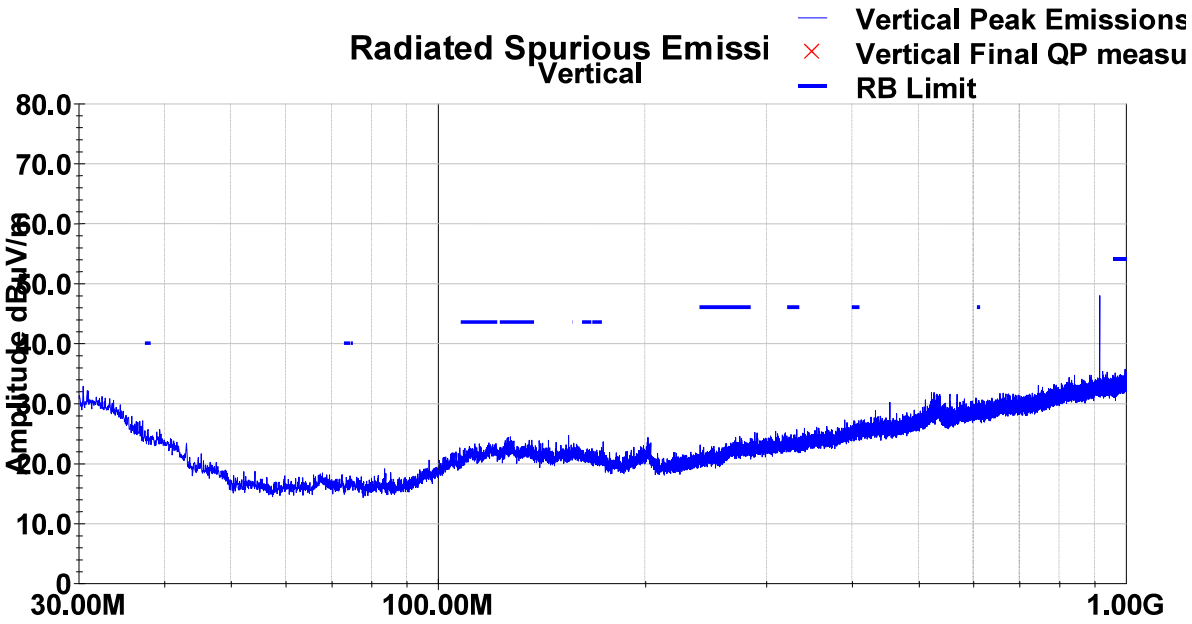
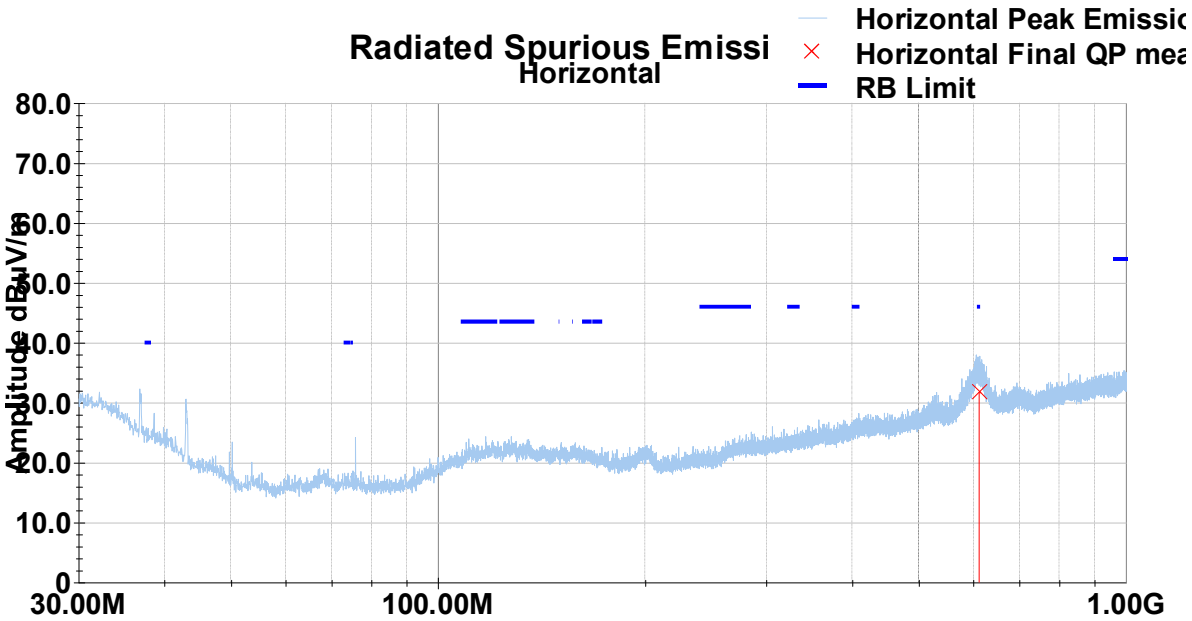
30-1000MHz

