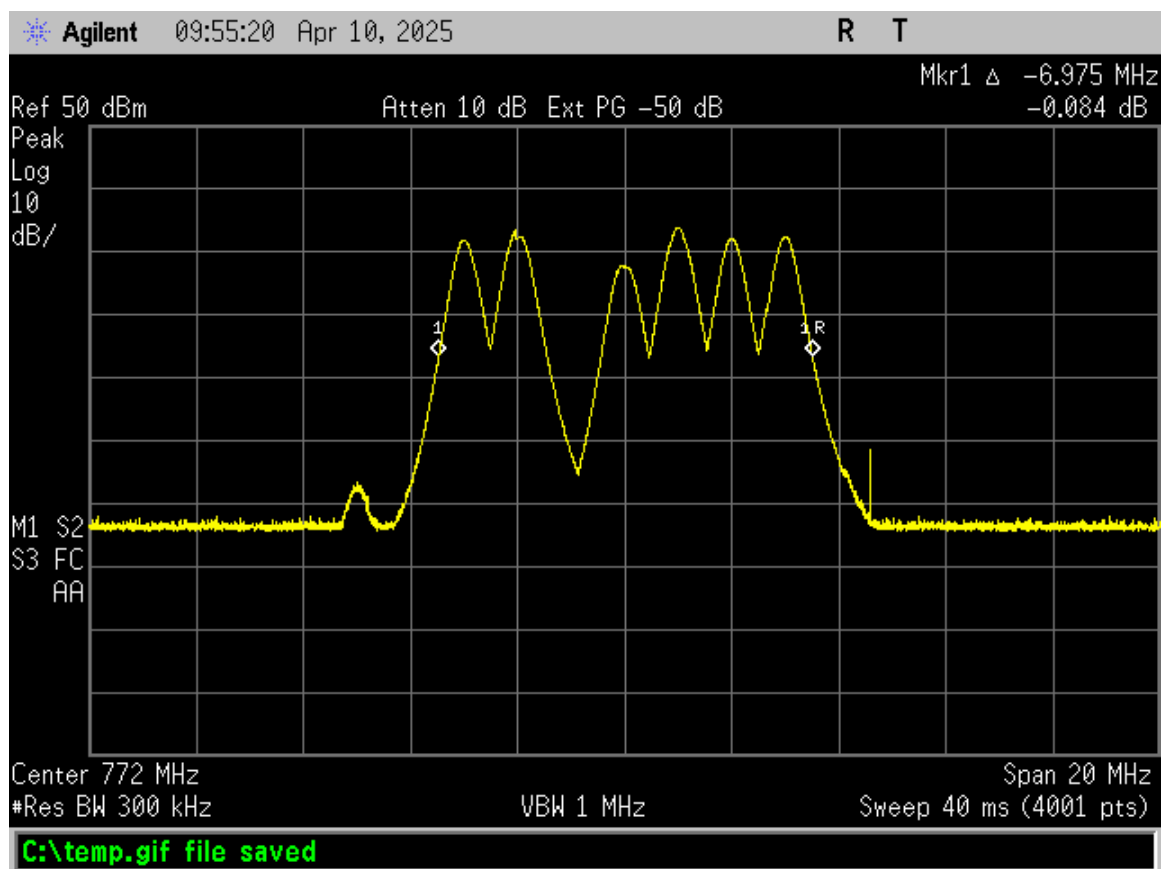


Figure 148. 769 – 775 MHz Down Link Out-of-Band Rejection

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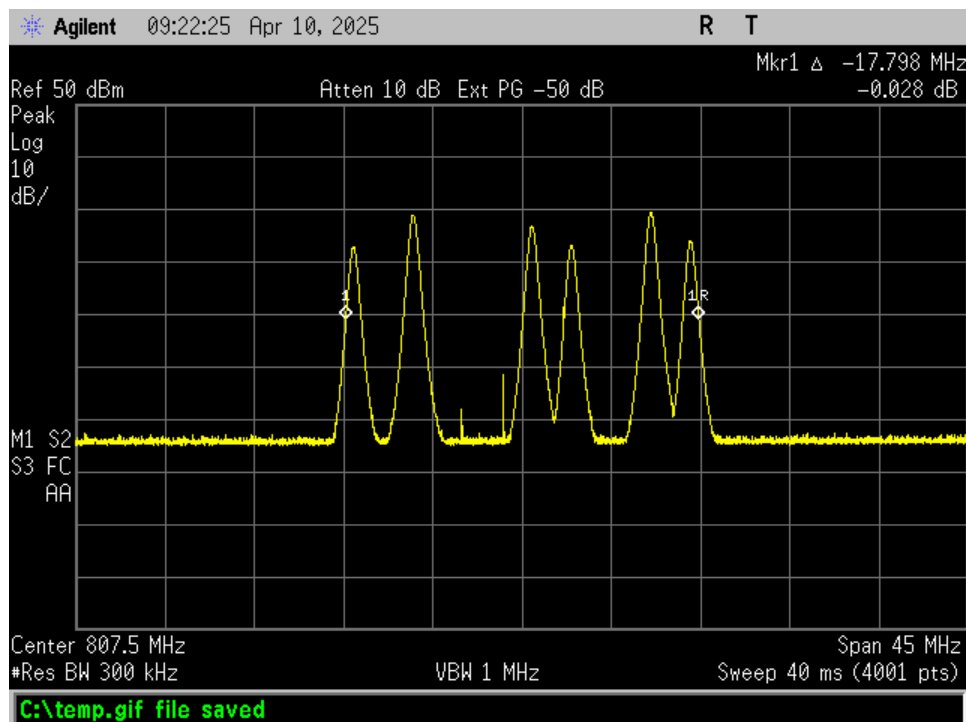


Figure 149. 799 – 816 MHz Up Link Out-of-Band Rejection

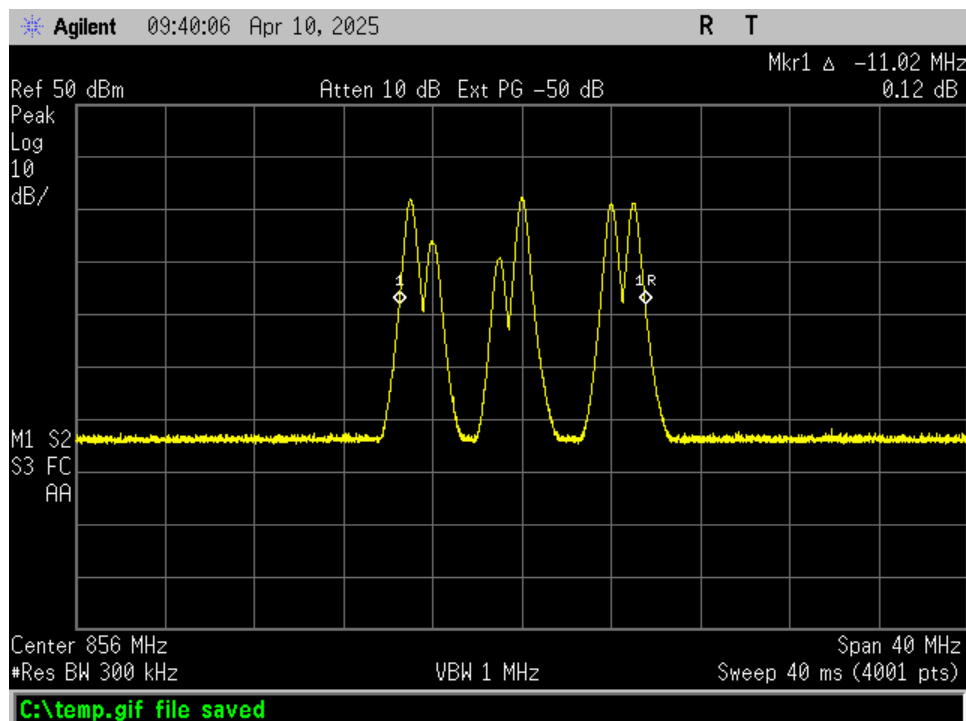


Figure 150. 851 – 861 MHz Down Link Out-of-Band Rejection

2.16 Frequency Stability (90.219(e)(4)(i), RSS-131, 9.4)

The signals are retransmitted on the same channels as received. Minor departures from the exact provider or reference frequencies of the input signals are allowed, provided that the retransmitted signals meet the requirements of § 90.213.

In cases where the frequency stability limit is not given in the applicable 90.213 or RSS, the equipment shall comply with a frequency stability of ± 1.5 ppm.

The frequency tolerance of the carrier signal was measured while the temperature was varied from -30 to + 50 degrees centigrade. The frequency tolerance was verified in 10-degree increments. The EUT was tested at 120 VAC. The supply voltage was varied down to the operating point just above the threshold of operation at 103 VAC and up to 138 VAC. The data is shown in the following tables and figures.

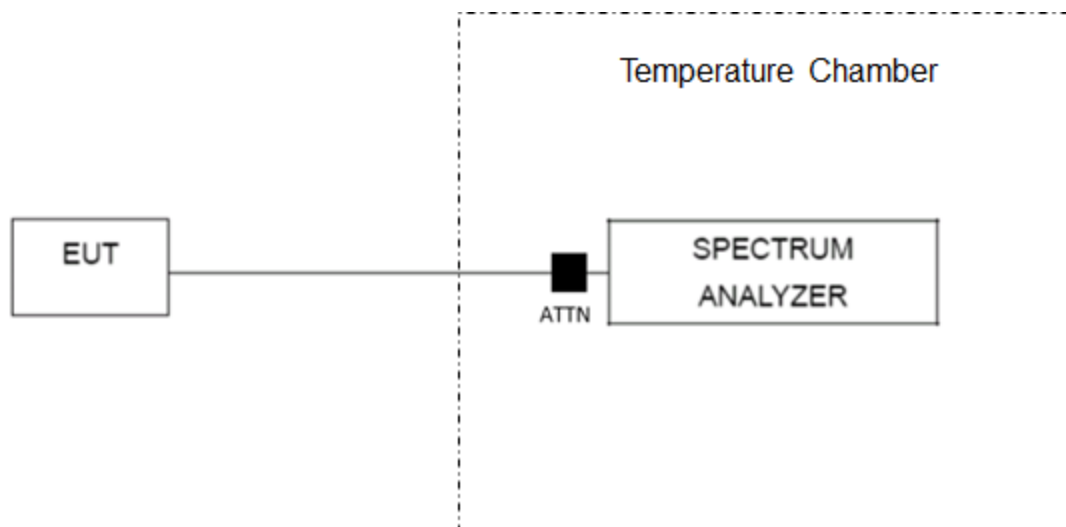


Figure 151. Frequency Stability Test Configuration

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2.16.1 Up Link Channels

Table 20. Frequency Deviation/Stability – 799 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	799.000004	0.01
-20	799.000005	0.01
-10	799.000005	0.01
0	799.000006	0.01
10	799.000006	0.01
20	799.000007	0.01
30	799.000006	0.01
40	799.000006	0.01
50	799.000008	0.01

Table 21. Frequency Deviation/Stability- Voltage deviation – 799 MHz

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	799.000014	0.02
120 VAC (100%)	799.000007	0.01
138 VAC (115%)	799.000011	0.01

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Table 22. Frequency Deviation/Stability – 808 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	808.000004	0.00
-20	808.000005	0.01
-10	808.000005	0.01
0	808.000006	0.01
10	808.000006	0.01
20	808.000006	0.01
30	808.000007	0.01
40	808.000006	0.01
50	808.000008	0.01

Table 23. Frequency Deviation/Stability- Voltage deviation - 808 MHz

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	808.000014	0.02
120 VAC (100%)	808.000006	0.01
138 VAC (115%)	808.000011	0.01