30-1000MHz – Vertical – CH11 X-axis

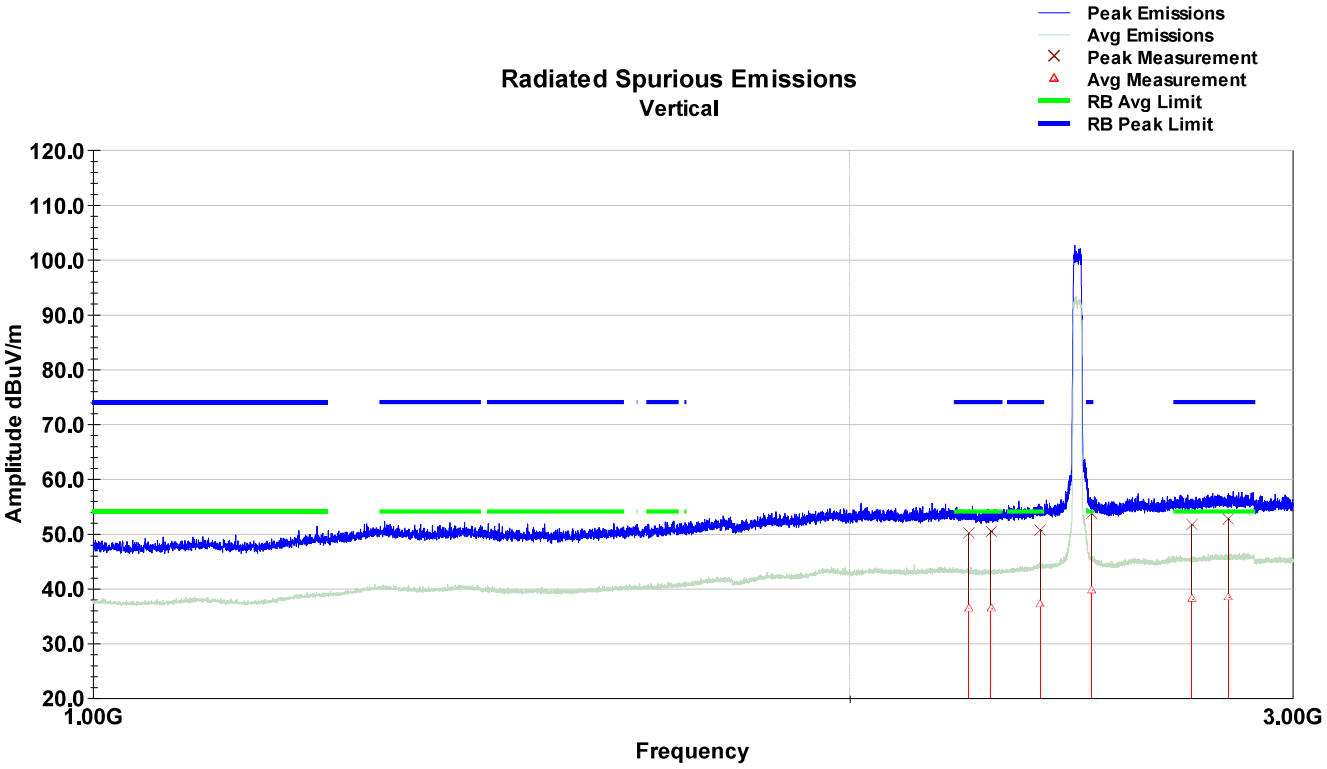


30-1000MHz – Horizontal – CH11 Z-axis



Frequency MHz	Raw QP (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	Amp (dB)	QP Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
612.13	35.7	H	31.0	143.0	24.0	1.7	29.8	31.7	46.0	-14.3
QP Value = Raw QP + AF + Loss - Amp										
Margin = QP Value - Limit										

1-3GHz – Vertical – CH11 Z-axis



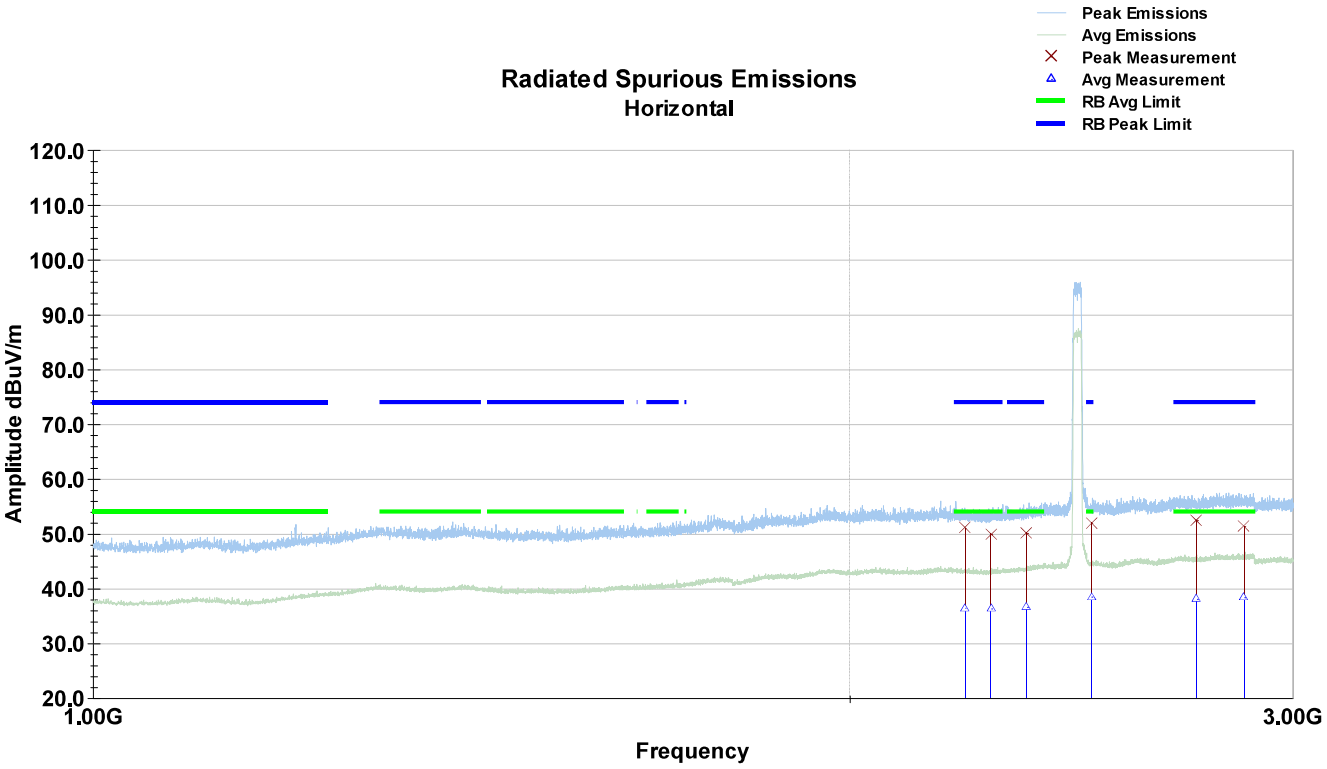
Peak

Frequency MHz	Raw Pk (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF (dB)	Amp (dB)	Final Pk (dBuV/m)	Limit (dBuV/m)	Margin (dB)
2229.56	41.4	V	50.0	233.0	31.3	11.9	0.0	34.5	50.1	74.0	-23.9
2276.20	41.8	V	51.0	127.0	31.1	12.0	0.0	34.4	50.5	74.0	-23.5
2381.60	41.3	V	192.0	227.0	31.8	12.0	0.0	34.4	50.7	74.0	-23.3
2495.60	43.9	V	342.0	148.0	31.9	12.0	0.0	34.1	53.7	74.0	-20.3
2736.04	41.5	V	334.0	175.0	32.4	12.2	0.0	34.4	51.7	74.0	-22.3
2828.36	42.3	V	113.0	242.0	32.5	12.2	0.0	34.3	52.7	74.0	-21.3
Final Pk = Raw Pk + AF + Loss + DCF - Amp											
Margin = Final Pk - Limit											

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	DCF dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
2229.56	27.8	V	50.0	233.0	31.3	11.9	0.0	34.5	36.5	54.0	-17.5
2276.20	27.7	V	51.0	127.0	31.1	12.0	0.0	34.4	36.3	54.0	-17.6
2381.60	27.7	V	192.0	227.0	31.8	12.0	0.0	34.4	37.1	54.0	-16.9
2495.60	30.0	V	342.0	148.0	31.9	12.0	0.0	34.1	39.8	54.0	-14.2
2736.04	27.9	V	334.0	175.0	32.4	12.2	0.0	34.4	38.1	54.0	-15.9
2828.36	28.1	V	113.0	242.0	32.5	12.2	0.0	34.3	38.5	54.0	-15.5
Final Avg = Raw Avg + AF + Loss + DCF - Amp											
Margin = Final Avg - Limit											

1-3GHz – Horizontal – CH11 Z-axis



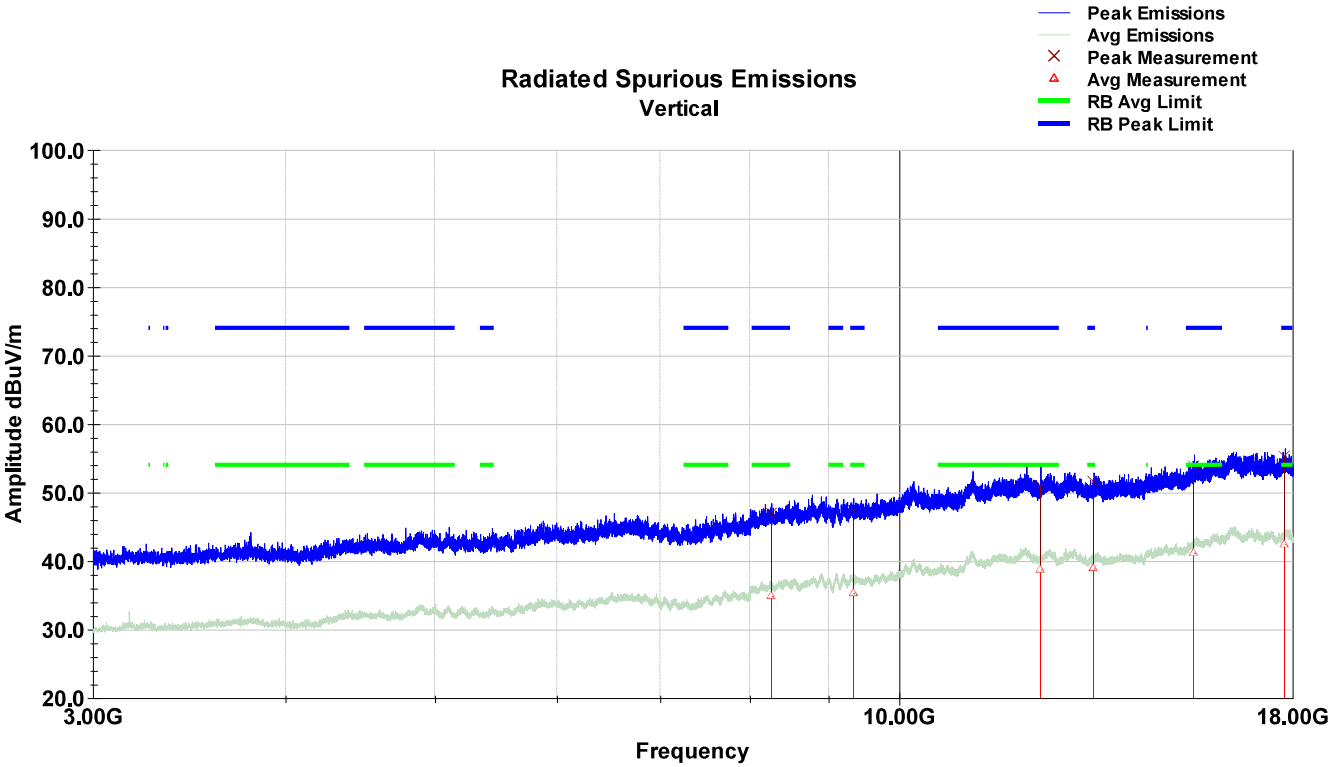
Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF dB	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
2223.00	42.3	H	132.0	165.0	31.3	11.9	0.0	34.5	51.0	74.0	-23.0
2276.00	41.2	H	132.0	232.0	31.1	12.0	0.0	34.4	49.9	74.0	-24.1
2352.00	41.3	H	201.0	235.0	31.5	12.0	0.0	34.6	50.1	74.0	-23.9
2495.00	42.2	H	260.0	165.0	31.9	12.0	0.0	34.2	52.0	74.0	-22.0
2748.00	42.3	H	260.0	230.0	32.5	12.2	0.0	34.5	52.5	74.0	-21.5
2870.00	41.1	H	279.0	198.0	32.4	12.2	0.0	34.4	51.4	74.0	-22.6
Final Pk = Raw Pk + AF + Loss + DCF - Amp											
Margin = Final Pk - Limit											

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF dB	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
2223.00	27.8	H	132.0	165.0	31.3	11.9	0.0	34.5	36.5	54.0	-17.5
2276.00	27.7	H	132.0	232.0	31.1	12.0	0.0	34.4	36.4	54.0	-17.6
2352.00	27.8	H	201.0	235.0	31.5	12.0	0.0	34.6	36.6	54.0	-17.3
2495.00	28.7	H	260.0	165.0	31.9	12.0	0.0	34.2	38.5	54.0	-15.4
2748.00	28.0	H	260.0	230.0	32.5	12.2	0.0	34.5	38.1	54.0	-15.9
2870.00	28.2	H	279.0	198.0	32.4	12.2	0.0	34.4	38.4	54.0	-15.6
Final Avg = Raw Avg + AF + Loss + DCF - Amp											
Margin = Final Avg - Limit											