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Table 24. Frequency Deviation/Stability – 816 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	816.000004	0.00
-20	816.000005	0.01
-10	816.000005	0.01
0	816.000006	0.01
10	816.000006	0.01
20	816.000006	0.01
30	816.000006	0.01
40	816.000006	0.01
50	816.000008	0.01

Table 25. Frequency Deviation/Stability- Voltage deviation – 816 MHz

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	816.000013	0.02
120 VAC (100%)	816.000006	0.01
138 VAC (115%)	816.000011	0.01

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2.16.2 Down Link Channels

Table 26. Frequency Deviation/Stability – 765 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	769.000004	0.01
-20	769.000005	0.01
-10	769.000006	0.01
0	769.000006	0.01
10	769.000006	0.01
20	769.000007	0.01
30	769.000006	0.01
40	769.000006	0.01
50	769.000050	0.07

Table 27. Frequency Deviation/Stability- Voltage deviation – 765 MHz

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	769.000014	0.02
120 VAC (100%)	769.000006	0.01
138 VAC (115%)	769.000010	0.01

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Table 28. Frequency Deviation/Stability – 775 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	775.000004	0.01
-20	775.000005	0.01
-10	775.000005	0.01
0	775.000005	0.01
10	775.000006	0.01
20	775.000007	0.01
30	775.000006	0.01
40	775.000006	0.01
50	775.000007	0.01

Table 29. Frequency Deviation/Stability- Voltage deviation

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	775.000014	0.02
120 VAC (100%)	775.000006	0.01
138 VAC (115%)	775.000010	0.01

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Table 30. Frequency Deviation/Stability – 851 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	851.000004	0.00
-20	851.000005	0.01
-10	851.000006	0.01
0	851.000006	0.01
10	851.000007	0.01
20	851.000007	0.01
30	851.000007	0.01
40	851.000006	0.01
50	851.000007	0.01

Table 31. Frequency Deviation/Stability- Voltage deviation – 851 MHz

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	851.000014	0.02
120 VAC (100%)	851.000007	0.01
138 VAC (115%)	851.000012	0.01

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Table 32. Frequency Deviation/Stability – 856 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	856.000004	0.00
-20	856.000006	0.01
-10	856.000006	0.01
0	856.000006	0.01
10	856.000007	0.01
20	856.000007	0.01
30	856.000008	0.01
40	856.000006	0.01
50	856.000008	0.01

Table 33. Frequency Deviation/Stability- Voltage deviation

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	856.000014	0.02
120 VAC (100%)	856.000007	0.01
138 VAC (115%)	856.000012	0.01

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Table 34. Frequency Deviation/Stability – 861 MHz

Temperature (degrees C)	Measured Frequency (MHz)	Deviation (ppm)
-30	861.000005	0.01
-20	861.000005	0.01
-10	861.000006	0.01
0	861.000007	0.01
10	861.000007	0.01
20	861.000007	0.01
30	861.000008	0.01
40	861.000006	0.01
50	861.000008	0.01

Table 35. Frequency Deviation/Stability- Voltage deviation

Voltage (% or Nom) @ 20°C	Measured Frequency (MHz)	Deviation (ppm)
103 VAC (85%)	861.000014	0.02
120 VAC (100%)	861.000006	0.01
138 VAC (115%)	861.000001	0.00

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2.17 Measurement Uncertainty

2.17.1 Radiated Spurious Emissions Measurement Uncertainty

For a measurement distance of 3 m, the measurement uncertainty (with a 95% confidence level) for this test using a Broadband Biconical Antenna (30 MHz to 1000 MHz) is ± 5.0 dB. This value includes all elements of measurement.

The measurement uncertainty (with a 95% confidence level) for this test using a Horn Antenna is ± 5.08 dB (3 m distance).

2.17.2 Conducted Radio Emissions Measurement Uncertainty

Measurement uncertainty (within a 95% confidence level) for this test is ± 1.5 dB.

3 Conclusions

3.1 Test Outcome

Based on the test results shown above, the EUT is deemed to comply with all relevant requirements for Part 90.219 and RSS-131 Clause 6.