3-18GHz – Vertical – CH11 Z-axis



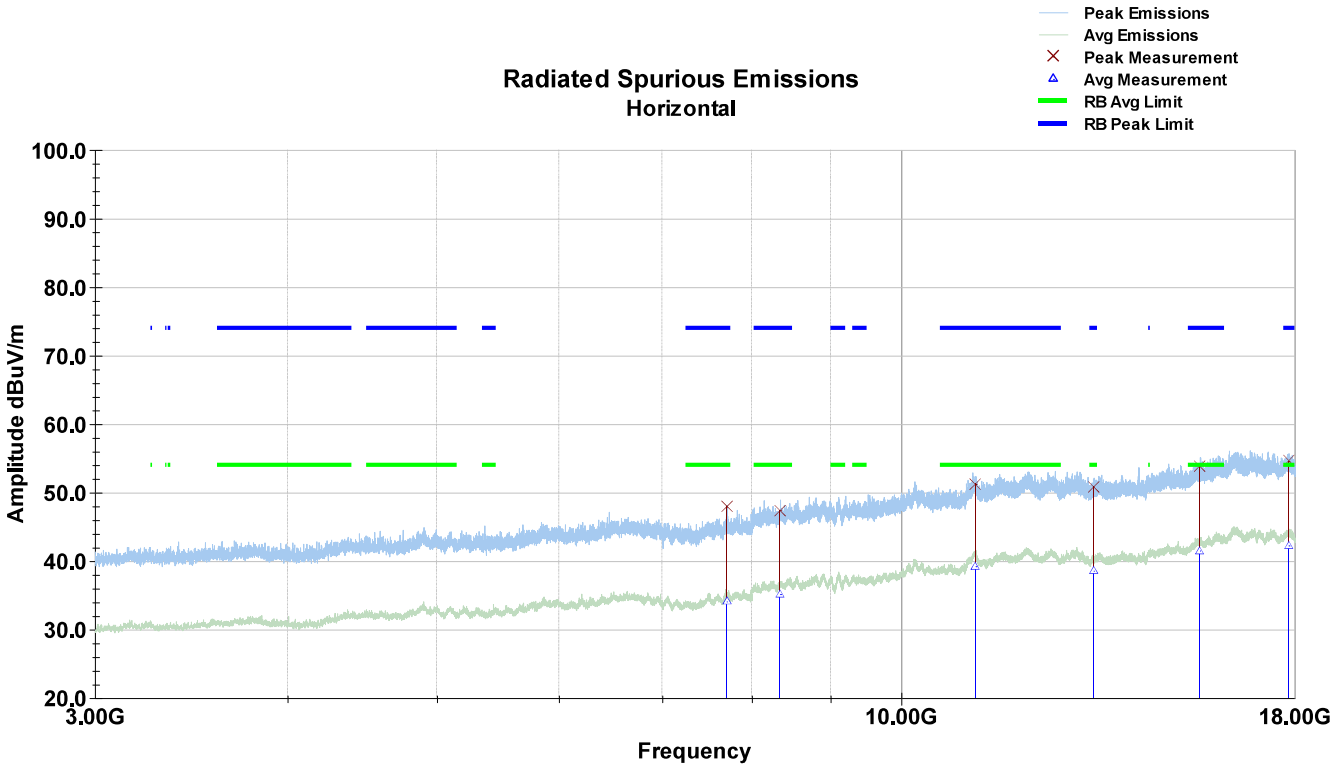
Peak

Frequency MHz	Raw Pk (dBuV)	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF (dB)	Amp (dB)	Final Pk (dBuV/m)	Limit (dBuV/m)	Margin (dB)
8268.46	42.0	V	219.0	134.0	35.9	3.6	0.0	34.6	46.9	74.0	-27.1
9338.00	42.1	V	146.0	231.0	36.6	3.7	0.0	35.0	47.4	74.0	-26.6
12354.16	43.1	V	172.0	135.0	39.1	4.5	0.0	35.7	51.0	74.0	-23.0
13374.36	43.8	V	357.0	209.0	39.3	4.5	0.0	36.0	51.6	74.0	-22.4
15532.72	44.8	V	359.0	234.0	40.5	4.9	0.0	36.2	53.9	74.0	-20.1
17786.94	45.6	V	238.0	248.0	41.0	5.3	0.0	36.6	55.3	74.0	-18.7
Final Pk = Raw Pk + AF + Loss + DCF - Amp											
Margin = Final Pk - Limit											

Average

Frequency MHz	Raw Avg dBuV	Polarity V/H	Azimuth degrees	Height cm	AF dB/m	Loss dB	DCF dB	Amp dB	Final Avg dBuV/m	Limit dBuV/m	Margin dB
8268.46	29.9	V	219.0	134.0	35.9	3.6	0.0	34.6	34.9	54.0	-19.1
9338.00	30.0	V	146.0	231.0	36.6	3.7	0.0	35.0	35.3	54.0	-18.7
12354.16	30.9	V	172.0	135.0	39.1	4.5	0.0	35.7	38.8	54.0	-15.2
13374.36	31.2	V	357.0	209.0	39.3	4.5	0.0	36.0	38.9	54.0	-15.0
15532.72	32.1	V	359.0	234.0	40.5	4.9	0.0	36.2	41.2	54.0	-12.8
17786.94	32.8	V	238.0	248.0	41.0	5.3	0.0	36.6	42.5	54.0	-11.5
Final Avg = Raw Avg + AF + Loss + DCF - Amp											
Margin = Final Avg - Limit											

3-18GHz – Horizontal – CH11 Z-axis



Peak

Frequency MHz	Raw Pk dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF dB	Amp (dB)	Final Pk dBuV/m	Limit dBuV/m	Margin dB
7706.00	43.0	H	259.0	243.0	35.9	3.4	0.0	34.3	47.9	74.0	-26.1
8345.00	42.1	H	98.0	243.0	35.9	3.7	0.0	34.4	47.4	74.0	-26.6
11175.00	43.5	H	310.0	221.0	38.6	4.3	0.0	35.2	51.3	74.0	-22.7
13335.00	43.0	H	99.0	218.0	39.3	4.5	0.0	35.9	50.9	74.0	-23.1
15626.50	44.6	H	30.0	139.0	40.6	4.9	0.0	36.2	53.9	74.0	-20.1
17834.50	44.8	H	246.0	170.0	41.0	5.4	0.0	36.7	54.6	74.0	-19.4
Final Pk = Raw Pk + AF + Loss + DCF - Amp											
Margin = Final Pk - Limit											

Average

Frequency MHz	Raw Avg dBuV	Polarity (V/H)	Azimuth (degrees)	Height (cm)	AF (dB/m)	Loss (dB)	DCF dB	Amp (dB)	Avg Value dBuV/m	Limit (dBuV/m)	Margin (dB)
7706.00	29.2	H	259.0	243.0	35.9	3.4	0.0	34.3	34.1	54.0	-19.8
8345.00	29.9	H	98.0	243.0	35.9	3.7	0.0	34.4	35.2	54.0	-18.8
11175.00	31.5	H	310.0	221.0	38.6	4.3	0.0	35.2	39.2	54.0	-14.7
13335.00	30.8	H	99.0	218.0	39.3	4.5	0.0	35.9	38.6	54.0	-15.4
15626.50	32.2	H	30.0	139.0	40.6	4.9	0.0	36.2	41.5	54.0	-12.5
17834.50	32.6	H	246.0	170.0	41.0	5.4	0.0	36.7	42.3	54.0	-11.7
Final Avg = Raw Avg + AF + Loss + DCF - Amp											
Margin = Final Avg - Limit											

18-26 GHz

- This frequency range does not show any significant difference between different EUT orientations, channels, or chains. Worst Case plots shown on CH 6.

8 Emissions in Restricted Frequency Bands

8.1 *Test Result*

Test Description	Test Specification		Test Result
Restricted Band Emissions	15.205 / 15.209	RSS-GEN S8.9 / 8.10	Compliant

8.2 *Test Method*

Field strength measurements were performed at the restricted band edges of 2390MHz and 2483.5MHz for each modulation. Measurements were made using the conducted methods defined in ANSI C63.10, Section 11.12.2.

8.3 *Test Site*

SGS EMC Laboratory, Suwanee, GA

Environmental Conditions

Temperature:	23.06 °C
Relative Humidity:	53.9 %
Atmospheric Pressure:	98.26 kPa

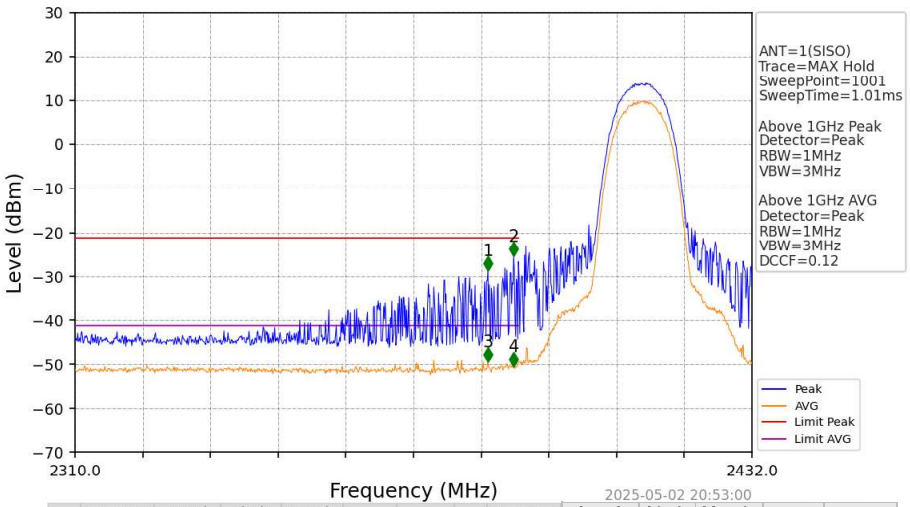
8.4 *Test Equipment*

Test End Date: 2-May-2025 Tester: SGM

Equipment	Manufacturer	Model	Asset Number	Cal Date	Cal Due Date
RF CABLE SMA TO SMA, 0.01-40GHZ	TELEDYNE STORM MICROWAVE	084-0505-059	20108	3-Apr-2025	3-Apr-2026
SIGNAL ANALYZER (TS8997)	ROHDE & SCHWARZ	FSV30	B085749	4-Mar-2025	4-Mar-2026
TSTPASS SWITCHBOX	TSTPASS	SB2	23009	4-Apr-2025	4-Apr-2026

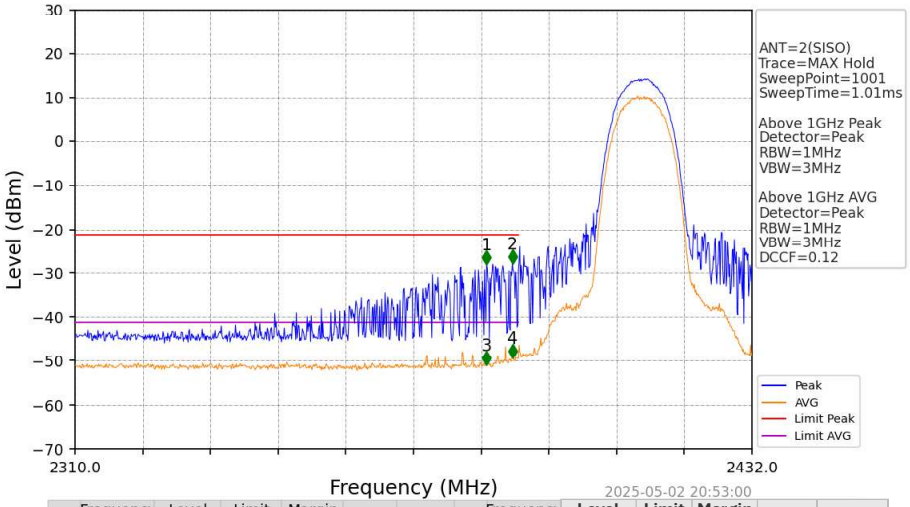
8.5 *Test Data – Band Edge*

802.11b_LCH_2412MHz_Ant1 (SISO)_NTNV



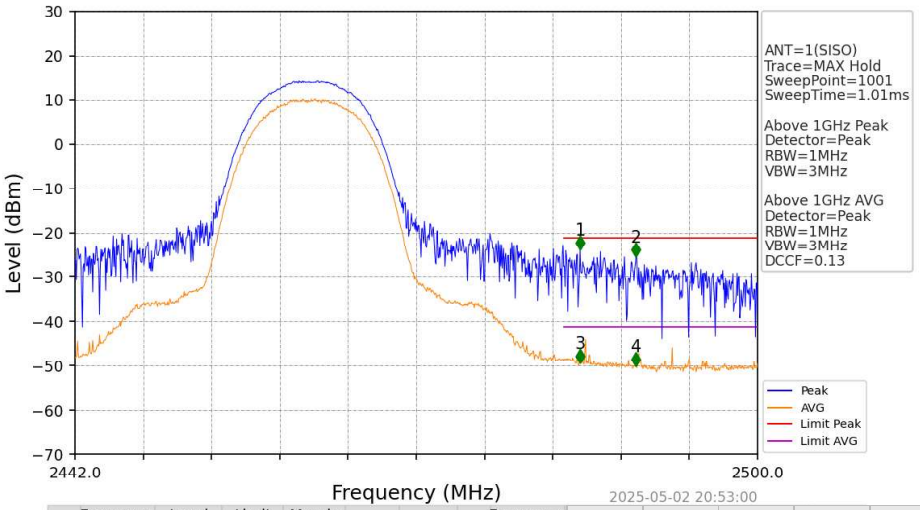
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2384.420	-28.53	-21.20	7.33	Pass	Peak	3	2384.420	**-49.63**	**-41.2**	**8.43**	**Pass**	**AVG**
2	2389.056	-25.23	-21.20	4.03	Pass	Peak	4	2389.056	**-50.71**	**-41.2**	**9.51**	**Pass**	**AVG**

802.11b_LCH_2412MHz_Ant2 (SISO)_NTNV



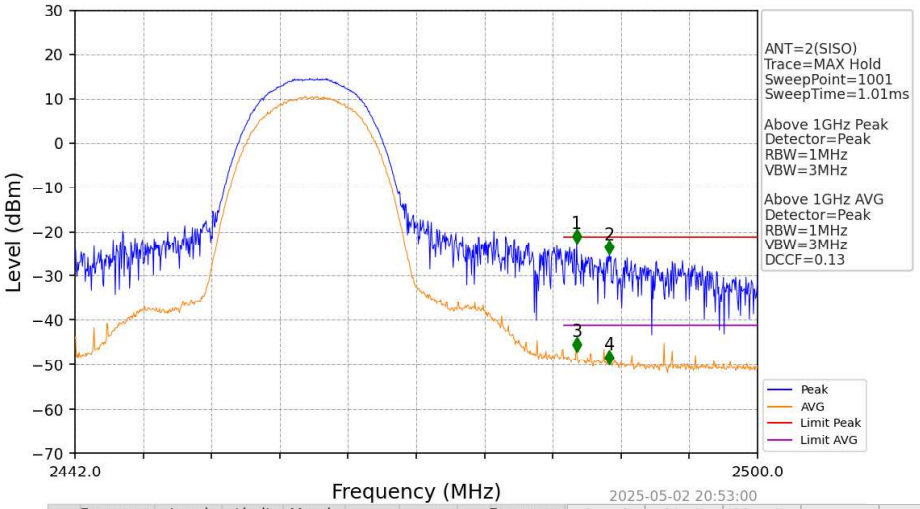
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2384.176	-28.01	-21.20	6.81	Pass	Peak	3	2384.176	**-51.13**	**-41.2**	**9.93**	**Pass**	**AVG**
2	2388.812	-27.83	-21.20	6.63	Pass	Peak	4	2388.812	**-49.45**	**-41.2**	**8.25**	**Pass**	**AVG**

802.11b_HCH_2462MHz_Ant1 (SISO)_NTNV



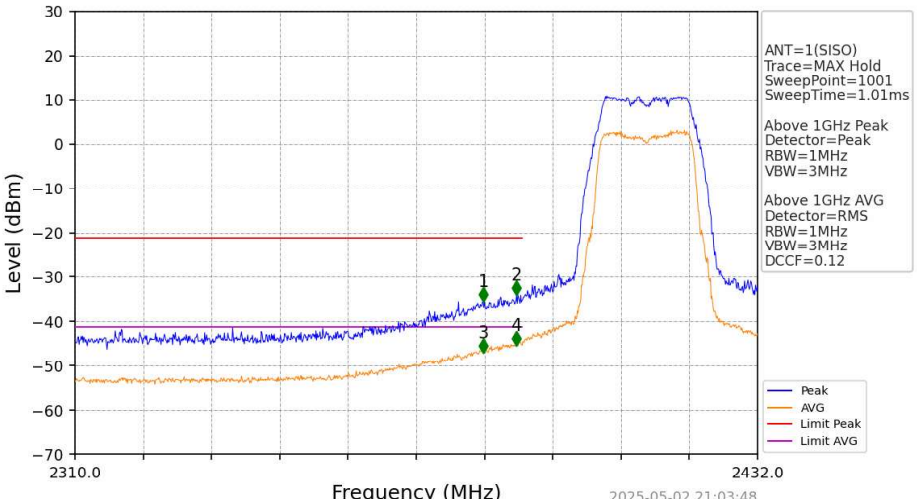
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2484.920	-23.91	-21.20	2.71	Pass	Peak	3	2484.920	-49.78	-41.2	8.58	Pass	AVG
2	2489.676	-25.49	-21.20	4.29	Pass	Peak	4	2489.676	-50.58	-41.2	9.38	Pass	AVG

802.11b_HCH_2462MHz_Ant2 (SISO)_NTNV



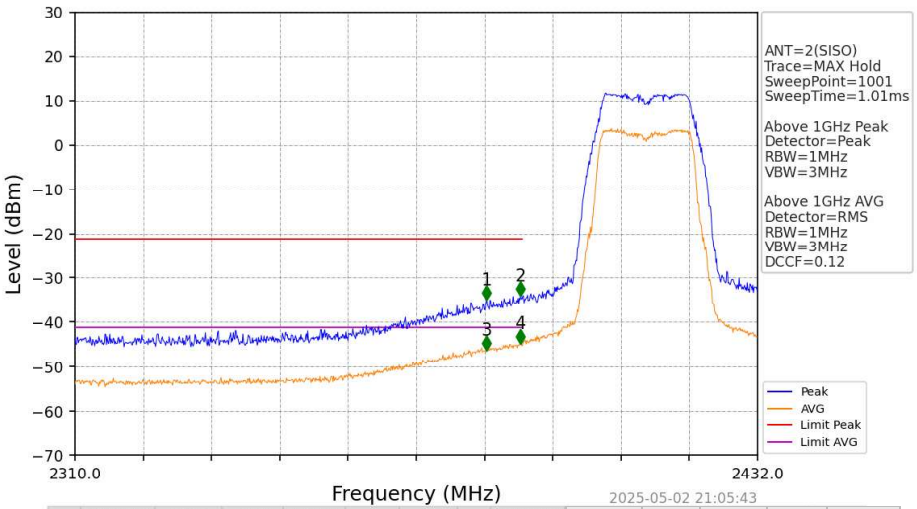
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2484.630	-22.61	-21.20	1.41	Pass	Peak	3	2484.630	-47.01	-41.2	5.81	Pass	AVG
2	2487.414	-25.14	-21.20	3.94	Pass	Peak	4	2487.414	-49.83	-41.2	8.63	Pass	AVG

802.11g_LCH_2412MHz_Ant1 (SISO)_NTNV



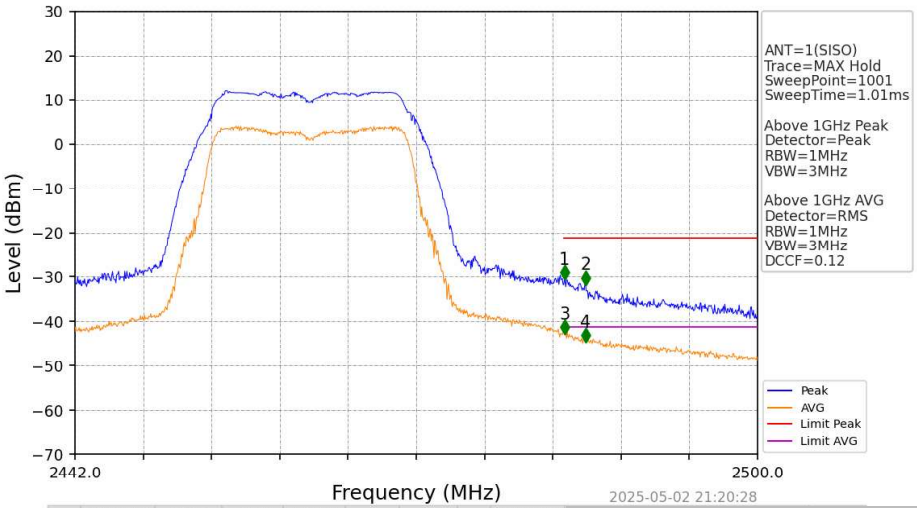
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2382.956	-35.57	-21.20	14.37	Pass	Peak	3	2382.956	**-47.24**	**-41.2**	**6.04**	**Pass**	**AVG**
2	2388.934	-34.05	-21.20	12.85	Pass	Peak	4	2388.934	**-45.59**	**-41.2**	**4.39**	**Pass**	**AVG**

802.11g_LCH_2412MHz_Ant2 (SISO)_NTNV



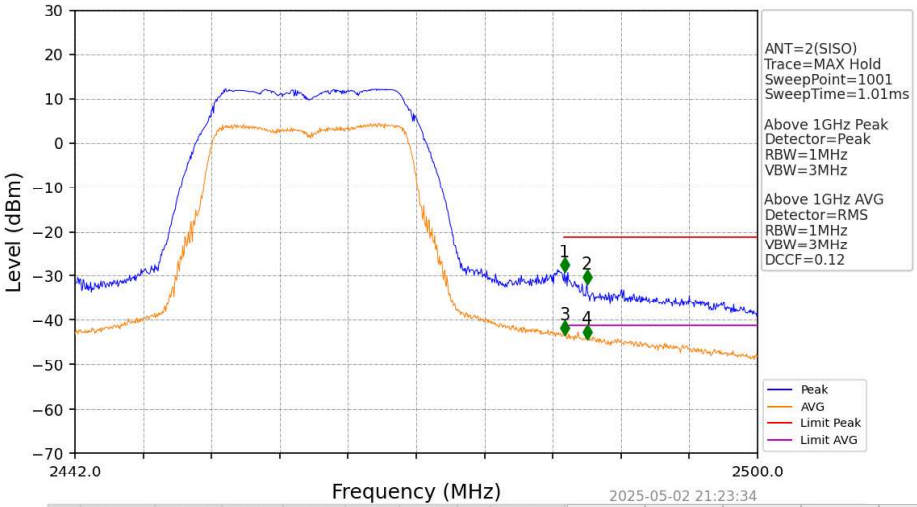
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2383.566	-34.95	-21.20	13.75	Pass	Peak	3	2383.566	**-46.29**	**-41.2**	**5.09**	**Pass**	**AVG**
2	2389.666	-34.01	-21.20	12.81	Pass	Peak	4	2389.666	**-44.85**	**-41.2**	**3.65**	**Pass**	**AVG**

802.11g_HCH_2462MHz_Ant1 (SISO)_NTNV



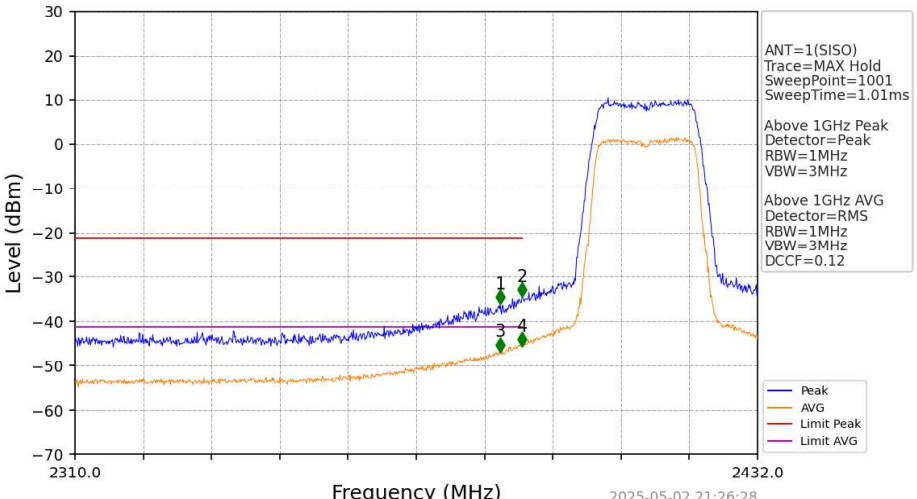
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2483.586	-30.67	-21.20	9.47	Pass	Peak	3	2483.586	-43.39	-41.2	2.19	Pass	AVG
2	2485.384	-31.79	-21.20	10.59	Pass	Peak	4	2485.384	-45.15	-41.2	3.95	Pass	AVG

802.11g_HCH_2462MHz_Ant2 (SISO)_NTNV



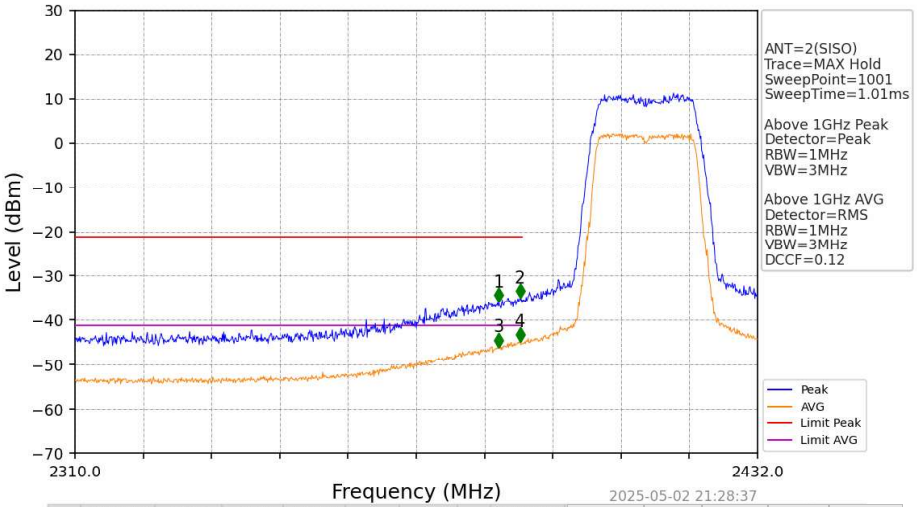
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2483.586	-29.21	-21.20	8.01	Pass	Peak	3	2483.586	-43.34	-41.2	2.14	Pass	AVG
2	2485.500	-31.81	-21.20	10.61	Pass	Peak	4	2485.500	-44.2	-41.2	3	Pass	AVG

802.11n(HT20)_LCH_2412MHz_Ant1 (SISO)_NTNV



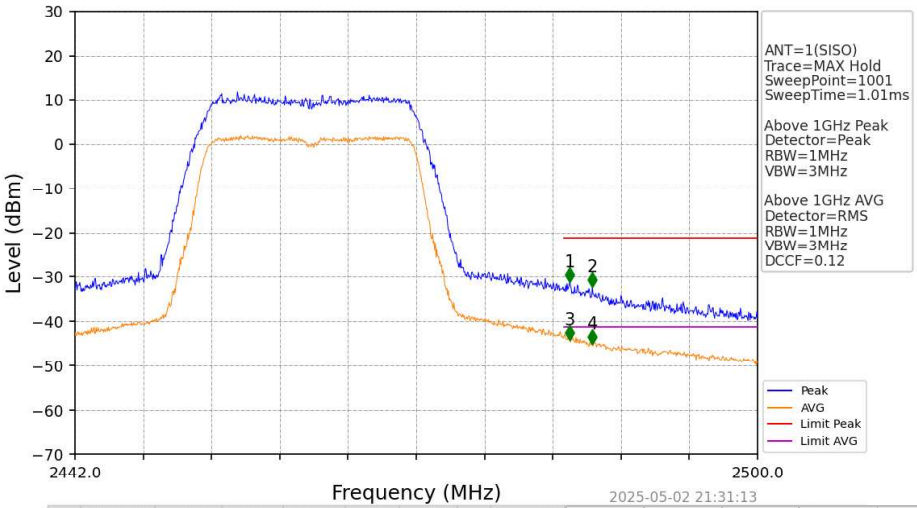
No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2386.006	-36.09	-21.20	14.89	Pass	Peak	3	2386.006	-47.02	-41.2	5.82	Pass	AVG
2	2389.910	-34.50	-21.20	13.30	Pass	Peak	4	2389.910	-45.89	-41.2	4.69	Pass	AVG

802.11n(HT20)_LCH_2412MHz_Ant2 (SISO)_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2385.762	-35.88	-21.20	14.68	Pass	Peak	3	2385.762	-46.09	-41.2	4.89	Pass	AVG
2	2389.544	-35.04	-21.20	13.84	Pass	Peak	4	2389.544	-44.9	-41.2	3.7	Pass	AVG

802.11n(HT20)_HCH_2462MHz_Ant1 (SISO)_NTNV



No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2484.050	-31.17	-21.20	9.97	Pass	Peak	3	2484.050	-44.52	-41.2	3.32	Pass	AVG
2	2485.964	-32.19	-21.20	10.99	Pass	Peak	4	2485.964	-45.42	-41.2	4.22	Pass	AVG

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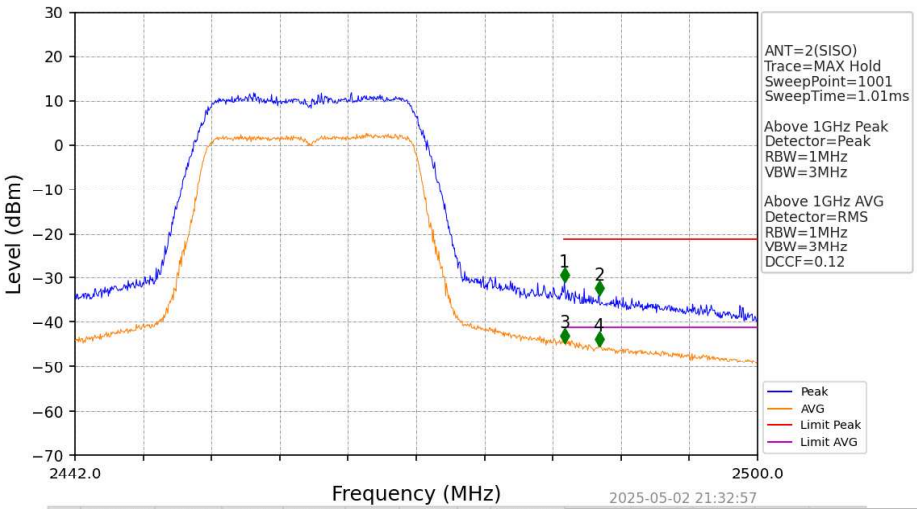

No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark	No	Frequency (MHz)	Level (dBm)	Limit (dBm)	Margin (dB)	Status	Remark
1	2483.586	-30.91	-21.20	9.71	Pass	Peak	3	2483.586	-44.57	-41.2	3.37	Pass	AVG
2	2486.544	-33.96	-21.20	12.76	Pass	Peak	4	2486.544	-45.32	-41.2	4.12	Pass	AVG

9 Antenna Requirement

9.1 *Result*

Test Description	Test Specification		Test Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.203	RSS-GEN S8.3	Compliant

9.2 *Requirement*

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit permanently attached antenna or of so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

9.3 *Conclusion*

The Device utilizes an internal PCB antenna that is not accessible and cannot be disconnected. This meets the requirements of the standard.

10 Measurement Uncertainty

The measurement uncertainty figures are be calculated in accordance with TR 100 028-1 [2] and correspond to an expansion factor (coverage factor) k = 2 (which provide confidence levels of 95,45 % in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

	Expanded Uncertainty for Normal k factor equal to 2	
Parameter	Required	Laboratory Actual
Radio Frequency	±1 x 10-5	±9.8 x 10-8
total RF power, conducted	±1.5 dB	±1.2 dB
RF power density, conducted	±3 dB	±0.7 dB
spurious emissions, conducted	±3 dB	±2.1 dB
all emissions, radiated	±6 dB	±4.8 dB
temperature	±1°C	±0.5°C
humidity	±5 %	±3.5%
DC and low frequency voltages	±3 %	±0.4%

11 Revision History

Revision Level	Description of changes	Revision Date
DRAFT1	Draft - Updated section 8.5	02 May 2025
DRAFT2	Updated Equipment under test. Updated section 8.5	13 May 2025
0	Initial Release	28 May 2025
1	Updated the test standard from ANSI C63.10:2013 to 2020	30 May 2025
2	Added antenna requirement section. Added battery voltage in section 2.3.	06 June 2025
3	Corrected table of contents. Added EIRP output power to section 4.5.	20 June 2025
4	Additional Measurement point taken for ISED requirements	17 July 2025